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10CFR50.55a(g)(5)(iii)

LR-N07-0150

United States Nuclear Regulatory Commission Document Control Desk Washington, DC 20555

> SALEM GENERATING STATION – UNIT 2 FACILITY OPERATING LICENSE NO. DPR-75 NRC DOCKET NO. 50-311

Subject:

RE-SUBMITTAL OF INSERVICE INSPECTION PROGRAM RELIEF REQUESTS S2-I2-RR-B01 AND S2-I2-RR-C01

References: (1) Letter from PSEG to NRC: "Inservice Inspection Program Relief Requests S2-I2-RR-B01 and S2-I2-RR-C01, Salem Nuclear Generating Station - Unit 2, Facility Operating License DPR-75, Docket No. 50-311," dated March 21, 2006

> (2) Letter from NRC to PSEG: "Salem Nuclear Generating Station, Unit 2, Request for Additional Information, Re: Inservice Inspection Program Relief Requests," dated December 20, 2006

> (3) Letter from PSEG to NRC: "Withdrawal of Inservice Inspection Program Relief Requests S2-I2-RR-B01 and S2-I2-RR-C01, Salem Nuclear Generating Station - Unit 2, Facility Operating License DPR-75, Docket No. 50-311," dated March 24, 2007

In Reference 1, PSEG Nuclear LLC (PSEG) submitted inspection relief requests S2-I2-RR-B01 and S2-I2-RR-C01 associated with the Second Ten Year Inservice Inspection (ISI) Interval for Salem Unit 2.

In Reference 2, the NRC requested additional information (RAI) related to the Reference 1 requests.

In Reference 3 PSEG withdrew relief requests S2-I2-RR-B01 and S2-I2-RR-C01 following discussion with the NRC Staff. PSEG noted in Reference 3 that the relief requests, including with responses to the Reference 2 RAIs, may be re-submitted in the future.

This letter re-submits relief requests S2-I2-RR-B01 and S2-I2-RR-C01, and incorporates the responses to the Reference 2 RAIs, as described below.

Pursuant to 10CFR50.55a(g)(5)(iii), PSEG Nuclear (PSEG) hereby requests NRC approval of the following requests associated with the Second Ten Year Inservice Inspection (ISI) Interval for Salem Unit 2. ISI relief requests S2-I2-RR-B01 (Attachment 1) and S2-I2-RR-C01 (Attachment 2) address examination limitations for exams performed in accordance the requirements of the American Society of Mechanical Engineering (ASME) Boiler and Pressure Vessel Code, Section XI for Class 1 and Class 2 components, respectively.

The Salem Unit 2, Second Ten-Year Interval ISI examinations were performed in accordance with the requirements of ASME Boiler and Pressure Vessel Code Section XI 1986 Edition Article IWB-2500 to the extent practical. Coverage for certain weld examinations conducted during the Second Ten-Year Interval was less than required in ASME Section XI.

PSEG has determined that conformance with these requirements is impractical for Salem Unit 2. Information supporting this determination is provided in Attachments 1 and 2 in accordance with 10 CFR 50.55a(g)(5)(iii). Attachment 3 provides individual responses to the Reference 2 RAIs, and, where applicable, describes how the RAI responses are addressed in Attachments 1 and 2, and Enclosure 1. Enclosure 1 provides supporting documentation and additional descriptive details.

If you have any questions or require additional information, please do not hesitate to contact Mr. Jamie Mallon at (610) 765-5507.

Sincerely,

Robert Braun Site Vice President Salem Generating Station

Attachments:

- 1. ISI Relief Request S2-I2-RR-B01
- 2. ISI Relief Request S2-I2-RR-C01
- 3. Response to NRC RAIs

Enclosures:

1. Supporting Documentation

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USNRC Senior Resident Inspector – (Salem X24)

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10 CFR 50.55a Request Number: S2-I2-RR-B01 Relief Request in Accordance with 10 CFR 50.55a(g)(5)(iii) Inservice Inspection Impracticality

NOTE:

Salem Unit 2 – Second Ten-Year Interval Inservice Inspection (ISI) inservice inspection examinations was conducted between May 10, 1992 (start) and November 23, 2003 (end). This interval excludes 26 months and 21 days (6/8/95 – 8/29/97) for an extended shutdown and cumulatively less 2 months and 1 day to coincide with end of refueling outage per IWA-2430 (d).

ASME Code Components Affected

Code Class	1
Reference:	IWB-2500
Examination Categories:	B-A, B-B, B-D, B-F, B-J, and B-K-1
Item Numbers:	See Table 1-1
Description:	Volumetric and surface examination coverage
Component Number:	See Table 1-1

Applicable Code Edition and Addenda

The code of record for the Salem Unit 2 Second ten-year ISI Program interval is Section XI of the ASME Code, 1986 Edition.

Applicable Code Requirement

Salem Unit 2 Second Ten-Year Interval Inservice Inspection (ISI) examinations were performed in accordance with the requirements of ASME Boiler and Pressure Vessel Code Section XI, 1986 Edition Article IWB-2500 to the extent practical. Table IWB-2500-1 defines examination requirements for Class 1 components. The table contains information associated with the identification of components to be examined by nondestructive examination; this includes the applied nondestructive examination (NDE) method, acceptance standard, and extent of exam coverage and exam frequency.

In addition, 10CFR50.55a was revised effective November 22, 1999 to require expedited implementation of Appendix VIII, "Performance Demonstration for Ultrasonic Examination Systems," of the ASME Code, Section XI, 1995 Edition with the 1996 Addenda. These requirements affected both Class 1 and 2 bolting, piping system welds, and reactor pressure vessel nondestructive examinations performed after this date. With this initiative came revised coverage calculation methodologies that further reduced the credited examination coverage of those applicable components.

ASME, Section XI, 1986 Edition, required volumetric and/or surface and visual examinations be performed upon components and welds identified within Table IWB-2500-1. The applicable exam categories for this relief request are B-A, B-B, B-D, B-F, B-J, and B-K-1. The applicable code requirements for the relevant item numbers are as follows. Please note that "essentially 100%," as clarified by ASME Code Case N-460, is greater than 90% coverage of the examination volume, or surface area, as applicable.

A. Exam Category B-A Pressure Retaining Welds in Reactor Vessels

Code Requirement: Item B1.12 requires essentially 100% volumetric examination, as defined by Figure IWB-2500-2, of one longitudinal reactor pressure vessel (RPV) beltline (core region) shell weld during successive operating intervals 2 through 4. Items B1.21 and B1.22 require essentially 100% volumetric examination of the "accessible length" of head welds, as defined by Figure IWB-2500-3. Items B1.30 and B1.40 require essentially 100% of the shell-to-flange and closure head-to-flange welds, as defined by Figures IWB-2500-4 and -5, respectively.

B. Exam Category B-B Pressure Retaining Welds in Vessels Other Than Reactor Vessels

Code Requirement: Items B2.11 and B2.12 require essentially 100% volumetric examination, as defined by Figures IWB-2500-1 and -2, of the circumferential shell-to-head weld and one foot of the intersecting longitudinal weld on the pressurizer.

C. Exam Category B-D Full Penetration Welds of Nozzles in Vessels- Inspection Program B

Code Requirement: Item B3.90 requires essentially 100% volumetric examination, as defined by Figures IWB-2500-7 a through d, of the reactor vessel nozzle-to-vessel welds. Items B3.120 and B3.140 require essentially 100% volumetric examination, as defined by Figures IWB-2500-7 a through d, of the nozzle inside radius sections of the pressurizer and primary side of the steam generators.

D. Exam Category B-F Pressure Retaining Dissimilar Metal Piping Welds

Code Requirement: Items B5.40 and B5.70, require essentially 100% volumetric and surface examinations, as defined by Figure IWB-2500-8 of the pressurizer relief and spray nozzle-to-safe-end welds, and steam generator short radius nozzle-to-safe-end welds.

E. Exam Category B-J Pressure Retaining Piping Welds

Code Requirement: Items B9.11 and B9.31, require essentially 100% volumetric and surface examinations, as defined by Figures IWB-2500-8, -9, -10, or -11, as applicable, for piping circumferential and branch connection welds > 4-inch NPS. Items B9.21 and B9.40 require essentially 100% surface examinations, as defined in IWB-2500-8, of piping circumferential welds < 4-inch NPS and socket welds. Once incorporated into NRC Regulatory Guide 1.147 Revision 12, item B9.12 piping longitudinal seam welds > 4-inch NPS were examined in accordance with the requirements of ASME Section XI Code Case N-524, Alternative Examination Requirements for Longitudinal Welds in Class 1 and 2 Piping.

F. Exam Category B-K-1 Welded Integral Attachments

Code Requirement: Items B10.10 and B10.20 require essentially 100% surface or volumetric examinations, as defined by Figures IWB-2500-13, -14, or -15, as applicable, for integrally welded support attachments on Class 1 piping and pumps, respectively. PSEG Nuclear conducted welded integral attachment weld exams in accordance with the requirements imposed by ASME Section XI Code Case N-509, Alternative Rules for the Selection and Examination of Class 1, 2 and 3 Integrally Welded Attachments.

Table 1-1 contains detailed information related to the explanation of those components demonstrating inadequate code exam coverage extent due to inaccessibility, physical limitation, or obstruction.

Basis for Relief:

Pursuant to 10CFR50.55a(g)(5)(iii), relief is requested from ASME XI examination requirements for the performance of the following piping and vessel welds due to exam limitations. Table 1-1 herein identifies those inservice inspection nondestructive examinations contained within the Salem Unit 2 ISI Program Long Term Plan for the second Ten-Year Interval whose NDE exams were found to be inaccessible, physically limited or partially obstructed and therefore not capable of fully meeting code coverage requirements for examination extent. Enclosure 1 provides additional descriptive details (sketches, illustrations, and/or drawings) for these components.

Subject components contained herein have received inservice inspection NDE examinations to the "extent practical" within the limitations of design, geometry and materials of construction of the components as allowed by Code. These components have also undergone necessary volumetric examination by radiography and/or surface examinations during fabrication, in accordance with approved construction/fabrication code requirements providing adequate assurance for the structural integrity of the components prior to plant operation. In addition, these components have been subjected to a visual examination for leakage after completion of each refueling outage, which provides additional assurance that the structural integrity of the subject components is maintained.

PSEG Nuclear (PSEG) utilizes approved technical procedures written in accordance to applicable ASME Code section/paragraph criterion for area/volume requirements. Plant procedures require the documentation of the location and cause of the limitation.

A. Exam Category B-A Pressure Retaining Welds in Reactor Vessels

See Table 1-1, attached, to identify specific component information and explanation of the limitation(s) encountered.

Full Code required coverage is impractical for the identified subject components since the Reactor Pressure Vessel (RPV) would require design modifications that would impose a significant burden to PSEG. PSEG has examined the subject components to the extent practical and has determined them to be acceptable with no observed signs of degradation. In addition, other RPV welds have been examined to the extent required by the Code and also found to be acceptable with no observed signs of degradation. Also, VT-2 visual examinations performed in conjunction with system pressure testing after each refueling outage found these welds to be acceptable with no leakage observed.

B. Exam Category B-B Pressure Retaining Welds in Vessels Other Than Reactor Vessels

See Table 1-1, attached, to identify specific component information and explanation of the limitation(s) encountered.

Full Code required coverage is impractical for the subject components since these vessels would require design modifications that would impose a significant burden to PSEG. PSEG has examined these component welds to the extent practical and determined them to be acceptable with no observed signs of degradation. In addition, other similar vessel welds have been examined to the extent required by the Code and also found to be acceptable with no observed signs of degradation. Also, VT-2 visual examinations performed in conjunction with system pressure testing after each refueling outage found these welds to be acceptable with no leakage observed.

C. Exam Category B-D Full Penetration Welds of Nozzles in Vessels- Inspection Program B

See Table 1-1, attached, to identify specific component information and explanation of the limitation(s) encountered.

Full Code required coverage is impractical for the subject components since the nozzles identified within the table would require design modifications that would

impose a significant burden to PSEG. PSEG has examined these component welds to the extent practical and determined them to be acceptable with no observed signs of degradation. In addition, other similar vessel welds have been examined to the extent required by the Code and also found to be acceptable with no observed signs of degradation. Also, VT-2 visual examinations performed in conjunction with system pressure testing after each refueling outage found these welds to be acceptable with no leakage observed.

D & E. Exam Category B-F and B-J Pressure Retaining Piping Welds

See Table 1-1, attached, to identify specific component information and explanation of the limitation(s) encountered.

Required Code coverage is impractical for the subject welds since the components would require design modifications that would impose a significant burden to PSEG. PSEG has examined these welds to the extent practical and determined them to be acceptable with no observed signs of degradation. In addition, other similar piping welds have been examined to the extent required by the Code and also found to be acceptable with no observed signs of degradation. Also, VT-2 visual examinations performed in conjunction with system pressure testing after each refueling outage found these welds to be acceptable with no leakage observed.

Code required volumetric examinations are conducted by ultrasonic examination from both the upstream and downstream directions of piping welds. Ultrasonic examination of certain terminal ends and structural discontinuities are considered to be impractical due to their configuration and material acoustic properties.

The EPRI Performance Demonstration Initiative (PDI) is in agreement with the NRC's September 22, 1999 Final Rule regarding single side access for piping. The Final Rule requires if access is available, austenitic steel welds shall be scanned in each of the four directions (parallel and perpendicular to the weld) where required. PDI has not been able to qualify a single side examination procedure technique that is capable of demonstrating equivalency for a two-sided examination procedure technique on austenitic piping welds. Current or past technology is not capable of reliably detecting or sizing flaws on the far side of an austenitic weld for configurations common to nuclear applications. Ultrasonic examination of ferritic steel welds requires scanning in the two axial scan directions. Circumferential scanning is required in the remaining two directions only when axial indications were noted during pre-service inspections. Coverage credit may be taken for single side exams on ferritic piping. However, for austenitic piping, a procedure must be qualified with flaws on the inaccessible side of the weld.

To demonstrate that the best available technology was applied for austenitic welds, PDI provides a best effort qualification instead of a complete single sided

qualification. PDI Performance Demonstration Qualification Summary (PDQS) austenitic piping certificates list the limitation that single side examination is performed on a best effort basis. When performing single side access of austenitic stainless steel piping welds the best available techniques are used from the accessible side of the weld, as qualified through the PDI.

When the examination area is limited to one side of an austenitic weld, examination coverage does not comply with 10CFR50.55a(b)(2)(xv)(A) or the ASME Section XI requirements and proficiency demonstrations do not comply with 10CFR50.55a(b)(2)(xvi) and full coverage credit may not be claimed. Based upon the qualification efforts of the PDI program, PSEG considers austenitic piping welds examined from a single side to be fully examined to the extent practical. This is considered true for examinations performed prior to and after the PDI in that it has been confirmed by the PDI that the configuration and material acoustic properties of austenitic piping prevents full two-sided access for examination.

F. Exam Category B-K-1 Welded Integral Attachments

See Table 1-1, attached, to identify specific component information and explanation of the limitation(s) encountered.

Full Code required coverage is impractical for the subject welds since the integral attachment would require design modifications and would impose a significant burden to PSEG Nuclear. The piping and pumps have a permanently welded support structure that interfered with the exam upon the lower portion of the integrally welded attachments. Removal of the piping or pump support structure to access the obstructed area would result in the need to redesign the system's configuration. PSEG has examined these welds to the extent practical and determined them to be acceptable with no observed signs of degradation. In addition, other similar welds have been examined to the extent required by the Code and also found to be acceptable with no observed signs of degradation. VT-2 visual examinations performed in conjunction with system pressure testing after each refueling outage found these welds to be acceptable with no leakage observed.

Alternative Examination

PSEG performed NDE examinations to the extent practical upon the components identified in the exam categories below using the state of the art techniques of the time and as applicable, demonstrated through the EPRI PDI Program.

A. Exam Category B-A Pressure Retaining Welds in Reactor Vessels

Where the component would not allow an ultrasonic angle beam examination from both sides of the weld, the following was performed using the best available technology at the time and as applicable, demonstrated through the EPRI PDI program:

- Similar metal welds were examined to the extent practical using personnel and techniques qualified and demonstrated through the EPRI PDI, as applicable.
- System pressure test examinations were performed per ASME Section XI requirements.
- B. Exam Category B-B Pressure Retaining Welds in Vessels Other Than Reactor Vessels

Where the component would not allow an ultrasonic angle beam examination from both sides of the weld, the following were performed using the best available technology at the time and as applicable, demonstrated through the EPRI PDI program:

- Similar metal welds were examined to the extent practical using personnel and techniques qualified and demonstrated through the EPRI PDI, as applicable.
- System pressure test examinations were performed per ASME Section XI requirements.
- C. Exam Category B-D Full Penetration Welds of Nozzles in Vessels Inspection Program B

Where the component would not allow an ultrasonic angle beam examination from both sides of the weld or upon the nozzle inner radius section, the following were performed using the best available technology at the time and as applicable, demonstrated through the EPRI PDI program:

- Similar metal welds and inner radius sections were examined to the extent practical using personnel and techniques qualified and demonstrated through the EPRI PDI, as applicable.
- System pressure test examinations were performed per ASME Section XI requirements.
- D. Exam Category B-J, and B-F Pressure Retaining Piping Welds

Where the component would not allow an ultrasonic angle beam examination for axial scans (upstream and downstream), the following were performed using the best available technology at the time and as applicable, demonstrated through the EPRI PDI program:

- Similar metal welds were examined in at least one axial direction and two circumferential scans adjacent to the weld and upon the weld using personnel and techniques qualified and demonstrated through the EPRI PDI program for single sided access relating to the material type to be examined, as applicable.
- Austenitic-to-Inconel dissimilar metal welds were examined in at least one axial direction and two circumferential scans adjacent to the weld and upon the weld using personnel and techniques qualified and demonstrated through the EPRI PDI program for single sided access relating to the material type to be examined, as applicable.
- The code required surface and system pressure test examinations were performed per ASME Section XI requirements.
- F. Exam Category B-K-1 Welded Integral Attachments

These examinations were performed in accordance with the requirements of ASME Section XI 1986 Edition to the extent practical. System pressure test examinations were performed per ASME Section XI requirements.

Once approved by NRC Regulatory Guide 1.147, ASME Code Case N-568, Alternative Examination Requirements for Welded Attachments, was applied. As an alternative to the examination requirements of B-K (pre-1995 Addenda examination Categories B-H and B-K-1), Code Case N-568 indicates examination of a welded attachment that is obstructed by a component support or portion of a component support may be limited to the accessible portion of the welded attachment. Disassembly of the component support or portion of the component support is not required.

Applicability

This Relief Request is applicable to the following:

• Salem Unit 2 – Second Ten-Year Inservice Inspection Interval

Precedents

As part of the submission of the Salem 2 second 10-year interval ISI program plan and associated relief requests, limitations relief requests RR-B1 and RR-C1 were submitted. In the Safety Evaluation of this submission, relief was granted for relief requests RR-B1, parts 2 through 11, and RR-C1, parts 1 through 4, for the Salem 2 second 10-year interval (Reference 1). Those components that relief was granted for are noted as such in Table 1-1 ("Relief Previously Granted" column).

Additionally similar relief requests were submitted for the first 10-year interval at Salem Unit 2 (Reference 2). Most of those welds listed in that submittal are the same as those for the second interval, with some additions. Those components for which relief was granted in the first interval are also noted in Table 1-1 ("Relief Previously Granted" column). The examinations performed in the second interval achieved equivalent or better coverage or coverage in more examination directions compared to the first 10-year interval (second interval relief request submittal utilized first interval coverage).

The NRC also approved a similar request for the Salem Unit 1 second 10-year interval in Reference 3.

<u>References</u>

- "Evaluation of the Second Ten-Year Interval Inspection Program Plan and Associated Requests for Relief for Salem Generating Station, Unit 2 (TAC No. M83316)," dated October 23, 1995.
- 2. "Inservice Inspection Long Term Plan, Final Relief Requests First Interval, Salem Generating Station, Unit No. 2, Docket No. 50-311," dated September 28, 1992.
- 3. "Salem Nuclear Generating Station, Unit No. 1 Relief from ASME Code Requirements Related to the Salem Inservice Inspection Program, Relief Request S1-RR-B01 and S1-RR-C01 (TAC NO. MB3811)," dated January 16, 2003.

Table 1-1
2nd Ten-Year Inservice Inspection Interval Class 1 Component NDE Exam Limitations

Sum#	Component ID	Description	2 nd Interval ASME Cat	2 nd Interval ASME Item #	ASME Class	System	Limited NDE Exam	Code Coverage Achieved	Exam Date	Photo/ Sketch No.*	Required Examination Volume	Relief Previously Granted?**	UT Exam Type and Limitation Description
000400	2-RPV-3442A	LOWER SHELL AT 60 DEG.	B-A	B1.12	1	RC	UT	81%	4/18/02	215, 215A, 215B, 216, 217, 218	IWB-2500-1		UT exam was conducted using 45-degree shear and refracted longitudinal wave transducers. The exams completed were limited to approximately 81% code required coverage due to the core barrel support lugs attached to the reactor vessel shell. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
000500	2-RPV-3442B	LOWER SHELL AT 180 DEG.	B-A	B1.12	1	RC	UT	81%	4/18/02	215A, 215B, 219, 220, 221, 222	I WB-2 500-1		UT exam was conducted using 45-degree shear and refracted longitudinal wave transducers. The exams completed were limited to approximately 81% code required coverage due to the core barrel support lugs attached to the reactor vessel shell. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
000600	2-RPV-3442C	LOWER SHELL AT 300 DEG.	B-A	B1.12	1	RC	UT	81%	4/18/02	215A, 215B, 223, 224, 225, 226	IWB-2500-1		UT exam was conducted using 45-degree shear and refracted longitudinal wave transducers. The exams completed were limited to approximately 81% code required coverage due to the core barrel support lugs attached to the reactor vessel shell. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
002600	2-RPVCH-6446B	DOLLAR PLATE	B-A	B1.21	1	RC	UT	67%	10/28/94	45, 46, 47, 266A, 266B	IWB-2500-3	YES	UT exam was conducted using 0-, 45- and, 60-degree shear wave transducers. The exam completed was limited to 67% code required coverage due to CRD Penetrations interferences interfering with scanning. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
002000	2-RPVCH-1446A	MERIDIONAL WELD AT 300 DEG	B-A	B1.22	1	RC	UT	31%	10/28/94	33, 34, 266A, 266B	IWB-2500-3	YES	UT exam was conducted using 0-, 45- and, 60-degree shear and longitudinal wave transducers. The exam completed was limited to 31% code required coverage due to CRD Penetrations and Shroud Support Ring interferences interfering with scanning. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
002100	2-RPVCH-1446B	MERIDIONAL WELD AT 0 DEG.	B-A	B1.22	1	RC	UT	26%	10/28/94	35, 36, 266A, 266B	IWB-2500-3	YES	UT exam was conducted using 0-, 45- and, 60-degree shear and longitudinal wave transducers. The exam completed was limited to 26% code required coverage due to CRD Penetrations and Shroud Support Ring and Lifting Lug interferences interfering with scanning. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
002200	2-RPVCH-1446C	MERIDIONAL WELD AT 60 DEG.	B-A	B1.22	1	RC	UT	35%	10/28/94	37, 38, 266A, 266B	IWB-2500-3		UT exam was conducted using 0-, 45- and, 60-degree shear and longitudinal wave transducers. The exam completed was limited to 35% code required coverage due to CRD Penetrations and Shroud Support Ring interferences interfering with scanning. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.

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Table 1-1
2nd Ten-Year Inservice Inspection Interval Class 1 Component NDE Exam Limitations

Sum#	Component ID	Description	2 nd Interval ASME Cat	2 nd Interval ASME Item #	ASME Class	System	Limited		Exam Date	Photo/ Sketch No.*	Required Examination Volume	Relief Previously Granted?**	UT Exam Type and Limitation Description
002300	2-RPVCH-1446D	MERIDIONAL WELD AT 120 DEG	B-A	B1.22	1	RC	UT	35%	10/28/94	39, 40, 266A, 266B	IWB-2500-3	YES	UT exam was conducted using 0-, 45- and, 60-degree shear and longitudinal wave transducers. The exam completed was limited to 35% code required coverage due to CRD Penetrations and Shroud Support Ring and Lifting Lug interferences interfering with scanning. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
002400	2-RPVCH-1446E	MERIDIONAL WELD AT 180 DEG	B-A	B1.22	1	RC	UT	36%	10/28/94	41, 42, 266A, 266B	IWB-2500-3	YES	UT exam was conducted using 0-, 45- and, 60-degree shear and longitudinal wave transducers. The exam completed was limited to 36% code required coverage due to CRD Penetrations and Shroud Support Ring interferences interfering with scanning. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
002500	2-RPVCH-1446F	MERIDIONAL WELD AT 240 DEG	B-A	B1.22	1	RC	UT	54%	10/28/94	43, 44, 266A, 266B	IWB-2500-3	YES	UT exam was conducted using 0-, 45- and, 60-degree shear and longitudinal wave transducers. The exam completed was limited to 54% code required coverage due to CRD Penetrations and Shroud Support Ring and Lifting Lug interferences interfering with scanning. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
001300	2-RPV-1443A	MERIDIONAL WELD AT 270 DEG	B-A	B1.22	1	RC	UT	88%	4/18/02	227, 227A, 227B, 227C, 228, 229, 230, 231	IWB-2500-3		UT exam was conducted using 45-degree shear and longitudinal wave transducers. The exam completed was limited to 88% code required coverage due to instrumentation tubes interfering with scanning. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
001500	2-RPV-1443C	MERIDIONAL WELD AT 30 DEG.	B-A	B1.22	1	RC	UT	88%	4/18/02	232, 233, 234, 235, 236	IWB-2500-3	YES	UT exam was conducted using 45-degree shear and longitudinal wave transducers. The exam completed was limited to 88% code required coverage due to instrumentation tubes interfering with scanning. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
001600	2-RPV-1443D	MERIDIONAL WELD AT 90 DEG.	B-A	B1.22	1	RC	UT	72%	4/18/02	227A, 227B, 227C, 237, 238, 239	IWB-2500-3	YES	UT exam was conducted using 45-degree shear and longitudinal wave transducers. The exam completed was limited to 72% code required coverage due to instrumentation tubes interfering with scanning. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
002700	2-RPV-7442	VESSEL TO FLANGE	B-A	B1.30	1	RC	UT	82%	4/18/02	240, 240A, 241, 242, 243, 244, 255, 256, 257, 258, 259, 260, 261, 262, 262A, 263, 264, 265	IWB-2500-4	YES	UT exam was conducted using 45-degree shear and longitudinal wave transducers. The exam completed was limited to 82% code required coverage due to OD configuration associated with the taper of the reactor vessel flange. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.

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		2n	d Ten	-Year	Inse	rvice	Inspe	ction Ir	terval	Class 1	Compon	ent NDE	Exam Limitations
Sum#	Component ID	Description	2 nd Interval ASME Cat	2 nd Interval ASME Item #	ASME Class	System	Limited NDE Exam	Code Coverage Achieved	Exam Date	Photo/ Sketch No.*	Required Examination Volume	Relief Previously Granted?**	UT Exam Type and Limitation Description
002800	2-RPVCH-6446A	HEAD TO FLANGE	B-A	B1.40	1	RC	UT	79%	4/17/02	266, 266A, 266B, 267, 268, 269, 270, 270A, 270B, 270C, 270C, 270D, 270E, 270F, 270G	IWB-2500-5	YES	UT exam was conducted using 45- and 60-degree shear wave transducers. The exam completed was limited to 79% code required coverage due to OD configuration associated with the reactor vessel closure head and flange. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed. Closure head was replaced 2R14 with monoblock design (Spring 2005).
010900	2-PZR-CIRC DUH	SHELL D TO UPPER HEAD	B-B	B2.11	1	RC	UT	37%	4/11/02	283, 284, 285, 286, 286A, 286B, 286C	IWB-2500-1		UT exam was conducted using 45- and 60-degree shear wave transducers. The exam completed was limited to 37% code required coverage due to due to support ring clamped to the upper head of the pressurizer head. A total of 140° of the total circumference was accessible for examination. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
010400	2-PZR-LONG D	LONGITUDINAL WELD SHELL D	B-8	B2.12	1	RC	UT	74%	9/7/96	84A, 84B, 85, 86, 87, 88	IWB-2500-2		UT exam was conducted using 45- and 60-degree shear wave transducers. The exam completed was limited to 74% code required coverage. The UT exams conducted were limited due to a permanently installed insulation support bracket. The exam was limited between 0" to 9" with 9" to 13" being restricted due to permanently installed insulation brackets. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
011100	4-PSN-1231-IRS	SAFETY NOZZLE	B-D	B3.120	1	RC	UT	50%	9/7/96	89, 89A, 89B, 90, 91, 92, 93	IWB-2500-7(b)		UT exam was conducted using a 53-degree shear wave transducer. The exam completed was limited to 50% code required coverage. The UT exam conducted was limited due to due to the permanent raised manufacturer ID #'s casted to the lower head. No exam could be performed from the vessel side between 0° and 180° due to the raised manufacturer ID #'s casted to the head. The exam was performed from 180° to 40° constrained from 180° constrained from 180° to the raised to the head. The exam was performed from 180° to 50°. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
020800	31-STG-1220- IRS	OUTLET NOZZLE	B-D	B3.140	1	RC	UT	80%	10/24/94	311, 312, 313, 313P, 313Q, 313R	IWB-2500-7(d)	YES	UT exam was conducted using 28- and 38-degree refracted longitudinal wave transducers. The exam completed was limited to 80% code required coverage due to an installed insulation support ring. The exam surface is approximately 153.9" with the length of the limitation being 30". No exam could be performed between 15" ccw to 15" cw from datum zero. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.

Table 1-1

LR-N07-0150 S2-I2-RR-B01

Table 1-1
2nd Ten-Year Inservice Inspection Interval Class 1 Component NDE Exam Limitations

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Sum#	Component ID	Description	2 nd Interval ASME Cat	2 nd Interval ASME Item #	ASME Class	System	Limited NDE Exam	Code Coverage Achieved	Exam Date	Photo/ Sketch No.*	Required Examination Volume	Relief Previously Granted?**	UT Exam Type and Limitation Description
021200	29-STG-1220- IRS	INLET NOZZLE IRS	B-D	B3.140	1	RC	UT	73%	10/24/94	311, 312, 313, 313D, 313E, 313F	IWB-2500-7(d)	YES	UT exam was conducted using 28- and 38-degree refracted longitudinal wave transducers. The exam completed was limited to 73% code required coverage due to an installed insulation support ring. The exam surface is approximately 154" with the length of the limitation being 73". No exam was able to be performed between 24" ccw to 15" cw from datum zero on insulation support lug located 77"cw to 79"cw with 2"W measurement. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
020700		OUTLET NOZZLE IRS	B-D	B3.140	1	RC	UT	81%	5/12/99	311, 312, 313, 3138, 313T, 313U	IWB-2500-7(d)	YES	UT exam was conducted using 28- and 38-degree refracted longitudinal wave transducers. The exam completed was limited to 81% code required coverage due to an installed insulation support brackets connected to the cast head that restricted scanning. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
021100	29-STG-1230- IRS	INLET NOZZLE IRS	B-D	B3.140	1	RC	UT	75%	5/12/99	311, 312, 313, 313G, 313H, 313-I	IWB-2500-7(d)	YES	UT exam was conducted using 28- and 38-degree refracted longitudinal wave transducers. The exam completed was limited to 75% code required coverage due to an installed insulation support brackets connected to the cast head that restricted scanning. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
020600	31-STG-1240- IRS	OUTLET NOZZLE IRS	B-D	B3.140	1	RC	UT	85%	4/23/02	311, 312, 313, 313V, 313W, 313W, 313X	IWB-2500-7(d)	YES	UT exam was conducted using 28- and 38-degree longitudinal wave transducers. The exams completed was limited to 85% code required coverage due to due to the insulation support brackets attached to the steam generators lower head that interfered with scanning. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
020900	31-STG-1210- IRS	OUTLET NOZZLE IRS	B-D	B3.140	1	RC	UT	79%	4/23/02	311, 312, 313, 313M, 313N, 313- O	IWB-2500-7(d)	YES	UT exam was conducted using 28- and 38-degree longitudinal wave transducers. The exams completed was limited to 79% code required coverage due to due to the insulation support brackets attached to the steam generators lower head that interfered with scanning. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
021000	29-STG-1240- IRS	INLET NOZZLE IRS	B-D	B3.140	1	RC	UT	86%	4/23/02	311, 312, 313, 313J, 313K, 313L	IWB-2500-7(d)	YES	UT exam was conducted using 28- and 38-degree longitudinal wave transducers. The exams completed was limited to 86% code required coverage due to due to the insulation support brackets attached to the steam generators lower head that interfered with scanning. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.

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Table 1-1
2nd Ten-Year Inservice Inspection Interval Class 1 Component NDE Exam Limitations

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Sum#	Component ID	Description	2 nd Interval ASME Cat	2 nd Interval ASME Item #	ASME Class	System	Limited NDE Exam	Code Coverage Achieved	Exam Date	Photo/ Sketch No.*	Required Examination Volume	Relief Previously Granted?**	UT Exam Type and Limitation Description
021300	29-STG-1210- IRS	INLET NOZZLE IRS	B-D	B3.140	1	RC	UT	82%	4/23/02	311, 312, 313, 313A, 313B, 313C	IWB-2500-7(a)	YES	UT exam was conducted using 28- and 38-degree longitudinal wave transducers. The exams completed was limited to 82% code required coverage due to due to the insulation support brackets attached to the steam generators lower head that interfered with scanning. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
003600	29-RCN-1210	OUTLET NOZZLE AT 338 DEG.	B-D	B3.90	1	RC	м-ит	72%	12/19/02	271, 271A, 271B, 280, 281	IWB-2500-7(b)	YES	UT exam was conducted using 45-degree shear and refracted longitudinal wave transducers. The ultrasonic examination completed was partially limited to 72% of the code required converge being achieved due to the OD configuration of the nozzle protrusion (boss) that interfered with scanning. There were no unacceptable indications observed. A system pressure test was also completed with no unacceptable indications observed.
002900	29-RCN-1230	OUTLET NOZZLE AT 22 DEG.	B-D	B3.90	1	RC	UT	72%	12/19/02	271, 271A, 271B, 272, 273	IWB-2500-7(b)	YES	UT exam was conducted using 45-degree shear refracted longitudinal wave transducers. The ultrasonic examination completed was partially limited to 72% of the code-required coverage being achieved due to the OD configuration of the nozzle protrusion (boss) that interfered with scanning. There were no unacceptable indications observed. A system pressure test was also completed with no unacceptable indications observed.
003300	29-RCN-1220	OUTLET NOZZLE AT 203 DEG.	B-D	B3.90	1	RC	UT	72%	12/19/02	271A, 271B, 277, 278, 279	IWB-2700-7(a)	YES	UT exam was conducted using 45-degree shear and longitudinal wave transducers. The exam completed was limited to 72% code required coverage due to the OD configuration of the nozzle protrusion (boss). No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
003200	29-RCN-1240	OUTLET NOZZLE AT 158 DEG.	B-D	B3.90	1	RC	UT	72%	12/19/02	271A, 271B, 274, 275, 276	IWB-2700-7(a)	YES	UT exam was conducted using 45-degree shear and longitudinal wave transducers. The exam completed was limited to 72% code required coverage due to the OD configuration of the nozzle protrusion (boss). No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
011800	6-PR-1205-1	NOZZLE TO SAFE-END	B-F	B5.40	1	RC	UT	38%	10/14/00	298, 298A, 298B, 298C, 298D, 299, 300	IWB-2500-7(b)	YES	UT exam was conducted using 30-degree refracted longitudinal wave transducer. The ultrasonic examination completed was partially limited to 38% of the code required converge being achieved due to the OD configuration of the nozzle to safe-end that did not lend itself to achieving full coverage from the upstream side when scanning was performed. There were no unacceptable indications observed. UT exam performed was best effort. This weld configuration does not contain Alloy 600, 82/182 weld material. A liquid penetrant examination and system pressure test were also completed with no recordable indications observed.

		2n	<u>id Ter</u>	<u>i-Year</u>	Inse	rvice	Inspe	<u>ection</u> Ir	nterval	Class 1	Compon	ent NDE	Exam Limitations
Sum#	Component ID	Description	2 nd Interval ASME Cat	2 nd Interval ASME Item #	ASME Class	System	Limited NDE Exam	Code Coverage Achieved	Exam Date	Photo/ Sketch No.*	Required Examination Volume	Relief Previously Granted?**	UT Exam Type and Limitation Description
011820		NOZZLE TO SAFE-END	B-F	B5.40	1	RC	UT	86%	4/21/99	300, 301, 302, 302A, 302B, 302C	IWB-2500-8	YES	UT exam was conducted using 45-, and 25-degree shear and refracted longitudinal wave transducer. The exam completed was limited to 86% code required coverage due to the exam being limited by the OD configuration of the nozzle and safe-end. This weld configuration does not contain Alloy 600 82/182 weld material. No unacceptable indications were noted. A liquid penetrant test and system pressure test were also completed with no unacceptable indications observed.
011830	4-PR-1200-1	NOZZLE TO SAFE-END	B-F	B5.40	1	RC	UT	84%	4/21/99	300, 303, 304, 304A, 304B, 304C, 304D	IWB-2500-8	YES	UT exam was conducted using 45-degree shear wave transducer. The exam completed was limited to 84% code required coverage due to the exam being limited by the OD configuration of the nozzle and safe-end. This weld configuration does not contain Alloy 600 82/182 weld material. No unacceptable indications were noted. A liquid penetrant test and system pressure test were also completed with no unacceptable indications does not contain the north of the system pressure test were also completed with no unacceptable indications does not contain the north of the system pressure test were also completed with no unacceptable indications observed.
083300	29-RC-1210-5	ELBOW TO NOZZLE	B-F	B5.70	1	RC	UT	67%	10/28/94	305, 306, 306A, 306B, 312, 313, 315	IWB-2500-8	YES	UT exam was conducted using 45-degree shear wave transducer. The exam completed was limited to 67% code required coverage due to no UT axial scan exam was performed from the upstream or the downstream side of the weld due to the elbow being fabricated from ASTM351-65 CF8M cast stainless steel whose acoustic properties is not conducive for ultrasonic examination and the OD configuration of the nozzle. A clockwise and counterclockwise exam was performed of the weld crown. No unacceptable indications were noted. A liquid penetrant exam and system pressure test were also completed with no unacceptable indications observed.
070000	31-RC-1240-1	NOZZLE TO ELBOW	B-F	B5.70	1	RC	UT	50%	10/28/94	312, 313, 315, 315B, 316H, 316- I, 316J	IWB-2500-8	YES	UT exam was conducted using 45-degree shear wave transducer. The exam completed was limited to 50% code required coverage due to no UT axial scan exam was performed from either the upstream or the downstream side of the weld due to the elbow being fabricated from ASTM351-65 CF8M cast stainless steel whose acoustic properties is not conducive for ultrasonic examination and the OD configuration of the nozzle. A clockwise and counterclockwise exam was performed of the weld crown. No unacceptable indications were noted. A liquid penetrant exam and system pressure test were also completed with no unacceptable indications observed.

Table 1-1

Sum#

072300

074600

076800

31-RC-1210-1

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NOZZLE TO ELBOW

B-F

B5.70

UT exam was conducted using 45-degree refracted longitudinal wave transducer. The exam completed was limited to 50% code required coverage due to no UT axial scan exam was performed from either the upstream or the downstream side of the weld due to the elbow being

fabricated from ASTM351-65 CF8M cast stainless steel whose acoustic

properties is not conducive for ultrasonic examination and the OD

completed with no unacceptable indications observed.

configuration of the nozzle. A clockwise and counterclockwise exam was performed of the weld crown. No unacceptable indications were noted. A liquid penetrant exam and system pressure test were also

	2nd Ten-Year Inservice Inspection Interval Class 1 Component NDE Exam Limitations													
Component ID	Description	2 nd Interval ASME Cat	2 nd Interval ASME Item #	ASME Class	System		Code Coverage Achieved	Exam Date	Photo/ Sketch No.*	Required Examination Volume	Relief Previously Granted?**	UT Exam Type and Limitation Description		
31-RC-1230-1	NOZZLE TO ELBOW	B-F	B5.70	1	RC	UT	50%	4/24/99	312, 313, 315, 315A, 316E, 316F, 316G, 317	IWB-2500-8	YES	UT exam was conducted using 45-degree refracted longitudinal wave transducer. The exam completed was limited to 50% code required coverage due to no UT axial scan exam was performed from either the upstream or the downstream side of the weld due to the elbow being fabricated from ASTM351-65 CF8M cast stainless steel whose acoustic properties is not conducive for ultrasonic examination and the OD configuration of the nozzle. A clockwise and counterclockwise exam was performed of the weld crown. No unacceptable indications were noted. A liquid penetrant exam and system pressure test were also completed with no unacceptable indications observed.		
31-RC-1220-1	NOZZLE TO ELBOW	B-F	B5.70	1	RC	UT	50%	4/24/99	312, 313, 315, 316A, 316B, 316C, 316D	IWB-2500-8	YES	UT exam was conducted using 45-degree refracted longitudinal wave transducer. The exam completed was limited to 50% code required coverage due to no UT axial scan exam was performed from either the upstream or the downstream side of the weld due to the elbow being fabricated from ASTM351-65 CF8M cast stainless steel whose acoustic properties is not conducive for ultrasonic examination and the OD configuration of the nozzle. A clockwise and counterclockwise exam was performed of the weld crown. No unacceptable indications were noted. A liquid penetrant exam and system pressure test were also completed with no unacceptable indications observed.		

315, 315B.

317. 317A.

317B

IWB-2500-8

YES

Table 1-1
2nd Ten-Year Inservice Inspection Interval Class 1 Component NDE Exam Limitations

* These numbers refer to Enclosure 1, Pages 1 through 343. Page numbers are in boxes in the corners of the pages.

** Relief was granted by the NRC in Reference 1 or was submitted in the Salem 2 first 10-year interval in Reference 2.

RC

1

UT

50%

4/24/99

Table 1-1	
2nd Ten-Year Inservice Inspection Interval Class 1 Component NDE Exam Limitations	

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Sum#	Component ID	Description	2 nd Interval ASME Cat	2 nd Interval ASME Item #	ASME Class	System	Limited NDE Exam	Code Coverage Achieved	Exam Date	Photo/ Sketch No.*	Required Examination Volume	Relief Previously Granted?**	UT Exam Type and Limitation Description
080300	29-RC-1230-3	PIPE TO PIPE	B-J	B9.11	1	RC	UT	90%	4/6/93	1, 2	IWB-2500-8		UT exam was conducted using 45-degree shear wave transducer. The ultrasonic examination completed was partially limited to 90% of the code-required coverage being achieved due to branch connections between 37 3/4" to 41" and 104 1/2" to 1 1/2" that did not lend itself to achieving full coverage from the downstream side when scanning was performed. Scanning was performed across the weld to maximize achieved Code coverage. There were no unacceptable indications observed. No unacceptable indications were noted. This weld configuration does not contain Alloy 600, 82/182-weld material. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.
164000	10-SJ-1221-21	ELBOW TO PIPE	B-J	B9.11	1	SJ	UT	83%	4/12/93	3, 3A, 3B, 3C	IWB-2500-8		UT exam was conducted using 45-degree shear wave transducer. The ultrasonic examination completed was partially limited to 83% of the achieved code required coverage being limited from 13" to 21" on upstream side due to the curvature of the shortened inner radius of the elbow. Scanning was also performed across the weld to maximize achieved code coverage. No unacceptable indications were observed. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.
166000	8-SJ-1262-10	PIPE TO PIPE	B-J	B9.11	1	SJ	UT	82%	3/27/93	4, 4A, 4B, 4C, 4D	IWB-2500-8		UT exam was conducted using 45-degree shear wave transducer. The ultrasonic examination completed was partially limited to 82% of the achieved code required coverage being limited due to a permanently installed pipe support (9PS) that restricted scanning to approximately 1 3/4" of the upstream side of the weld. No unacceptable indications were observed. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.
169450	8-SJ-1245-1	TEE TO VALVE 24RH27	B-J	B9.11	1	ţ	UT	36%	4/14/93	5, 6, 6A, 6B, 6C	IWB-2500-8	YES	UT exam was conducted using 45-degree shear wave transducer. The ultrasonic examination completed was partially limited to 36% of the achieved code required coverage being limited due to the tee to valve configuration and the shortened radius of the tee between 9" to 18" and 23" TO 4". The exam was limited on the downstream side due to the OD configuration of the valve and the upstream side of the tee. No unacceptable indications were observed. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.

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Sum#	Component ID	Description	2 nd Interval ASME Cat	2 nd Interval ASME Item #	ASME Class	System	Limited NDE Exam	Code Coverage Achieved	Exam Date	Photo/ Sketch No.*	Required Examination Volume	Relief Previously Granted?**	UT Exam Type and Limitation Description
172500	6-SJ-1241-18	ELBOW TO PIPE	B-J	B9.11	1	SJ	UT	90%	4/3/93	7, 7A, 7B, 7C	IWB-2500-8		UT exam was conducted using 45-degree shear wave transducer. The ultrasonic examination completed was partially limited to 90% of the achieved code required coverage being limited due to close proximity of the adjacent weld # 19 located downstream. No unacceptable indications were observed. A liquid penetrant examination and system pressure test were also completed with no recordable indications observed.
076000	31-RC-1220-4	ELBOW TO PIPE	B-J	B9.11	1	RC	UT	84%	10/27/94	48, 49, 50, 50A, 50B, 50C	IWB-2500-8	YES	UT exam was performed using 45-degree shear wave transducer from the pipe side with no exam able to be conducted from the elbow side due to the elbow being fabricated from ASTM351-65 CF8M cast stailess steel whose acoustic properties is not conducive for ultrasonic examination. The exam completed was limited to 84% code required coverage. No unacceptable indications were noted. The downstream exam was limited between 55" to 62" due to a branch connection that interfered with scanning. A liquid penetrant examination and system pressure test were also completed with no unacceptable indications observed.
054400	4-PR-1200-7	PIPE TO TEE	B-J	B9.11	1	RC	UT	59%	5/3/99	124, 125, 126	IWB-2500-8		UT exam was conducted using 45-degree shear and refracted longitudinal wave transducers. The exam completed was limited to 59% code required coverage due to no UT exam being able to be performed from the downstream side due to the tee to valve configuration. In addition, the exam conducted from the upstream side was limited due to the radius of the tee. Scanned across weld to maximize achieved Code coverage. No unacceptable indications were noted. A liquid penetrant test and system pressure test was also completed with no unacceptable indications observed.
063000	4-PS-1231-20	VALVE 2PS28 TO PIPE	B-J	B9.11	1	RC	UT	59%	5/17/99	129, 130, 131, 131A, 131B, 131C	IWB-2500-8		UT exam was conducted using 45-degree shear and refracted longitudinal wave transducer. The exam completed was limited to 59% code required coverage due to the UT exam being limited due to the upstream side valve's OD configuration that restricted scanning. UT scans were performed on and across the welds in both directions. No unacceptable indications were noted. A liquid penetrant test and system pressure test was also completed with no unacceptable indications observed.
063100	4-PS-1231-21	PIPE TO VALVE 2PS3	B-J	B9.11	1	RC	UT	55%	5/17/99	132, 133, 134	IWB-2500-8		UT exam was conducted using 45-degree shear and refracted longitudinal wave transducer. The exam completed was limited to 55% code required coverage due to the UT exam being limited due to the upstream side valve's OD configuration that restricted scanning. UT scans were performed on and across the welds in both directions. No unacceptable indications were noted. A liquid penetrant test and system pressure test was also completed with no unacceptable indications observed.

Table 1-1

LR-N07-0150 S2-I2-RR-B01

		2n	d Ten	-Year	Inse	rvice	Inspe	ction Ir	iterval	Class 1	Compon	ent NDE	Exam Limitations
Sum#	Component ID	Description	2 nd Interval ASME Cat	2 nd Interval ASME Item #	ASME Class	System	Limited NDE Exam	Code Coverage Achieved	Exam Date	Photo/ Sketch No.*	Required Examination Volume	Relief Previously Granted?**	UT Exam Type and Limitation Description
168200	8-SJ-1252-9	PIPE TO PIPE	B-J	B9.11	1	SJ	UT	86%	5/8/99	135, 136	IWB-2500-8		UT exam was conducted using 45-degree shear and refracted longitudinal wave transducer. The exam completed was limited to 86% code required coverage due to the UT exam being limited UT exam performed due two permanently welded pipe supports located on the downstream side of the weld that restricted scanning. The two pipe supports exist at 90° and 270° around the pipe for a total of 12". UT scans were performed on and across the welds in both directions. No unacceptable indications were noted. A liquid penetrant test and system pressure test was also completed with no unacceptable indications observed.
170850	6-SJ-1242-2	ELBOW TO VALVE 24SJ43	B-J	B9.11	1	SJ	UT	62%	5/3/99	137, 138, 139	IWB-2500-8		UT exam was conducted using 45-degree shear and refracted longitudinal wave transducer. The exam completed was limited to 62% code required coverage due to the UT exam being limited due to the valve's OD configuration that restricted scanning. UT scans were performed on and across the welds in both directions. No unacceptable indications were noted. A liquid penetrant test and system pressure test was also completed with no unacceptable indications observed.
173300	6-SJ-1232-12	PIPE TO TEE	B-J	B9.11	1	SJ	UT	61%	5/3/99	140, 141, 142	IWB-2500-8		UT exam was conducted using 45-degree shear and refracted longitudinal wave transducer. The exam completed was limited to 61% code required coverage due to the UT exam being limited due to the tee's OD configuration that restricted scanning. UT scans were performed on and across the welds in both directions. No unacceptable indications were noted. A liquid penetrant test and system pressure test was also completed with no unacceptable indications observed.
175600	6-SJ-1212-2	VALVE 21SJ43 TO PIPE	B-J	B9.11	1	SJ	UT	61%	5/3/99	143, 144	IWB-2500-8		UT exam was conducted using 45-degree shear and refracted longitudinal wave transducer. The exam completed was limited to 61% code required coverage due to the UT exam being limited due to the valve's OD configuration that restricted scanning. UT scans were performed on and across the welds in both directions. No unacceptable indications were noted. A liquid penetrant test and system pressure test was also completed with no unacceptable indications observed.
084400	27.5-RC-1230-1	PUMP TO PIPE	B-J	B9.11	1	RC	UT	49%	10/16/00	173, 174, 174A, 174B, 174C, 174D	IWB-2500-8		UT exam was conducted using 45- and 60-degree shear wave transducer. The exam completed was limited to 49% code required coverage due to the UT exam being limited due to the OD configuration of the pump nozzle and the presence of a branch connection located downstream between 101" to 3" that restricted scanning. A liquid penetrant test and system pressure test was also.completed with no unacceptable indications observed.

Table 1-1

Table 1-1
2nd Ten-Year Inservice Inspection Interval Class 1 Component NDE Exam Limitations

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Sum#	Component ID	Description	2 nd Interval ASME Cat	2 nd Interval ASME Item #	ASME Class	System	Limited NDE Exam	Coverage	Exam Date	Photo/ Sketch No.*	Required Examination Volume	Relief Previously Granted?**	UT Exam Type and Limitation Description
174300	6-RH-1231-16	ELBOW TO VALVE 23SJ156	B-J	B9.11	1	RHR	UŤ	50%	10/18/00	175, 176, 176A	IWB-2500-8		UT exam was conducted using 45-degree shear wave transducer. The exam completed was limited to 50% code required coverage due to the UT exam being limited due to the valve's OD configuration that restricted scanning. UT scans were performed on and across the welds in both directions. No unacceptable indications were noted. A liquid penetrant test and system pressure test was also completed with no unacceptable indications observed.
075800	31-RC-1220- 4LU-I	LONGITUDINAL	B-J	B9.12	1	RC	UT	0%	10/28/94	315, 315C, 315D	IWB-2500-8		No UT exam was able to be conducted from the elbow side due to the elbow being fabricated from ASTM351-65 CF8M cast stainless steel whose acoustic properties is not conducive for ultrasonic examination. A PT exam of the long seam was performed in lieu of the UT exam because of the elbow's acoustic properties of the casting. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
075900	31-RC-1220- 4LU-O	LONGITUDINAL	B-J	B9.12	1	RC	UT	0%	10/28/94	315, 315E, 315F	IWB-2500-8	YES	No UT exam was able to be conducted from the elbow side due to the elbow being fabricated from ASTM351-65 CF8M cast stainless steel whose acoustic properties is not conducive for ultrasonic examination. A PT exam of the long seam was performed in lieu of the UT exam because of the elbow's acoustic properties of the casting. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
034500	3-CV-1241-13	VALVE 2CV80 TO ELBOW	B-J	B9.21	1	сус	UT	75%	9/22/98	168, 169	IWB-2500-8		UT exam was conducted using 45- and 70-degree shear wave transducers. The exam completed was limited to 75% code required coverage due the upstream side of the weld due to the valve's OD configuration that interfered with scanning. Component selected as an augmented 88-08 exam. No unacceptable indications were noted. A liquid penetrant and system pressure test was also completed with no unacceptable indications observed.
036000	3-CV-1231-14	PIPE TO VALVE 2CV274	B-J	B9.21	1	cvc	UT	75%	10/11/00	172, 172A, 172B, 172C	IWB-2500-8		UT exam was conducted using 45-shear wave transducer. The exam completed was limited to 75% code required coverage due to the UT exam being limited due to the valve's OD configuration that restricted scanning. UT scans were performed on and across the welds in both directions. No unacceptable indications were noted. A liquid penetrant test and system pressure test was also completed with no unacceptable indications observed.
034600	3-CV-1241-14	ELBOW TO BRANCH CONNECTION	B-J	B9.21	1	cvc	UT	75%	10/14/00	170, 171	IWB-2500-11		UT exam was conducted using 45- and 70-degree shear wave transducers. The exam completed was limited to 75% code required coverage due to the OD configuration of the branch connection that interfered with scanning. No unacceptable indications were noted. A liquid penetrant test and system pressure test was also completed with no unacceptable indications observed.

Table 1-1
2nd Ten-Year Inservice Inspection Interval Class 1 Component NDE Exam Limitations

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Sum#	Component ID	Description	2 nd Interval ASME Cat	2 nd Interval ASME Item #	ASME Class	System		Code Coverage Achieved	Exam Date	Photo/ Sketch No.*	Required Examination Volume	Relief Previously Granted?**	UT Exam Type and Limitation Description
085000		4 IN. BRANCH CONNECTION	B-J	B9.31	1	RC	UT	55%	11/7/94	51, 52, 53, 54	IWB-2500-8	YES	UT exam was conducted using 45- and 32-degree shear wave transducers. The exam completed was limited to 55% code required coverage due to the exam being limited by a branch connection configuration. The exam was limited 1 1/2" W measurement due to the branch connection's OD configuration that interfered with scanning. No unacceptable indications were noted. A liquid penetrant and system pressure test was also completed with no unacceptable indications observed.
086800	27.5-RC-1210- 1BC-3	10 IN. BRANCH CONNECTION	B-J	B9.31	1	RC	UT	56%	11/7/94	55, 56, 57, 58, 59	IWB-2500-8	YES	UT exam was conducted using 45- and 39-degree shear wave transducers. The exam completed was limited to 56% code required coverage due to the exam being limited by a branch connection configuration. The exam was limited 1 1/2" W measurement due to the branch connection's OD configuration that interfered with scanning. No unacceptable indications were noted. A liquid penetrant and system pressure test was also completed with no unacceptable indications observed.
086900	27.5-RC-1210- 1BC-4	4 IN. BRANCH CONNECTION	B-J	B9.31	1	RC	UT	53%	11/7/94	60, 61, 62, 63	IWB-2500-8	YES	UT exam was conducted using 45- and 32-degree shear wave transducers. The exam completed was limited to 53% code required coverage due to the exam being limited by a branch connection configuration. The exam was limited 1 1/2" W measurement due to the branch connection's OD configuration that interfered with scanning. No unacceptable indications were noted. A liquid penetrant and system pressure test was also completed with no unacceptable indications observed.
040900	2-CV-1275-43	VALVE 2CV76 TO PIPE	B-J	B9-40	1	сус	υŤ	50%	10/14/00	314, 314A, 314B, 314C	IWB-2500-8		UT exam was conducted using 45-degree shear wave transducer. The exam completed was limited to 50% code required coverage due to the exam limited to 3/8" W due to the close proximity of the downstream socket weld # 44 being too close that interfered with scanning. Component selected as an augmented 88-08 exam. No unacceptable indications were noted. A liquid penetrant and system pressure test was also completed with no unacceptable indications observed.
041000	2-CV-1275-44	PIPE TO BRANCH CONNECTION	B-J	B9-40	1	CVC	UT	50%	10/14/00	314A, 314D, 314E, 316	IWB-2500-8		UT exam was conducted using 45-degree shear wave transducer. The exam completed was limited to 50% code required coverage due to the UT exam being limited due to 3/8" W due to adjacent downstream socket weld # 43 being too close and interfering with the scan. Component selected as an augmented 88-01 exam. No unacceptable indications were noted. A liquid penetrant test and system pressure test was also completed with no unacceptable indications observed

Table 1-1
2nd Ten-Year Inservice Inspection Interval Class 1 Component NDE Exam Limitations

Sum#	Component ID	Description	2 nd Interval ASME Cat	2 nd Interval ASME Item #	ASME Class	System	Limited NDE Exam	Code Coverage Achieved	Exam Date	Photo/ Sketch No.*	Required Examination Volume	Relief Previously Granted?**	UT Exam Type and Limitation Description
061700	4-PS-1231-11PS- 1 THRU 4	PIPE SUPPORT	В-К-1	B10.10	1	RC	PT	50%	4/30/99	127, 128	IWB-2500-8		PT exam was conducted of this component. The PT exam was limited to 50% because of a permanently installed component support that obstructed the exam. The bottom of the pipe support weld was inaccessible due to a permanent obstruction from the fixed pipe clamp. A system pressure test was also completed with no unacceptable indications observed.
251200	22-PMP-LUGS 1,2,3	PUMP LUGS	В-К-1	B10.20	1	RC	PT	67%	4/6/93	8, 9, 10, 11	IWB-2500-15	VES	PT exam was performed of this component. The liquid penetrant examination completed was partially limited to 67% of the achieved code required coverage being limited due to a portion of the lugs being hidden within the pump support structure. No unacceptable indications were observed. A system pressure test was also completed with no recordable indications observed.
251300	21-PMP-LUGS 1,2,3	PUMP LUGS	B-K-1	B10.20	1	RC	PT	67%	4/6/93	12, 13, 14, 15	IWB-2500-15	VES	PT exam was performed of this component. The liquid penetrant examination completed was partially limited to 67% of the achieved code required coverage being limited due to a portion of the lugs being hidden within the pump support structure. No unacceptable indications were observed. A system pressure test was also completed with no recordable indications observed.

10 CFR 50.55a Request Number: S2-I2-RR-C01 Relief Request in Accordance with 10 CFR 50.55a(g)(5)(iii) Inservice Inspection Impracticality

NOTE:

Salem Unit 2 – Second Ten-Year Interval Inservice Inspection (ISI) inservice inspection examinations was conducted between May 10, 1992 (start) and November 23, 2003 (end). This interval excludes 26 months and 21 days (6/8/95 – 8/29/97) for an extended shutdown and cumulatively less 2 months and 1 day to coincide with end of refueling outage per IWA-2430 (d).

ASME Code Components Affected

Code Class	2
Reference:	IWC-2500
Examination Categories:	C-A, C-B, C-C, C-F-1, and C-F-2
Item Numbers:	See Table 2-1
Description:	Volumetric and surface examination coverage
Component Number:	See Table 2-1

Applicable Code Edition and Addenda

The code of record for the Salem Unit 2 second 10-year ISI Program interval is Section XI of the ASME Code, 1986 Edition

Code Requirement:

Salem Unit 2 second Ten-Year Interval Inservice Inspection (ISI) examinations were performed in accordance with the requirements of ASME Boiler and Pressure Vessel Code Section XI, 1986 Edition Article IWC-2500 to the extent practical. Table IWC-2500-1 defines examination requirements for Class 2 components. The table contains information associated with the identification of components to be examined by nondestructive examination; this includes the applied nondestructive examination (NDE) method, acceptance standard, and extent of exam coverage and exam frequency.

In addition, 10CFR50.55a was revised effective November 22, 1999 to require expedited implementation of Appendix VIII, "Performance Demonstration for Ultrasonic Examination Systems," of the ASME Code, Section XI, 1995 Edition with the 1996 Addenda. These requirements affected Class 1 and 2 bolting, piping system welds, and reactor pressure vessel nondestructive examinations performed after this date. With this initiative came revised coverage calculation methodologies that further reduced the credited examination coverage of some components.

ASME, Section XI, 1986 Edition required volumetric and/or surface and visual examinations be performed upon components and welds identified within Table IWC-2500-1. The applicable exam categories for this relief request are C-A, C-B, C-C, C-F-1 and C-F-2. The applicable code requirements for the relevant item numbers are as follows. Please note that "essentially 100%," as clarified by ASME Code Case N-460, is greater than 90% coverage of the examination volume, or surface area, as applicable.

A. Exam Category C-A Pressure Retaining Welds in Pressure Vessels

Code Requirement: Items C1.10, C1.20, and C1.30 require essentially 100% volumetric weld examinations to be performed upon various pressure vessel shell-circumferential, head-circumferential and tubesheet-to-shell welds, respectively. The examinations may be limited to one vessel among the group of vessels performing a similar function.

B. Exam Category C-B Pressure Retaining Nozzle Welds in Vessels

Code Requirement: Item C2.21 requires essentially 100% volumetric and surface examinations, as defined by Figures IWC-2500-4 (a) and (b), of the nozzle-to-shell welds in Class 2 vessels. The examinations may be limited to one vessel among the group of vessels performing a similar function.

C. Exam Category C-C Welded Integral Attachments

Code Requirement: Items C3.10 and C3.20 require essentially 100% surface examinations, as defined by Figure IWC-2500-5, of integral attachments for pressure vessels and piping respectively. PSEG Nuclear (PSEG) conducted welded integral attachment weld exams in accordance with the requirements of ASME Section XI Code Case N-509, Alternative Rules for the Selection and Examination of Class 1, 2 and 3 Integrally Welded Attachments.

D. Exam Category C-F-1 and C-F-2 Pressure Retaining Piping Welds

Code Requirement: PSEG conducted Class 2 piping exams in accordance with the requirements imposed by ASME Section XI Code Case N-408 Alternative Rules for Examination of Class 2 Piping Exam Categories C-F-1 and C-F-2. This code case required surface and volumetric weld examinations be performed upon welds greater than 4 inches in diameter and 0.375 inch thickness (Items C5.10/C5.11) and greater than or equal to 2 inches in diameter but less than or equal to 4 inches (Items C5.20/C5.21). Additionally, as part of the second 10-year interval inservice inspection plan, as detailed in Reference 1, PSEG committed to perform augmented volumetric examinations of a 7½% sample of Class 2 welds in the containment spray system that are otherwise not selected based on wall thickness (i.e. less than 0.375 inches wall thickness). A limitation

in examination coverage of one of these augmented welds is listed in Table 2-1 (Category "A-E").

Table 2-1 contains detailed information related to the explanation of those components demonstrating inadequate code exam coverage extent due to inaccessibility, physical limitation or obstruction.

Basis for Relief:

Pursuant to 10CFR50.55a(g)(5)(iii), relief is requested from ASME XI examination requirements for the performance of the following piping and vessel welds due to exam limitations. Table 2-1 herein identifies those inservice inspection nondestructive examinations contained within the Salem Unit 2 ISI Program Long Term Plan for the Second Ten-Year Interval whose NDE exams were found to be inaccessible, physically limited or partially obstructed and therefore not capable of fully meeting code coverage requirements for examination extent. Enclosure 1 provides additional descriptive details (sketches, illustrations, and/or drawings) for these components.

Subject components contained herein have received inservice inspection NDE examinations to the "extent practical" within the limitations of design, geometry and materials of construction of the components as allowed by Code. These components have also undergone necessary volumetric examination by radiography and/or surface examinations during fabrication, in accordance with approved construction/fabrication code requirements providing adequate assurance for the structural integrity of the components prior to plant operation. In addition, these components have been subjected to a visual examination for leakage after completion of each inspection period. This provides additional assurance that the structural integrity of the subject components is maintained.

PSEG utilizes approved technical procedures written in accordance to applicable ASME Code section/paragraph criterion for area/volume requirements. Plant procedures require the documentation of the location and cause of the limitation.

A. Exam Category C-A Pressure Retaining Welds in Pressure Vessels

See Table 2-1, attached to identify specific component information and explanation of the limitation(s) encountered.

Full Code required coverage is impractical for the subject welds since the vessels would require design modifications that would impose a significant burden to PSEG. PSEG has examined these welds to the extent practical and determined them to be acceptable with no observed signs of degradation. In addition, other similar vessel welds have been examined to the extent required by the Code and also found to be acceptable with no observed signs of degradation. In addition, VT-2 visual examinations performed in conjunction with system pressure testing have found these welds to be acceptable with no leakage observed.

B. Exam Category C-B Pressure Retaining Nozzle Welds in Vessels

See Table 2-1, attached to identify specific component information and explanation of the limitation(s) encountered.

Full Code required coverage is impractical for the subject welds since the vessels would require design modifications and would impose a significant burden to PSEG. PSEG has examined these welds to the extent practical and determined them to be acceptable with no observed signs of degradation. In addition, other similar vessel welds have been examined to the extent required by the Code and also found to be acceptable with no observed signs of degradation. In addition, VT-2 visual examinations performed in conjunction with system pressure testing have found these welds to be acceptable with no leakage observed.

C. Exam Category C-C Welded Integral Attachments

See Table 2-1, attached to identify specific component information and explanation of the limitation(s) encountered.

Full Code required coverage is impractical for the subject welds since the integral attachments would require design modifications and would impose a significant burden to PSEG. PSEG has examined these welds to the extent practical and determined them to be acceptable with no observed signs of degradation. In addition, other similar welded attachments have been examined to the extent required by the Code and also found to be acceptable with no observed signs of degradation. Also, VT-2 visual examinations performed in conjunction with system pressure testing found these welds to be acceptable with no leakage observed.

D. Exam Category C-F-1 and C-F-2 Pressure Retaining Piping Welds

See Table 2-1, attached to identify specific component information and explanation of the limitation(s) encountered.

Required Code coverage is impractical for the subject welds since the piping system would require design modifications to achieve additional coverage and would impose a significant burden to PSEG. PSEG has examined these welds to the extent practical and determined them to be acceptable with no observed signs of degradation. In addition, other similar piping welds have been examined to the extent required by the Code and also found to be acceptable with no observed signs of degradation. Further, VT-2 visual examinations performed in conjunction with system pressure testing have found these welds to be acceptable with no leakage observed.

Code required volumetric examinations are conducted by ultrasonic examination from both the upstream and downstream directions of piping welds. Ultrasonic

examination of certain terminal ends and structural discontinuities are considered to be impractical due to their configuration and material acoustic properties.

The EPRI Performance Demonstration Initiative (PDI) is in agreement with the NRCs September 22, 1999 Final Rule regarding single side access for piping. The Final Rule requires that if access is available, austenitic steel weld shall be scanned in each of the four directions (parallel and perpendicular to the weld) where required. PDI has not been able to qualify a single side examination procedure technique that is capable of demonstrating equivalency for a two-sided examination procedure technique on austenitic piping welds. Current or past technology is not capable of reliably detecting or sizing flaws on the far side of an austenitic weld for configurations common to nuclear applications. Ultrasonic examination of ferritic steel welds requires scanning in the two axial scan directions. Circumferential scanning is required in the remaining two directions only when axial indications were noted during pre-service inspections. Coverage credit may be taken for single side exams on ferritic piping. However, for austenitic piping, a procedure must be qualified with flaws on the inaccessible side of the weld.

To demonstrate that the best available technology was applied to austenitic welds, PDI provides a best effort qualification instead of a complete single sided qualification. PDI Performance Demonstration Qualification Summary (PDQS) austenitic piping certificates list the limitation that single side examination is performed on a best effort basis. When performing single side access of austenitic stainless steel piping welds the best available techniques are used from the accessible side of the weld, as qualified through the PDI.

When the examination area is limited to one side of an austenitic weld, examination coverage does not comply with 10CFR50.55a(b)(2)(xv)(A) or the ASME Section XI requirements and proficiency demonstrations do not comply with 10CFR50.55a(b)(2)(xvi) and full coverage credit may not be claimed. Based upon the qualification efforts of the PDI program, PSEG considers austenitic piping welds examined from a single side to be fully examined to the extent practical. This is considered true for examinations performed prior to and after the PDI in that it has been confirmed by the PDI that the configuration and material acoustic properties of austenitic piping prevents full two-sided access for examination.

Alternative Examination:

PSEG performed NDE examinations to the extent practical upon the components identified in the exam categories below using the state of the art techniques of the time and as applicable, demonstrated through the EPRI PDI Program.

A. Exam Category C-A Pressure Retaining Welds in Pressure Vessels

Where the component would not allow an ultrasonic angle beam examination from both sides of the weld, the following were performed using the best available technology at the time and as applicable, demonstrated through the EPRI PDI program:

- Similar metal welds, 100% of the required volume was examined to the extent practical using personnel and techniques qualified and demonstrated through the EPRI PDI, as applicable.
- The code required system pressure test examinations were performed per ASME Section XI requirements.
- B. Exam Category C-B Pressure Retaining Nozzle Welds in Vessels

Where the component would not allow an ultrasonic angle beam examination from both sides of the weld, the following were performed using the best available technology at the time and as applicable, demonstrated through the EPRI PDI program:

- Similar metal welds, 100% of the required volume was examined to the extent practical using personnel and techniques qualified and demonstrated through the EPRI PDI, as applicable.
- The code required system pressure test examinations were performed per ASME Section XI requirements.
- C. Exam Category C-C Welded Integral Attachments

These examinations were performed in accordance with the requirements of ASME Section XI 1986 Edition to the extent practical. System pressure test examinations were performed per ASME Section XI requirements.

Once approved by NRC Regulatory Guide 1.147, ASME Code Case N-568, Alternative Examination Requirements for Welded Attachments, was applied. As an alternative to the examination requirements of C-C and D-A (pre-1991 Addenda examination categories D-A, D-B and D-C), Code Case N-568 indicates examination of a welded attachment that is obstructed by a component support or portion of a component support may be limited to the accessible portion of the welded attachment. Disassembly of the component support or portion of the component support is not required.

D. Exam Category C-F-1 and C-F-2 Pressure Retaining Piping Welds

Where the component would not allow an ultrasonic angle beam examination for axial scans (upstream and downstream), the following were performed using the best available technology at the time and as applicable, demonstrated through the EPRI PDI program:

- For similar metal welds, 100% of the required volume was examined by ultrasonic examination in at least one axial direction and two circumferential scans adjacent to the weld and upon the weld using personnel and techniques qualified and demonstrated through the EPRI PDI program for single sided access relating to the material type to be examined, as applicable.
- For dissimilar metal welds, 100% of the required volume was examined by ultrasonic examination in at least one axial direction and two circumferential scans adjacent to the weld and upon the weld using personnel and techniques qualified and demonstrated through the EPRI PDI program for single sided access relating to the material type to be examined, as applicable.
- The code required surface and system pressure test examinations were performed per ASME Section XI requirements.

Applicability

This Relief Request is applicable to the following:

• Salem Unit 2 – Second Ten-Year Inservice Inspection Interval

Precedents

As part of the submission of the Salem 2 second 10-year interval ISI program plan and associated relief requests, limitations relief requests RR-B1 and RR-C1 were submitted. In the Safety Evaluation of this submission, relief was granted for relief requests RR-B1, parts 2 through 11, and RR-C1, parts 1 through 4, for the Salem 2 second 10-year interval (Reference 1). Those components that relief was granted for are noted as such in Table 2-1 ("Relief Previously Granted" column).

Additionally similar relief requests were submitted for the first 10-year interval at Salem Unit 2 (Reference 2). Most of those welds listed in that submittal are the same as those for the second interval, with some additions. Those components for which relief was granted in the first interval are also noted in Table 2-1 ("Relief Previously Granted"

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column). The examinations performed in the second interval achieved equivalent or better coverage or coverage in more examination directions compared to the first 10-year interval (second interval relief request submittal utilized first interval coverage).

The NRC also approved a similar request for the Salem Unit 1 second 10-year interval in Reference 3.

References

- "Evaluation of the Second Ten-Year Interval Inspection Program Plan and Associated Requests for Relief for Salem Generating Station, Unit 2 (TAC No. M83316)," dated October 23, 1995.
- 2. "Inservice Inspection Long Term Plan, Final Relief Requests First Interval, Salem Generating Station, Unit No. 2, Docket No. 50-311," dated September 28, 1992.
- "Salem Nuclear Generating Station, Unit No. 1 Relief from ASME Code Requirements Related to the Salem Inservice Inspection Program, Relief Request S1-RR-B01 and S1-RR-C01 (TAC NO. MB3811)," dated January 16, 2003.

Table 2-1
2nd Ten-Year Inservice Inspection Interval Class 2 Component NDE Exam Limitations

Sum#	Component ID	Description	2 ND Interval ASME Cat	2 nd Interval ASME Item #	ASME Class	System	Limited NDE Exam	Code Coverage Achieved	Exam Date	Photo/ Sketch No.*	Required Examination Volume	Relief Previously Granted?**	UT Exam Type and Limitation Description
700000	8-CS-2227-5	VALVE 21CS2 TO PIPE	A-E	A-E<3/8	2	CS	UT	31%	5/8/99	338, 339, 340, 341, 342, 343	IWC-2500- 7(b)		UT exam was conducted using a 45- and 70-degree shear wave transducer. The ultrasonic exam completed was limited to 31% code required coverage due to the UT exam being limited due to the valve's OD configuration that restricted scanning. UT scans were performed on and across the welds in both directions. No unacceptable indications were noted. A liquid penetrant test and system pressure test was also completed with no unacceptable indications observed.
275365	21-RHRHEX-1	FLANGE TO SHELL	C-A	C1.10	2	RHR	UT	79%	4/12/93	23, 24, 24A, 24B, 24C	IWC-2500-1	YES	UT exam was conducted using 0- and 45-degree shear wave transducers. The ultrasonic examination completed was partially limited to 79% of the achieved code required coverage due to the inlet nozzle OD configuration between 110" to 6" and the configuration outlet nozzle OD configuration between 52" to 64". No unacceptable indications were observed. A magnetic particle (MT) and system pressure test was also completed with no recordable indications observed.
275370	21-RHRHEX-2	SHELL TO FLANGE	C-A	C1.10	2	RHR	UT .	20%	4/13/93	24B, 24C, 25, 25A, 26	IWC-2500-1	YES	UT exam was conducted using 0- and 45-degree shear wave transducers. The ultrasonic examination completed was partially limited to 20% of the achieved code required coverage due to the inlet nozzle OD configuration between 111" to 6" and the configuration outlet nozzle OD configuration between 53" to 65". No exam could also be performed between 12 1/2" to 47" and 70" to 105" due to the heat exchanger's support plate. No unacceptable indications were observed. A magnetic particle (MT) and system pressure test was also completed with no recordable indications observed.
275240	2-RCF-2	FLANGE TO SHELL	C-A	C1.10	2	RC	UT	61%	4/12/99	145A, 150, 151, 152, 153, 154	IWC-2500-1		UT exam was conducted using 45- and 70-degree shear wave transducers. The exam completed was limited to 61% code required coverage due to the UT exam being limited due to a davit welded pad attachment connected to the reactor coolant filter that restricted scanning. UT scans were performed on and across the welds in both directions. The UT exam performed included 42.3" to 1.5, 13.4" to 16" and 27.75" to 30.75". No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
275210	2-LHEX-1	FLANGE TO SHELL	C-A	C1.10	2	cvc	UT	42%	10/14/00	177, 178, 179, 180, 181	IWC-2500-1	YES	UT exam was conducted using 45- and 60-degree shear and longitudinal wave transducers. The exam completed was limited to 42% code required coverage due to the exam being limited due to proximity of the nozzle and flange welds. No unacceptable indications were noted. A liquid penetrant test and system pressure test was also completed with no unacceptable indications observed. UT exam limited due to the configuration of the flange and nozzle.

Table 2-1
2nd Ten-Year Inservice Inspection Interval Class 2 Component NDE Exam Limitations

Sum#	Component ID	Description	2 ND Interval ASME Cat	2 nd Interval ASME Item #	ASME Class	System	Limited NDE Exam	Code Coverage Achieved	Exam Date	Photo/ Sketch No.*	Required Examination Volume	Relief Previously Granted?**	UT Exam Type and Limitation Description
734111	2CVE-18-SWIJ-1	#21 SEAL WATER INJECTION FILTER FLANGE TO SHELL	C-A	C1.10	2	сус	UT	61%	10/29/03	324, 325, 326, 327, 328, 329, 330	IWC-2500-1		UT exam was conducted using 70-degree refracted longitudinal wave, 0-degree longitudinal, and 45- and 60-degree shear wave transducers. The exam completed was limited to 61% code required coverage due to presence of permanently installed welded attachment and identification plate that interfere with scanning. Additionally the flange configuration on the upstream side of the weld prevented axial scanning on that side. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
734112	2CVE-18-SWIJ-2	#21 SEAL WATER INJECTION FILTER SHELL TO LOWER HEAD	C-A	C1.20	2	cvc	UT	69%	10/29/03	331, 332, 333, 334, 335, 336, 337	IWC-2500-1		UT exam was conducted using 0-degree longitudinal and 45- and 60-degree shear wave transducers. The exam completed was limited to 69% code required coverage due to presence of permanently installed welded attachments and an inlet nozzle that interfere with scanning. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
275030	2-CVCT-2	SHELL TO LOWER HEAD	C-A	C1.20	2	сус	UT	71%	4/5/93	16, 17, 18, 18A	IWC-2500-1	YES	UT exam was conducted using 45-degree shear wave transducer. The ultrasonic examination completed was partially limited to 71% of the achieved code required coverage due to four tank leg support plates welded to the vessel. No examination could be performed from 29 1/2" to 42 1/2", 99" to 112 1/2", 170" to 183" and 245 1/4" to 258 1/4". No unacceptable indications were observed. A system pressure test was also completed with no recordable indications observed.
275230		UPPER HEAD TO FLANGE	C-A	C1.20	2	RC	UT	68%	4/14/99	145, 145A, 146, 147, 148, 149	IWC-2500-1	YES	UT exam was conducted using 45- and 70-degree shear wave transducer. The exam completed was limited to 68% code required coverage due to the UT exam being limited due to the OD configuration of the reactor coolant filter flange and weld that restricted scanning. UT scans were performed on and across the welds in both directions. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
275250	2-RCF-3	SHELL TO LOWER HEAD	C-A	C1.20	2	RC	UT	53%	4/12/99	145A, 155, 156, 157, 158, 159	IWC-2500-1		UT exam was conducted using 45- and 70-degree shear wave transducer. The exam completed was limited to 53% code required coverage due to the UT exam being limited due to our tank leg support plates welded to the reactor coolant filter shell that restricted scanning. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.

^{*} These numbers refer to Enclosure 1, Pages 1 through 343. Page numbers are in boxes in the corners of the pages. ** Relief was granted by the NRC in Reference 1 or was submitted in the Salem 2 first 10-year interval in Reference 2.

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	2nd Ten-Year Inservice Inspection Interval Class 2 Component NDE Exam Limitations										xam Limitations		
Sum#	Component ID	Description	2 ND Interval ASME Cat	2 nd Interval ASME Item #	ASME Class	System	Limited NDE Exam	Code Coverage Achieved	Exam Date	Photo/ Sketch No.*	Required Examination Volume	Relief Previously Granted?**	UT Exam Type and Limitation Description
715180	2-BIT-A	LOWER HEAD	C-A	C1.20 ⁻	2	SJ	UT	85%	4/19/02	294, 295, 296, 297, 167A	IWC-2500-1		UT exam was conducted using 45- and 60-degree shear wave transducers. The exam completed was limited to 85% code required coverage due to the UT exam being limited due to the tank support legs attached to the vessel shell restricted scanning. UT scans were performed on and across the welds in both directions. No unacceptable indications were noted. A liquid penetrant test and system pressure test was also completed with no unacceptable indications observed.
272900	21-STG-SDUH	SHELL D TO UPPER HEAD	C-A	C1.20	2	RC	UT	87%	4/19/02	206A, 206B, 206C, 287, 288, 289, 290, 291, 292	IWC-2500-1		UT exam was conducted using 45- and 60-degree shear wave transducers. The exam completed was limited to 87% code required coverage due to the insulation support plates and welded pads attached to the head that interfered with scanning from 534" to 20", 165" to 205" and 350" to 390". No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
275310	2-RHE-2	SHELL TO TUBE SHEET	C-A	C1.30	2	RHR	UT	44%	10/10/00	182, 183, 184, 185	IWC-2500-1		UT exam was conducted using 45-degree shear wave transducer. The exam completed was limited to 44% code required coverage due to presence of permanently installed component support connected to the regenerative heat exchanger that interferes with scanning. UT scans were performed on and across the welds in both directions. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
275320	2-RHE-3	SHELL TO TUBE SHEET	C-A	C1.30	2	RHR	UT	33%	10/19/00	186, 187, 188, 189	IWC-2500-1		UT exam was conducted using 45-degree shear wave transducer. The exam completed was limited to 33% code required coverage due to presence of permanently installed component support plate connected to the regenerative heat exchanger that interferes with scanning. UT scans were performed on and across the welds in both directions. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.
715140	2-BIT-1	NOZZLE TÖ LOWER HEAD	С-В	C2.21	2	SJ	UT	31%	5/15/99	162, 163, 164, 165, 166, 167, 167A	ÌWC-2500- 4(a)		UT exam was conducted using 0-, 45- and 60-degree shear and longitudinal wave transducers. The exam completed was limited to 31% code required coverage due to the OD configuration of the nozzle that interfered with scanning. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.

Table 2-1	
2nd Ten-Year Inservice Inspection Interval Class 2 Component NDE Exam	Limitations

		2nc	d Ten-	Year l	Inser	vice l	nspect	ion Inte	rval Cl	- . ass 2 Co	mponen	t NDE E	Exam Limitations
Sum#	Component ID	Description	2 ND Interval ASME Cat	2 nd Interval ASME Item #	ASME Class	System	Limited	Code Coverage Achieved	Exam Date	Photo/ Sketch No.*	Required Examination Volume	Relief Previously Granted?**	UT Exam Type and Limitation Description
715160	2-BIT-2	NOZZLE TO UPPER HEAD	C-B	C2.21	2	SJ	UT	63%	4/24/02	167A, 167B, 167C, 167D, 167E, 167F, 167G	IWC-2500- 4(b)		UT exam was conducted using 0-degree longitudinal and 45- and 60-degree shear wave transducers. The exam completed was limited to 63% code required coverage due to the nozzle to upper head weld configuration that interfered with scanning. No unacceptable indications were noted. An acceptable magnetic particle surface exam was also completed with no coverage limitations. A system pressure test was also completed with no unacceptable indications observed.
275400	21-RHRHEX- OUT	NOZZLE-TO- SHELL WELD	C-B	C2.21	2	RHR	UT	10%	10/16/00	190, 191, 192, 193, 194, 195	IWC-2500- 4(b)	YES	UT exam was conducted using 60-degree refracted longitudinal wave and 45- and 60-degree shear wave transducers. The exam completed was limited to 10% code required coverage due to presence of permanently installed component support plate connected to the regenerative heat exchanger that interferes with scanning. UT scans were performed on and across the welds in both directions. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed. UT exam limited due to the nozzle configuration and flange and support welds that interfere with scanning.
275410	21-RHRHEX-IN	NOZZLE-TO- SHELL WELD	C-B	C2.21	2	RHR	UT	25%	10/25/03	305, 306, 307, 308, 309, 310, 310A, 310B, 310C, 310D, 310E	IWC-2500- 4(b)		UT exam was conducted using 45- and 60-degree shear wave transducers. The exam completed was limited to 25% code required coverage due to the exam being limited due to proximity of adjacent support plates and flange welds. No unacceptable indications were noted. A liquid penetrant test and system pressure test was also completed with no unacceptable indications observed.
275040	2-CVCT-2VS- (1- 8) IA	VESSEL SUPPORT INTEGRAL ATTACHMENT	C-C	C3.10	2	сус	PT	89%	4/5/93	18, 18A, 19	IWC-2500-5	YES	PT exam was performed of this component. The liquid penetrant examination completed was partially limited to 89% of the achieved code required coverage being limited due to a permanently installed I beam support structure. The PT exam was unable to be performed for a 6" length due to support leg interferences. No unacceptable indications were observed. A system pressure test was also completed with no recordable indications observed.
275050	2-CVCT-2VS- 3&4	VESSEL SUPPORT	C-C	C3.10	2	cvc	РТ	89%	4/5/93	18, 18A, 20	IWC-2500-5	YES	PT exam was performed of this component. The liquid penetrant examination completed was partially limited to 89% of the achieved code required coverage being limited due to a permanently installed I beam support structure. The PT exam was unable to be performed for a 6" length due to support leg interferences. No unacceptable indications were observed. A system pressure test was also completed with no recordable indications observed.

Table 2-1

		2 n 0	d Ten-	Year	Inser	vice lı	nspect	ion Inte	rval Cl	ass 2 Co	mponen	t NDE E	xam Limitations
Sum#	Component ID	Description	2 ^{№D} Interval ASME Cat	2 nd Interval ASME Item #	ASME Class	System	Limited NDE Exam	Code Coverage Achieved	Exam Date	Photo/ Sketch No.*	Required Examination Volume	Relief Previously Granted?**	UT Exam Type and Limitation Description
275060	2-CVCT-2VS- 5&6	VESSEL SUPPORT	C-C	C3.10	2	сус	PT	89%	4/5/93	18, 18A, 21	IWC-2500-5	YES	PT exam was performed of this component. The liquid penetrant examination completed was partially limited to 89% of the achieved code required coverage being limited due to a permanently installed I beam support structure. The PT exam was unable to be performed for a 6" length due to support leg interferences. No unacceptable indications were observed. A system pressure test was also completed with no recordable indications observed.
275070	2-CVCT-2VS- 7&8	VESSEL SUPPORT	c-c	C3.10	2	сус	PT	89%	4/5/93	18, 18A, 22	IWC-2500-5	YES	PT exam was performed of this component. The liquid penetrant examination completed was partially limited to 89% of the achieved code required coverage being limited due to a permanently installed I beam support structure. The PT exam was unable to be performed for a 6" length due to support leg interferences. No unacceptable indications were observed. A system pressure test was also completed with no recordable indications observed.
275358	2-RHE-1VS-1&2	VESSEL SUPPORT	c-c	C3.10	2	RHR	PŤ	50%	10/22/03	307, 308	IWC-2500- 5(a)	YES	PT exam was conducted of this component. The PT exam was limited to 50% because of weld #1 being partially inaccessible due to the permanently installed support's configuration. A system pressure test was also completed with no unacceptable indications observed.
331095	14-BF-2211- Trunnions 11PL-11 and 11PI-12	TRUNNIONS	c-c	C3.20	2	BF	МТ	80%	4/12/93	28, 29, 29A, 29B, 29C	IWC-2500- 5(a)	VEC	MT exam was conducted. The exam completed was limited to 80% code required coverage being obtained due to 1 1/2" of the total 7 1/2" long weld not being able to be examined due to an adjacent permanent pipe support interference (11PS). No unacceptable indications were observed. A system pressure test was also completed with no recordable indications observed.
330540	14-BF-2231- 17PS	PIPE SUPPORT S- 22	c-c	C3.20	2	BF	МТ	50%	10/31/94	64, 65, 65A, 65B, 65C, 65D	IWC-2500- 5(a)	YES	MT exam was conducted of this component. The MT exam was limited to 50% because of pipe restraint in the area that prevented sufficient access to examine the weld in two directions. The MT exam of the lugs was unable to be examined from two directions due to a permanently installed restriction. A system pressure test was also completed with no unacceptable indications observed. MT exam limited due to close proximity of pipe restraint.
330560	14-BF-2231- 18PS	PIPE SUPPORT	C-C	C3.20	2	BF	MT	50%	10/31/94	66, 66A, 66B, 66C, 66D, 66E	IWC-2500- 5(a)		MT exam was conducted of this component. The MT exam was limited to 50% because of a permanently installed pipe collar in the area that prevented sufficient access to examine the weld in two directions. The MT exam of the lugs was unable to be examined from two directions due to a permanently installed restriction. A system pressure test was also completed with no unacceptable indications observed.

Table 2-1

	2nd Ten-Year Inservice Inspection Interval Class 2 Component NDE Exam Limitations													
Sum#	Component ID	Description	2 ND Interval ASME Cat	2 nd Interval ASME Item #	ASME Class	System	Limited NDE Exam	Code Coverage Achieved	Exam Date	Photo/ Sketch No.*	Required Examination Volume	Relief Previously Granted?**	UT Exam Type and Limitation Description	
381070	34-MS-2241- 242PL	PIPE LUG 242	C-C	C3.20	2	MS	МТ	71%	11/11/94	70, 70 A , 70B, 70C, 70D	IWC-2500- 5(a)	YES	MT exam was conducted of this component. The MT exam was limited to 71% because of a permanently installed beam that obstructed access to lug number 2. No exam could be performed from 11 1/2" to 18 1/8" due to the beam's proximity. The total weld length is 23". A complete MT exam was performed on lug number 1. A system pressure test was also completed with no unacceptable indications observed.	
573383	12-RH-2252- 38PS-1&2	PIPE SUPPORT	c-c	C3.20	2	RHR	РТ	71%	11/15/94	80, 80A, 80B, 80C, 80D, 80E	IWC-2500- 5(a)	YES	PT exam was conducted of this component. The PT exam was limited to 71% because of a permanently installed component support that obstructed the exam. No exam could be performed from 20" to 28" due to the presence of the component support proximity. A system pressure test was also completed with no unacceptable indications observed.	
573387	12-RH-2252- 38PS-3	PIPE SUPPORT	c-c	C3.20	2	RHR	PT	71%	11/15/94	81, 81A, 81B, 81C, 81D	IWC-2500- 5(a)	YES	PT exam was conducted of this component. The PT exam was limited to 71% because of a permanently installed component support that obstructed the exam. No exam could be performed from 7 1/2" to 14" and 30" to 36 1/2" due to the presence of the adjacent piping interfering with the exam. A system pressure test was also completed with no unacceptable indications observed.	
381120	32-MS-2231- 1PS-2	WELDED INTEGRAL PIPE SUPPORT ATTACHMENT	c-c	C3.20	2	MS	МТ	50%	1/17/96	102, 102A, 102B, 102C, 102D	IWC-2500- 5(a)		MT exam was conducted of this component. The MT exam was limited to 50% because of the configuration of the lug that precluded examination of the lug in two directions. The MT exam was unable to be examined from two directions due to its configuration. There is no IWF support associated with this weld attachment. A system pressure test was also completed with no unacceptable indications observed. Component selected for MEB 3-1 Augmented Exam requirements.	
381220	32-MS-2221- 1PS-2	WELDED INTEGRAL PIPE SUPPORT ATTACHMENT	c-c	C3.20	2	MS	МТ	50%	1/19/96	110, 110A, 110B, 110C, 110D, 110E	IWC-2500- 5(a)		MT exam was conducted of this component. The MT exam was limited to 50% because of the configuration of the lug that precluded examination of the lug in two directions. The MT exam was unable to be examined from two directions due to its configuration. There is no IWF support associated with this weld attachment. A system pressure test was also completed with no unacceptable indications observed.	
381320	32-MS-2211- 1PS-2	WELDED INTEGRAL PIPE SUPPORT ATTACHMENT	c-c	C3.20	2	MS	MT	50%	1/19/96	114, 114A, 114B, 114C, 114D	IWC-2500- 5(a)		MT exam was conducted of this component. The MT exam was limited to 50% because of the configuration of the lug that precluded examination of the lug in two directions. The MT exam was unable to be examined from two directions due to its configuration. There is no IWF support associated with this weld attachment. A system pressure test was also completed with no unacceptable indications observed.	

Table 2-1

		2nc	d Ten-	Year l	Inser	vice l	nspect	ion Inte	rval Cl	ass 2 Co	mponent	t NDE E	xam Limitations
Sum#	Component ID	Description	2 ND Interval ASME Cat	2 nd Interval ASME Item #	ASME Class	System	Limited NDE Exam	Code Coverage Achieved	Exam Date	Photo/ Sketch No.*	Required Examination Volume	Relief Previously Granted?**	
381350	32-MS-2211- 2PL-1 THRU 3	PIPE LUG	C-C	C3.20	2	MS	МТ	84%	1/16/96	115, 116, 117, 117А, 117В	IWC-2500- 5(a)		MT exam was conducted of this component. The MT exam was limited to 84% because of the configuration of the lug that precluded examination of the lug in two directions. The MT exam was unable to be examined from two directions due to its configuration. There is no IWF support associated with this weld attachment. A system pressure test was also completed with no unacceptable indications observed.
573055	12-RH-2252-5PL- 1 THRU 6	PIPE LUG	C-C	C3.20	2	RHR	РТ	33%	5/7/99	318, 319, 320, 321, 321A	IWC-2500- 5(a)	YES	PT exam was conducted of this component. The PT exam was limited to 33% because the lugs 2, 3, 4, 5 due to inaccessibility. The inaccessible pipe lugs are located within a permanent piping penetration sleeve. A system pressure test was also completed with no unacceptable indications observed.
330645	14-BF-2221-3PL- 1 THRU 8	2-FWG-22-17	c-c	C3.20	2	BF	MT	79%	4/6/02	293, 293A, 293B, 293C, 293D, 293E, 293F, 293G	IWC-2500- 5(a)		MT exam was conducted of this component. The MT exam was limited to 79% because of other components in the area of the welded attachments that prevented sufficient access to examine the weld in two directions. The MT exam of the lugs was unable to be examined from two directions due to permanently installed restrictions being present. A system pressure test was also completed with no unacceptable indications observed
500010	12-PR-2201-1	CAP TO PIPE	C-F-1	C5.11	2	RC	UT	78%	4/7/93	31, 31A, 32, 32A, 32B	IWC-2500- 7(a)	YES	UT exam was conducted using a 45-degree shear wave transducer. The exam completed was limited to 78% code required coverage. No UT exam from the downstream side or upstream side between 10 3/4" to 14 1/4" and 26 3/4" to 31 3/4" due to installed pipe support. The edge of the pipe support clamp is 3/4" from the weld toe. Scanned across weld from the upstream side and from the downstream side on weld crown only. No unacceptable indications were noted. A liquid penetrant test and system pressure test was also completed with no unacceptable indications observed.
501800	14-RH-2212-1	VALVE 2RH2 TO PIPE	C-F-1	C5.11	2	RHR	UT	87%	11/9/94	72, 73, 74, 74A, 74B, 74C	IWC-2500- 7(b)	YES	UT exam was conducted using a 45-degree shear wave transducer. The exam completed was limited to 87% code required coverage due to the UT exam being limited due to the upstream side valve's OD configuration that restricted scanning. UT scans were performed on and across the welds in both directions. No unacceptable indications were noted. A liquid penetrant test and system pressure test was also completed with no unacceptable indications observed.
570010	14-RH-2224-1	VALVE 22SJ44 TO ELBOW	C-F-1	C5.11	2	RHR	UT t	75%	11/14/94	75, 76, 77, 77A, 77B	IWC-2500- 7(b)	TES	UT exam was conducted using a 45-degree shear wave transducer. The exam completed was limited to 75% code required coverage due to the UT exam being limited due to the upstream side valve's OD configuration that restricted scanning. UT scans were performed on and across the welds in both directions. No unacceptable indications were noted. A liquid penetrant test and system pressure test was also completed with no unacceptable indications observed.

Table 2-1

· ·	Table 2-1	
2nd Ten-Year Inservice Ins	pection Interval Class 2 Compon	ent NDE Exam Limitations

·									1101.01				
Sum#	Component ID	Description	2 ND Interval ASME Cat	2 nd Interval ASME Item #	ASME Class	System	Limited NDE Exam	Code Coverage Achieved	Exam Date	Photo/ Sketch No.*	Required Examination Volume	Relief Previously Granted?**	UT Exam Type and Limitation Description
573380	12-RH-2252-38	PIPE TO PIPE	C-F-1	C5.11	2	RHR	UT	67%	11/15/94	78, 79, 79A, 79B, 79C	IWC-2500- 7(b)	YES	UT exam was conducted using a 45-degree shear wave transducer. The exam completed was limited to 67% code required coverage due to the UT exam being limited UT exam due to welded plug and close proximity of adjacent piping that impedes access to scan the examination area to achieve full coverage. No UT exam could be performed from 7 1/2" to 14" and 30" to 36 1/2" due to the proximity of adjacent piping. In addition, the downstream side scan was limited 1 3/8" W from 38 11/16" to 40 1/8" due to a welded plug. No unacceptable indications were noted. A liquid penetrant test and system pressure test was also completed with no unacceptable indications observed.
503340	8-RH-2216-4R1	FLANGE TO VALVE 21RH10	C-F-1	C5.11	2	RHR	UT	22%	5/15/96	122, 123	IWC-2500- 7(b)	YES	UT exam was conducted using a 45-degree shear wave transducer. The exam completed was limited to 22% code required coverage. No UT exam could be performed from either side of weld due to flange and valve OD configurations. No unacceptable indications were noted. A magnetic particle test and system pressure test was also completed with no unacceptable indications observed.
502580	8-RH-2273-18	VALVE 21RH12 TO TEE	C-F-1	C5.11	2	RHR	UΤ	51%	. 10/5/00	199, 200, 201	IWC-2500- 7(b)		UT exam was conducted using 45- and 70-degree shear wave transducers. The exam completed was limited to 51% code required coverage due to the UT exam being limited due to the tee and valve's OD configurations that restricted scanning. UT scans were performed on and across the welds in both directions. No unacceptable indications were noted. A liquid penetrant test and system pressure test was also completed with no unacceptable indications observed.
707130	4-CV-2257-1	FLANGE TO PIPE	C-F-1	C5.21	2	cvc	UT	86%	10/21/94	82, 83, 84	IWC-2500- 7(b)	YES	UT exam was conducted using a 45-degree shear wave transducer. The exam completed was limited to 86% code required coverage due to the UT exam being limited to the pipe side only due to the OD configuration of the flange located on the upstream side. Scanning was conducted on the weld in all directions to increase code coverage. No unacceptable indications were noted. A liquid penetrant test and system pressure test was also completed with no unacceptable indications observed.
707730	3-CV-2257-7	VALVE 2CV82 TO PIPE	C-F-1	C5.21	2	сус	UT	80%	10/21/94	322, 322A, 323	IWC-2500- 7(b)	YES	UT exam was conducted using a 45-degree shear wave transducer. The exam completed was limited to 80% code required coverage due to the UT exam being limited due to the upstream side valve's OD configuration that restricted scanning. UT scans were performed on and across the welds in both directions. No unacceptable indications were noted. A liquid penetrant test and system pressure test was also completed with no unacceptable indications observed.

	2nd Ten-Year Inservice Inspection Interval Class 2 Component NDE Exam Limitations													
Sum#	Component ID	Description	2 ND Interval ASME Cat	2 nd Interval ASME item #	ASME Class	System	Limited NDE Exam	Code Coverage Achieved	Exam Date	Photo/ Sketch No.*	Required Examination Volume	Relief Previously Granted?**		
710140	3-CV-2255-9	VALVE 2CV70 TO PIPE	C-F-1	C5.21	2	сус	UT	31%	5/23/99	160, 161, 161A, 161B	IWC-2500- 7(b)		UT exam was conducted using 45-, 60- and 70-degree shear wave transducers. The exam completed was limited to 31% code required coverage due to the UT exam being limited due to the OD configuration of the nozzle that restricted scanning. UT scans were performed on and across the welds in both directions. No unacceptable indications were noted. A liquid penetrant test and system pressure test was also completed with no unacceptable indications observed.	
707320	4-CV-2257-16	VALVE 2CV53 TO ELBOW	C-F-1	C5.21	2	сус	UT	38%	10/20/00	205, 208	IWC-2500- 7(b)		UT exam was conducted using a 45-degree shear and a 70-degree refracted longitudinal wave transducer. The exam completed was limited to 38% code required coverage due to the UT exam being limited due to the valve's OD configuration that restricted scanning. UT scans were performed on and across the welds in both directions. No unacceptable indications were noted. A liquid penetrant test and system pressure test was also completed with no unacceptable indications observed.	
707620	3-CV-2259-14R1	VALVE 2CV55 TO PIPE	C-F-1	C5.21	2	сус	UT	39%	10/5/00	202, 203, 204, 206 207	IWC-2500- 7(b)		UT exam was conducted using 45- and 70-degree shear transducers. The exam completed was limited to 39% code required coverage due to the UT exam being limited due to the valve's OD configuration that restricted scanning. UT scans were performed on and across the welds in both directions. No unacceptable indications were noted. A liquid penetrant test and system pressure test was also completed with no unacceptable indications observed.	
709960	3-CV-2256-6	PIPE TO VALVE 2CV73	C-F-1	C5.21	2	сус	UT	50%	10/18/00	161B, 209, 210, 211, 212	IWC-2500- 7(b)		UT exam was conducted using 45- and 70-degree shear transducers. The exam completed was limited to 50% code required coverage due to the UT exam being limited due to the valve's OD configuration that restricted scanning. UT scans were performed on and across the welds in both directions. No unacceptable indications were noted. A liquid penetrant test and system pressure test was also completed with no unacceptable indications observed.	
710190	3-CV-2255-12	PIPE TO VALVE 2CV72	C-F-1	C5.21	2	сус	UT	50%	10/18/00	161B, 213, 214, 214A, 214B	IWC-2500- 7(b)		UT exam was conducted using 45- and 70-degree shear transducers. The exam completed was limited to 50% code required coverage due to the UT exam being limited due to the valve's OD configuration that restricted scanning. UT scans were performed on and across the welds in both directions. No unacceptable indications were noted. A liquid penetrant test and system pressure test was also completed with no unacceptable indications observed.	

Table 2-1

* These numbers refer to Enclosure 1, Pages 1 through 343. Page numbers are in boxes in the corners of the pages. ** Relief was granted by the NRC in Reference 1 or was submitted in the Salem 2 first 10-year interval in Reference 2.

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		2nc	d Ten-	Year I	nser	vice lı	nspect	ion Inte	rval Cl	ass 2 Co	mponen	NDE E	xam Limitations
Sum#	Component ID	Description	2 ND Interval ASME Cat	2 nd Interval ASME Item #	ASME Class	System	Limited NDE Exam	Code Coverage Achieved	Exam Date	Photo/ Sketch No.*	Required Examination Volume	Relief Previously Granted?**	UT Exam Type and Limitation Description
330930	14-BF-2211-2	PIPE TO ELBOW	C-F-2	C5.51	2	BF	UT.	84%	4/2/93	27, 27A, 27B, 27C, 27D, 27E, 27F	IWC-2500-7	YES	UT exam was conducted using a 45-degree shear wave transducer. The ultrasonic examination completed was partially limited to 84% of the achieved code required coverage due to a permanently installed column support lug located immediately adjacent to the weld that interferes with scanning. No unacceptable indications were observed. A magnetic particle (MT) and system pressure test was also completed with no recordable indications observed.
382140	30-MS-2211-9	PIPE TO ELBOW	C-F-2	C5.51	2	MS	UT	90%	4/13/93	30, 30A, 30B, 30C	IWC-2500- 7(a)		UT exam was conducted using a 45-degree shear wave transducer. The exam completed was limited to 90% code required coverage from the upstream side due to a branch connection being located between 9/16" to 3 7/8" that limited scanning to 3 1/4". No unacceptable indications were noted. A magnetic particle test and system pressure test was also completed with no unacceptable indications observed.
380140		PIPE TO VALVE 24MS167	C-F-2	C5.51	2	MS	UT	85%	11/11/94	67, 67A, 68, 68A, 68B, 68C, 68D, 69	IWC-2500- 7(b)	YES	UT exam was conducted using 45- and 32-degree shear wave transducers. The exam completed was limited to 85% code required coverage due to the UT exam being limited to between 7 1/2" W from 5" to 16", 87 1/2" to 103" due to multiple branch connections located on the main steam header. No unacceptable indications were noted. A magnetic particle and system pressure test was also completed with no unacceptable indications observed.
385510	6-MS-2211-13	TEE TO PIPE	C-F-2	C5.51	2	MS	UT	73%	11/17/94	71, 71A, 71B, 71C	IWC-2500- 7(b)		UT exam was conducted using a 45-degree shear wave transducer. The exam completed was limited to 73% code required coverage due to the UT exam being limited between 8 1/2" to 14 1/2" and 20" to 3 1/2" due to the OD configuration of the tee fitting's blend radius areas located on the upstream side. UT scans were performed on and across the welds in both directions. No unacceptable indications were noted. A magnetic particle and system pressure test was also completed with no unacceptable indications observed.
381055	32-MS-2241-3	ELBOW TO PIPE	C-F-2	C5.51	2	MS	UT	85%	1/13/96	99, 100, 101	IWB-2500- 7(b)		UT exam was conducted using a 45-degree shear wave transducer. The exam completed was limited to 85% code required coverage. The UT exam conducted was limited due to a permanently installed welded pipe support from 18" to 26". No unacceptable indications were noted. A liquid penetrant test and system pressure test was also completed with no unacceptable indications observed. Component selected for MEB 3-1 Augmented Exam requirements.

Table 2-1

Table 2-1
2nd Ten-Year Inservice Inspection Interval Class 2 Component NDE Exam Limitations

Sum#	Component ID	Description	2 ND Interval ASME Cat	2 nd Interval ASME Item #	ASME Class	System	Limited NDE Exam	Code Coverage Achieved	Exam Date	Photo/ Sketch No.*	Required Examination Volume	Relief Previously Granted?**	UT Exam Type and Limitation Description
381155	32-MS-2231-3	ELBOW TO PIPE	C-F-2	C5.51	2	MS	UT	87%	1/18/96	103, 103A, 105, 106	IWC-2500- 7(b)		UT exam was conducted using a 45-degree shear wave transducer. The exam completed was limited to 87% code required coverage. The UT exam conducted was limited due to a welded pipe support from 49.25" to 2.75" partially covering the upstream side of the weld. No unacceptable indications were noted. A magnetic particle test and system pressure test was also completed with no unacceptable indications observed.
381175	34-MS-2231-1	PIPE TO PIPE	C-F-2	C5.51	2	MS	UT	40%	1/24/96	107, 108, 109	IWC-2500- 7(b)		UT exam was conducted using a 45- and 60-degree shear wave transducer. The exam completed was limited to 40% code required coverage. The UT exam conducted from the downstream side was limited due to a welded pipe support from 3" to 24". No unacceptable indications were noted. A magnetic particle test and system pressure test was also completed with no unacceptable indications observed.
381260	32-MS-2221-3	ELBOW TO PIPE	C-F-2	C5.51	2	MS	UT	87%	1/20/96	111, 112, 113	IWC-2500- 7(b)		UT exam was conducted using 0-degree longitudinal wave and 45- degree shear wave transducers. The exam completed was limited to 87% code required coverage. The UT exam conducted from the downstream and upstream sides were limited due to pads and pipe support. No unacceptable indications were noted. A magnetic particle test and system pressure test was also completed with no unacceptable indications observed.
381355	32-MS-2211-3	ELBOW TO PIPE	C-F-2	C5.51	2	MS	UT	82%	3/13/97	118, 119	IWC-2500- 7(b)		UT exam was conducted using a 45-degree shear wave transducer. The exam completed was limited to 82% code required coverage. No UT scan was performed from the downstream side from 62.5" to 80.5" due to a permanent restraint interfering with scanning. No scan could be performed from the upstream direction from 94.5" to 7.5" due to branch connection. Also no scan could be performed from 74.5" to 78.5" due to a branch connection. No unacceptable indications were noted. A magnetic particle test and system pressure test was also completed with no unacceptable indications observed.
381370	34-MS-2211-1	PIPE TO PIPE	C-F-2	C5.51	2	MS	UT	51%	1/24/96	120, 121	IWC-2500- 7(b)		UT exam was conducted using a 45-degree shear wave transducer. The exam completed was limited to 51% code required coverage. The UT exam was performed from the upstream side and limited between 22 1/2" to 27 1/2", 79" to 81", 88" to 90" and 93 3/4" to 7 1/4" due to seven pipe restraint bars measuring 1.45" for a total of 10.15". The restraint support partially covers the weld 360°. No unacceptable indications were noted. A magnetic particle test and system pressure test was also completed with no unacceptable indications observed.

LR-N07-0150 S2-I2-RR-C01

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Table 2-1
2nd Ten-Year Inservice Inspection Interval Class 2 Component NDE Exam Limitations

Sum#	Component ID	Description	2 ND Interval ASME Cat	2 nd Interval ASME Item #	ASME Class	System	Limited NDE Exam	Code Coverage Achieved	Exam Date	Photo/ Sketch No.*	Required Examination Volume	Relief Previously Granted?**	UT Exam Type and Limitation Description
384320	6-MS-2246-3	PIPE TO VALVE 24MS9	C-F-2	C5.51	2	MS	UT	79%	.10/17/00	196, 197, 198	IWC-2500- 7(b)		UT exam was conducted using a 45-shear wave transducer. The exam completed was limited to 79% code required coverage due to the UT exam being limited due to the valve's OD configuration that restricted scanning. UT scans were performed on and across the welds in both directions. No unacceptable indications were noted. A magnetic particle test and system pressure test was also completed with no unacceptable indications observed.

* These numbers refer to Enclosure 1, Pages 1 through 343. Page numbers are in boxes in the corners of the pages. ** Relief was granted by the NRC in Reference 1 or was submitted in the Salem 2 first 10-year interval in Reference 2.

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RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION REQUESTS FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR INSERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

On March 21, 2006, PSEG Nuclear LLC (PSEG), the licensee for the Salem Nuclear Generating Station (Salem), Unit No. 2, requested relief from certain requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Code), Section XI, for the inservice inspection (ISI) of Class 1 and Class 2 components. PSEG stated that it had conducted examinations as part of the Second Ten-Year Interval ISI Program to the extent practical; however, coverage for certain weld examinations was less than required by the Code. The Nuclear Regulatory Commission (NRC) staff has determined that responses to the following questions are necessary in order for the staff to complete its review:

Questions on Relief Request S2-I2-RR-B01:

- 1.1 <u>Request for Relief S2-I2-RR-B01, Part B, Examination Category B-B, Pressure</u> <u>Retaining Welds in Vessels Other than Reactor Vessels</u>
- 1.1(a) For weld 2-PZR-CIRC DUH, the information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support the determination that the inspection of this weld is limited and impractical.

RESPONSE

Enclosure 1 provides additional information for weld 2-PZR-CIRC DUH, including the following attributes:

- 1. Weld cross-section
- 2. Material (SS or CS to determine inspection requirement differences)
- 3. Thickness / weld crown
- 4. Obstruction(s) identified on a diagram
- 5. Exam area shown (highlighted) on a diagram
- 6. Transducer ray exit point

The Enclosure 1 page numbers for this additional information have been added to the 2-PZR-CIRC DUH component entry in Table 1-1 of Attachment 1.

- 1.2 <u>Request for Relief S2-I2-RR-B01, Part C, Examination Category B-D, Full</u> <u>Penetration Welds of Nozzles in Vessels</u>
- 1.2(a) For certain nozzle welds, information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers shown below.

31-STG-1220-IRS 29-STG-1230-IRS 29-STG-1240-IRS 29-STG-1220-IRS 31-STG-1240-IRS 29-STG-12R10-IRS 31-STG-1230-IRS 31-STG-12R10-IRS

RESPONSE

Enclosure 1 provides additional information for the above welds, including the following attributes:

- 1. Weld cross-section
- 2. Material (SS or CS to determine inspection requirement differences)
- 3. Thickness / weld crown
- 4. Obstruction(s) identified on a diagram
- 5. Exam area shown (highlighted) on a diagram
- 6. Transducer ray exit point

Note that the 'R' in weld numbers 29-STG-12R10-IRS and 31-STG-12R10-IRS is a typographical error and the weld numbers in Attachment 1 and Enclosure 1 are correct (29-STG-1210-IRS and 31-STG-1210-IRS). The Enclosure 1 page numbers for this additional information have been added to the applicable component entries in Table 1-1 of Attachment 1.

1.2(b) From the licensee's submittal, it appears that all welds considered in Category B-D underwent a pressure test, with the exception of 29-RCN-12R10 and 29-RCN-1230. Please clarify whether a pressure test was performed on these welds, and the results of the pressure test.

RESPONSE

Like welds 29-RCN-1220 and 29-RCN-1240, welds 29-RCN-1210 and 29-RCN-1230 did receive a pressure test and the results were satisfactory. Component ID 29-RCN-was corrected in Attachment 1 Table 1-1 to be 29-RCN-1210.

- 1.3 <u>Request for Relief S2-I2-RR-B01, Part D, Examination Category B-J and B-F,</u> <u>Pressure Retaining Welds in Piping and Pressure Retaining Dissimilar Metal</u> <u>Welds in Vessel Nozzles</u>
- 1.3(a) In the licensee's submittal, Table 1 of Relief Request S2-I2-RR-B01 contains a listing of multiple limited examinations for Class 1 piping and nozzle welds that have occurred during the second 10-year interval. The table lists ASME Code examination categories for each piping and nozzle weld prior to (B-F and B-J), and after (R-A), implementation of a risk-informed inservice inspection (RI-ISI) program. It is unclear whether the piping and nozzle weld examinations were performed under a conventional ASME Code program, or under the new RI-ISI program.

It is important to understand which program was used to examine each piping weld because: a) under a conventional ASME Code Section XI program, which requires a substantial population of applicable Category B-F and B-J welds to be

examined, requests for relief for limited examinations based on impracticality may be submitted per Title 10 of the *Code of Federal Regulations* (10 CFR), Paragraph 50.55a(g)(5)(iii), whereas, b) under a RI-ISI program, which is an existing alternative to ASME Code requirements approved by the NRC for Salem Unit No. 2, there is no method for evaluating a request for relief under 10 CFR 50.55a(g)(5)(iii).

RESPONSE

All examinations noting limitations in the relief request submittal were performed to ASME Section XI, B-F and B-J requirements. Some risk-informed examinations were performed in the last outage of the second 10-year interval, however there were no limitations in those examinations. As the current risk-informed classification of these components does not apply to the examinations for which relief is requested, these columns were removed from Table 1-1.

1.3(b) According to Table 1, Examination Category B-F and B-J, the post ISI ASME item numbers are listed as R1.19-2, R1.20-4, or R1.20-6. According to Code Case N-577 or N-578, as applicable, for implementation of RI-ISI programs at Salem Unit No. 2, these item numbers do not appear in Table 1, Examination Category R-A. Please provide the correct designations.

RESPONSE

As part of Salem's Service Experience and Susceptibility Review for the initial application of the EPRI risk-informed methodology, Salem assigned the degradation mechanism of External Chloride Stress Corrosion Cracking (ECSCC) to some components at both units. Code Case N-578 does not have an item number for ECSCC but N-578-1, Table 1, has the additional item numbers of R1.19 for ECSCC and R1.20 for items with no degradation mechanism applicable to them. These are the item numbers referred to in item 1.3(b). The examinations were established using the EPRI report TR-112657 Rev B-A methodology.

As the current risk-informed classification of these components does not apply to the examinations for which relief is requested, these columns were removed from Table 1-1 and 2-1.

1.3(c) For certain piping welds, information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

Examination Category B-F

6-PR-1205-1	29-RC-1210-5	31-RC-1220-1
6-PR-1203-1	31-RC-1240-1	31-RC-1210-1
4-PR-1200-1	31-RC-1230-1	

Examination Category B-J

10-SJ-1221-21	31-RC-1220-4	31-RC-1220-4LU-I	2-CV-1275-44
8-SJ-1262-10	4-PS-1231-20	31-RC-1220-4LU-O	
8-SJ-1245-1	27.5-RC-1230-1	3-CV-1231-14	
8-SJ-1241-18	6-RH-1231-16	2-CV-1275-43	

RESPONSE

Enclosure 1 provides additional information for the above welds, including the following attributes:

- 1. Weld cross-section
- 2. Material (SS or CS to determine inspection requirement differences)
- 3. Thickness / weld crown
- 4. Obstruction(s) identified on a diagram
- 5. Exam area shown (highlighted) on a diagram
- 6. Transducer ray exit point

The Enclosure 1 page numbers for this additional information have been added to the applicable component entries in Table 1-1 of Attachment 1.

- 1.4 <u>Request for Relief Part E, Examination Category B-G-1, Pressure Retaining</u> Bolting, Greater than 2 Inches in Diameter.
- 1.4(a) Relief is being requested for certain examination requirements for Examination Category B-G-1, "Pressure Retaining Bolting Greater than 2 Inches in Diameter." However, there are no B-G-1 items listed in Table 1. Please add the appropriate Category B-G-1 items to Table 1, and include sufficient information to demonstrate impracticality, or revise the request appropriately.

RESPONSE

There were no limitations for B-G-1 component examinations for the second interval for Salem Unit 2. The relief request was revised to remove reference to this category.

Questions on Relief Request S2-I2-RR-C01:

- 2.1 <u>Request of Relief S2-I2-RR-C01, Part C, Examination Category C-F-1 and C-F-2,</u> <u>Pressure Retaining Piping Welds</u>
- 2.1(a) In the licensee's submittal, Table 1 of Relief Request S2-I2-RR-C01 contains a listing of multiple limited examinations for Class 2 piping welds that have occurred during the second 10-year interval. The table lists ASME Code examination categories for each piping weld prior to (C-F-1 and C-F-2), and after (R-A), implementation of an RI-ISI program. It is unclear whether the piping weld examinations were performed under a conventional ASME Code program, or under the new RI-ISI program.

It is important to understand which type of program each piping weld examination was performed under, because: a) under a conventional ASME Code Section XI program, which requires a substantial population of applicable Category C-F-1 and C-F-2 welds to be examined, requests for relief for limited examinations based on impracticality may be submitted per 10 CFR 50.55a(g)(5)(iii), whereas, b) under a RI-ISI program, which is an existing alternative to ASME Code requirements approved by the NRC for Salem Unit No. 2, there is no method for evaluating a request for relief under 10 CFR 50.55a(g)(5)(iii).

RESPONSE

All examinations noting limitations in the relief request submittal were performed to ASME Section XI, C-F-1 and C-F-2 requirements. As the current risk-informed classification of these components does not apply to the examinations for which relief is requested, these columns were removed from Table 2-1.

2.1(b) For the component identified as 8-CS-2227-5, a valve-to-pipe weld, the licensee has listed this as ASME Examination Category C-F-1, Item A-E<3/8. This item number does not correspond with Table IWC-2500-1 in the 1986 Edition of the ASME Code. Please confirm that this weld is required to be examined by requirements of ASME Code, Table IWC-2500-1, Examination Category C-F-1. If so, please list the correct item designation for this weld.</p>

RESPONSE

This weld is not required to be examined by the requirements of ASME Code, Table IWC-2500-1, Examination Category C-F-1 as the wall thickness of the piping is less than 3/8-inch (Item C5.11 is for welds greater than or equal to 3/8-inch). Therefore there is no applicable item number for this weld. As part of the second 10-year interval inservice inspection plan, as detailed in Reference 1, PSEG committed to the NRC to perform augmented volumetric examinations of a 7 $\frac{1}{2}$ % sample of Class 2 welds in the containment spray system that are otherwise not selected based on wall thickness (i.e. less than 0.375 inches wall thickness). This weld is part of the augmented examination population and therefore included in the submittal.

2.1(c) For certain piping welds, information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by the licensee identification numbers below.

8-CS-2227-5	12-PR-2201-1	14-RH-2212-1	14-RH-2224-1
12-RH-2252-38	3-CV-2255-9	3-CV-2256-6	3-CV-2255-12
14-BF-2211-2	30-MS-2211-9	34-MS-2241-3	6-MS-2211-13

RESPONSE

Enclosure 1 provides additional information for the above welds, including the following attributes:

- 1. Weld cross-section
- 2. Material (SS or CS to determine inspection requirement differences)
- 3. Thickness / weld crown
- 4. Obstruction(s) identified on a diagram
- 5. Exam area shown (highlighted) on a diagram
- 6. Transducer ray exit point

The Enclosure 1 page numbers for this additional information have been added to the applicable component entries in Table 2-1 of Attachment 2.

- 2.2 <u>Request for Relief Part D, Examination Category C-C, Integral Attachments for</u> <u>Vessels, Piping, Pumps and Valves</u>
- 2.2(a) For certain component attachment and support welds, information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by the licensee identification numbers below.

14-BF-2211-Trunnions 11PL-11 & 11-PI-12 14-BF-2231-18PS 12-RH-2252-38PS-1&2 32-MS-2231-1PS-2 32-MS-2211-1PS-2 12-RH-2252-5PL-1 thru 6 14-BF-2231-17PS 34-MS-2241-242PL 12-RH-2252-38PS-3 32-MS-2221-1PS-2 32-MS-2211-2PL-1 thru 3 14-BF-2221-3PL-1 thru 8

RESPONSE

Enclosure 1 provides additional information for the above welds, including the following attributes:

- 1. Weld cross-section
- 2. Material (SS or CS to determine inspection requirement differences)
- 3. Thickness / weld crown
- 4. Obstruction(s) identified on a diagram
- 5. Exam area shown (highlighted) on a diagram
- 6. Transducer ray exit point

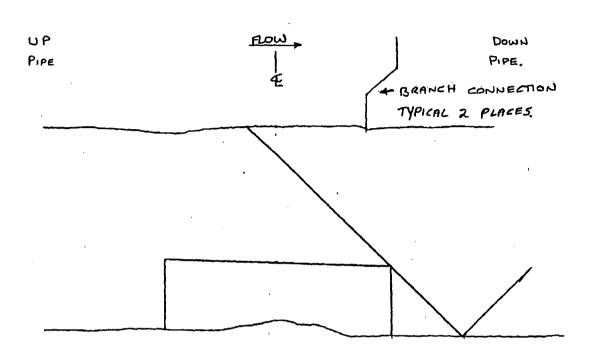
The Enclosure 1 page numbers for this additional information have been added to the applicable component entries in Table 1 of Attachment 2.

Relief Request: S2-I2-RR-B01, S2-I2-RR-C01 Second Ten-Year Interval Inservice Inspection NDE Exam Limitations Salem Unit 2 Additional Descriptive Details

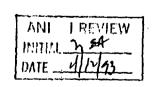
(Sketches, illustrations, and/or drawings)

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177	216	266A	293G	313H	320
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185	224	270C	298C	313P	326
186	225	270D	298D	313Q	327
187	226	270E	299	313R	328
188	227	270F	300	313S	329
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191	227C	271A	302A	313V	332
192	228	271B	302B	313W	333
193	229	272	302C	313X	334
194	230	273	303	314	335
195	231	274	304	314A	336
196	232	275	304A	314B	337
197	233	276	304B	314C	338
198	234	277	304C	314D	339
199	235	278	304D	314E	340
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206B	243	286B	310A	316A	
206C	244	286C	310B	316B	
207	255	287	310C	316C	
208	256	288	310D	316D	
209	257	289	310E	316E	
210	258	290	311	316F	
.211	259	291	312	316G	
212	260	292	313	316H	
213	261	293	313A	316-I	

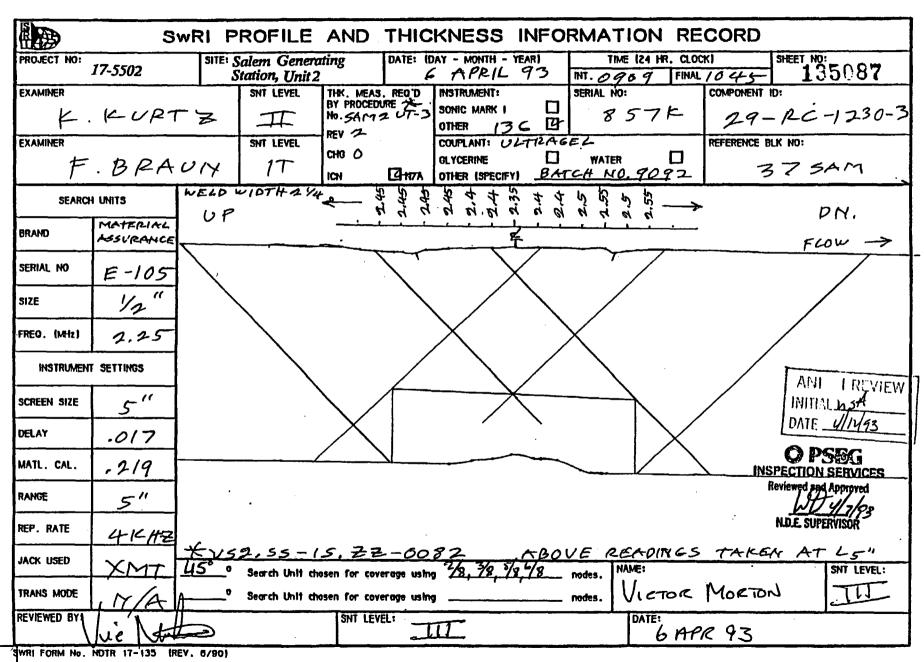


SALEM UNIT 2 17-5502 REACTOR COOLINNT-29-RC-1230-3 VICTOR MORTON III 6APR 93 FOR COVERAGE ONLY. 100% COVERAGE FROM OPPOSITE SIDE.



INSPECTION SERVICES Review

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# REQUEST FOR ADDITIONAL INFORMATION REQUEST FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR IN-SERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

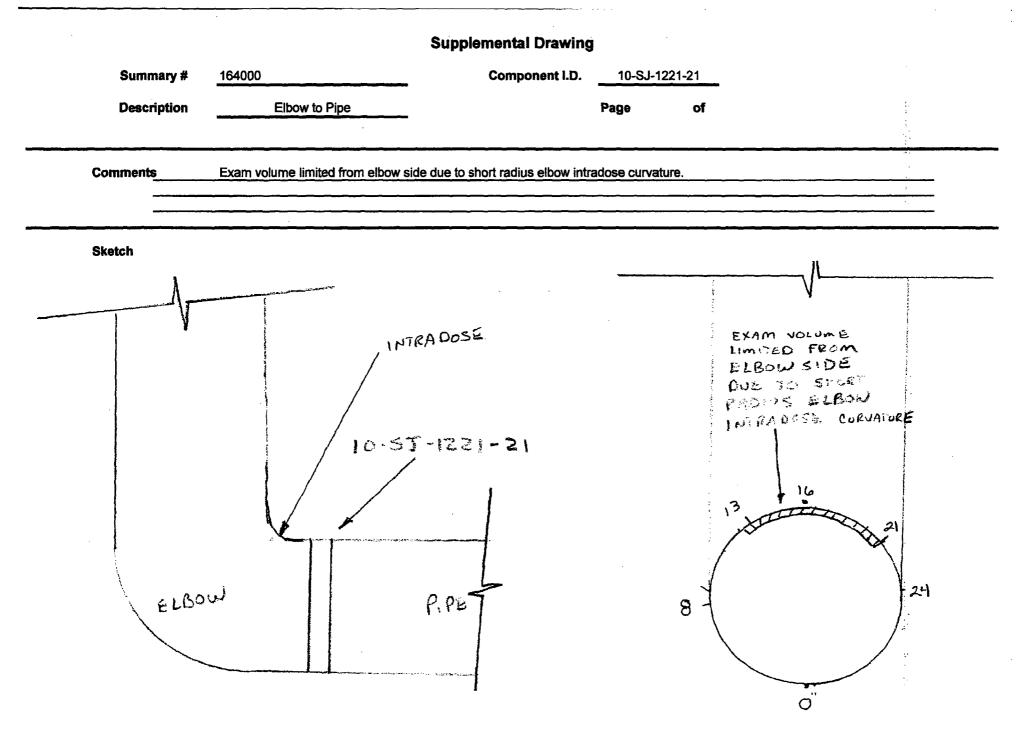
QUESTION 1.3 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

| Summary #      | 164000                      |                                  |
|----------------|-----------------------------|----------------------------------|
| Component I.D. | 10-SJ-1221-21               |                                  |
| Description    | Elbow to Pipe               |                                  |
|                |                             | Comments                         |
| 1              | Weld X-Section              | See Attached                     |
| 2              | Material                    | Stainless Steel                  |
| 3              | Thickness / weld Crown      | Thickness 1.1" / Weld Crown 1.5" |
| 4              | Obstruction                 | Intrados of Elbow                |
| 5              | Exam Area Highlighted on Dr | awing Yes No X                   |
| 6              | Transducer ray exit point   | See Attached                     |

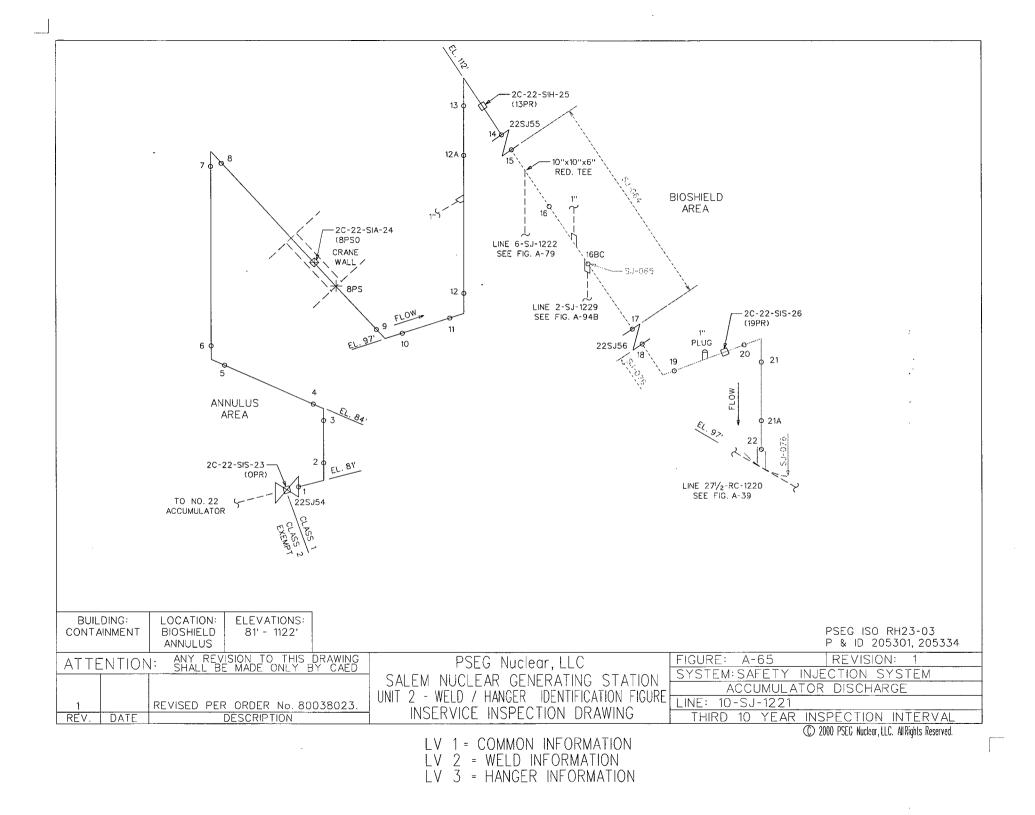
#### Comments

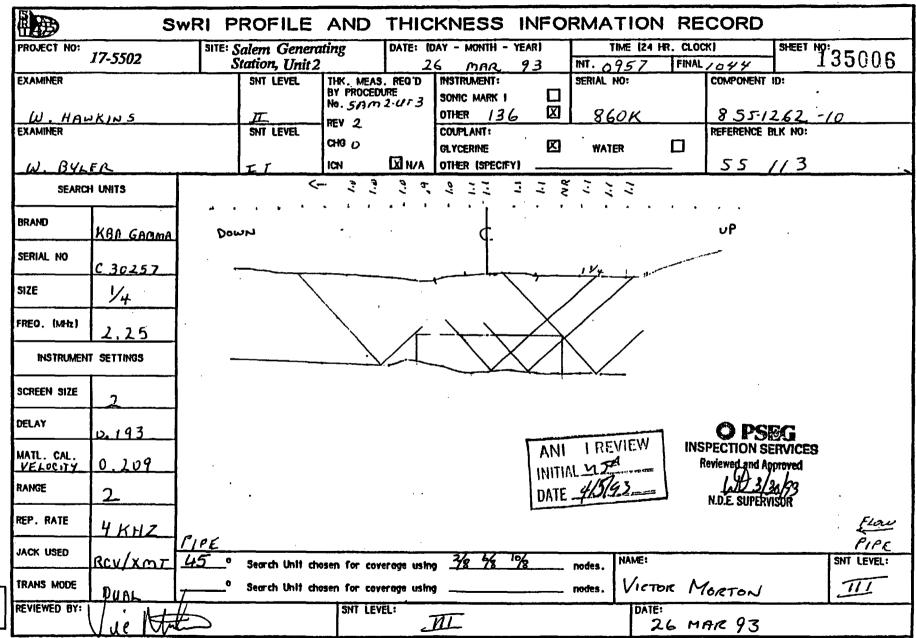
UT exam was performed of this component using 45 degree shear wave transducer. The ultrasonic examination completed was partially limited to 83% of the code required coverage being limited from 13" to 21" on the upstream side due to the curvature of the shortened inner radius of the elbow. Scanning was also performed across the weld to maximize achieved code coverage. No unacceptable indications were observed. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.

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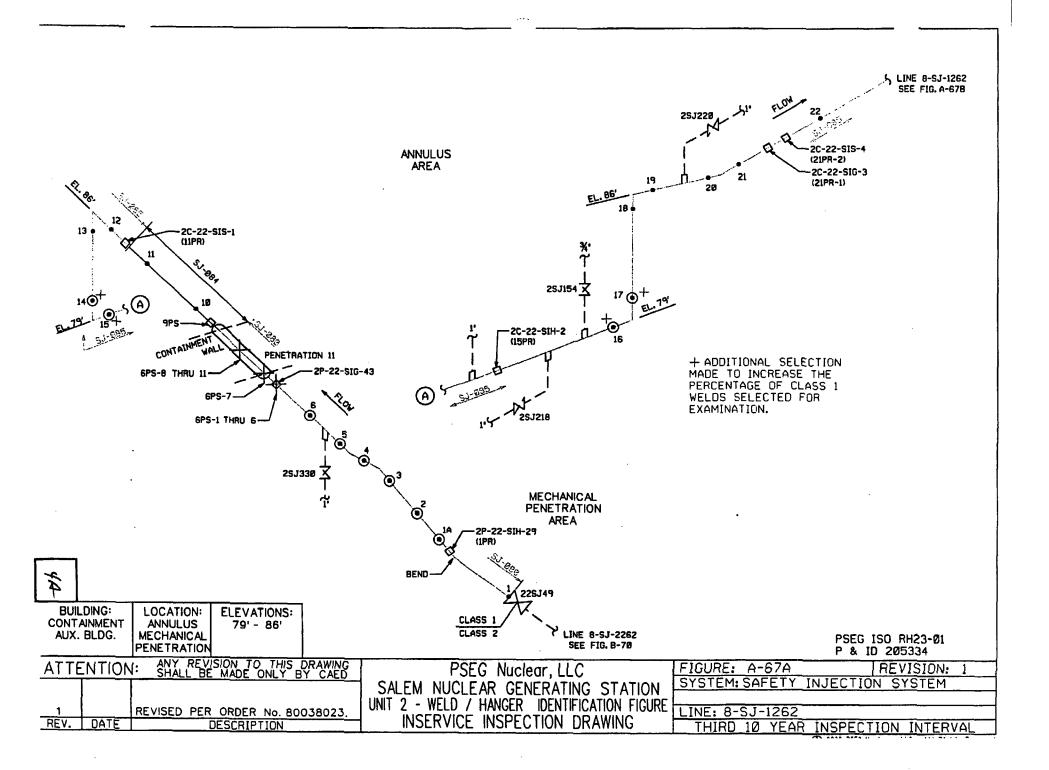
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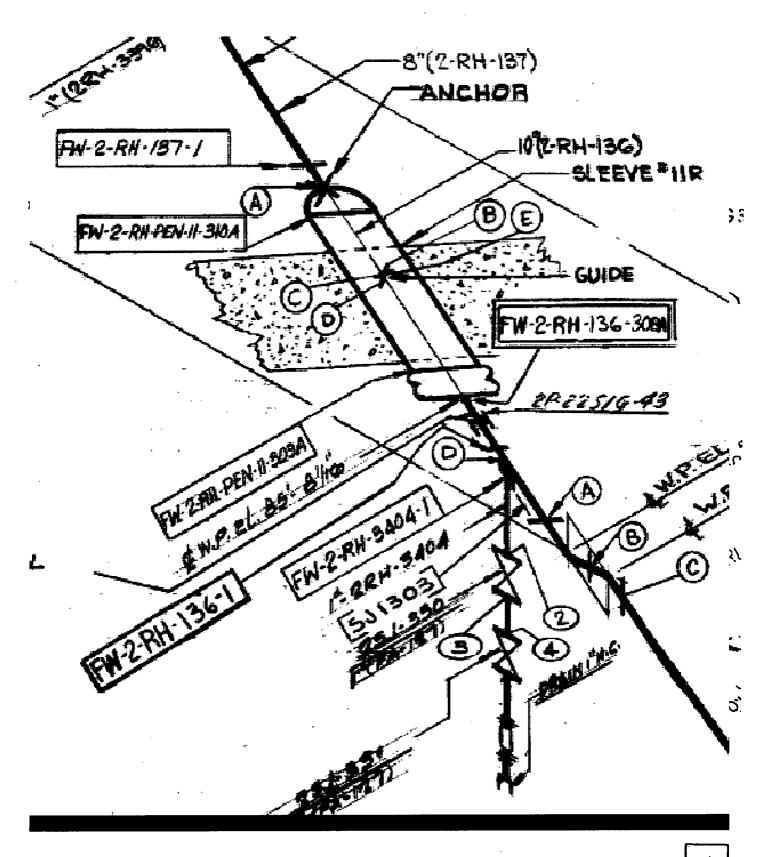


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166000



USER RESPONSIBLE FOR VERIFYING REVISION, STATUS AND CHANGES DWG RH23 001 10 PRINTED 20050111



# REQUEST FOR ADDITIONAL INFORMATION REQUEST FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR IN-SERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

QUESTION

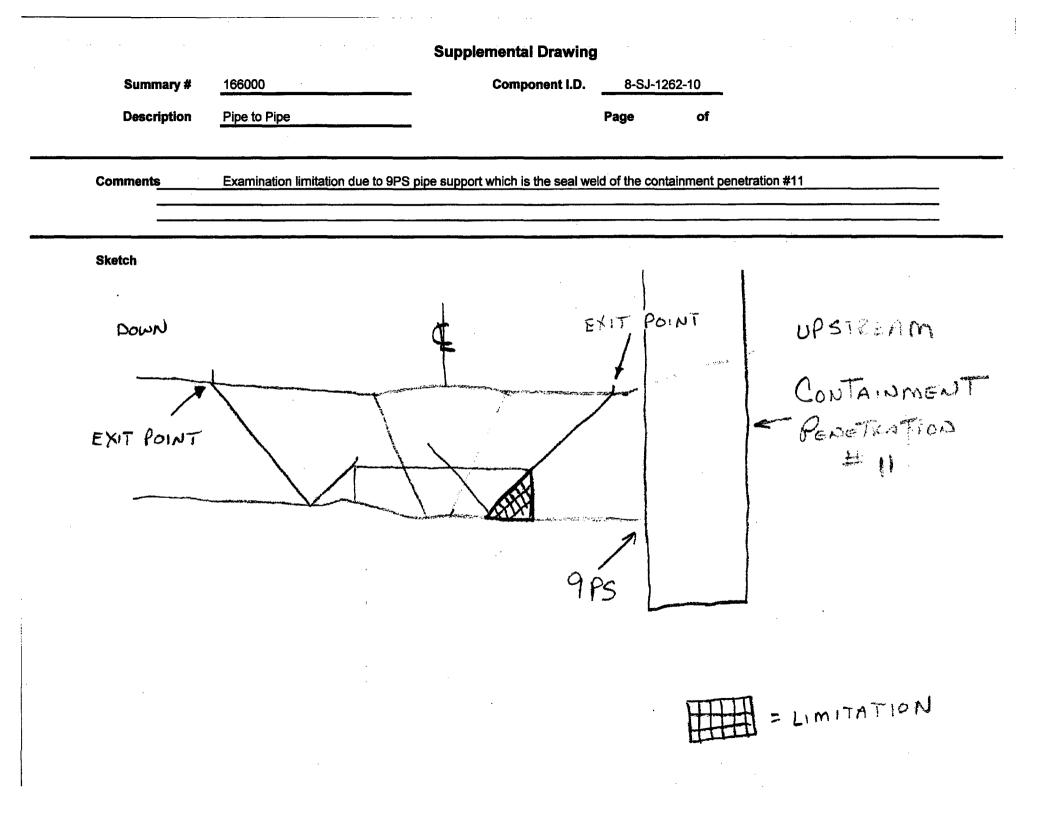
1.3 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

| Summary #      | 166000                           |                                   |
|----------------|----------------------------------|-----------------------------------|
| Component I.D. | 8-SJ-1262-10                     |                                   |
| Description    | Pipe to Pipe                     |                                   |
|                |                                  | Comments                          |
| 1              | Weld X-Section                   | See Attached                      |
| 2              | Material                         | Stainless Steel                   |
| 3              | Thickness / weld Crown           | Thickness 1.1" / Weld Crown 1.25" |
| 4              | Obstruction                      | Pipe Support                      |
| 5              | Exam Area Highlighted on Drawing | Yes X No                          |
| 6              | Transducer ray exit point        | See Attached                      |

#### Comments

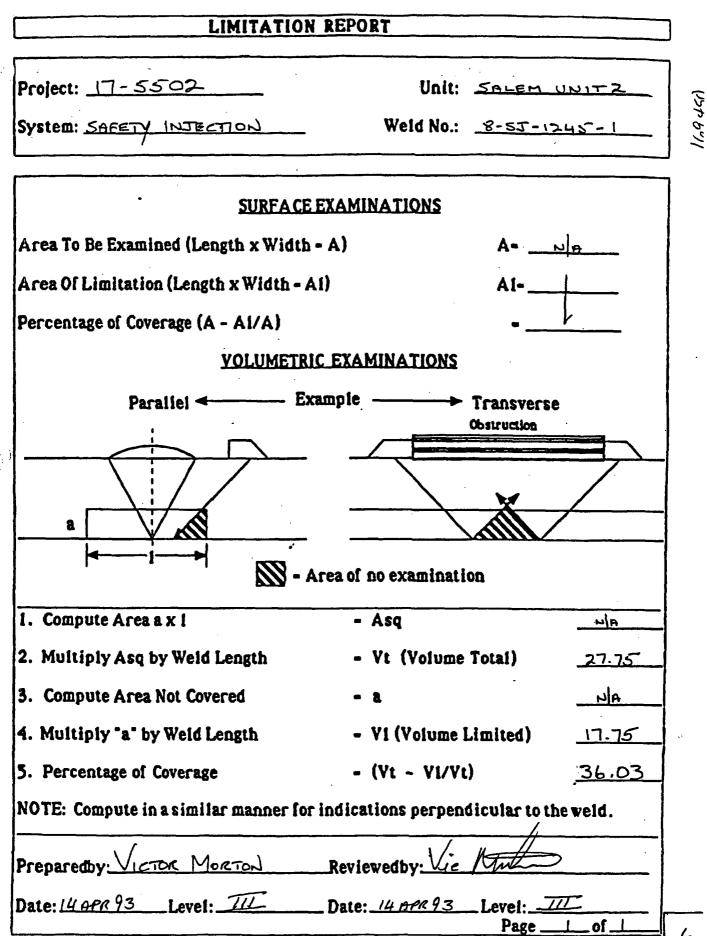
UT exam was performed of this component using 45 degree shear wave transducer. The ultrasonic examination completed was partially limited to 82% of the code required coverage being limited due to pipe support 9 PS. that restricted scanning to approx. 1 3/4" of the upstream side of the weld. No unacceptable indications were observed. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.

Page of



|                |                 |              |                                    |                                            |        | )<br>                                      |        |                         |                            | х.<br>Х          |            |
|----------------|-----------------|--------------|------------------------------------|--------------------------------------------|--------|--------------------------------------------|--------|-------------------------|----------------------------|------------------|------------|
| PROJECT NO:    | Sv              |              | ROFILE                             |                                            |        | KNESS I                                    |        | RMATION<br>TIME (24 HR. |                            | SHEET NO: OF T   |            |
|                | 17-5502         |              | ation, Unit 2                      |                                            |        | 3 APRIL                                    |        |                         | FINAL 1650                 | 1351             | <u>4</u> 3 |
| examiner<br>K. | KURTZ           | 2            | SNT LEVEL                          | THK. MEAS<br>BY PROCED<br>No. SA~<br>REV 2 | URE *  | INSTRUMENT:<br>SONIC MARK I<br>OTHER / 3 C | D<br>Ø | SERIAL NO:<br>8571      | COMPONENT                  | 10:<br>5 J - 124 | 15-        |
| examiner<br>F. | BRAU            | $\checkmark$ | SNT LEVEL                          | CHO O<br>ICN                               | 1917/A | COUPLANT:<br>GLYCERINE<br>OTHER (SPECIFY)  |        | WATER [<br>A GISC BATCH | REFERENCE                  | blk no:<br>5//3  |            |
| SEARC          | I UNITS         | V A          | LVE                                |                                            |        |                                            |        | A FL                    | 04/                        | TEE              | -          |
| BRAND          | SURI            |              |                                    |                                            |        | 0                                          |        |                         | _                          | - L-:            | 20         |
| SERIAL NO      | 4024            |              | -                                  |                                            |        | t                                          |        |                         |                            |                  |            |
| SIZE           | 14              |              |                                    |                                            |        |                                            |        | -                       |                            |                  |            |
| FREQ. (MHz)    | 2.15            |              |                                    |                                            |        |                                            |        |                         |                            |                  |            |
| INSTRUMEN      | r settings      |              |                                    |                                            |        |                                            |        |                         |                            |                  |            |
| SCREEN SIZE    | 2.5             |              |                                    |                                            |        |                                            |        | AHI LDEVI               |                            | PSEG             |            |
| DELAY          | .051            |              |                                    |                                            |        |                                            |        | INITIAL NOA             |                            | wed and Approved |            |
| MATL. CAL.     | . 224           |              |                                    |                                            |        |                                            | l      | DATE 4/15/9             | N.D                        | E SUPERVISOR     | •          |
| RANGE          | 2.5             | ,<br>NO R    | Ack wfl                            | ection                                     | for Th | hicKness Al                                | T oth  | ler Than cen            | Terlineof                  | weld.            |            |
| REP. RATE      | 4               | UNAL         | 3LE TO                             | DET                                        | ERM    | INE FO                                     | 15 (0  | N LINE                  | 57.2.                      |                  |            |
| JACK USED      |                 | <u>+ 152</u> | <u>55 -15.2</u><br>Search Unit chi |                                            |        | <u> </u>                                   | %      | nodes, NAME:            |                            | SNT LEV          | EL:        |
| TRANS MODE     | N/A             | 0            | Search Unit ch                     |                                            |        |                                            |        | nodes. VICTE            | or Morton                  | J 111            | <br> <br>• |
| REVIEWED BY:   | Lic Nut         | È.           |                                    | SNT LEV                                    | EL:    | Z                                          |        | DATE:                   | 4 APR 93                   |                  |            |
| SWRI FORM No.  | NDTR 17-135 (RE | V. 6/901     |                                    |                                            |        |                                            |        |                         | أتريبي والمعملان الاستخدار |                  |            |

<sup>169450</sup> 



# REQUEST FOR ADDITIONAL INFORMATION REQUEST FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR IN-SERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

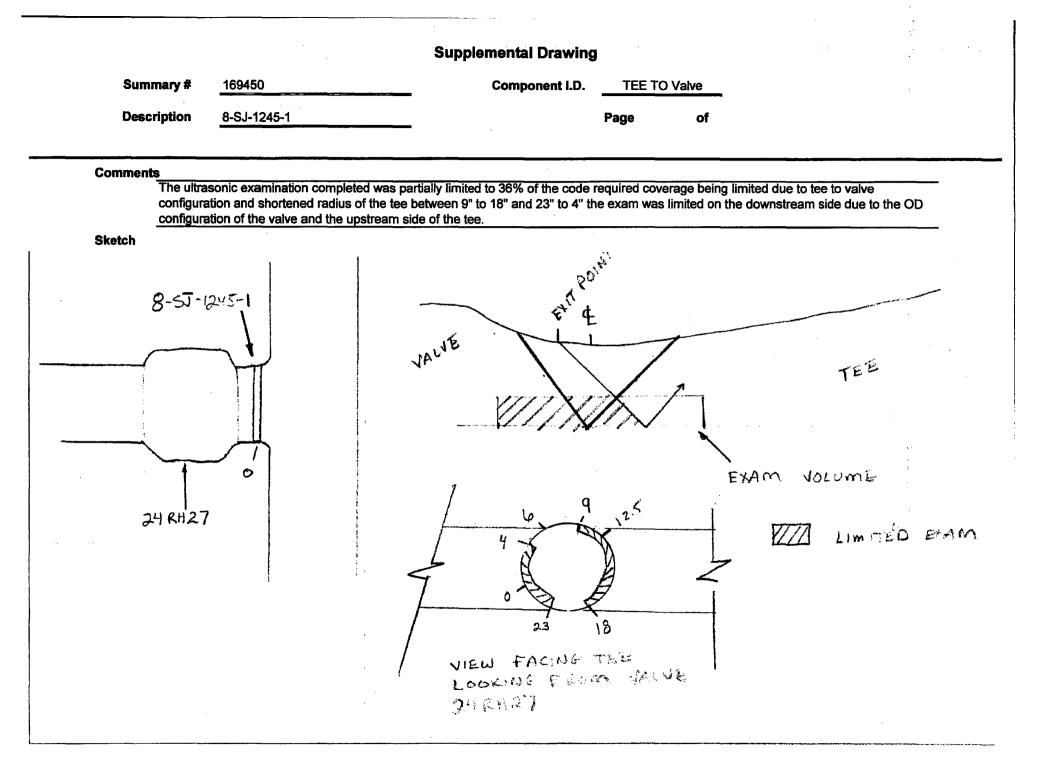
QUESTION 1.3 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

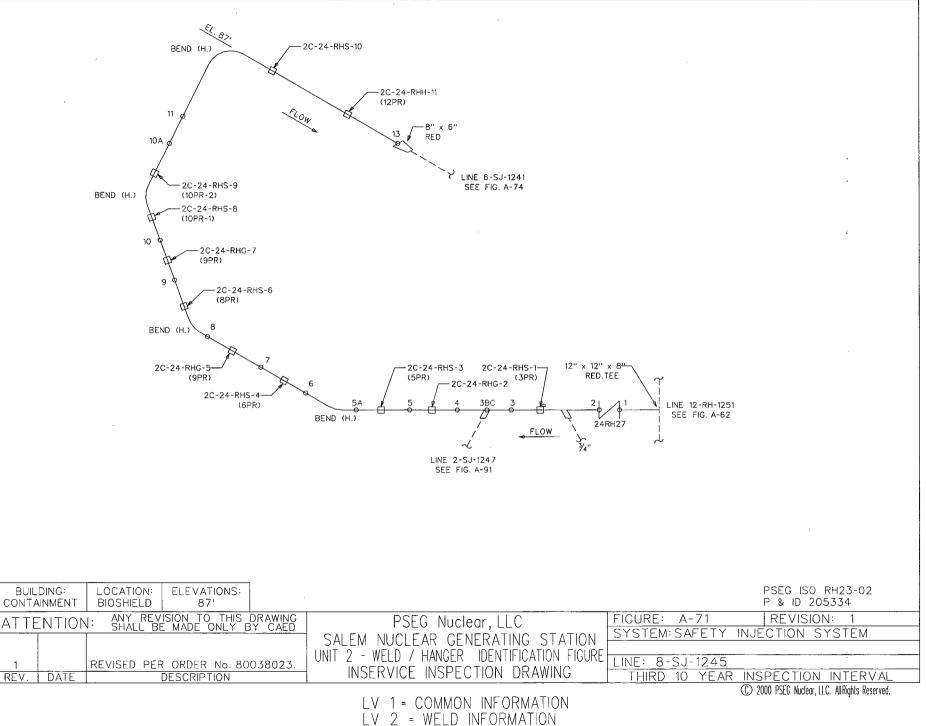
| Summary #      | 169450                           |                                 |
|----------------|----------------------------------|---------------------------------|
| Component I.D. | 8-SJ-1245-1                      |                                 |
| Description    | Tee to Valve                     |                                 |
|                |                                  | Comments                        |
| 1              | Weld X-Section                   | See Attached                    |
| 2              | Material                         | Stainless Steel                 |
| 3              | Thickness / weld Crown           | Thickness .9" / Weld Crown 1.5" |
| 4              | Obstruction                      | Valve to Tee Configuration      |
| 5              | Exam Area Highlighted on Drawing | Yes X No                        |
| 6              | Transducer ray exit point        | See Attached                    |

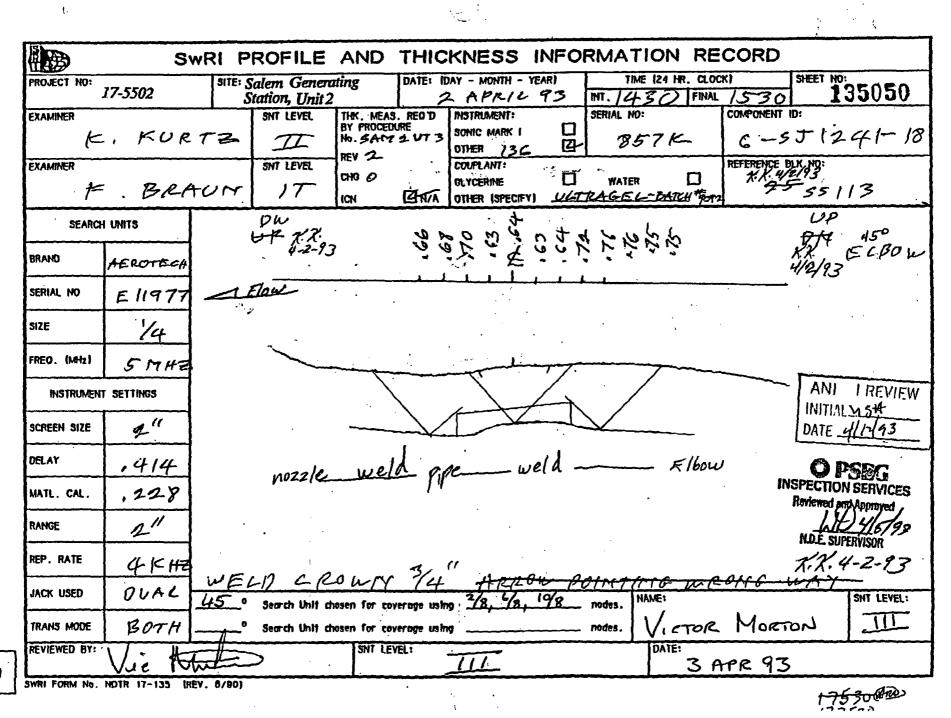
#### Comments

UT exam was performed of this component using 45 degree shear wave transducer. The ultrasonic examination completed was partially limited to 36% of the code required coverage being limited due to tee to valve configuration and shortened radius of the tee between 9" to 18" and 23" to 4" the exam was limited on the downstream side due to the OD configuration of the valve and the upstream side of the tee.. No unacceptable indications were observed. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.

> of Page







| LINE $\theta$ -SJ-1245<br>SEE FIG. A-71<br>B' x 6'<br>RED.                                                                          | $2C-24-RH4-12$ $2C-24-RH9-14$ $2C-24-RH9-14A$ $2C-24-RH9-14A$ $1^{1}$ $2C-24-RH9-14A$ $1^{2}$ $2C-24-RH9-15$ $1^{2}$ $2C-24-RH9-14A$ $1^{2}$ $1^{2}$ $2C-24-RH9-14A$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ $1^{2}$ |
|-------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BUILDING: LOCATION: ELEVATIONS:<br>CONTAINMENT BIOSHIELD 87'- 99'                                                                   | PSEG ISO RH23-02<br>P & ID 205301, 205334                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| ATTENTION: ANY REVISION TO THIS DRAWING<br>SHALL BE MADE ONLY BY CAED<br>1 REVISED PER ORDER No. 80038023.<br>REV. DATE DESCRIPTION | PSEG Nuclear, LLC<br>SALEM NUCLEAR GENERATING STATION<br>UNIT 2 - WELD / HANGER IDENTIFICATION FIGURE<br>INSERVICE INSPECTION DRAWING<br>INSERVICE INSPECTION DRAWING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

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# REQUEST FOR ADDITIONAL INFORMATION REQUEST FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR IN-SERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

QUESTION

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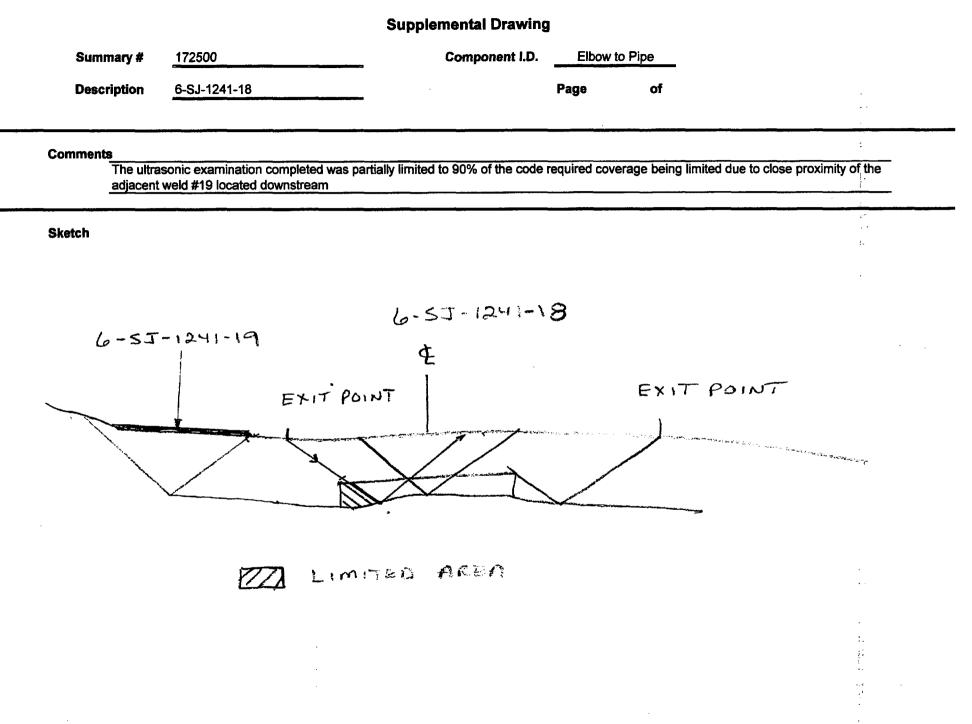
| Summary #      | 172500                           |                                  |
|----------------|----------------------------------|----------------------------------|
| Component I.D. | 6-SJ-1241-18                     |                                  |
| Description    | Elbow to Pipe                    |                                  |
|                |                                  | Comments                         |
| 1              | Weld X-Section                   | See Attached                     |
| 2              | Material                         | Stainless Steel                  |
| 3              | Thickness / weld Crown           | Thickness .63" / Weld Crown .75" |
| 4              | Obstruction                      | Adjacent Weld Joint              |
| 5              | Exam Area Highlighted on Drawing | Yes X No                         |
| 6              | Transducer ray exit point        | See Attached                     |

#### Comments

UT exam was performed of this component using 45 degree shear wave transducer. The ultrasonic examination completed was partially limited to 90% of the code required coverage being limited due to close proximity of the adjacent weld #19 located downstream. No unacceptable indications were observed. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.

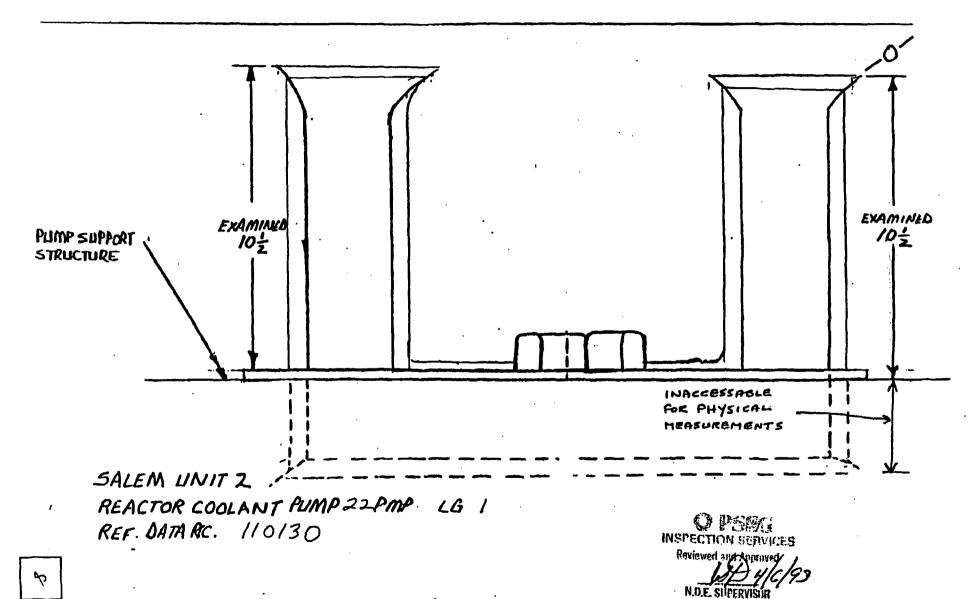
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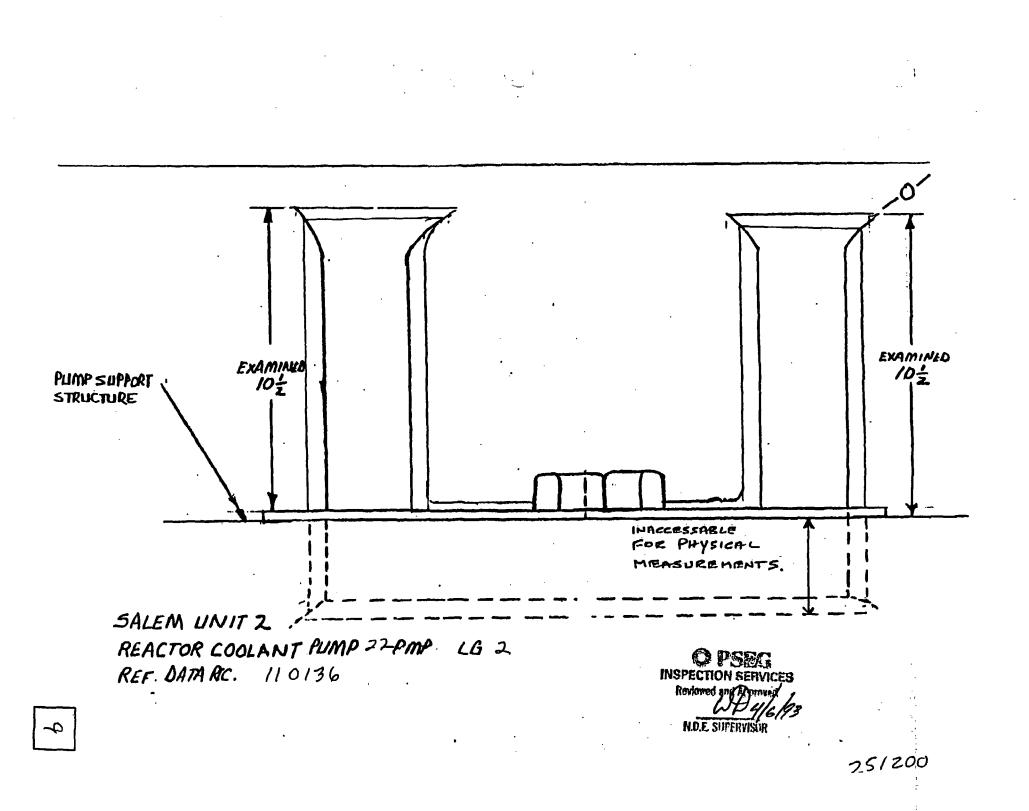
of



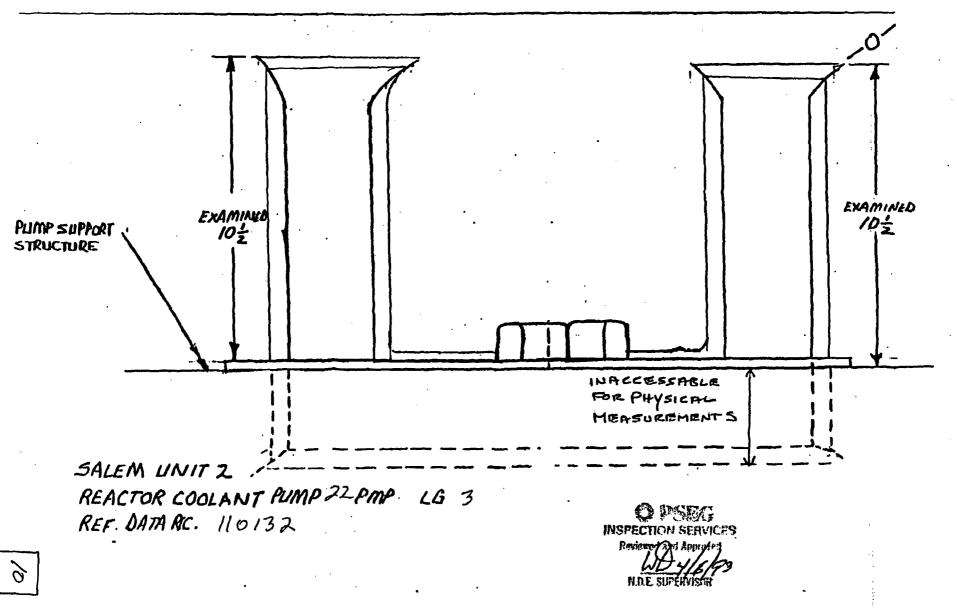
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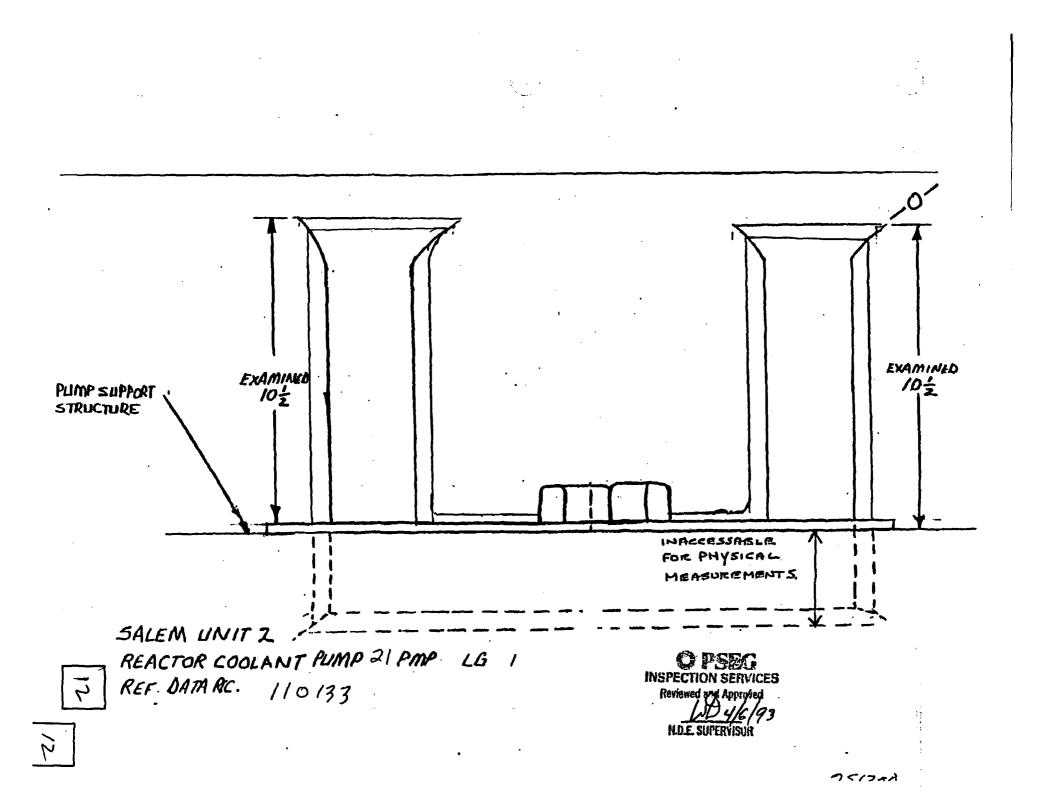


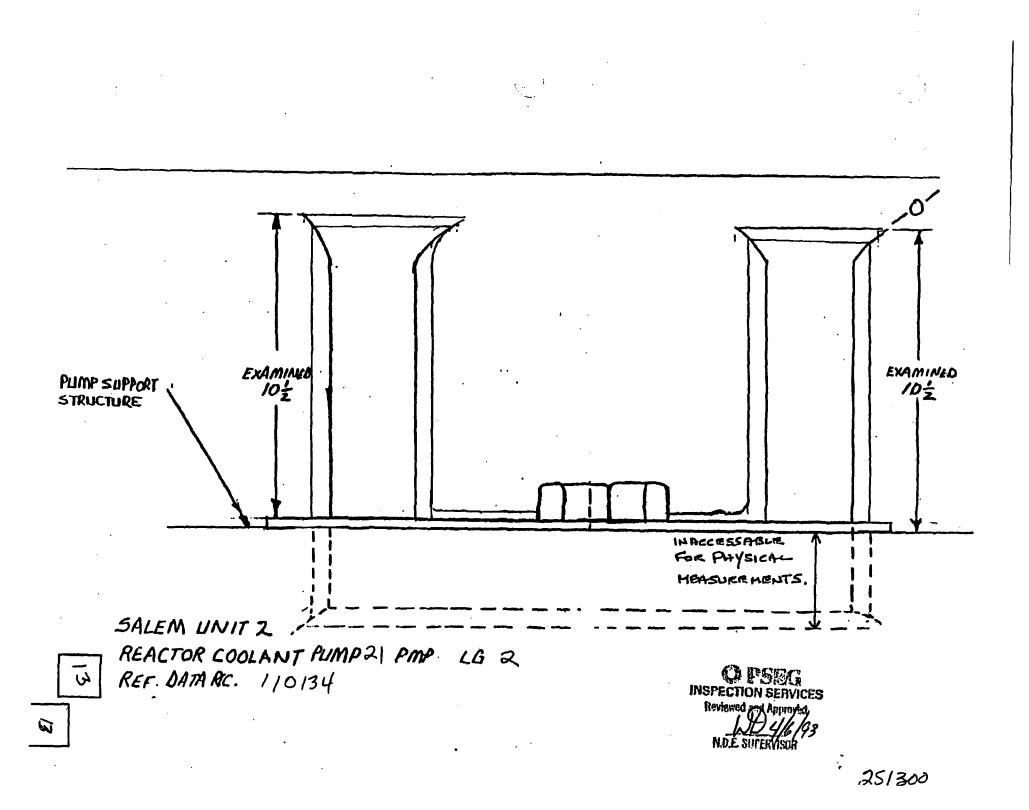


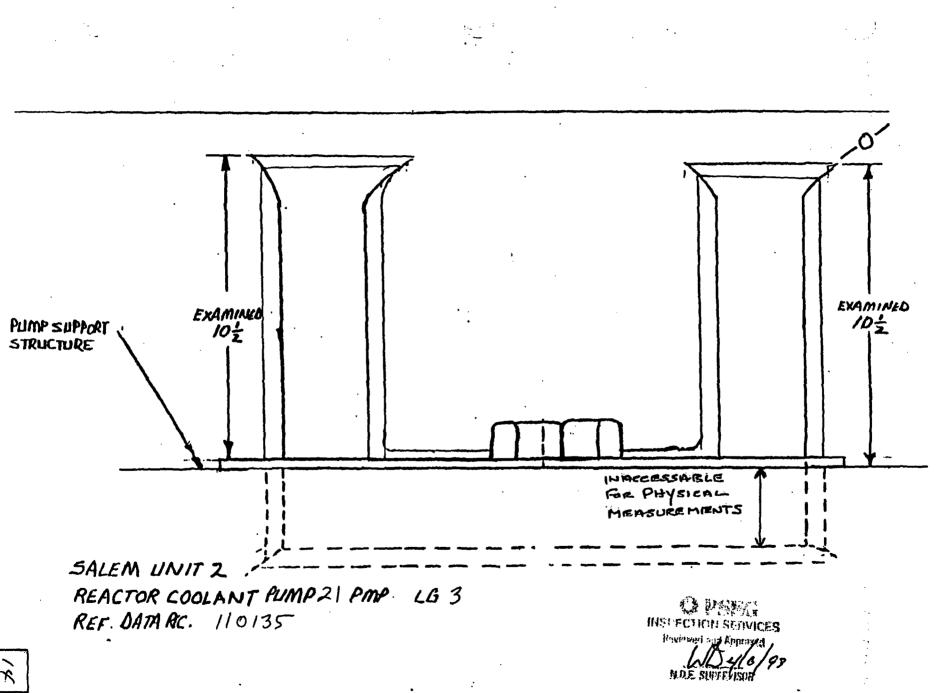
## LIMITATION REPORT

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| Project: 17-5502                       | Unit: SALEM UNIT 2.                                  |
|----------------------------------------|------------------------------------------------------|
| System: REACTOR COOLANT PUMP           | Weld No .: 22-Pmp-Lugs 1,2+3                         |
| SURFACE                                | EXAMINATIONS                                         |
| Area To Be Examined (Length x Width    | - A) A- SEE SKETCH                                   |
| Area Of Limitation (Length x Width - A | .i) Al- <u>«</u> "                                   |
| Percentage of Coverage (A - A1/A)      | - <u>≈67</u>                                         |
| VOLUMETRI                              | C EXAMINATIONS                                       |
|                                        | area of no examination                               |
| 1. Compute Area a x 1                  | - Asq <u>NA</u>                                      |
| 2. Multiply Asq by Weld Length         | - Vt (Volume Total)                                  |
| 3. Compute Area Not Covered            | - a                                                  |
| 4. Multiply "a" by Weld Length         | - V1 (Volume Limited)                                |
| 5. Percentage of Coverage              | - (Vt - V1/Vt)                                       |
| NOTE: Compute in a similar manner for  | indications perpendicular to the weld.               |
| Preparedby: VICTOR MORTON              |                                                      |
| Date: 6 MPR 93_Level: III              | _ Date: <u>6 APR 93</u> Level: <u>III</u><br>Page of |
|                                        | rage ui                                              |

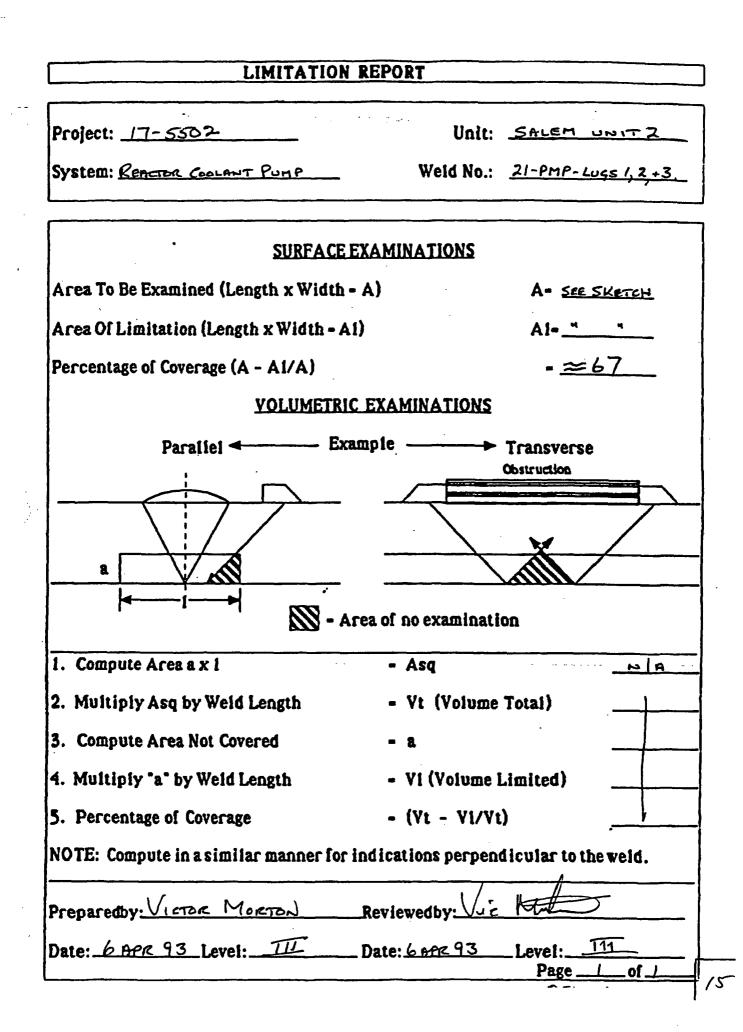






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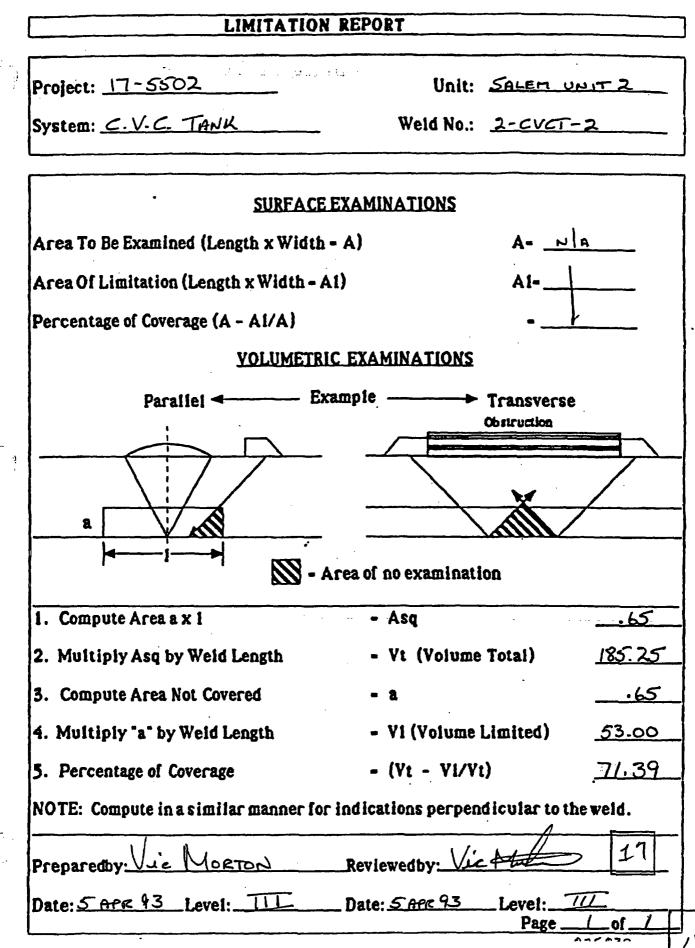
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| PROJECT NO:                                                                                                                     |                                                    | SITE: S | alem Genen                                    | ating                      |                                           | DAY - MONTH - YE          |          | TIME                   | 24 HR. CLO                    | <u>*)</u> | SHEET NO135066                                                        |
|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|---------|-----------------------------------------------|----------------------------|-------------------------------------------|---------------------------|----------|------------------------|-------------------------------|-----------|-----------------------------------------------------------------------|
|                                                                                                                                 | 17-5502                                            |         | station, Unit 2                               | ?                          |                                           | DJ APR 9                  | 3        | INT. 1410              | ) FINAL                       | 1420      |                                                                       |
| examiner                                                                                                                        |                                                    |         | SNT LEVEL                                     | THK. MEAS                  |                                           | INSTRUMENT:               | п        | SERIAL NO:             |                               | COMPONENT | •                                                                     |
| L.V/1                                                                                                                           | LA                                                 |         | I                                             | No. SAMO                   | -0749                                     | SONIC MARK I<br>OTHER 136 |          | 855)                   | <                             | CVC       | 2 - CVCT - 2                                                          |
| EXAMINER                                                                                                                        | ·····                                              |         | SNT LEVEL                                     | REV O                      |                                           | COUPLANT:                 |          |                        |                               | REFERENCE | BLK NO:                                                               |
| M.Co                                                                                                                            | TTEN                                               |         | IT                                            | CH0O                       | 57                                        | GLYCERINE                 |          | WATER                  | Ű D                           | SS DC     | - 43                                                                  |
| · · · · · · · · · · · · · · · · · · ·                                                                                           |                                                    |         |                                               | ICN *                      | X N/A                                     | OTHER (SPECIFY)           | ULT      | RABEL #                | <u></u>                       |           | •                                                                     |
| SEARCI                                                                                                                          | H UNITS                                            | ¥ B/3TC | CH 9092                                       |                            |                                           |                           |          |                        |                               |           |                                                                       |
| BRAND                                                                                                                           | ква<br>Вамма                                       |         |                                               | •                          | •37                                       | ·37                       | 8¢.      | 8 5 C                  |                               |           |                                                                       |
| SERIAL NO                                                                                                                       | C30257                                             |         |                                               |                            | ·                                         | -4                        |          |                        |                               |           |                                                                       |
| SIZE                                                                                                                            | 1/4'                                               |         | -                                             |                            | LLOW<br>HE                                | ER<br>7D                  | SHE      |                        |                               | ~         |                                                                       |
|                                                                                                                                 | 1                                                  |         |                                               |                            |                                           |                           |          |                        |                               |           |                                                                       |
| REO. (MHz)                                                                                                                      | 2.25                                               | •       |                                               |                            |                                           |                           |          |                        |                               |           |                                                                       |
|                                                                                                                                 | 2-25                                               | •       |                                               |                            |                                           |                           | <b>X</b> |                        |                               |           |                                                                       |
| INSTRUMEN                                                                                                                       |                                                    | •       |                                               |                            |                                           | · · · ·                   | X        |                        |                               |           |                                                                       |
| INSTRUMEN                                                                                                                       | IT SETTINGS                                        |         |                                               |                            |                                           |                           | ¥        |                        |                               |           | O PSEC                                                                |
| INSTRUMEN<br>SCREEN SIZE<br>DELAY                                                                                               | T SETTINGS                                         | •       |                                               |                            |                                           |                           |          | ANI                    | I REVIEL                      |           | O PSEG                                                                |
| INSTRUMEN<br>SCREEN SIZE<br>DELAY<br>MATL. CAL.                                                                                 | 17 SETTINGS<br>/"<br>0-770                         |         | •                                             |                            |                                           |                           |          | ANI<br>INITIAL<br>DATE | I REVIEL                      |           | Viewed 275 Approved                                                   |
| INSTRUMEN<br>SCREEN SIZE<br>DELAY<br>MATL. CAL.<br>RANGE                                                                        | 17 SETTINGS<br>/"<br>0-770                         |         | ATION TAK                                     |                            |                                           |                           |          | INITIAL                | 1 REVIEN<br>2 579<br>4 10- 13 |           | ECTION SERVICES                                                       |
| INSTRUMEN<br>SCREEN SIZE<br>DELAY<br>MATL. CAL.<br>RANGE<br>REP. RATE                                                           | 1 SETTINGS<br>/''<br>0- 770<br>0- 181<br>/         |         | ATION TAK<br><u>3 VS2-SS</u><br>Search Unit d | - <i>IS</i> , Z            | <u>z -00</u>                              | 11. 91 17/                | 148      | INITIAL                | 4 57A<br>4 12-53              |           | VIEWED 275 Approved                                                   |
| RED. (MHz)<br>INSTRUMEN<br>SCREEN SIZE<br>DELAY<br>MATL. CAL.<br>RANGE<br>REP. RATE<br>JACK USED<br>IRANS MODE<br>REVIEWED BY 1 | 1 SETTINGS<br>/''<br>0- 370<br>0-181<br>/<br>4 KHZ | *PSE+   | 9 VS2-55                                      | - <u></u><br>Hosen for cov | <u>z -0 o</u><br>erage usin<br>erage usin | 9 4/8 8/8, 12/            | 2,148    | INITIAL<br>DATE        | 4/12-13                       |           | PECTION SERVICES<br>viewed 27 Approved<br>246 93<br>I.D.E. SUPERVISOR |

SWRI FORM No. NDTR 17-135 (REV. 6/90)



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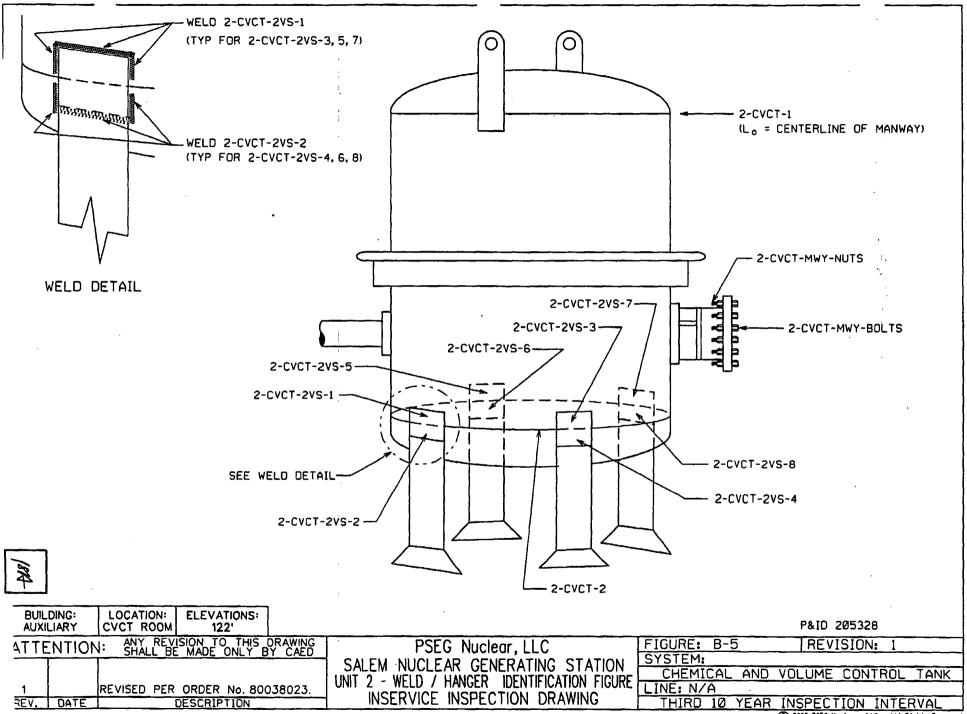
| PROJECT No:                           | 17-5502       | SIT              | Salem Ger<br>Unil                | terating Station           | η,                                |                        | month - year)<br>P18, 93 | W. LOCATION   | 1<br>: L.D                                | SHEET Nº 11008                         | 30          |
|---------------------------------------|---------------|------------------|----------------------------------|----------------------------|-----------------------------------|------------------------|--------------------------|---------------|-------------------------------------------|----------------------------------------|-------------|
|                                       | REA (SYST/COM | P) (LIN          | E/SUBASSEMBLY                    |                            |                                   | IDENTIFICATION         |                          |               |                                           | WELD TYPE: (FLO                        |             |
| EXAMINER                              | TANK          | SNT              | LEVEL PROCEDUR                   | - 2 VS                     |                                   | SURFACE TEM            | P *F PENETRAI            | IT TEMP "F    | THERMOMETER S                             |                                        | •           |
|                                       |               | SNT              | LEVEL CHG 1                      | \$S-15. 22-                | -0075                             | 7/ °<br>SURFACE FINISH |                          | 70            | SWRF /                                    | 93                                     |             |
|                                       | TTEN          | Ľ                |                                  |                            |                                   | AS W.                  |                          |               | 2,57                                      | L 40 12"                               |             |
| BRAND                                 |               |                  |                                  | ·                          | •                                 | REMOVER                |                          |               | DEVELOPER                                 |                                        |             |
| Түре                                  | SPOTC         |                  | BRAND                            | SPOTCHE                    |                                   | BRAND                  | SPOTCH                   |               | BRAND                                     | SPOTCHE                                | <u> 3 K</u> |
| BATCH No                              | SKC-N         |                  | BATCH No                         | SKL-HF                     |                                   | BATCH No               | SKC-1                    |               | TYPE<br>BATCH No                          | SKD-NF                                 | -           |
| CLEANING                              |               |                  | TIME APPLIED                     | 89K03                      | 1                                 | REMOVAL                | 9220                     |               | TIME APPLIED                              | 92 <u>A 01P</u><br>0945                |             |
| 192JOIK                               |               |                  | TIME REMOVED                     | 0930                       |                                   | COMPLETED              | COMPLETED U93            |               | TIME READ                                 | 0953                                   | <u></u>     |
| INDICATION<br>No                      | L             | w                | LOCATION<br>UP OR DOWN<br>STREAM | TYPE<br>ROUND OR<br>LINEAR | SIZE<br>DIAMETEI<br>LENGT         | R OR                   |                          | REMA          | 7K5                                       |                                        | INITI/      |
| · · · · · · · · · · · · · · · · · · · | NO RI         | CORDA            | BLE IN                           | DICATION                   |                                   |                        |                          |               | we                                        | 148                                    | 27          |
|                                       |               |                  |                                  |                            |                                   |                        |                          | min           | mile                                      | ······································ |             |
|                                       |               |                  |                                  |                            |                                   |                        | *                        |               | ¥                                         |                                        | 1           |
|                                       | [             |                  |                                  |                            |                                   |                        | Λ.                       | I             | - And |                                        |             |
|                                       |               |                  |                                  |                            |                                   |                        |                          |               |                                           | A                                      | 23          |
|                                       |               |                  |                                  | INSPECTION                 |                                   | S.                     | F0 1                     | B             |                                           | ON tast                                | 120         |
|                                       |               | INITIAL 2        | NEW<br>MA                        | Reviewed and               | Approved                          | :S                     | 10 1                     | B<br>m E<br>A | minim                                     | on tant                                |             |
|                                       |               | INITIAL          |                                  |                            | Approved                          | :S                     | 10 L                     | m E           | minie                                     | ON TANK                                |             |
|                                       |               | INITIAL_<br>DATE | 42A<br>[[11]53]                  | Reviewed and               | Approved<br><i>G</i> 53<br>RVISOR |                        | 10 L                     | M E A         | minine<br>Marine                          | lo tant                                | 73          |

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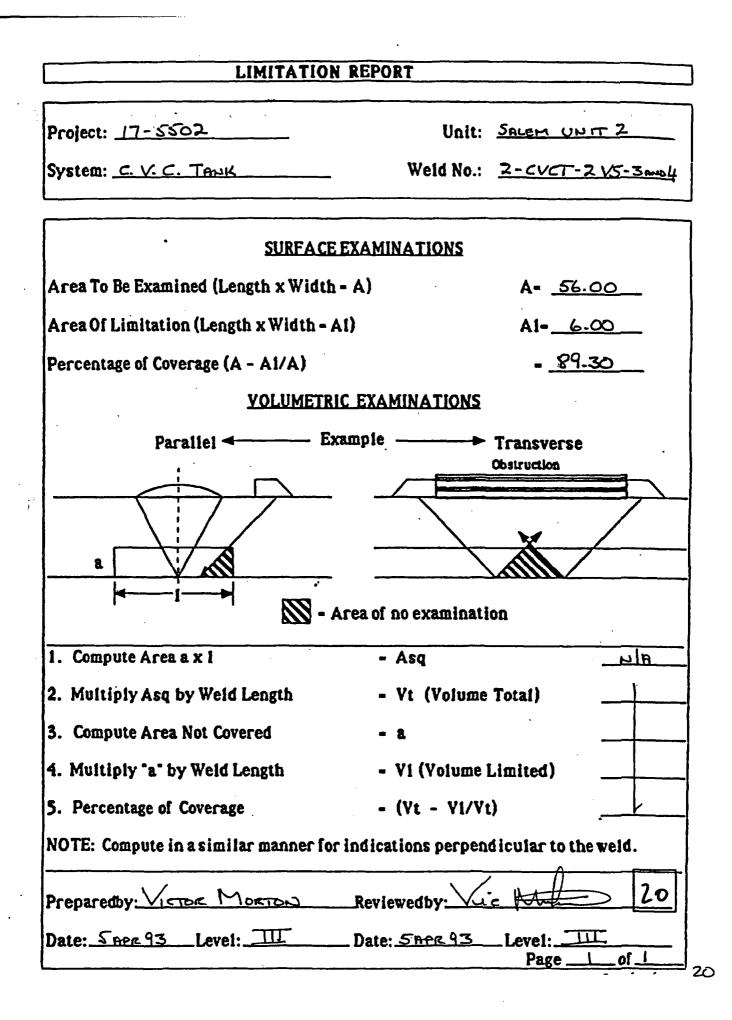
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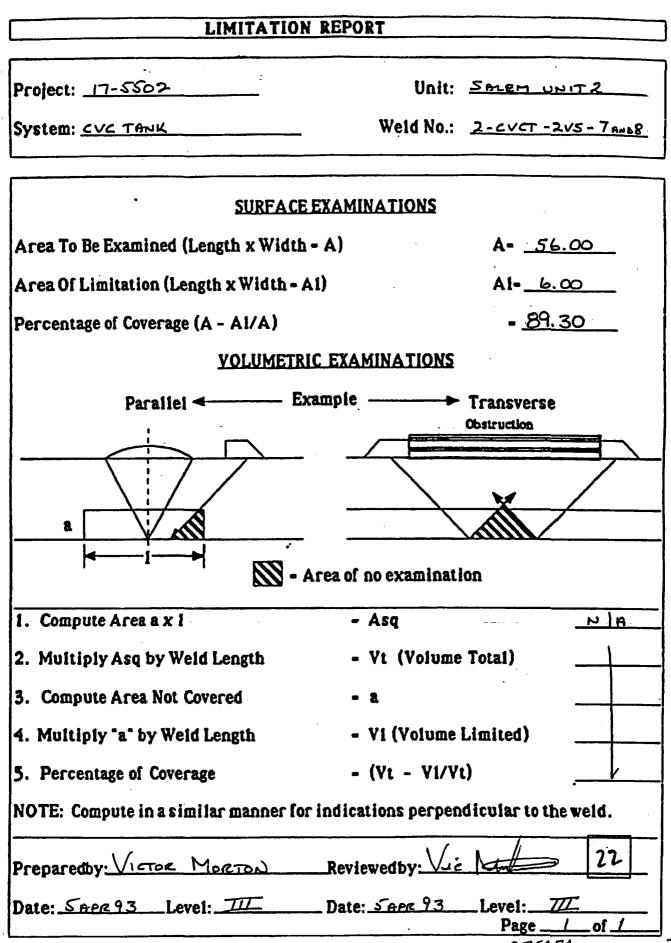
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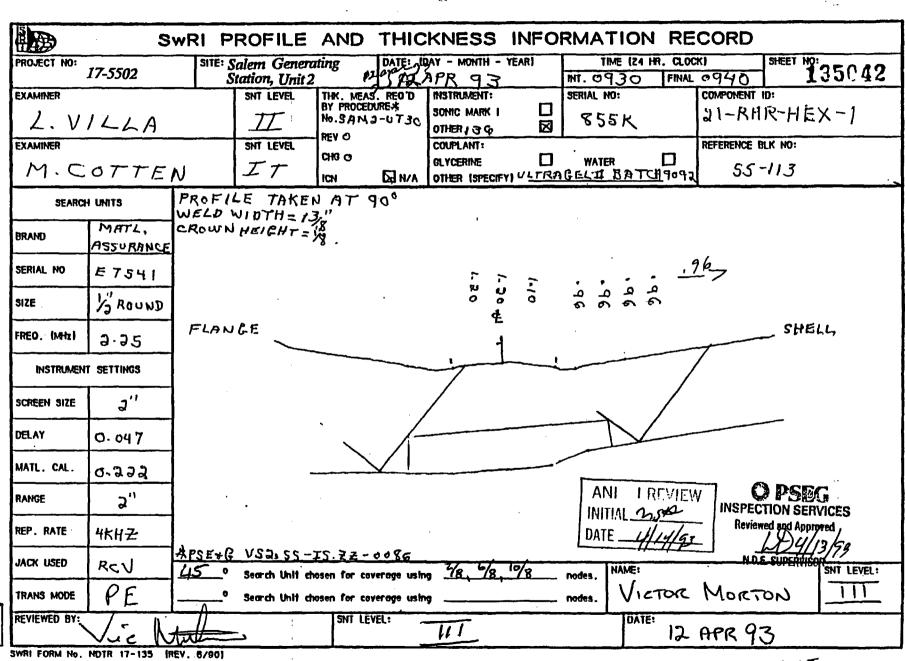
# LIMITATION REPORT

| Ĩ.  | Project: 17-5502 Unit: SALEN UNIT 2                                                   |
|-----|---------------------------------------------------------------------------------------|
|     | System: C.V.C. TANK Weld No.: 2-CVCT-2VS-land2                                        |
|     |                                                                                       |
|     | SURFACE EXAMINATIONS                                                                  |
|     | Area To Be Examined (Length x Width = A) A- <u>56.00</u>                              |
|     | Area Of Limitation (Length x Width - A1) A1- 6.00                                     |
|     | Percentage of Coverage (A - A1/A) = 89.30                                             |
|     | VOLUMETRIC EXAMINATIONS                                                               |
|     | Parallel                                                                              |
| . 2 |                                                                                       |
|     | - Area of no examination                                                              |
|     | 1. Compute Area a x 1 - Asq NIA                                                       |
|     | 2. Multiply Asq by Weld Length - Vt (Volume Total)                                    |
|     | 3. Compute Area Not Covered - a                                                       |
|     | 4. Multiply "a" by Weld Length - V1 (Volume Limited)                                  |
|     | 5. Percentage of Coverage - (Vt - V1/Vt)                                              |
|     | NOTE: Compute in a similar manner for indications perpendicular to the weld.          |
|     | Preparedby: VICTOR MORTON Reviewedby: Vic Kut 19                                      |
|     | Date: <u>SAPR93</u> Level: <u>III</u> Date: <u>SAPR93</u> Level: <u>III</u><br>Pageof |



## LIMITATION REPORT Project: 17-5502 Unit: SALEM UNIT 2 Weid No .: 2-CVCT-ZVS-SANG6 System: C.V.C. TANK SURFACE EXAMINATIONS Area To Be Examined (Length x Width - A) A- 56.00 Area Of Limitation (Length x Width - Al) AI- 6.00 Percentage of Coverage (A - A1/A) - 89.30 **VOLUMETRIC EXAMINATIONS** — Example – -> Transverse Parallel -Obstruction 1 8 N - Area of no examination 1. Compute Area a x 1 NA - Asa - Vt (Volume Total) 2. Multiply Asq by Weld Length 3. Compute Area Not Covered - V1 (Volume Limited) 4. Multiply "a" by Weld Length 5. Percentage of Coverage - (Yt - Yi/Yt)NOTE: Compute in a similar manner for indications perpendicular to the weld. 21 Preparedby VICTOR MORTON Reviewedby Date: 5 APR 93 Level: III Date: 5 APR 93 Level: III Page. of



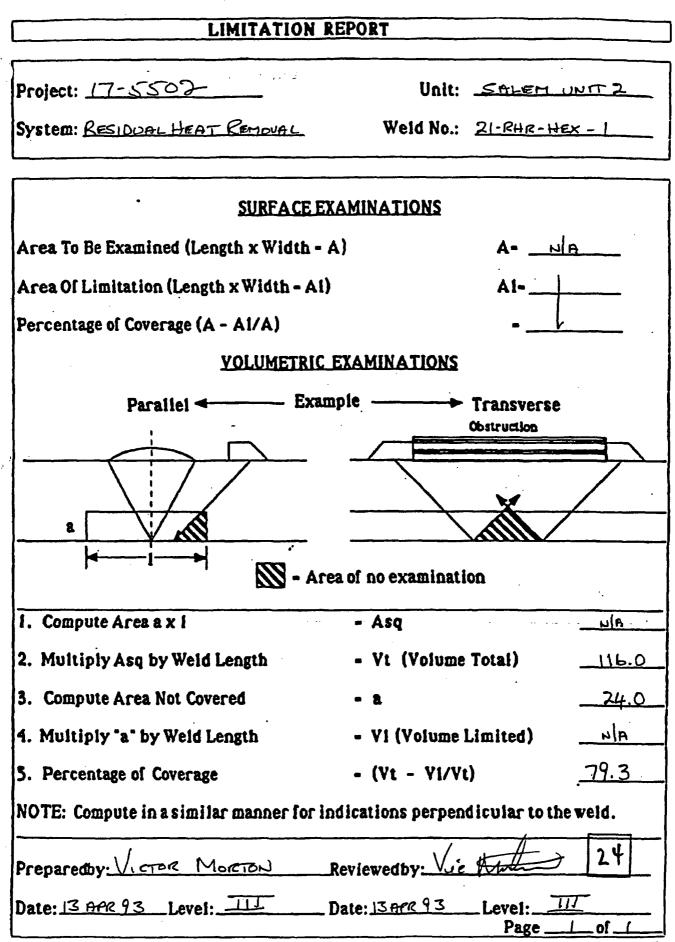


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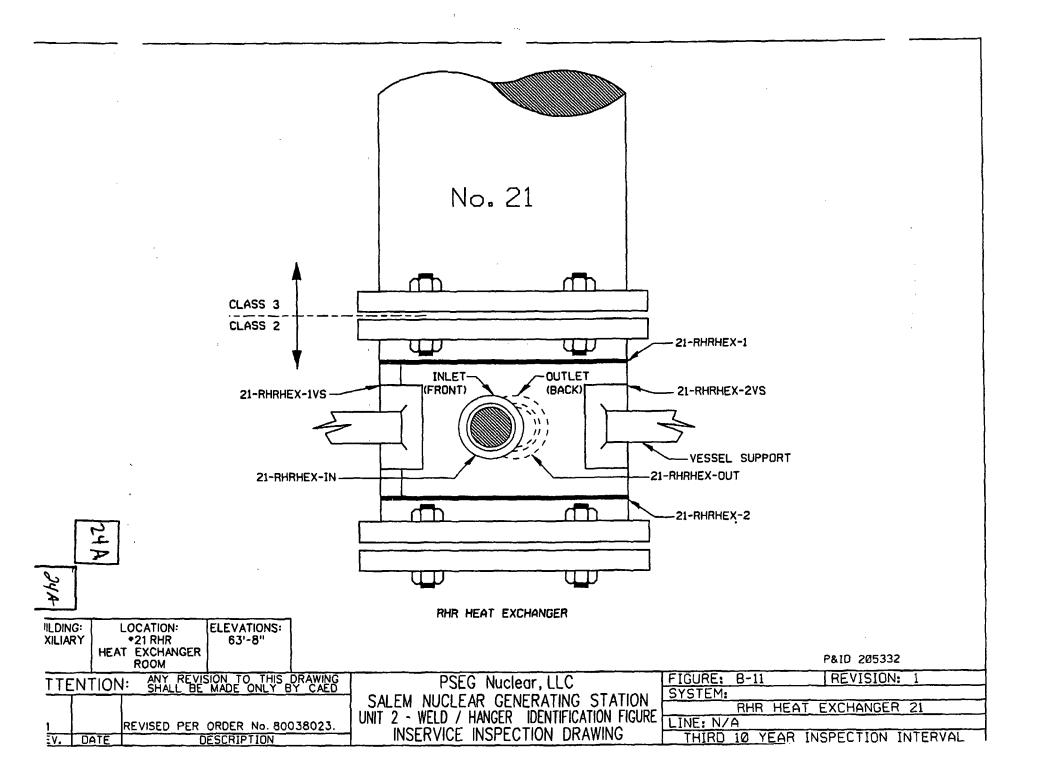
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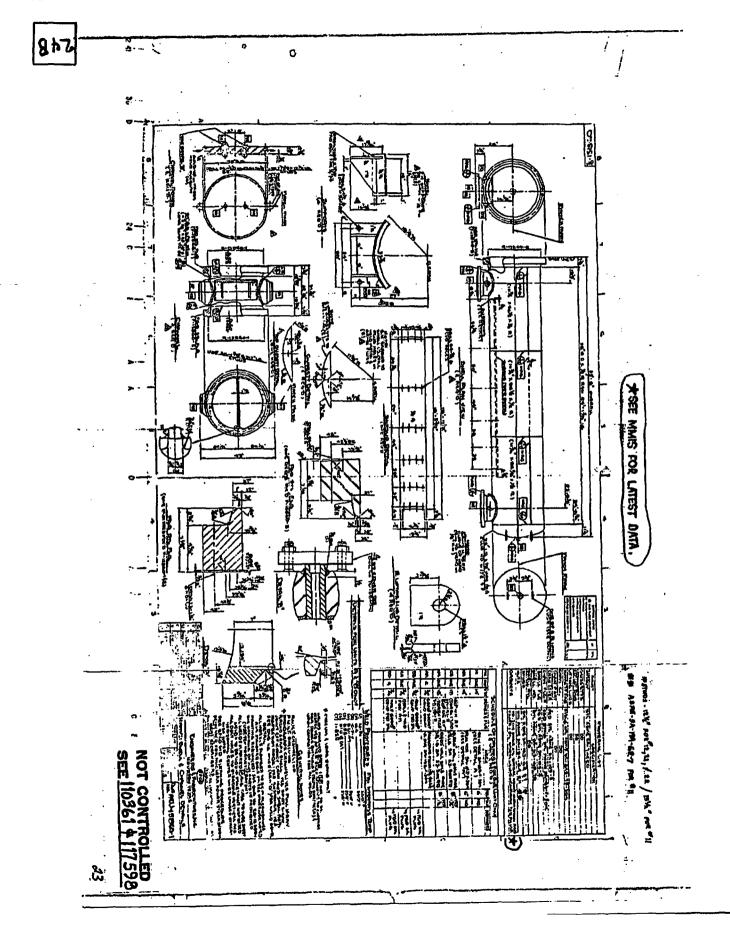
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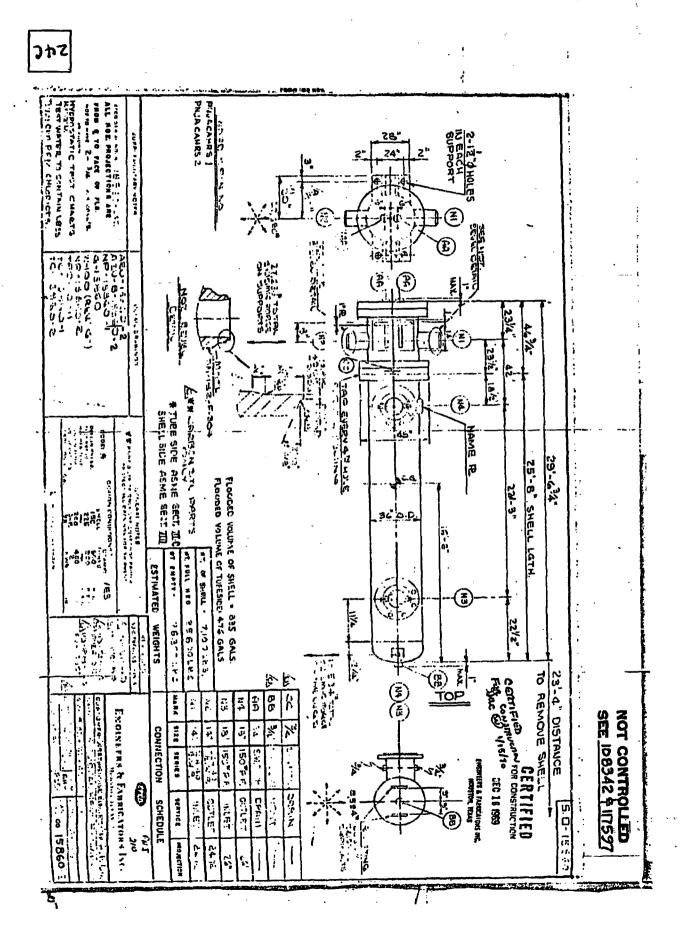


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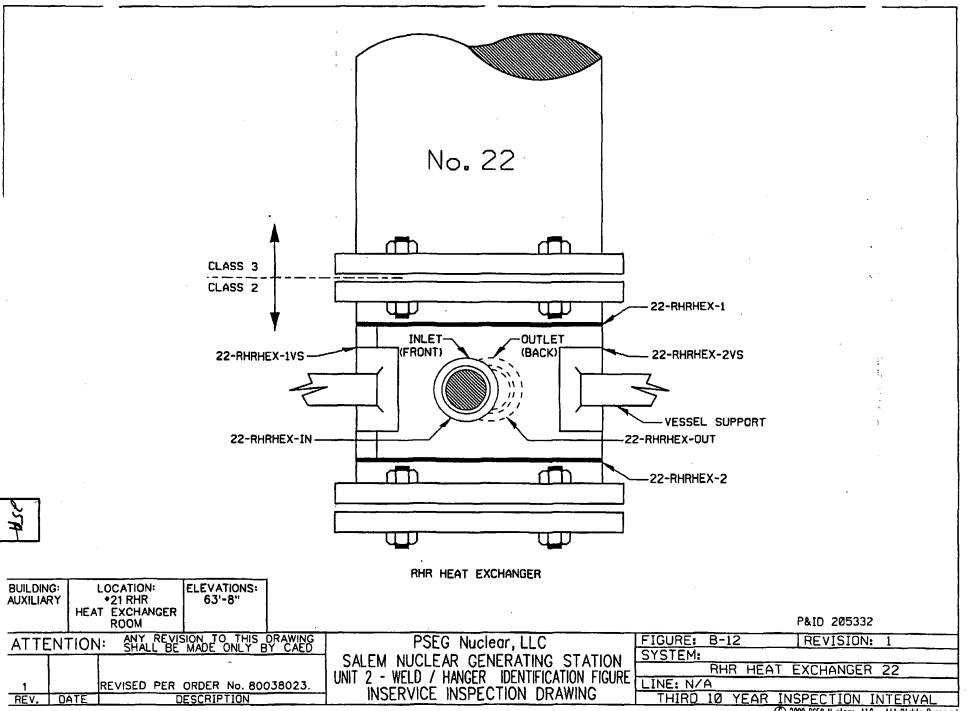
| · _<br>          |                    |                   |                                       |                                          |                    |                                           |               |               |                              |                    |              |            |
|------------------|--------------------|-------------------|---------------------------------------|------------------------------------------|--------------------|-------------------------------------------|---------------|---------------|------------------------------|--------------------|--------------|------------|
|                  | S                  | WRI PR            | OFILE                                 | AND T                                    | HIC                | KNESS I                                   | NFOR          | MAT           | ION RE                       | CORD               |              | -          |
| PROJECT NO:      | 17-5502            |                   | lem Genera<br>ttion, Unit 2           | ting C                                   | DATE: 10           | AY - MONTH - YE                           |               | TIN<br>NT. 00 | AE 124 HR. CLOC<br>335 FINAL | KI<br>0950         | SHEET NO     | 35043      |
| EXAMINER<br>L.V/ | LLA                |                   | SNT LEVEL                             | THK. MEAS.<br>BY PROCEDURI<br>No. SAM 3- | REOD<br>EX<br>UT30 | INSTRUMENT:<br>SONIC MARK I<br>OTHER / 了G | 5<br>10<br>13 | TERIAL NO     |                              | COMPONENT<br>21-RH |              | Ex-2       |
| EXAMINER<br>M.CO | TTEN               | 1                 | SNT LEVEL<br>Z                        | revo<br>Choio<br>ICN                     | N/A                | COUPLANT:<br>GLYCERINE<br>OTHER (SPECIFY) | 0<br>247.89 B | WATER         | С П<br>Батсн <u>т</u> ояд    | REFERENCE I        |              | -<br>-     |
| SEARC            | I UNITS            | PROFILE<br>WELD W | TAKEN                                 | AT 50"                                   |                    | ,<br>,                                    |               |               |                              |                    |              |            |
| BRAND            | MATL,<br>ASSURANCE | CROWN             | HEIRHT =                              | 8 n                                      |                    | 1. 80.1                                   | ج             | <u>م</u> ه    | ۹۴.<br>46                    | .96                |              |            |
| SERIAL NO        | E7541              | FLANGE            |                                       |                                          |                    | 6 94                                      |               | י<br>שוי      | 8) <u></u> ,                 |                    | SH           | ell,       |
| SIZE             | 13 ROUND           |                   |                                       |                                          | ·                  | -                                         |               |               |                              |                    |              |            |
| FREQ. (MHz)      | 2.25               |                   | •                                     |                                          |                    |                                           |               |               |                              |                    |              |            |
| INSTRUMENT       | I SETTINGS         |                   | •                                     |                                          |                    |                                           |               |               |                              |                    |              | · .        |
| SCREEN SIZE      | 2"                 |                   | :                                     |                                          |                    |                                           |               |               |                              |                    |              |            |
| DELAY            | 0.047              | ]                 |                                       |                                          |                    |                                           |               | <b>p</b>      |                              |                    | PSEA         | <b>*</b> ' |
| MATL. CAL.       | o- १२२             |                   |                                       |                                          |                    |                                           |               | ANI           | I REVIEW                     |                    | ed and Appro |            |
| RANGE            | ב'י                |                   |                                       |                                          |                    |                                           |               | DATE          |                              | LD.N               | SUPERVISO    | 243        |
| REP. RATE        | 4847               |                   |                                       |                                          |                    | r                                         |               |               |                              |                    |              | ,          |
| JACK USED        | REV                |                   | V.S.2.SS<br>Search Unit che           |                                          |                    |                                           | / <u>8</u> n  | odes.         | NAME:                        | ·                  |              | SNT LEVEL: |
| TRANS MODE       | PE                 |                   | Search Unit che                       | sen for cover                            | age usin           | •                                         | n             | odes.         | VICTOR N                     | YORTON             |              | III        |
| REVIEWED BY:     | lie No             |                   | · · · · · · · · · · · · · · · · · · · | SNT LEVEL                                | ٦                  | Ш                                         |               |               |                              | r 93               |              |            |
| ŞWRI FORM No.    | NDTR 17-135 (      | REV. 6/90)        | 1                                     |                                          |                    |                                           |               |               |                              | 275390             |              |            |

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|  |  | <b>\</b> 4   |  |

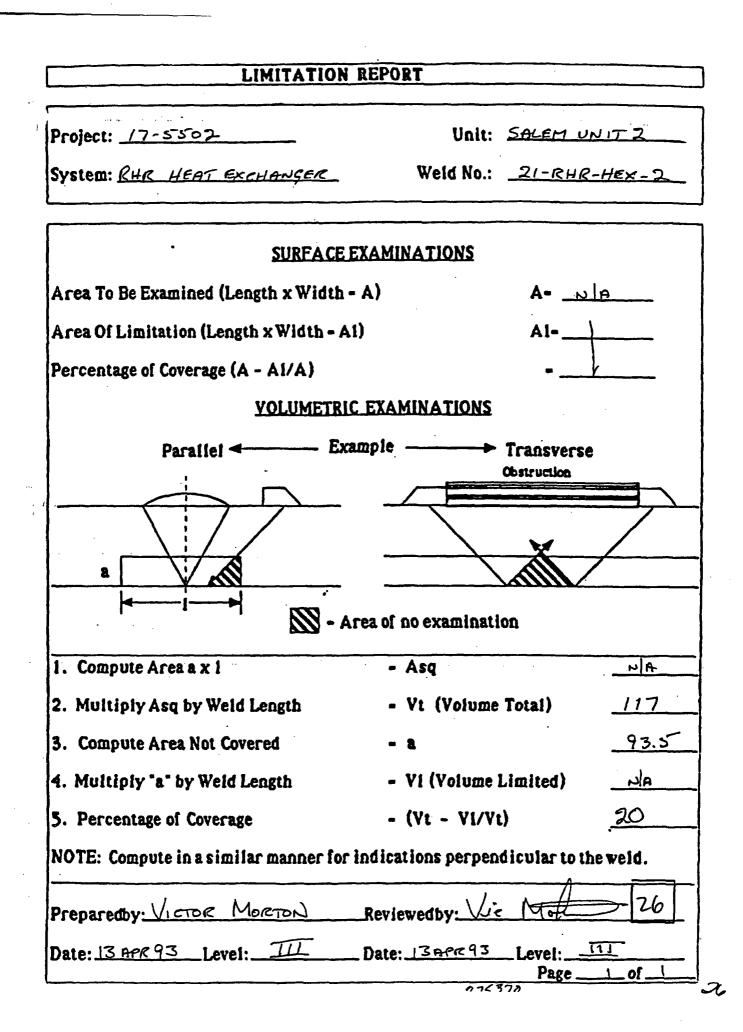
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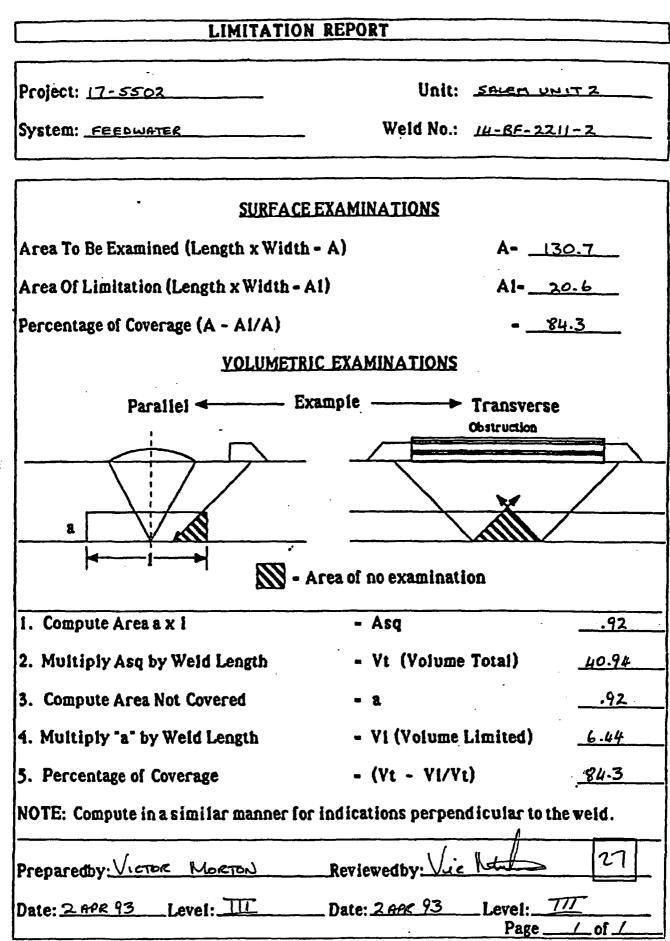
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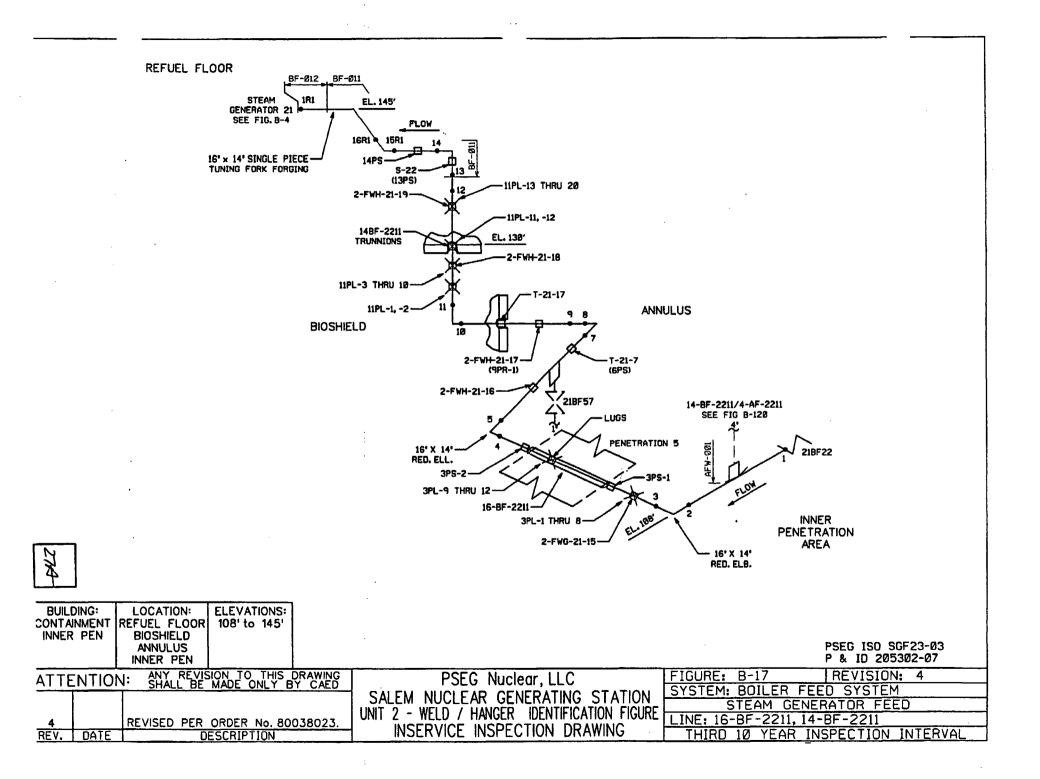
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### REQUEST FOR ADDITIONAL INFORMATION REQUEST FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR IN-SERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

QUESTION

2.1 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

| Summary #      | 330930                           |                                  |
|----------------|----------------------------------|----------------------------------|
| Component I.D. | 14-BF-2211-2                     |                                  |
| Description    | Pipe to Elbow                    |                                  |
|                |                                  | Comments                         |
| 1              | Weld X-Section                   | See Attached                     |
| 2              | Material                         | Carbon Steel                     |
| 3              | Thickness / weld Crown           | Thickness 1.1" / Weld Crown 1.5" |
| 4              | Obstruction                      | Restraining Lug                  |
| 5              | Exam Area Highlighted on Drawing | Yes X No                         |
| 6              | Transducer ray exit point        | See Attached                     |

#### Comments

UT exam was performed of this component using 45 degree shear wave transducer. The ultrasonic examination was limited to 84% of the code required coverage being limited due to permanently installed column support lug located immediately adjacent to the weld that interferes with scanning. No unacceptable indications were observed. A Magnetic Particle examination and system pressure test was also completed with no recordable indications observed.

Page

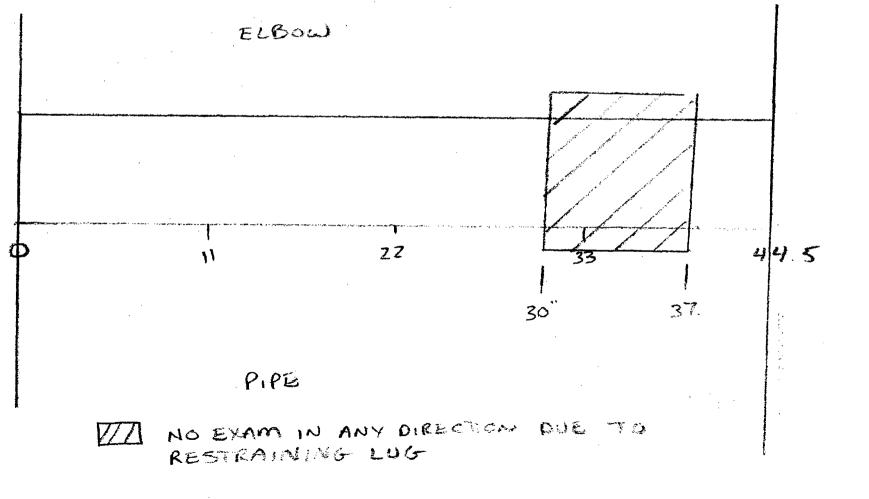
of

|             |               | Supplemental Drawing | 9            |    | <br>· · ·    |
|-------------|---------------|----------------------|--------------|----|--------------|
| Summary #   | 330930        | Component I.D.       | 14-BF-2211-2 | 2  | •            |
| Description | Pipe to Elbow |                      | Page         | of | *•<br>;<br>; |
|             |               |                      |              |    | к.<br>•.     |

#### Comments

UT exam was performed of this component using 45 degree shear wave transducer. The ultrasonic examination was limited to 84% of the code required coverage being limited due to permanently installed column support lug located immediately adjacent to the weld that interferes with scanning

#### Sketch



|      |                    |            |           |                   |                 | ·<br>···.                         |                |               |                 |                  | •               |            |                            |                         |                      |                             | · · · |                                       |          |          |                        |
|------|--------------------|------------|-----------|-------------------|-----------------|-----------------------------------|----------------|---------------|-----------------|------------------|-----------------|------------|----------------------------|-------------------------|----------------------|-----------------------------|-------|---------------------------------------|----------|----------|------------------------|
| ł    | •                  |            |           |                   | ·               | S                                 | wRI            | UL            | TR              | AS               |                 | CE         | EXÁN                       | <b>AINA</b>             | TION R               | ECOF                        | ۶D    |                                       |          |          | <u>nainn 1211</u>      |
| SOLE | CT No:             | 17-5       | 502       |                   | <u> </u>        | SITE:                             | Saler          | n Ger<br>Unit | nerati<br>t 2   | ng Sta           | tion,           |            |                            |                         | onth - year)<br>R 93 | TIME:<br>EXAM ST<br>EXAM EN | ARTED |                                       | SHEET N  | 860      | 0 <b>7</b> '           |
|      | NATION<br>ED U     |            |           | (COMP)            |                 | (LINE/SUBASSEMBLY)<br>14-BF ー ススパ |                |               |                 |                  |                 |            |                            | Lo LOCA                 |                      |                             |       | LOCATI                                |          |          |                        |
| L .  |                    | LLA        |           |                   |                 | SNT LE                            | VEL PF         | SAN           | 155 -<br>3 - 07 |                  | - 00            | 82         | CALIBRA<br>SHEETIS<br>1470 | TION<br>)               | ANGLE<br>USED        | 45 <sup>°</sup>             | N/    | WELD TYP                              | ELBOU    |          | (AM SI<br>TEMP<br>FORE |
|      | NER<br>CO          |            |           |                   |                 | SNT LE                            |                | 16 ò<br>N     |                 |                  | [               |            |                            |                         | SCANNING<br>dB       | 59-6                        | 7 A   | WELD LEN                              |          | 4        | 6                      |
| D    | XIOF<br>Dac<br>Max | W N<br>W   | MAX<br>MP | 20%<br>DAC        | L<br>50%<br>DAC | 1<br>100%<br>DAC                  | 1/2 MAJ<br>DAC | L<br>MAX      | 1/2 MAX<br>DAC  | L<br>100%<br>DAC | 2<br>50%<br>DAC | 20%<br>DAC | SEARCH<br>UNIT<br>LOC      | SEARCH<br>UNIT<br>ANGLE | DAMP:<br>(IF YES. E) | S<br>(PLAIN)                |       | REM                                   | IARKS    |          | 11                     |
| ,    | 56                 | 1/4        | 1.65      | -                 | 143,            |                                   |                | 141/4         |                 |                  | 145/            |            | DN                         | 45°                     | NO                   |                             |       |                                       |          | · · · ·  |                        |
|      | No                 | RE         | сор       | D/ <del>}</del> B | LF ,            | IND                               | ICA:           | TION          | s               |                  |                 |            | υP                         | <u>4 5</u> °            |                      | ·                           |       |                                       |          |          |                        |
|      |                    |            |           |                   |                 |                                   |                |               |                 |                  |                 |            |                            |                         |                      |                             |       | · · · · · · · · · · · · · · · · · · · |          |          | +                      |
|      |                    |            |           |                   |                 |                                   |                |               |                 |                  |                 |            |                            |                         |                      |                             |       |                                       | BCE      |          | ╉                      |
|      |                    |            |           |                   |                 |                                   |                |               |                 |                  |                 |            | · · ·                      |                         | INITIAL V            | TREVIE<br>154               | VI    | INSPECTIC<br>Reviewed                 | IN SERV  |          | ╧                      |
|      |                    |            |           |                   |                 |                                   |                |               |                 |                  |                 |            |                            |                         | DATE_4               | 12 93                       |       | NDES                                  | HD 4/9   | 193.     |                        |
|      |                    |            |           |                   |                 |                                   |                | ,             |                 |                  |                 |            |                            | /                       |                      |                             |       |                                       |          |          | ·                      |
| AAR  | KS / L             | IMITATI    | IONS.     | IF NON            | E SO :          | STATE:                            | No             | EXAI          | <u>Ч/ М/Э</u>   | <u> </u>         |                 |            | <u>30'' Tc</u>             | 37                      | DVE TO I             | <u>KESTRAI</u>              | NI NG | 2                                     | <u>ر</u> | <u>.</u> |                        |
|      |                    |            |           |                   |                 |                                   |                |               |                 |                  |                 |            |                            |                         |                      |                             |       |                                       |          |          |                        |
| /IEV | VED BY:            | <i>  .</i> | A         | 1                 |                 |                                   | SNT            | LEVEL         | TI              |                  | DAT             |            | e 93                       | C                       | ONTINUED ON S        | HEET                        |       | P                                     | AGE      |          |                        |

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SALEM UNIT 2 17-5502 FEEDWATER 14-BF-2211-2 VICTOR MORTON III 2 APR 93 GEOMETRIC

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ANT TREVIEW INITIAL MSA DATE 41493

**O PSEG** INSPECTION SERVICES Reviewed and Approved N.D.E. SUPERVISOR

1 ROOT

DOWN ELBOW

UP PIPE.

|                   | Sv                    | VRI P  | ROFILE                        | AND                                 | THIC          | KNESS                                     | NFÓ          | RMATIC                          | DN RE                 | CORD                     | <u></u>       |
|-------------------|-----------------------|--------|-------------------------------|-------------------------------------|---------------|-------------------------------------------|--------------|---------------------------------|-----------------------|--------------------------|---------------|
| PROJECT NO:       | 17-5502               |        | alem Generi<br>tation, Unit 2 |                                     | 2             | Day - Month - YE<br>MAR 93                | ARI          | TIME (1                         | FINAL                 | ж)<br>14 25              | SHEET 1235040 |
| examiner<br>L.VII | LLA                   |        | SNT LEVEL                     | THK. MEAS<br>BY PROCEDU<br>No.SAM 9 | . Reg"d<br>Re | INSTRUMENT:<br>SONIC MARK 1<br>OTHER 136  |              | SERIAL NO:<br>8554              |                       | COMPONENT                | ID:           |
| examiner<br>M.C.C | OTTEN                 |        | SNT LEVEL                     | REV C<br>CHG C<br>ICN               | N/A           | COUPLANT:<br>GLYCERINE<br>OTHER (SPECIFY) | U<br>ULTRA   | WATER<br>DB-ELII BA             | П<br><u>тсн 9</u> 01; | REFERENCE E              |               |
| SEARCH            | UNITS                 |        |                               |                                     |               |                                           |              |                                 |                       |                          | · ·           |
| DKANU             | MATERIAL<br>Assurance |        |                               | • .                                 |               | •                                         | 5            |                                 |                       |                          |               |
| serial no         | E-7541                |        |                               | 1.38                                |               | alii                                      |              | : 27                            | 1.0                   | 10                       |               |
| SIZE              | 1/2                   |        |                               | or 04 ∞3                            | 04 60         | - 107 - 28                                |              | 16 pm                           | %<br>.0 %             | e4                       | •<br>, ·      |
| REQ. (MHz)        | 2.25                  |        |                               |                                     | . t.          |                                           |              | Ede 1                           | •                     |                          |               |
| INSTRUMENT        | SETTINGS              |        |                               | $\frown$                            |               | X                                         |              | X                               | *                     |                          |               |
| CREEN SIZE        | 2''                   |        | $\wedge$                      |                                     |               |                                           | $\mathbf{N}$ |                                 | $\backslash$          |                          | X             |
| ELAY              | .006                  | /      |                               | $\backslash$                        |               |                                           | X            | $\overline{\boldsymbol{\zeta}}$ | 7Ζ                    |                          | <u> </u>      |
| MATL. CAL.        | -224                  |        | •                             |                                     |               | Y                                         | ¥            |                                 | V                     |                          |               |
| IANGE             | 2                     |        | •                             |                                     |               | AI                                        |              | REVIEW                          |                       | SERVICES                 | <del>_</del>  |
| EP. RATE          | HKHZ .                | WELD W | IDTH =                        | 1'5''                               |               | DAT                                       | IAL MS       | 12-153                          | Heviewed ad           | Approvedy F L<br>415 173 | UW            |
| IACK USED         |                       | 1      | Search Unit chu               |                                     | rage using    | 4/8 8/8 12/                               |              | nodes. NAME                     | NOE SUPE              | Wisne                    | SNT LEVEL:    |
| RANS MODE         | P/E -                 | 0      | Search Unit cha               |                                     |               | )                                         |              |                                 |                       | TORTON                   | III           |
| EVIEWED BY:       | VIII                  |        |                               | SNT LEVE                            | L:<br>TI      | L                                         |              |                                 | ite:<br>2 APR         | 93                       |               |

SWRI FORM No. NDTR 17-135 [REV. 6/90]

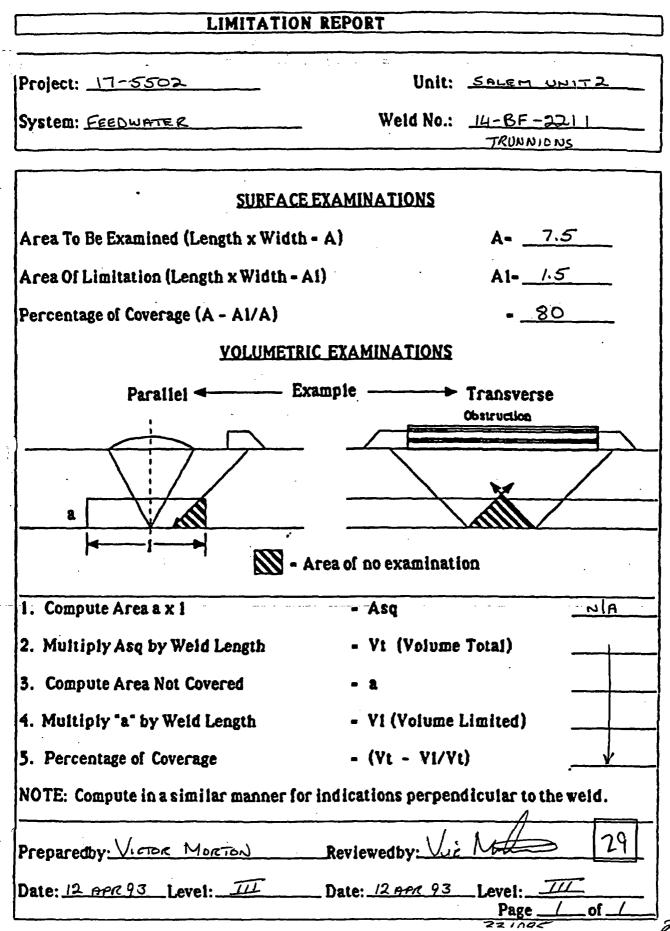
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|                                                | Sw              |                   | IETIC I               | PARTIC               | LEE         | XAMINAT                       | ION RE                                     | CORD                     |                         |              |
|------------------------------------------------|-----------------|-------------------|-----------------------|----------------------|-------------|-------------------------------|--------------------------------------------|--------------------------|-------------------------|--------------|
| PROJECT No:<br>17-550                          | )2              | SITE: Salem G     | Senerating S<br>nit 2 | station,             |             | NY - MONTH - YEAR<br>L APR 93 | TIME (24 HR.<br>EXAM STARTE<br>EXAM ENDED: | D: 0907                  | SHEET No.:<br>1.2001    | 16           |
| EXAMINATION AREA: (S                           | YST/COMP)       | LINE/SUBASSEMBL   |                       |                      | IDENTIFICA  |                               | L. LOCATION:                               |                          | W. LOCATION:            | <u>ج</u> ر م |
| FEEDWATE                                       | ٢               |                   | -2211                 |                      |             | INNIONS                       | 6                                          |                          | MAIN RUN                |              |
| EXAMINER:                                      |                 | SNT LEVEL         | PROCEDURE             | 22-0070              | SURFACE F   |                               |                                            | FLOW                     | YOKE SPACING:           | 4            |
| W. HAWKI                                       | NS              | I                 | No SAM 2 .            | -mTl                 | <u>– AS</u> | WELDED<br>MAT                 | FILLET<br>TERIAL                           |                          | YOKE BRAND: PA          | RKE          |
| EXAMINER:                                      | :               | SNT LEVEL         | REV /<br>CHG /        | (C71)                | BRAND: DE   | ETEK                          | WET                                        |                          | SERIAL No.: 80          | /            |
| W. BYLE                                        |                 | IT                |                       |                      | 4           | .: 7801-200                   | FLOURESCENT                                |                          | SURFACE TEMP.N          |              |
| CALIBRATION BLOCK<br>SERIAL No.:<br>B 70198 10 |                 | IBRATION VERIFICA |                       | ACK LIGHT            | TYPE:MP     | w_410                         | MIXED NO                                   |                          | THERMOMETER             |              |
|                                                |                 | 0847 1128         | TO                    | D SENSOR             | COLOR:YE    | LOW                           | MIXED WITH _                               | N/A                      | SERIAL No .: A          |              |
| WEIGHT: //. 3<br>BLACK LIGHT                   | INITIALS:       | WH WH             |                       | HT OUTPUT            | BLAC        | K LIGHT OUTPUT VE             | RIFICATION                                 | MATERIAL<br>APPLICATION: | DUSTING                 | X            |
| BRAND: N                                       |                 | N                 |                       |                      | TIME:       | T N_                          |                                            | AFFLICATION              | FLOODING                | П            |
|                                                | BRAND:          |                   | N                     | // w/cm <sup>2</sup> | INITIAL     |                               |                                            | 1                        | SPRAYING                |              |
| SERIAL No.: A                                  | SERIAL NO       |                   | ROUND OR              | SIZE DIA             |             |                               | REMARKS                                    | l<br>                    |                         |              |
|                                                |                 |                   | LINEAR                | OR LENGTH            | <b> </b>    |                               |                                            |                          | arssudr                 | _            |
| NO RECO                                        | RAABLE          | INDI              | CATIO                 | N5                   |             |                               |                                            | 1 K                      | BOUNDRY                 | - N          |
|                                                |                 |                   |                       |                      |             |                               |                                            |                          | $\overline{\mathbf{X}}$ |              |
|                                                |                 |                   |                       | ·{                   |             |                               |                                            |                          | stand /                 | :+           |
|                                                |                 |                   |                       |                      | l l         |                               |                                            | <u>/</u>                 | <u> </u>                |              |
|                                                |                 |                   |                       |                      |             | IN PS                         |                                            |                          | 141                     |              |
|                                                |                 |                   | D PSEG                |                      | ┼──┦───     | ·                             |                                            |                          | <u>}}=</u> }            |              |
|                                                |                 | INSPE             | CTION SERV            |                      | <b> </b>    |                               |                                            | <u>h</u>                 | _//`/                   | $\perp$      |
|                                                | AL NO           | A Revi            | eviced and Appro      | be be                |             |                               |                                            |                          | //./                    |              |
| 28                                             | 101.            | 162               | D.E. SUPERVISO        | R R                  | <u> </u>    | <u>, , ,</u>                  |                                            |                          |                         | 1            |
|                                                | DATE 41         | ¥421 N            | DE SUPERVISO          | ·                    | ┨╌┨━╍       |                               | <u></u>                                    |                          | 14-8F-22                | <del> </del> |
|                                                |                 |                   |                       | 1                    |             |                               | $\sim$                                     |                          | 17-81-24                | ''           |
| EXAMINATION AREA LIN                           | ITATION: IF NOT | E. SO STATE)      | ·                     | · · · · · · ·        |             | CARTEN                        |                                            | CONFILM                  |                         |              |
|                                                | LONG 1          | $l_2$ " of we     |                       | ANNOI E              |             | SPECTED                       |                                            |                          | KHEINN,                 |              |
| REVIEWED BY:                                   | 11th            |                   |                       |                      | SNT LEVEL   | -                             | DATI                                       | LAPR93                   | PAGE                    |              |
| r Are                                          | 7-12 IREV. 0/5  |                   |                       |                      | <u> </u>    |                               |                                            |                          | 33/095                  | 0F           |

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### REQUEST FOR ADDITIONAL INFORMATION REQUEST FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR IN-SERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

QUESTION 2.2(a) For certain component attachments and support welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

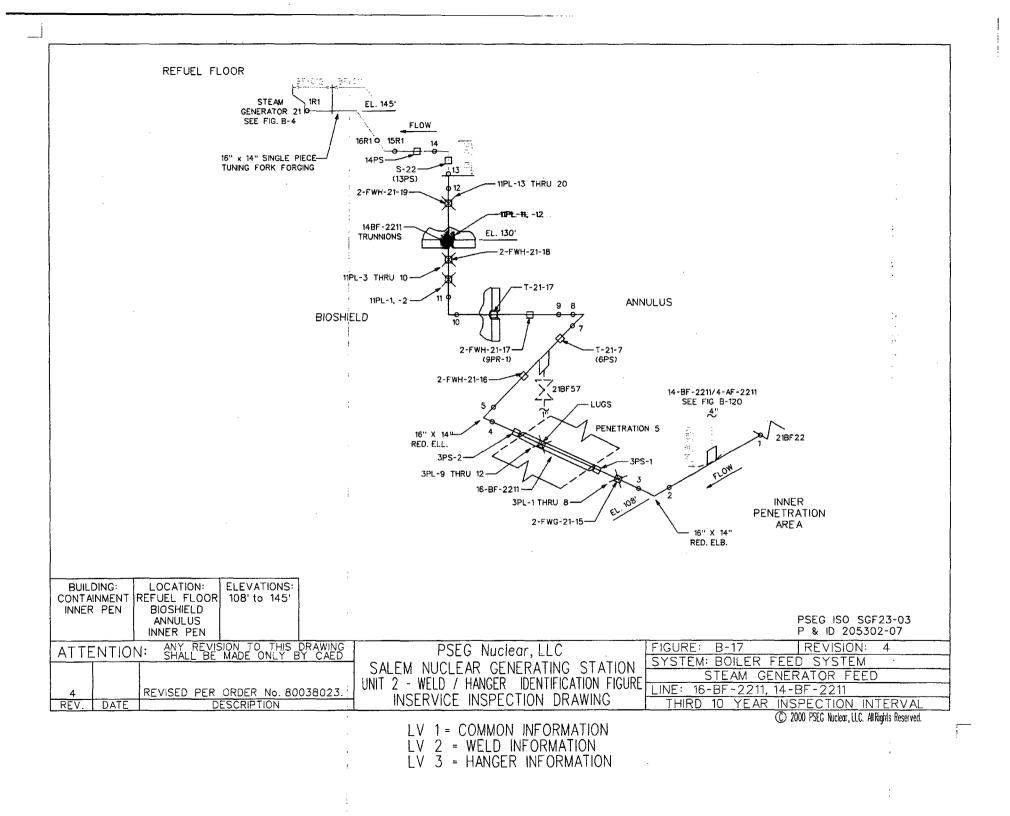
| Summary #      | 331095                           |                 |
|----------------|----------------------------------|-----------------|
| Component I.D. | 14-BF-2211 - 11PL11& 11PL12      |                 |
| Description    | TRUNION                          |                 |
|                |                                  | Comments        |
| 1              | Weld X-Section                   | N/A             |
| 2              | Material                         | Carbon Steel    |
| 3              | Thickness / weld Crown           | UNKNOWN         |
| 4              | Obstruction                      | 11 PIPE SUPPORT |
| 5              | Exam Area Highlighted on Drawing | Yes X No        |
| 6              | Transducer ray exit point        | N/A             |

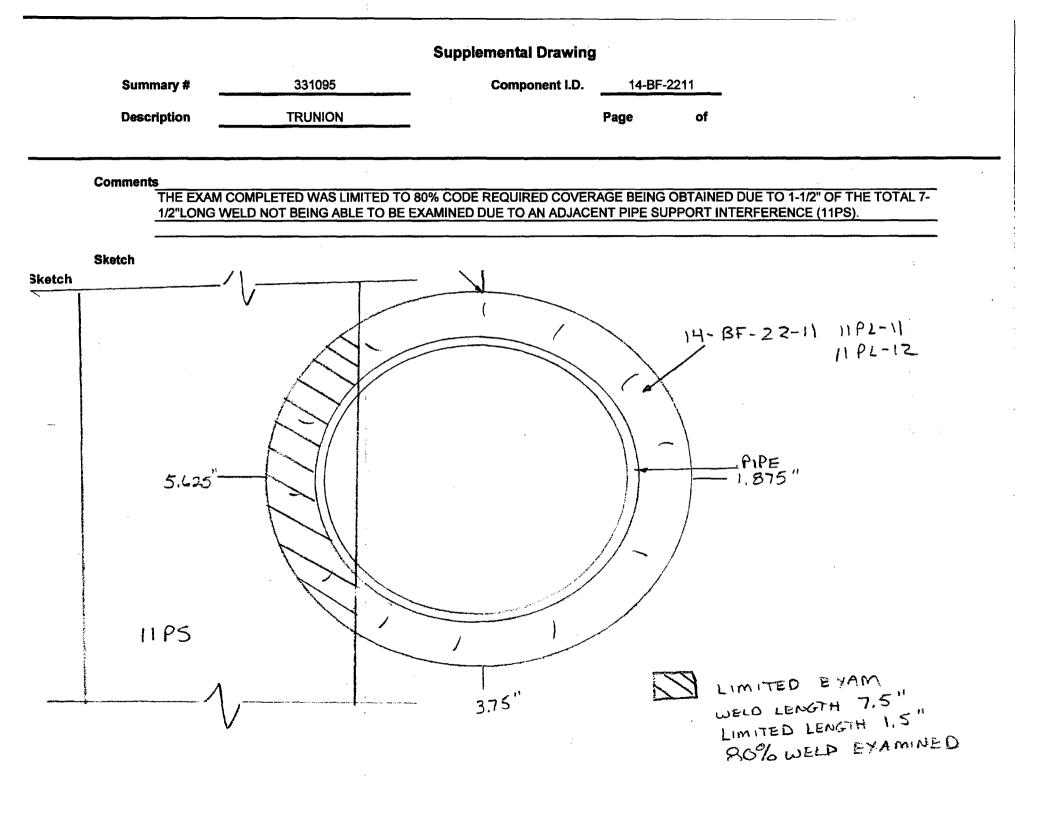
#### Comments

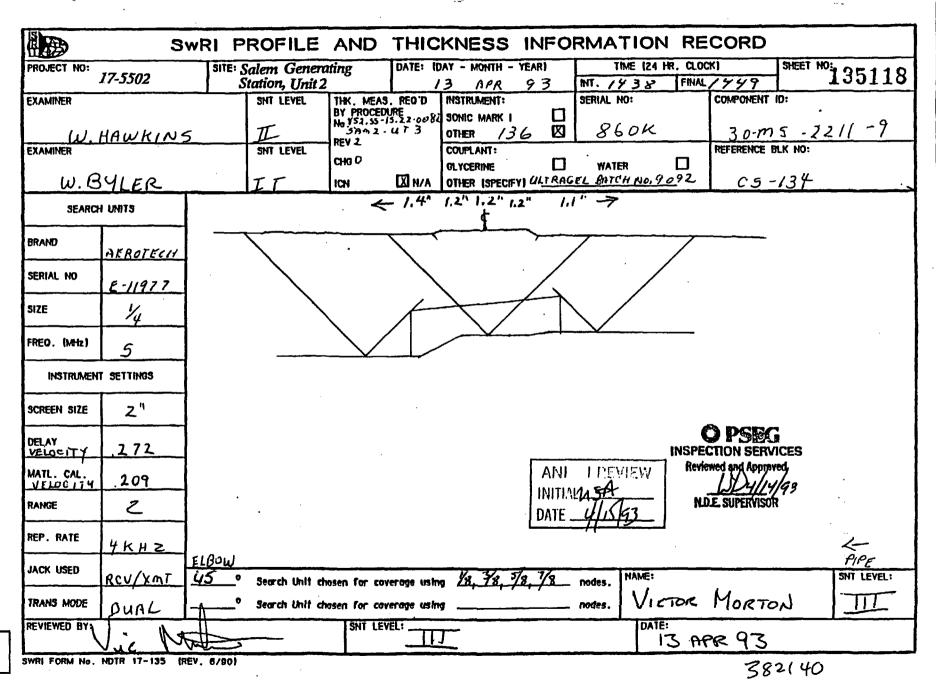
MT- EXAM WAS CONDUCTED. THE EXAM COMPLETED WAS LIMITED TO 80% CODE REQUIRED COVERAGE BEING OBTAINED DUE TO 1-1/2" OF THE TOTAL 7-1/2"LONG WELD NOT BEING ABLE TO BE EXAMINED DUE TO AN ADJACENT PIPE SUPPORT INTERFERENCE (11PS). NO UNACCEPTABLE INDICATIONS WERE OBSERVED. A SYSTEM PRESSURE TEST WAS ALSO COMPLETED WITH NO RECORDABLE INDICATIONS OBSERVED.

Page

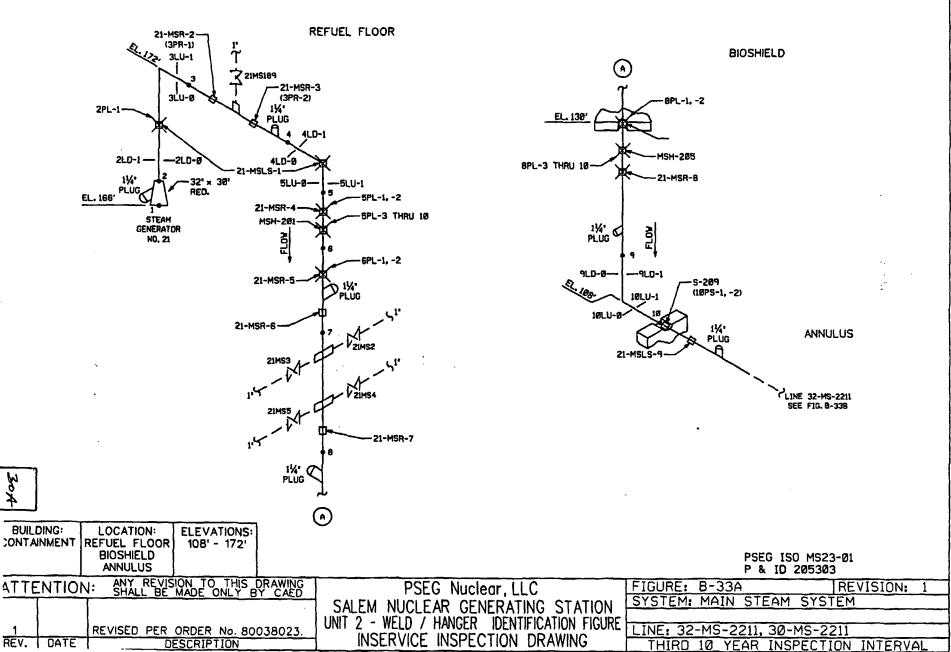
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#### REQUEST FOR ADDITIONAL INFORMATION REQUEST FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR IN-SERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

QUESTION

2.1 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

| Summary #      | 382140                           |                                |
|----------------|----------------------------------|--------------------------------|
| Component I.D. | 30-MS-2211-9                     |                                |
| Description    | Pipe to Elbow                    |                                |
|                |                                  | Comments                       |
| 1              | Weld X-Section                   | See Attached                   |
| 2              | Material                         | Carbon Steel                   |
| 3              | Thickness / weld Crown           | Thickness 1.2" / weld Crown 1" |
| 4              | Obstruction                      | Branch Connection              |
| 5              | Exam Area Highlighted on Drawing | Yes X No                       |
| 6              | Transducer ray exit point        | See Attached                   |

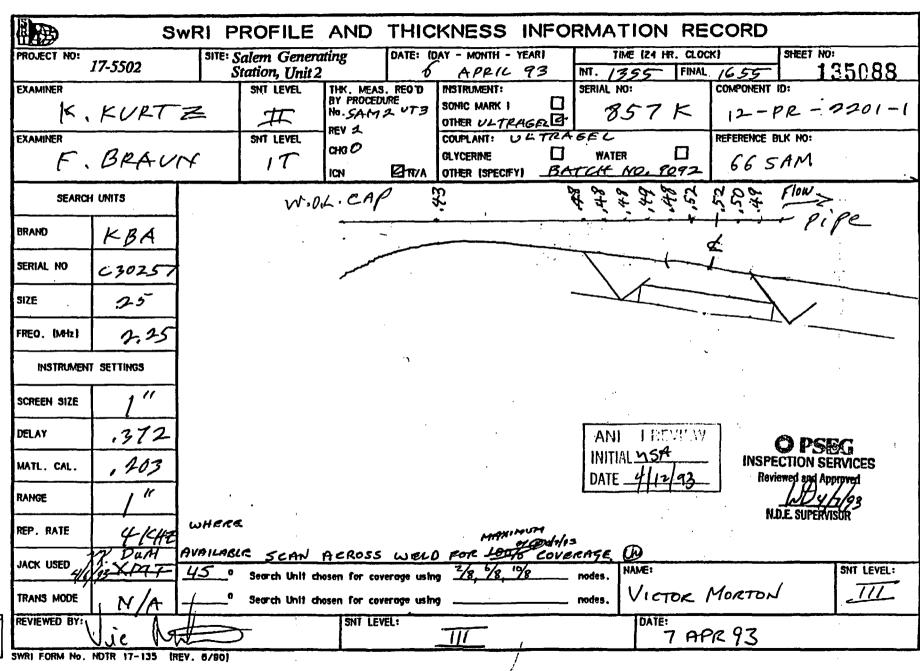
#### Comments

UT exam was performed of this component using 45 degree shear wave transducer. The ultrasonic examination was limited to 90% of the code required coverage being limited between 9/16" to 3 7/8" No unacceptable indications were observed. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.

Page

of

|                      |                                    | Supplemental Drawing             | 9               |                        |     |
|----------------------|------------------------------------|----------------------------------|-----------------|------------------------|-----|
| Summary #            | 382140                             | Component I.D.                   | 30-MS-2211      | -9                     |     |
| Description          | Pipe to Elbow                      | -                                | Page            | of                     |     |
| Comments             | sonic examination was limited to 9 | 0% of the code required coverage | being limited b | etween 9/16" to 3 7/8" |     |
|                      |                                    |                                  |                 |                        |     |
| Sketch               |                                    |                                  |                 |                        | _   |
| ketch                |                                    | P,PE                             |                 |                        | FLO |
| BRANCH<br>CON MECTOR |                                    |                                  |                 |                        |     |
| WELD<br>ROLLOUT      |                                    |                                  |                 |                        | E   |
|                      |                                    | ۲                                |                 |                        |     |
|                      |                                    |                                  |                 |                        | 100 |
|                      | <b>O</b> ,                         |                                  |                 |                        |     |
|                      |                                    |                                  |                 |                        |     |
| Down Stread          | A LIMITED SCH                      | an IIII                          | <b>.</b> .      |                        | ۱   |
|                      |                                    | ELVE                             |                 |                        | •   |

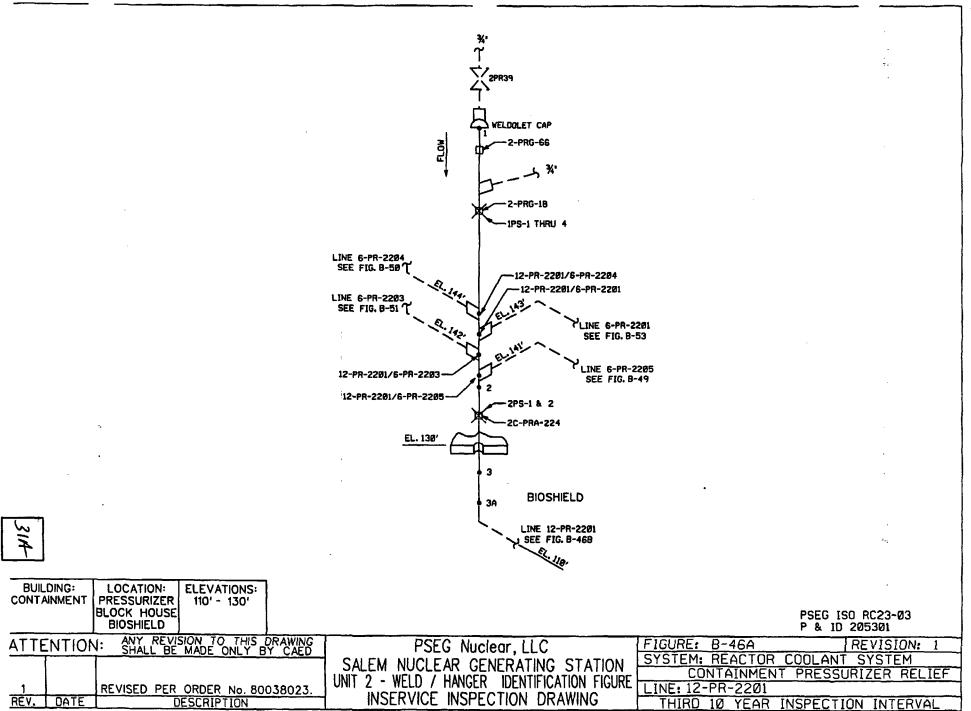


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# LIMITATION REPORT Project: 17-5502 Unit: SALEM UNIT 2 Weld No .: 12-PR-2201-1 System: PRESSURIZER RELIEF **SURFACE EXAMINATIONS** A- 79.00 Area To Be Examined (Length x Width - A) A1- 17.00 Area Of Limitation (Length x Width - Al) - 78.48 Percentage of Coverage (A - A1/A)VOLUMETRIC EXAMINATIONS - Example ----- Transverse Parallel -Obstruction 8 - Area of no examination 1. Compute Area a x 1 - Asq .40 2. Multiply Asq by Weld Length - Vt (Volume Total) 15.80 3. Compute Area Not Covered .40 - 2 - V1 (Volume Limited) 4. Multiply "a" by Weld Length 3.40 78.48 5. Percentage of Coverage -(Yt - Yi/Yt)NOTE: Compute in a similar manner for indications perpendicular to the weld. 32 Preparedby: VICTOR MORTON Reviewedby: Date: 7 APR 93 Level: TIT Date: 7 APR 93 Level: 111 Page. of .

#### REQUEST FOR ADDITIONAL INFORMATION REQUEST FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR IN-SERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

QUESTION 2.1 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

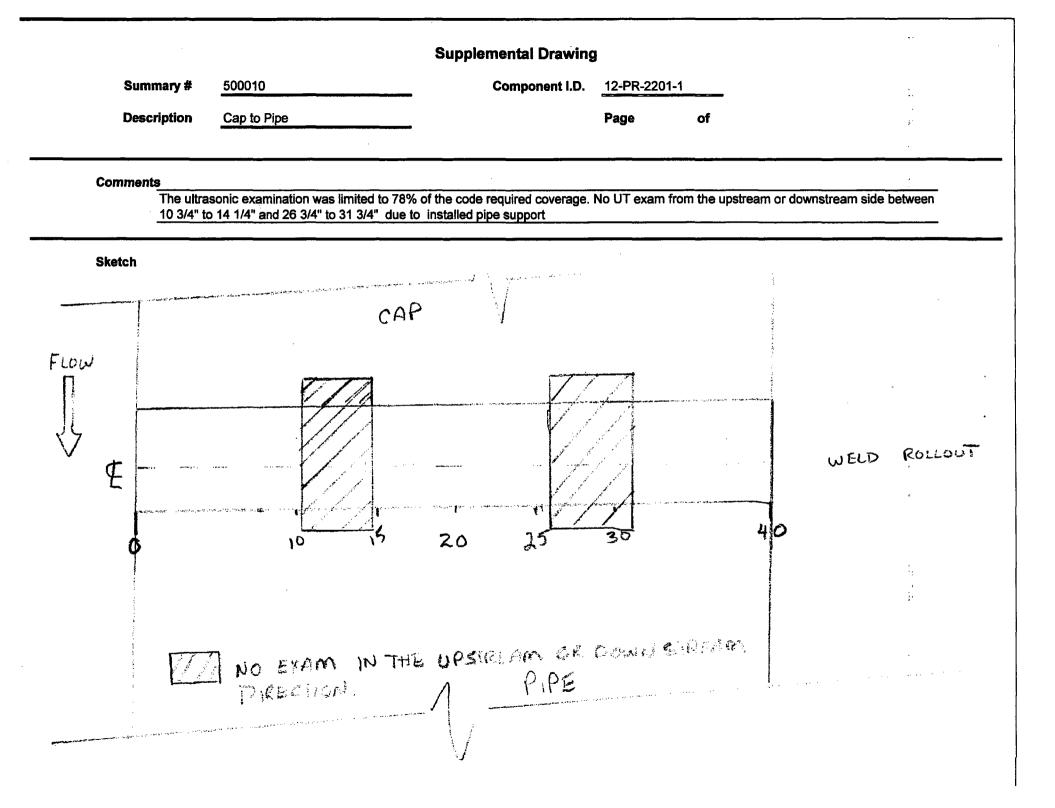
| Summary #      | 500010                         | <u> </u>                        |
|----------------|--------------------------------|---------------------------------|
| Component I.D. | 12-PR-2201-1                   |                                 |
| Description    | Cap to Pipe                    |                                 |
|                |                                | Comments                        |
| 1              | Weld X-Section                 | See Attached                    |
| 2              | Material                       | Stainless Steel                 |
| 3              | Thickness / weld Crown         | Thickness .52" / Weld Crown N/A |
| 4              | Obstruction                    | Pipe Support                    |
| . 5            | Exam Area Highlighted on Drawi | ng Yes X No                     |
| 6              | Transducer ray exit point      | See Attached                    |

#### Comments

UT exam was performed of this component using 45 degree shear wave transducer. The ultrasonic examination was limited to 78% of the code required coverage. No UT exam from the upstream or downstream side between 10 3/4" to 14 1/4" and 26 3/4" to 31 3/4" due to installed pipe support. Scanned across weld from upstream side and on weld crown only on downstream side. No unacceptable indications were observed. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.

Page

of



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SYSTEM: RPV – Closure Head

IDENTIFICATION: 2-RPVCH-1446A

WELD TYPE: Meridional Weld @ 300 deg.

Limitation Code: 1 - CRD Penetration 2 - Shroud Support Ring 3 - Lifting Lug

| CODE | <b>L</b>       | W                                            | LOCATION                                                                                               |
|------|----------------|----------------------------------------------|--------------------------------------------------------------------------------------------------------|
| 1    | 0" to 3 1/2"   | 0" to 4"                                     | CW Side                                                                                                |
| 1    | 10" to 18"     | : 0" to 4"                                   | CW Side                                                                                                |
| 1    | 1" to 8"       | 5" — to 12"                                  | CCW Side                                                                                               |
| 2    | 22" to 24 1/2" | 0" to 19"                                    | CW and CCW                                                                                             |
|      | 1<br>1<br>1    | 1 0" to 3 1/2"<br>1 10" to 18"<br>1 1" to 8" | 1     0" to 3 1/2"     0" to 4"       1     10" to 18"     0" to 4"       1     1" to 8"     5" to 12" |

|      | PSE&G LIMITATION REPORT |                     |  |            |                             |  |  |
|------|-------------------------|---------------------|--|------------|-----------------------------|--|--|
| PRO  | JECT:                   | 17-6399             |  | UNIT:      | SALEM Unit 2                |  |  |
| SYS  | TEM:                    | RPV Closure Head    |  | WELD NO .: | 2-RPVCH-1446A / merid.@ 300 |  |  |
| Prep | ared By                 | Hector Diaz Lv. III |  | Date:      | 11 Nov. 1994                |  |  |

| VOLUME | ANGLE              | EXAM TYPE     | DIRECTION    | % COVERAGE |
|--------|--------------------|---------------|--------------|------------|
| A      | 45 & 60            | Parallel      | 2 Directions | 16.0 %     |
|        | 45 & 60            | Transverse    | 2 Directions | 34.0 %     |
| В      | 45 & 60            | Parallel      | 1 Direction  | 34.0 %     |
|        | <b>45 &amp; 60</b> | Transverse    | 2 Directions | 40.0 %     |
| С      | 45 & 60            | Parallel      | 1 Direction  | 32.0 %     |
|        | 45 & 60            | Transverse    | 2 Directions | %          |
| ABCDE  | 0 deg.             | Lamination    | N/A          | 31.0 %     |
| ABC    | 0 deg.             | Pianar (weld) | N/A          | 30.0 %     |

AVERAGE COVERAGE

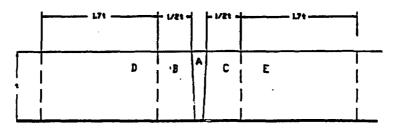
31.0 %

"A" volume is the weld volume,

"B" volume is the adjacent base material for a distance of 1/2 t from the weld fusion line on one side (cw, ccw, up, down) of the weld.

"C" volume is the adjacent base material for a distance of 1/2 t from the weld fusion line on the other side (cw, ccw, up, down) of the weld.

"D" and "E" are the adjacent base material volumes through which the angle beams pass to cover the base material for a distance of 1/2 t from the fusion line of the weld.



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SYSTEM: RPV - Closure Head

IDENTIFICATION: 2-RPVCH-14468

WELD TYPE: Meridional @ 0 deg.

Limitation Code: 1 - CRD Penetration 2 - Shroud Support Ring 3 - Lifting Lug

| NUMBER | CODE | <u> </u>       | W                 | LOCATION         |
|--------|------|----------------|-------------------|------------------|
| 1      | 1    | 0" to 3"       | 0" to 3 1/2"      | CW and CCW Sides |
| 2      | 1    | 3" to 8"       | 14 to 17 1/2"     | CCW Side         |
| 3      | 1    | 9" to 15"      | 5 1/4" to 10 1/4" | CCW Side         |
| 4      | 2    | 22" to 24 1/2" | 0" to 19"         | CW and CCW Sides |
| 5      | 3    | 21" to 46"     | 0" to 4 1/4"      | CW and CCW Sides |

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| PSE&G LIMITATION REPORT          |            |                                  |        |  |  |  |
|----------------------------------|------------|----------------------------------|--------|--|--|--|
| PROJECT: <u>17-6399</u>          | UNIT:      | SALEM Unit 2                     |        |  |  |  |
| SYSTEM: RPV Closure Head         | WELD NO .: | <u>2-RPVCH-1446B / merid.@</u> 0 | 1.<br> |  |  |  |
| Prepared By: Hector Diaz Lv. III | Date:      | 11 Nov. 1994                     |        |  |  |  |
|                                  | TRIC EXAMI | NATIONS                          |        |  |  |  |

| VOLUME | ANGLE   | EXAM TYPE     | DIRECTION    | % COVERAGE |
|--------|---------|---------------|--------------|------------|
| A      | 45 & 60 | Parallel      | 2 Directions | 13.5 %     |
|        | 45 & 60 | Transverse    | 2 Directions | 10.0 %     |
| В      | 45 & 60 | Parallel      | 1 Direction  | 35.4 %     |
|        | 45 & 60 | Transverse    | 2 Directions |            |
| С      | 45 & 60 | Parallel      | 1 Direction  | 34.3 %     |
|        | 45 & 60 | Transverse    | 2 Directions | 15.0 %     |
| ABCDE  | 0 deg.  | Lamination    | N/A          | 60.6 %     |
| ABC    | 0 deg.  | Planar (weld) | N/A          | 23_2 %     |
|        |         |               |              | •          |

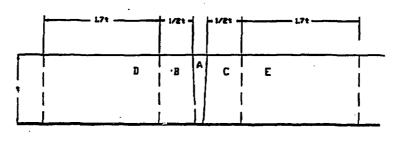
26.0 %

"A" volume is the weld volume.

"B" volume is the adjacent base material for a distance of 1/2 t from the weid fusion line on one side (cw, ccw, up, down) of the weld.

"C" volume is the adjacent base material for a distance of 1/2 t from the weld fusion line on the other side (cw, ccw, up, down) of the weld.

"D" and "E" are the adjacent base material volumes through which the angle beams pass to cover the base material for a distance of 1/2 t from the fusion line of the weld.



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SYSTEM: <u>RPV – Closure Head</u>

IDENTIFICATION: 2-RPVCH-1446C

WELD TYPE: Meridional Weld @ 60 deg.

Limitation Code: 1 – CRD Penetration 2 – Shroud Support Ring 3 – Lifting Lug

| NUMBER         | CODE | <u> </u>              | W             | LOCATION   |
|----------------|------|-----------------------|---------------|------------|
| <sup>′</sup> 1 | 1    | 0" to 3 1 <u>/</u> 2" | 0" to 3 1/2"  | CW and CCW |
| 2              | 1    | 1 1/2" to 9"          | 8" to 17"     | CW Side    |
| 3              | 1    | 14" to 22"            | 5 1/2" to 12" | CW Side    |
| 4              | 2    | 22" to 24 1/2"        | 0" to 19"     | CW and CCW |
| 5              | 1    | 10" to 18"            | 0" to 6"      | CCW Side   |

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| UNIT:      | SALEM Unit 2               |
|------------|----------------------------|
| WELD NO .: | 2-RPVCH-1446C / merid.@ 60 |
| Date: .    | <u>11 Nov. 1994</u>        |
|            | WELD NO .:                 |

| VOLUME | ANGLE                | EXAM TYPE     | DIRECTION    | % COVERAGE     |
|--------|----------------------|---------------|--------------|----------------|
| Α      | 45 & 60              | Parallei      | 2 Directions | 18.9 %         |
|        | 45 & 60              | Transverse    | 2 Directions | 10.4 %         |
| в      | 45 & 60              | Parallel      | 1 Direction  | 59.5 %         |
|        | 45 & 60              | Transverse    | 2 Directions | 13.2 %         |
| С      | 45 & 60              | Parallel      | 1 Direction  | <u>_64.5 %</u> |
|        | <b>45 &amp; 60</b> · | Transverse    | 2 Directions | <u>13.2 %</u>  |
| ABCDE  | 0 deg.               | Lamination    | N/A          | 66.9 %         |
| ABC    | 0 deg.               | Planar (weld) | N/A          | 36.7 %         |
|        |                      |               |              |                |

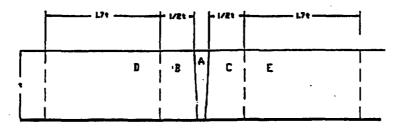
AVERAGE COVERAGE \_35.4 %

"A" volume is the weld volume.

"B" volume is the adjacent base material for a distance of 1/2 t from the weld fusion line on one side (cw, ccw, up, down) of the weld.

"C" volume is the adjacent base material for a distance of 1/2 t from the weld fusion line on the other side (cw, ccw, up, down) of the weld.

"D" and "E" are the adjacent base material volumes through which the angle beams pass to cover the base material for a distance of 1/2 t from the fusion line of the weld.



SYSTEM: RPV - Closure Head

IDENTIFICATION: 2-RPVCH-1446D

- WELD TYPE: Meridional Weld @ 120 deg.
- Limitation Code: 1 CRD Penetration 2 – Shroud Support Ring 3 – Lifting Lug

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| NUMBER | CODE | L              | W             | LOCATION   |
|--------|------|----------------|---------------|------------|
| 1      | 1    | 0" to 3"       | 0" to 3 1/2"  | CW and CCW |
| 2      | 1    | 1" to 8"       | 8" to 14 1/2" | CCW Side   |
| 3      | 1    | 11" to 17"     | 0" to 6"      | CW Side    |
| 4      | 2    | 22" to 24 1/2" | 0" to 19"     | CW and CCW |
| 5      | 3    | 21" to 46"     | 0" to 4 1/2"  | CW and CCW |

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| PSE&G LIMITATION REPORT |                       |            |                             |  |
|-------------------------|-----------------------|------------|-----------------------------|--|
| PROJECT:                | 17-6399               | UNIT:      | SALEM Unit 2                |  |
| SYSTEM:                 | RPV Closure Head      | WELD NO .: | 2-RPVCH-1446D / merid.@ 120 |  |
| Prepared By             | : Hector Diaz Lv. III | Date:      | <u>11 Nov. 1994</u>         |  |

| VOLUME | ANGLE   | EXAM TYPE     | DIRECTION    | % COVERAGE |
|--------|---------|---------------|--------------|------------|
| Α      | 45 & 60 | Parallel      | 2 Directions | 32.0 %     |
|        | 45 & 60 | Transverse    | 2 Directions | _11.0 %    |
| В      | 45 & 60 | Parallel      | 1 Direction  | _66.0 %    |
|        | 45 & 60 | Transverse    | 2 Directions | _15.0 %    |
| С      | 45 & 60 | Parallel      | 1 Direction  | _62.0 %    |
|        | 45 & 60 | Transverse    | 2 Directions | 5.3 %      |
| ABCDE  | 0 deg.  | Lamination    | <b>N/A</b>   | 61.0 %     |
| ABC .  | 0 deg.  | Planar (weld) | N/A          | 29.0 %     |
|        |         |               |              |            |

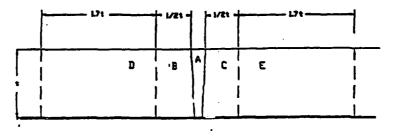
AVERAGE COVERAGE \_\_35.0 %

"A" volume is the weld volume.

"B" volume is the adjacent base material for a distance of 1/2 t from the weld fusion line on one side (cw, ccw, up, down) of the weld.

"C" volume is the adjacent base material for a distance of 1/2 t from the weld fusion line on the other side (cw, ccw, up, down) of the weld.

"D" and "E" are the adjacent base material volumes through which the angle beams pass to cover the base material for a distance of 1/2 t from the fusion line of the weld.



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SYSTEM: RPV - Closure Head

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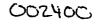
IDENTIFICATION: 2-RPVCH-1446E

WELD TYPE: Meridional Weld @ 180 deg.

| Limitation Code: | 1 - CRD Penetration     |
|------------------|-------------------------|
|                  | 2 – Shroud Support Ring |
|                  | 3 - Lifting Lug         |

| NUMBER | CODE | L              | W            | LOCATION   |
|--------|------|----------------|--------------|------------|
| 1      | 1    | 0" to 6"       | 0" to 3 1/2" | CW and CCW |
| 2      | 1    | 0" to 7"       | 13" to 17"   | CW Side    |
| 3      | 1    | 9" to 17"      | 5 1/2 to 12" | CCW Side   |
| 4      | 2    | 22" to 24 1/2" | 0" to 19"    | CW and CCW |

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| PSE&G LIMITATION REPORT |                       |            |                             |  |  |
|-------------------------|-----------------------|------------|-----------------------------|--|--|
| PROJECT:                | 17-6399               | UNIT:      | SALEM Unit 2                |  |  |
| SYSTEM:                 | RPV Closure Head      | WELD NO .: | 2-RPVCH-1446E / merid.@ 180 |  |  |
| Prepared By             | : Hector Diaz Lv. III | Date:      | 11 Nov. 1994                |  |  |

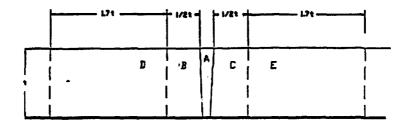
| VOLUME | ANGLE   | EXAM TYPE     | DIRECTION        | % COVERAGE     |
|--------|---------|---------------|------------------|----------------|
| A      | 45 & 60 | Parallel      | 2 Directions     | 19.0 %         |
|        | 45 & 60 | Transverse    | 2 Directions     | 44.0 %         |
| B      | 45 & 60 | Parallel      | 1 Direction      | 36.0 %         |
|        | 45 & 60 | Transverse    | 2 Directions     | 45.0 %         |
| С      | 45 & 60 | Parallel      | 1 Direction      | 36.0 %         |
|        | 45 & 60 | Transverse    | 2 Directions     | 45.0 %         |
| ABCDE  | 0 deg.  | Lamination    | N/A              | 31.0 %         |
| ABC    | 0 deg.  | Planar (weld) | N/A              | 34.0 %         |
|        |         |               | AVERAGE COVERAGE | <u>36.25 %</u> |

"A" volume is the weld volume.

"B" volume is the adjacent base material for a distance of 1/2 t from the weld fusion line on one side (cw, ccw, up, down) of the weld.

"C" volume is the adjacent base material for a distance of 1/2 t from the weld fusion line on the other side (cw, ccw, up, down) of the weld.

"D" and "E" are the adjacent base material volumes through which the angle beams pass to cover the base material for a distance of 1/2 t from the fusion line of the weld.



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SYSTEM: RPV – Closure Head

IDENTIFICATION: 2-RPVCH-1446F

WELD TYPE: Meridional Weld @ 240 deg.

| Limitation Code: | 1 - CRD Penetration     |
|------------------|-------------------------|
|                  | 2 - Shroud Support Ring |
|                  | 3 - Lifting Lug         |

| NUMBER | CODE | <u>      L                              </u> | W                 | LOCATION   |
|--------|------|----------------------------------------------|-------------------|------------|
| 1      | 1    | 0" to 4"                                     | 0" to 3 1/2"      | CW and CCW |
| 2      | 1    | 10" to 19"                                   | 0" to 5 1/2"      | CCW Side   |
| 3      | 1    | 1 1/2" to 8 1/2"                             | 8 1/2" to 19"     | CW Side    |
| 4      | 2    | 22" to 24 1/2"                               | 0" to 19"         | CW and CCW |
| 5      | 1    | 13 1/2" to 22"                               | 6" to 19"         | CW Side    |
| 6      | 1    | 0" to 4"                                     | 9 1/2" to 17 1/2" | CCW Side   |
| 7      | 3    | 21" to 46"                                   | 0" to 4 1/4"      | CW and CCW |

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| PSE&G LIMITATION REPORT |                       |            |                                    |  |  |
|-------------------------|-----------------------|------------|------------------------------------|--|--|
| PROJECT:                | 17-6399               | UNIT:      | SALEM Unit 2                       |  |  |
| SYSTEM:                 | RPV Closure Head      | WELD NO .: | <u>2-RPVCH-1446F / merid.@</u> 240 |  |  |
| Prepared By             | : Hector Diaz Lv. III | Date:      | 11 Nov. 1994                       |  |  |
|                         |                       |            |                                    |  |  |

| VOLUME | ANGLE   | EXAM TYPE     | DIRECTION    | % COVERAGE |
|--------|---------|---------------|--------------|------------|
| A      | 45 & 60 | Parallel      | 2 Directions | 37.0 %     |
|        | 45 & 60 | Transverse    | 2 Directions | 79.0 %     |
| В      | 45 & 60 | Parallel      | 1 Direction  | 77.0 %     |
|        | 45 & 60 | Transverse    | 2 Directions | 5.0 %      |
| С      | 45 & 60 | Parallei      | 1 Direction  | 81.0 %     |
|        | 45 & 60 | Transverse    | 2 Directions | 13.0 %     |
| ABCDE  | 0 deg.  | Lamination    | N/A          | 79.0 %     |
| ABC    | 0 deg.  | Planar (weld) | N/A          | 61.0 %     |

AVERAGE COVERAGE

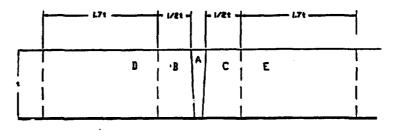
54.0 %

"A" volume is the weld volume.

"B" volume is the adjacent base material for a distance of 1/2 t from the weld fusion line on one side (cw, ccw, up, down) of the weld.

"C" volume is the adjacent base material for a distance of 1/2 t from the weld fusion line on the other side (cw, ccw, up, down) of the weld.

"D" and "E" are the adjacent base material volumes through which the angle beams pass to cover the base material for a distance of 1/2 t from the fusion line of the weld.





SYSTEM: RPV – Closure Head

IDENTIFICATION: 2-RPVCH-6446B

| WELD | TYPE: | Dollar Plate |
|------|-------|--------------|
|      |       |              |

| Limitation Code: | 1 - CRD Penetration     |
|------------------|-------------------------|
|                  | 2 – Shroud Support Ring |
|                  | 3 – Lifting Lug         |

Note: "L" Measurements made starting at 0 deg position, going CCW.

| NUMBER      | CODE | L                         | W                | LOCATION            |
|-------------|------|---------------------------|------------------|---------------------|
| 1           | 1    | 0" to 320"                | 5" to 19"        | Dome Side           |
| ` <b>2</b>  | 1    | 5 4/2" to 10 1/2"         | 8° to 19°        | Head Side           |
| 3           | 1    | 15 1/2" to 20 1/2"        | 0" to 7 1/2"     | Head Side           |
| 4           | 1.   | 23 1/2" to 28 1/2"        | 0" to 3"         | Dome and Head Sides |
| 5           | 1    | 33 1/2" to 38 1/2"        | 0" to 3"         | Dome and Head Sides |
| - 6         | 1    | 46" to 51"                | 0" to 3"         | Dome and Head Sides |
| 7           | 1    | 46" to 51"                | 11" to 19"       | Head Side           |
| 8           | 1    | 59" to 64"                | 0" to 7 1/2"     | Head Side           |
| 9           | 1    | 76 1/2" to 81 1/2"        | 0" to 3"         | Dome and Head Sides |
| <b>10</b> · | 1    | 84 1/2" to 89 1/2"        | 8" to 19"        | Head Side           |
| 11          | 1    | 103 1/2" to 108 1/2"      | 0" to 3"         | Dome and Head Sides |
| 12          | 1    | 106" to 112"              | 10" to 19" .     | Head Side           |
| 13          | 1    | 115" to 121 1/2"          | 0" to 3 1/2"     | Head Side           |
| 14          | 1    | 124 1/2" to 130 1/2"      | 1,1" to 19"      | Head Side           |
| 15          | · 1  | 127 1/2" to 134 1/2"      | 0" to 5 1/2"     | Head Side           |
| 16          | 1    | 139" to 146"              | 0" to 8"         | Head Side           |
| 17          | 1    | 154" to 161"              | .0" to 8"        | Head Side           |
| 18          | 1    | 162" to 168 1/2"          | 8" to 19"        | Head Side           |
| 19          | 1    | 171" to 177 1/2"          | 1 1/2" to 9 1/2" | Head Side           |
| 20          | 1    | <sup>-175</sup> " to 181" | 14" to 19"       | Head Side           |

002700

page 2

| <u>NU</u> | IMBER | CODE | <b>L</b>             | W            | LOCATION            |
|-----------|-------|------|----------------------|--------------|---------------------|
|           | 21    | 1    | 183" to 189"         | 0° to 3"     | Head Side           |
|           | 22    | 1    | 184 1/2" to 190 1/2" | 9" to 19"    | Head Side           |
|           | 23    | 1    | 195" to 201"         | Q" to 3"     | Dome Side           |
|           | 24    | 1    | 207" to 212 1/2"     | 10" to 19"   | Head Side           |
|           | 25    | 1    | 218" to 225"         | 0" to 8"     | Head Side           |
|           | 26    | 1    | 225 1/2" to 232 1/2" | 4" to 19"    | Dome Side           |
|           | 27    | 1    | 235" to 241 1/2"     | 0" to 6"     | Head Side           |
|           | 28    | 1    | 243 1/2" to 249 1/2" | 8" to 19"    | Head Side           |
|           | 29    | 1    | 234 1/2" to 241"     | 4" to 19"    | Dome Side           |
|           | 30    | 1    | 251" to 258 1/2"     | 0" to 8"     | Head Side           |
| ))        | 31    | 1    | 255" to 261"         | 13" to 19"   | Head Side           |
|           | 32    | 1    | 266" to 271 1/2"     | 10" to 19"   | Head Side           |
|           | 33    | 1    | 276" to 282"         | 0" to 3"     | Dome and Head Sides |
|           | 34    | 1    | 287" to 293 1/2"     | 1.1" to 19"  | Head Side           |
|           | 35    | 1    | 288" to 294 1/2"     | 0" to 3 1/2" | Head Side           |
|           | 36    | 1    | 300" to 306 1/2"     | 2' to 10"    | Head Side           |
|           | 37    | 1    | 294" to 300 1/2"     | 15" to 19"   | Head Side           |
|           | 38    | 1    | 306" to 312"         | 2" to 6"     | Dome Side           |
|           |       |      |                      |              |                     |

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|             |                       | PSE&G LIMI | TATION F   | REPORT                            |
|-------------|-----------------------|------------|------------|-----------------------------------|
| PROJECT:    | 17-6399               |            | UNIT:      | SALEM Unit 2                      |
| SYSTEM:     | RPV Closure Head      |            | WELD NO .: | 2-RPVCH-6446B / Dollar plate weld |
| Prepared By | r: Hector Diaz Lv.III |            | Date:      | 20 December 1994                  |

| VOLUME | ANGLE   | EXAM TYPE     | DIRECTION    | % COVERAGE |
|--------|---------|---------------|--------------|------------|
| Α      | 45 & 60 | Parallel      | 2 Directions | _22.0 %    |
|        | 45 & 60 | Transverse    | 2 Directions | 79.0 %     |
| В      | 45 & 60 | Parallel      | 1 Direction  | _ 82.0 %   |
|        | 45 & 60 | Transverse    | 2 Directions | 67.0 %     |
| С      | 45 & 60 | Parallel      | 1 Direction  | 66.0 %     |
|        | 45 & 60 | Transverse    | 2 Directions | 88.0 %     |
| ABCDE  | 0 deg.  | Lamination    | N/A          | 55.0 %     |
| ABC    | 0 deg.  | Planar (weld) | N/A          | 80.0 %     |

AVERAGE COVERAGE

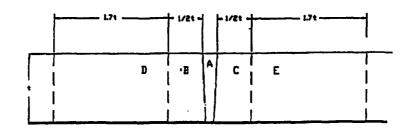
67.0 %

"A" volume is the weld volume.

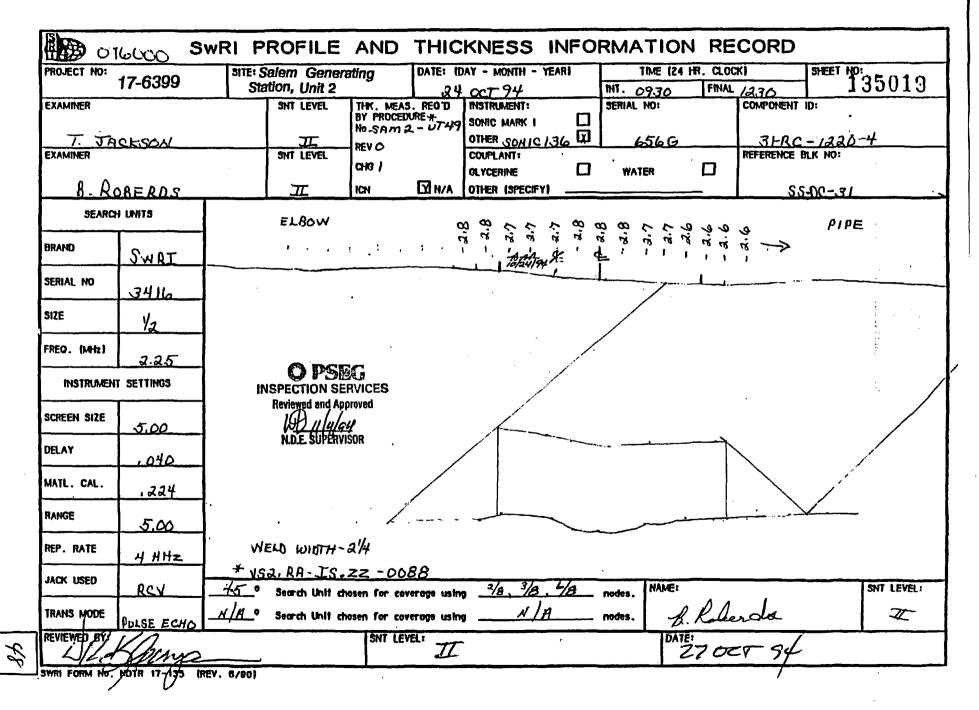
"B" volume is the adjacent base material for a distance of 1/2 t from the weld fusion line on one side (cw, ccw, up, down) of the weld.

"C" volume is the adjacent base material for a distance of 1/2 t from the weld fusion line on the other side (cw, ccw, up, down) of the weld.

"D" and "E" are the adjacent base material volumes through which the angle beams pass to cover the base material for a distance of 1/2 t from the fusion line of the weld.







|                                               | IMITATION REPORT      |          |
|-----------------------------------------------|-----------------------|----------|
| PROJECT: <u>17-6399</u>                       | UNIT: <u>Salem</u>    | 2        |
| SYSTEM: REACTOR COOLANT                       |                       | -1220-4  |
| Prepared By: VICTOR MORTON                    | Date: <u>[ NOV</u>    | 94       |
| SURFAC                                        | E EXAMINATIONS        |          |
| Area To Be Examined (length x Width = A)      | <u>A= 3</u>           | 7.2      |
| Area Of Limitation (Length x Width = Al)      | <u>AI=</u>            | 3.5      |
| Percentage Of Coverage                        | (A-AI <u>/A)= 9</u>   | 9.1%     |
| VOLUMET                                       | RIC EXAMINATION       | IS       |
| A. Axial Exams (Indications Parallel To Weld) |                       |          |
| 1. Compute Exam Volume (height x v            | width x length) = Vt1 | 281.9    |
| 2. Compute Vol. Not Covered Upstream          | = A                   | 43.11    |
| 3. Compute Upstream Limitation Percentage     | (A / Vt1) x 100 = Z1  | 15.29    |
| 4. Compute Vol. Not Covered Downstream        | = B                   | 43.11    |
| 5. Compute Downstream Limitation Percentage   | (B / Vt1) x 100 = Z2  | 15.29    |
| B. Circumferential Exams (Indications Perpend | icular To Weld)       |          |
| 1. Compute Exam Volume (height x v            | vidth x length) = Vt2 | 328.86   |
| 2. Compute Vol. Not Covered CW                | = C                   | 52.2     |
| 3. Compute CW Limitation Percentage           | (C / Vt2) x 100 = Z3  | 15.87    |
| 4. Compute Vol. Not Covered CCW               | = D                   | <u> </u> |
| 5. Compute CCW Limitation Percentage          | (D / Vt2) x 100 = Z4  | 15.87    |
| C. Total Coverage                             |                       |          |
| 1. Compute Total Limitation Percentage        | (Z1+Z2+Z3+Z4) / 4 = L | 15.58    |
| 2. Compute Total Coverage                     | 100 – L               | 84.42    |
| REMARKS:                                      |                       |          |
|                                               |                       |          |
|                                               |                       |          |

SALEM UNIT 2 17-6399 REACTOR COOLANJT 31-RC-1220-4 VICTUR MORTON III 1 NOV 94 FOR LIMITATIONS ONLY.

Pipe Elbow NO EXAM UP+DOWN FROM 55 +62" DUE TO BRANCH CONNECTIONS. = 17.01 w -Circumferential Upsticam Limitation due to Elbow Acoustic properties = 52.2 m<sup>3</sup> (CW + CCW) HXIAL LIMITATION due to Elbour Acoustic Properties = 26.1. (UP + DOWN) 076000 Э

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#### REQUEST FOR ADDITIONAL INFORMATION REQUEST FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR IN-SERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

QUESTION

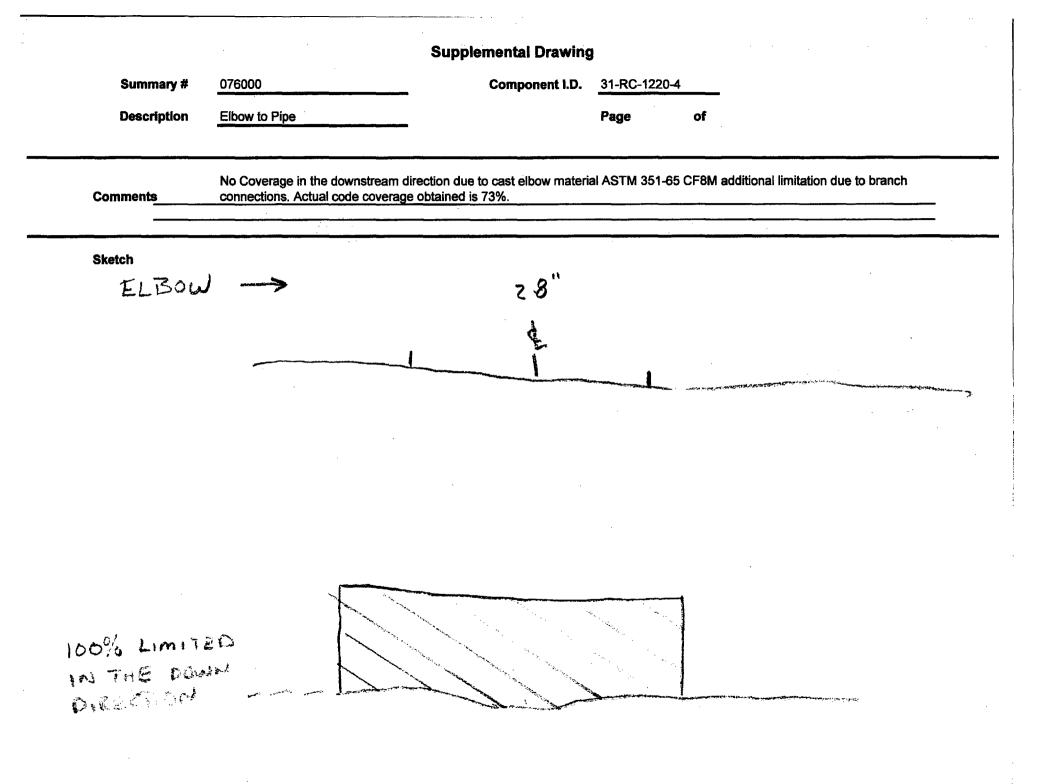
1.3 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

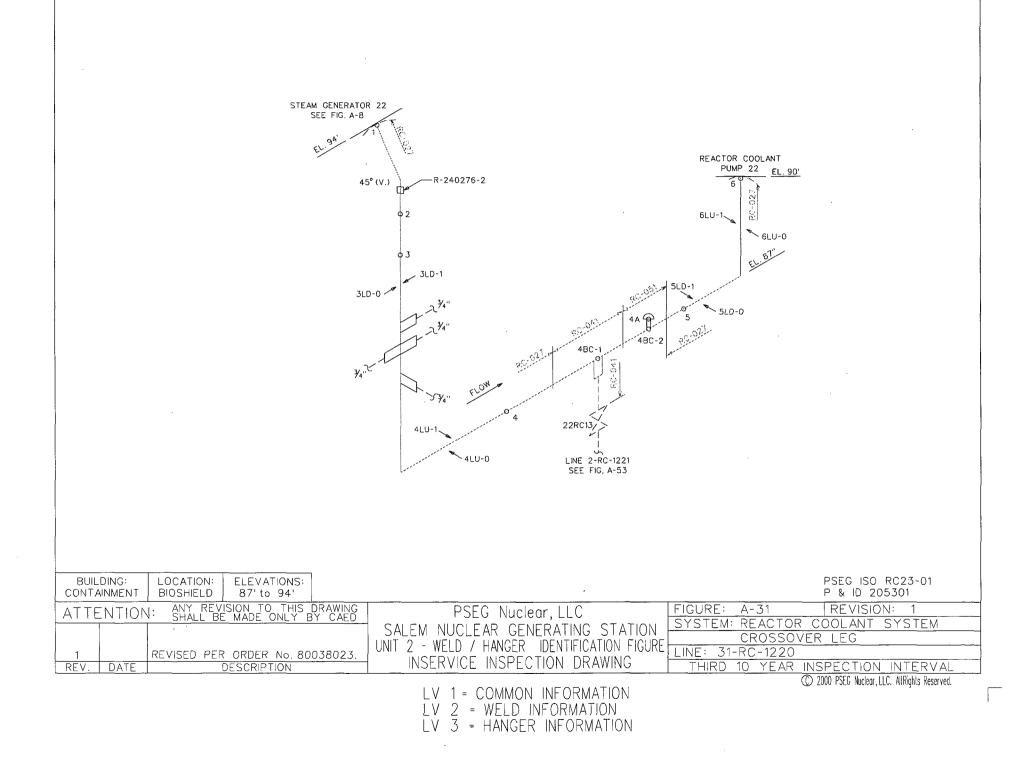
| Summary #      | 076000                           |                                                      |
|----------------|----------------------------------|------------------------------------------------------|
| Component I.D. | 31-RC-1220-4                     |                                                      |
| Description    | Elbow to Pipe                    |                                                      |
|                |                                  | Comments                                             |
| 1              | Weld X-Section                   | See Attached                                         |
| 2              | Material                         | Elbow- cast S/S ASTM 351-65<br>Pipe- Stainless steel |
| 3              | Thickness / weld Crown           | Thickness 2.8 / Weld Crown 2 1/4"                    |
| 4              | Obstruction                      | Elbow material and Branch connection                 |
| 5              | Exam Area Highlighted on Drawing | Yes X No                                             |
| 6              | Transducer ray exit point        | See Attached                                         |

#### Comments

Ut exam was performed from the pipe side with no exam able to be conducted from elbow side due to the elbow being fabricated from ASTM351-65 CF8M cast stainless steel whose acoustic properties is not conductive for ultrasonic examination. The exam completed was limited to 84% of code required coverage. There were no unacceptable indications observed. The downstream exam was limited between 55" to 62" due to a branch connection that interfered with scanning. A system pressure test was also completed with no recordable indications observed.

Page of



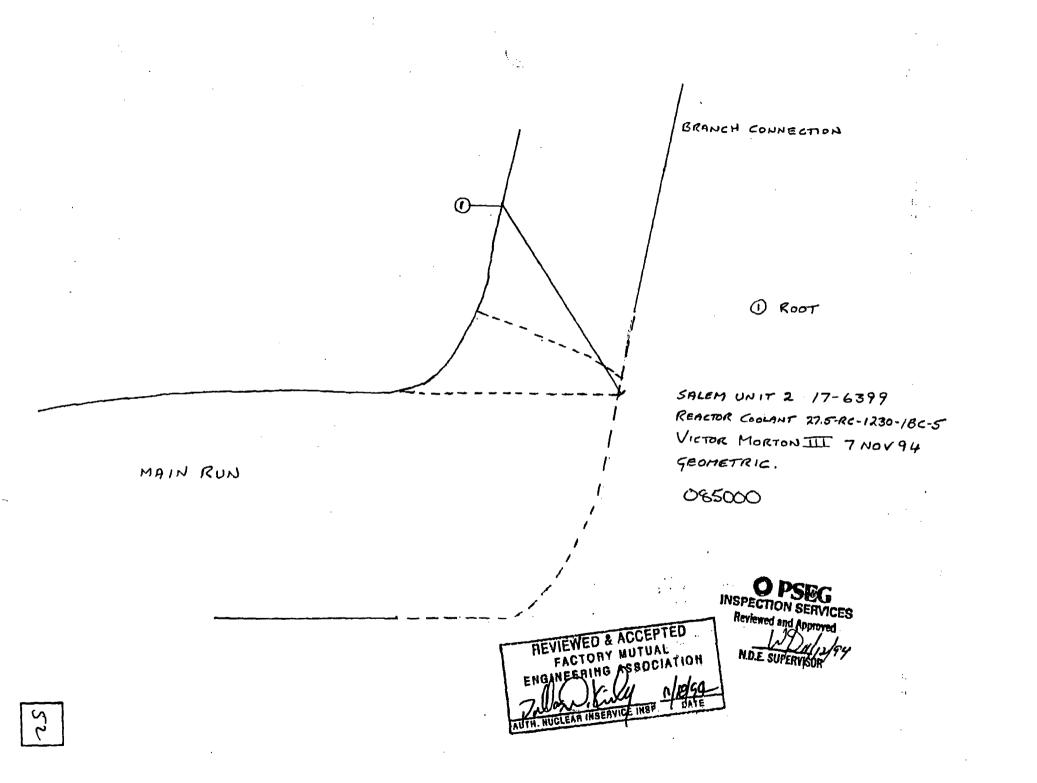


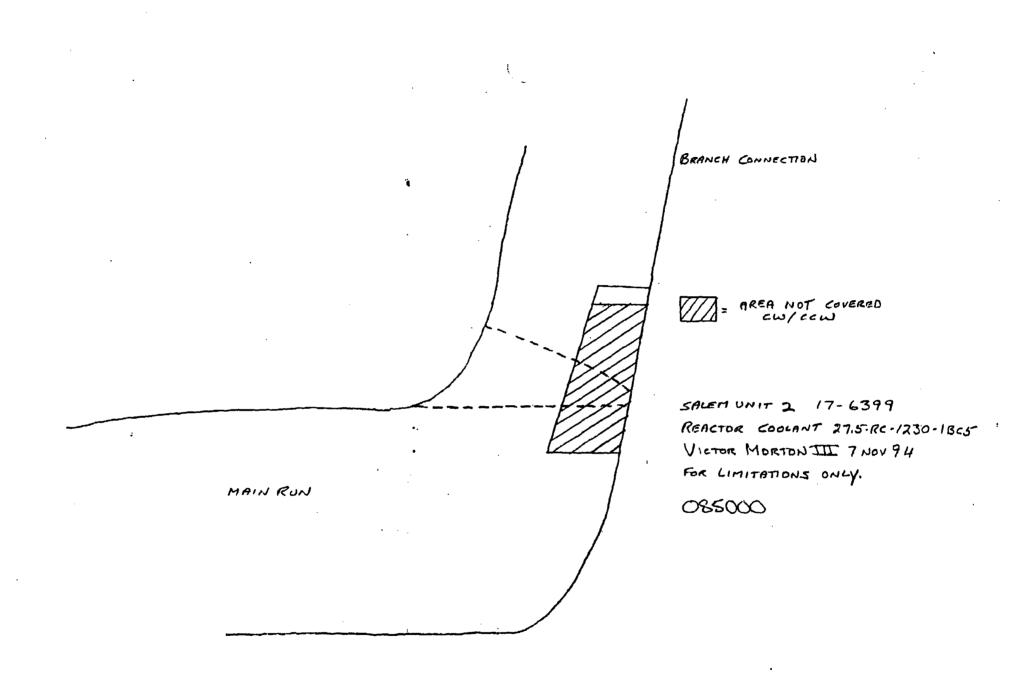
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| 7                   |                           |         |                             |                                      |                          | <u> </u>                                   |              |                   |                |                |                                                                                                                | ,                 |
|---------------------|---------------------------|---------|-----------------------------|--------------------------------------|--------------------------|--------------------------------------------|--------------|-------------------|----------------|----------------|----------------------------------------------------------------------------------------------------------------|-------------------|
|                     | (a.c.a. 5                 |         | ROFILE                      |                                      | THIC                     | KNESS                                      | INFO         | RMATI             | ON RE          | CORD           |                                                                                                                |                   |
| PROJECT NO:         | <u>,5000</u> S<br>17-6399 | SITE: S | alem Genera<br>tion, Unit 2 |                                      |                          | DAY - MONTH -                              |              |                   | 124 HR. CLO    |                | SHEET NO:                                                                                                      | 135040            |
| EXAMINER<br>D.KLE/M | JAN                       |         | SNT LEVEL<br>II             | THK. MEAS<br>BY PROCEDU<br>No. SAM 2 | . REOD<br>RE +<br>- 4749 | INSTRUMENT:<br>SONIC MARK I<br>OTHER SOLVC |              | SERIAL NO:<br>855 |                | COMPONENT      | •                                                                                                              | -)84-5            |
| examiner<br>H. HENZ |                           |         | SNT LEVEL                   | rev O<br>CHG /<br>ICN                | × N/A                    | COUPLANT:<br>GLYCERINE                     |              | water<br>RACE 40  | #94014         | REFERENCE B    | LK NO:                                                                                                         |                   |
| SEARCI              | H UNITS                   |         |                             |                                      |                          |                                            |              |                   |                | 1              |                                                                                                                |                   |
| BRAND               | SWRI                      | MAII    | r Ryn                       | •                                    |                          | •                                          |              |                   | [              |                | BRANCI                                                                                                         |                   |
| SERIAL NO           | 3416                      |         |                             |                                      |                          |                                            |              |                   | 1              |                |                                                                                                                |                   |
| SIZE                | 1/2                       |         |                             |                                      |                          |                                            |              |                   | //             | REVIEV         | VED & AC                                                                                                       | OFOTED T          |
| FREQ. (MHz)         | 2,25                      |         |                             |                                      |                          | •                                          |              |                   | 1,65           | FAC            | TORY MI                                                                                                        | TUAL<br>SOCIATION |
| SCREEN SIZE         | 5.0                       |         |                             |                                      |                          |                                            | Rs RS R      |                   | NR             | Dellaza        | the second s |                   |
| DELAY               | ,039                      |         |                             | •                                    |                          | ←                                          | <b>L +</b> + |                   |                | INS            | O' P<br>SPECTION<br>Reviewed and                                                                               | SERVICES          |
| MATL. CAL.          | 1224<br>-5.0 N 05         | 10134   |                             |                                      |                          |                                            |              |                   |                |                | N.D.E. SUPE                                                                                                    | 1/2/94            |
| RANGE               | 5.0                       |         |                             | •                                    |                          |                                            |              |                   |                |                |                                                                                                                |                   |
| REP. RATE           | 250Hz                     | * VS2.  | RA-15, Z                    | 2-008                                | 18 (a) 1                 | REV, D                                     |              | PROF              | FILE TAK       | <u>'E AT J</u> | 70°                                                                                                            |                   |
| JACK USED           | RCV<br>PE                 | 45° 0   |                             | osen for cov                         | erage using              | 18, 3/8, 5/                                | 8, 7/8       | nodes. NAM        | /Et            |                |                                                                                                                | SNT LEVEL:        |
| REVIEWED BY:        | Illen Ar                  | M       |                             | SNT LEY                              |                          |                                            |              |                   | DATE:<br>7 Nov | 1 94           |                                                                                                                |                   |
|                     | NOTE 17-135 /             | 1       |                             |                                      |                          |                                            |              |                   |                |                |                                                                                                                |                   |

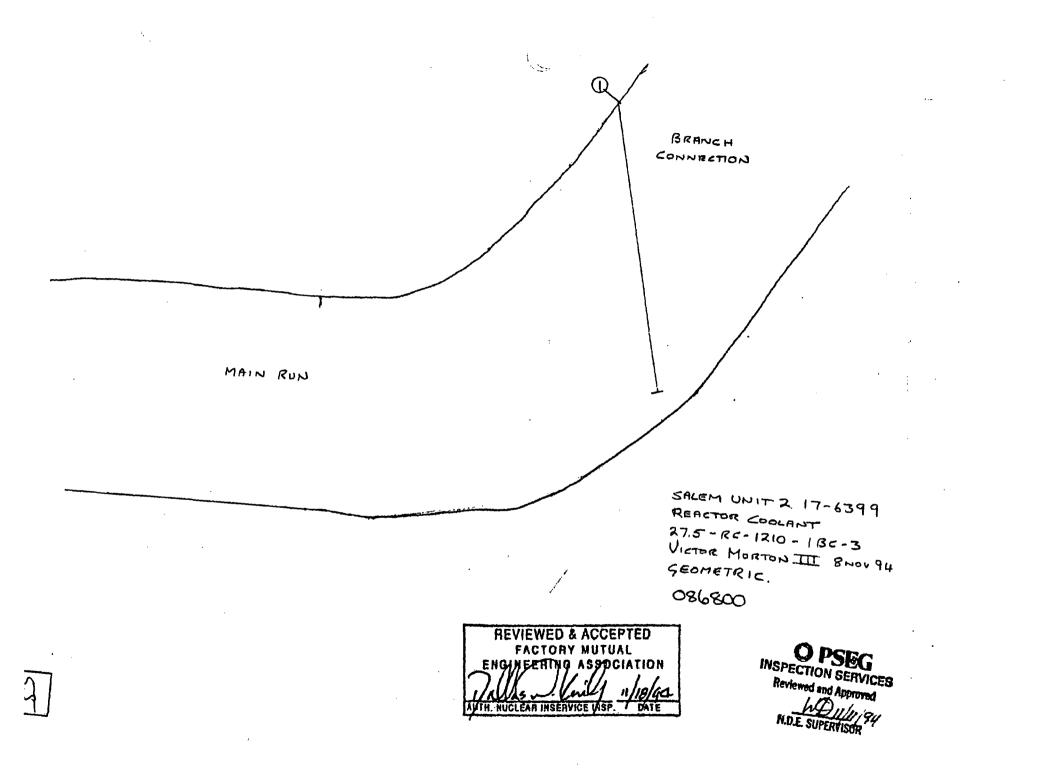
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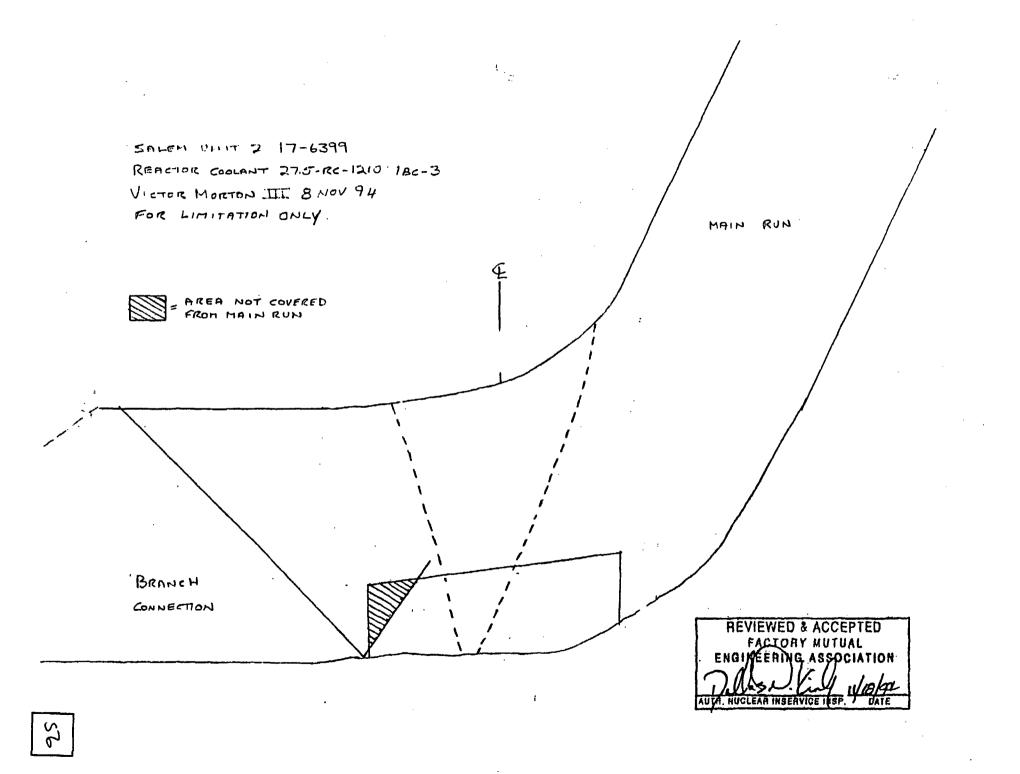
\_SWRI FORM No. NOTR 17-135 (REV. 6/90)

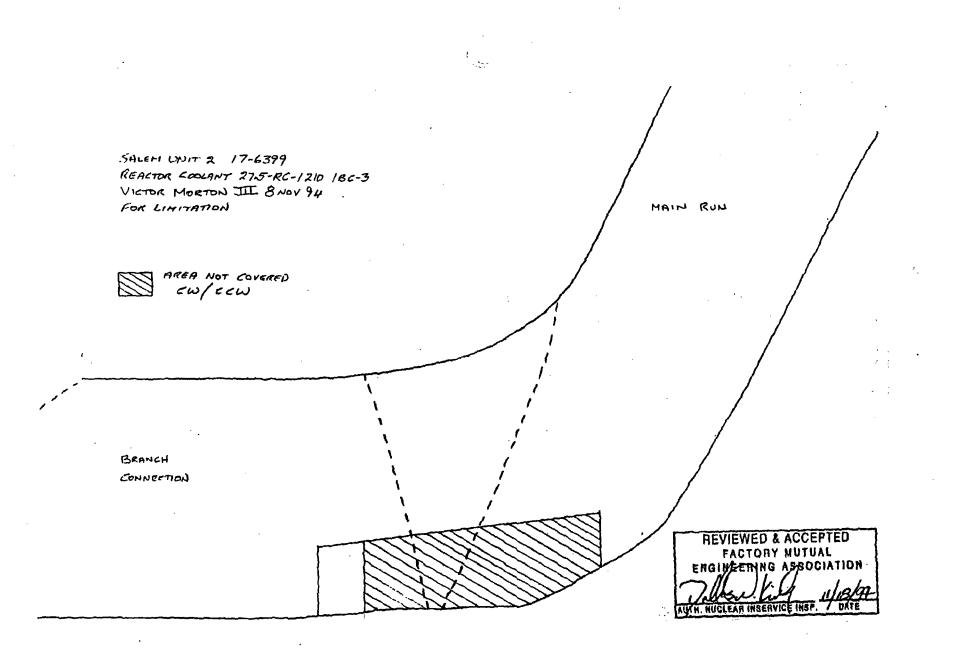


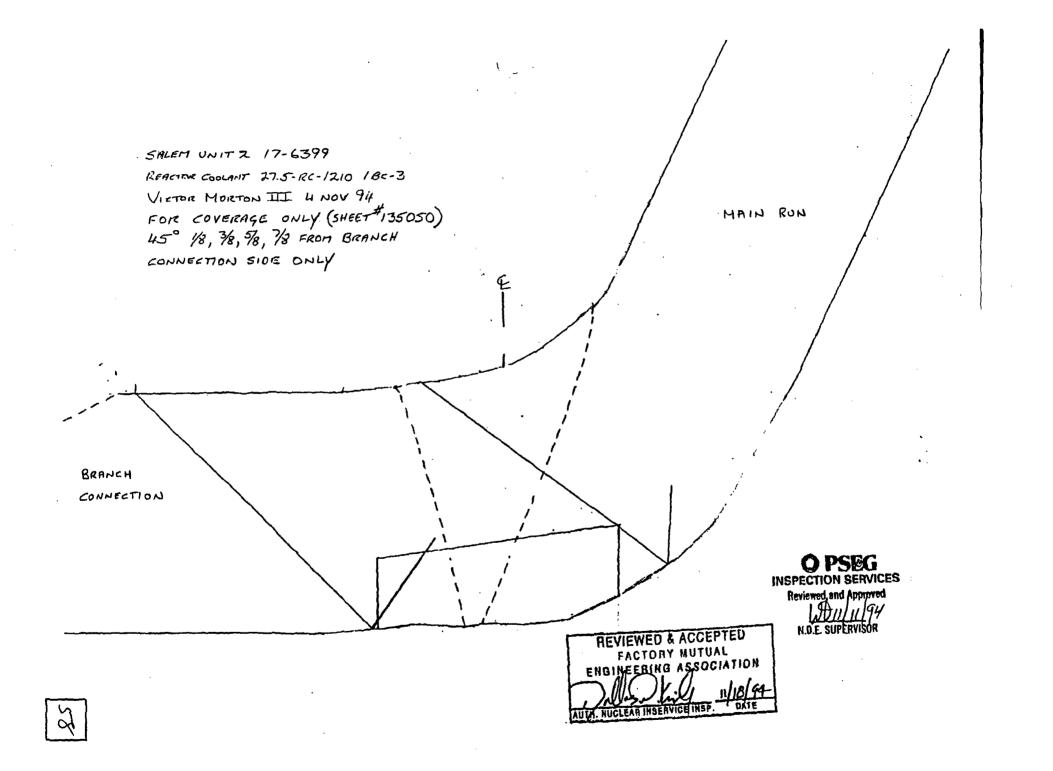


| PROJECT: <u>17-6399</u>                   | UNIT: SALEM                           | UNIT 2        |
|-------------------------------------------|---------------------------------------|---------------|
| SYSTEM: <u>Reactor Coolant</u>            | WELD NO .: 27.5-RC                    | -1230-1BC-5   |
| Prepared By:                              | Date: <u>7 No</u>                     | 94            |
| SURI                                      | FACE EXAMINATIONS                     |               |
| Area To Be Examined (length x Width = A)  | <u>A=</u>                             | NA            |
| Area Of Limitation (Length x Width = Al)  | <u>Al=</u>                            |               |
| Percentage Of Coverage                    | (A-Al <u>/A)=</u>                     | 4             |
| VOLU                                      | METRIC EXAMINATIO                     | NS            |
| A. Axial Exams (Indications Parallel To W | /eld)                                 |               |
| 1. Compute Exam Volume (he                | ight x width x length) = Vt1          | 23.63         |
| 2. Compute Vol. Not Covered Branch Conn   | ection = A                            | 0             |
| 3. Compute Branch Connection Limitation   | Percentage (A / Vt1) x 100 = Z1       | 0             |
| 4. Compute Vol. Not Covered Main Run      | = B                                   | 0             |
| 5. Compute Main Run Limitation Percentag  | e (B / Vt1) x 100 = Z2                | O             |
| B. Circumferential Exams (Indications Pe  | rpendicular To Weld)                  |               |
| 1. Compute Exam Volume (hei               | ight x width x length) = $Vt2$        | 31.5          |
| 2. Compute Vol. Not Covered CW            | = C                                   | 28.35         |
| 3. Compute CW Limitation Percentage       | (C / Vt2) x 100 = Z3                  | 90.00         |
| 4. Compute Vol. Not Covered CCW           | = D                                   | 28.35         |
| 5. Compute CCW Limitation Percentage      | (D / Vt2) x 100 = Z4                  | 90.00         |
| C. Total Coverage                         |                                       |               |
| 1. Compute Total Limitation Percentage    | (Z1+Z2+Z3+Z4) / 4 = 1                 | · · · · ·     |
| 2. Compute Total Coverage                 | 100 – L                               | <u>. 55 %</u> |
| REMARKS:                                  |                                       |               |
| •                                         | · · · · · · · · · · · · · · · · · · · |               |

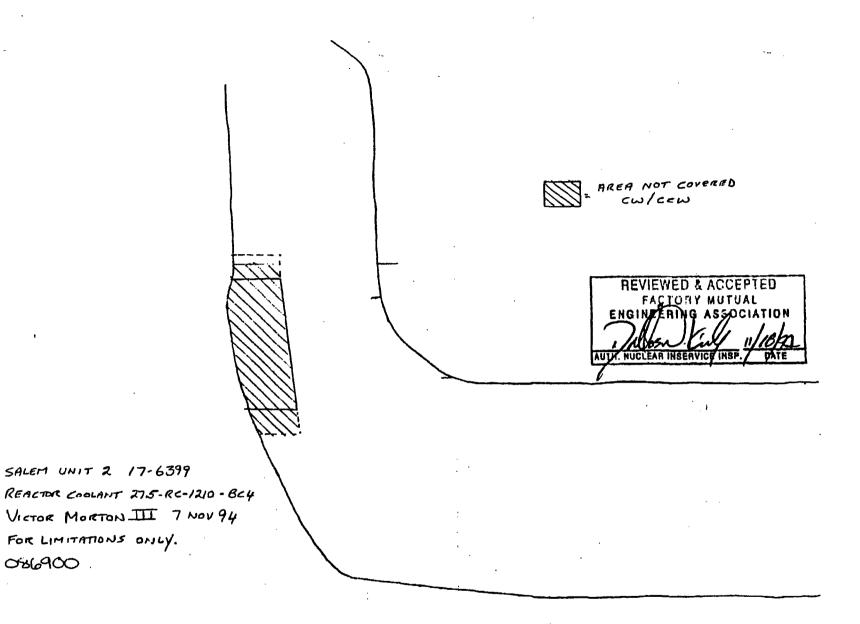


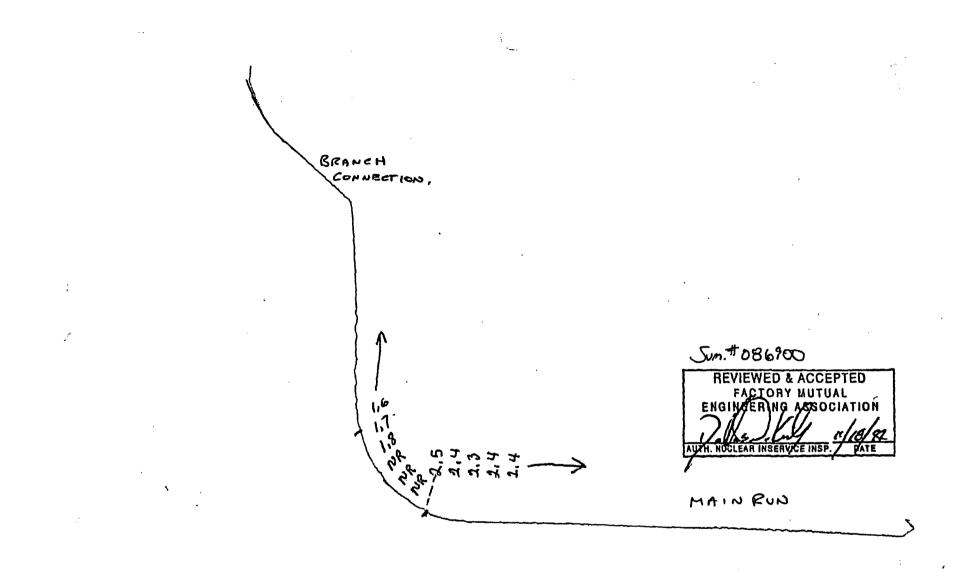


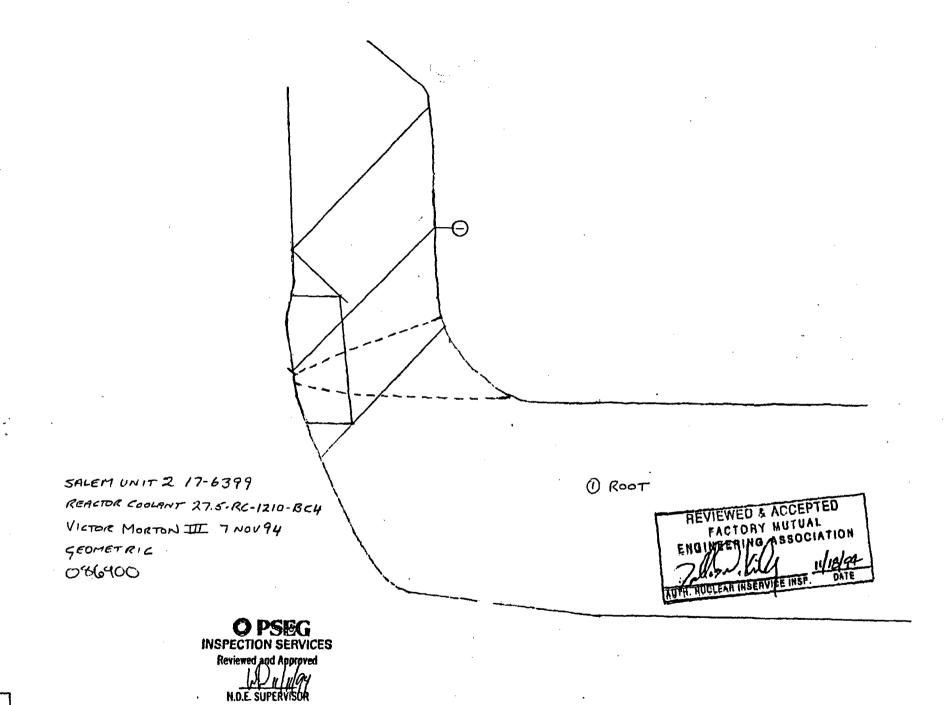




| PSE&G L                                        | MITATION            | REPOR          | Γ             |        |
|------------------------------------------------|---------------------|----------------|---------------|--------|
| PROJECT: 17-6399                               | UNIT:               | SALEM          | S TIND        | -      |
| SYSTEM: REACTOR COOLANT                        | WELD NO .:          | <u>27.5-RC</u> | -1210-186-3   | -      |
| Prepared By: VICTOR MORTON                     | Date:               | <u>9 NO</u>    | <u>v94</u>    | -      |
| SURFACI                                        | E EXAMINA           | TIONS          |               |        |
| Area To Be Examined (length x Width = A)       |                     | <u>A=</u>      | NA            | . ·    |
| Area Of Limitation (Length x Width = Al)       |                     | <u>Al=</u>     |               | •      |
| Percentage Of Coverage                         | (A-A                | N (A)=         |               |        |
| VOLUMET                                        |                     | NATION         | IS            |        |
| A. Axial Exams (Indications Parallel To Weld)  |                     |                | -<br>- ·      | •      |
| 1. Compute Exam Volume (height x v             | width x length) =   | /t1            | 121.26        |        |
| 2. Compute Vol. Not Covered Branch Connection  | = A                 |                |               | . :    |
| 3. Compute Branch Connection Limitation Percen | tage (A / Vt1) x    | 100 = Z1       | 0             |        |
| 4. Compute Vol. Not Covered Main Run           | = B                 |                | 10,81         |        |
| 5. Compute Main Run Limitation Percentage      | (B / Vt1) x 10      | 0 = <b>Z2</b>  | <u>8,91</u>   |        |
| B. Circumferential Exams (Indications Perpend  | licular To Weld)    |                |               |        |
| 1. Compute Exam Volume (height x v             | width x length) = \ | /t2            | 139.59        |        |
| 2. Compute Vol. Not Covered CW                 | ` = C               |                | 117.03        |        |
| 3. Compute CW Limitation Percentage            | (C / Vt2) x 10      | 0 = <b>Z</b> 3 | 83.84         |        |
| 4. Compute Vol. Not Covered CCW                | = D                 |                | 117.03        |        |
| 5. Compute CCW Limitation Percentage           | (D / Vt2) x 10      | 0 <b>= Z4</b>  | 83.84         |        |
| C. Total Coverage                              |                     |                |               |        |
| 1. Compute Total Limitation Percentage         | (Z1+Z2+Z3+          | -Z4) / 4 = L   | 44,15         |        |
| 2. Compute Total Coverage                      | 100 – L             |                | <u>55.85%</u> |        |
| REMARKS:                                       |                     |                |               |        |
| · · · · · · · · · · · · · · · · · · ·          |                     |                |               |        |
|                                                |                     |                |               | 051400 |







| PROJECT: 17-6399                              | UNIT: SALEM                           | UNIT 2   |
|-----------------------------------------------|---------------------------------------|----------|
| SYSTEM: REACTOR COOLANT                       | WELD NO .: 27.5-Rc-12                 | 10-1BC-4 |
| repared By: VICTOR MORTON                     | Date: _7_NOU                          | / 94     |
| SURFAC                                        | E EXAMINATIONS                        |          |
| Area To Be Examined (length x Width = A)      | <u>A=</u>                             | NA       |
| Area Of Limitation (Length x Width = Al)      | <u>AI=</u>                            | 1        |
| Percentage Of Coverage                        | (A-AI <u>/A)=</u>                     | +        |
| VOLUME                                        | TRIC EXAMINATIONS                     |          |
| A. Axial Exams (Indications Parallel To Weld) |                                       |          |
| 1. Compute Exam Volume (height x              | width x length) = Vt1                 | 18.19    |
| 2. Compute Vol. Not Covered Branch Connection | n = A                                 | O        |
| 3. Compute Branch Connection Limitation Perce | ntage (A / Vt1) x 100 = Z1            | O        |
| 4. Compute Vol. Not Covered Main Run          | = B                                   | 0        |
| 5. Compute Main Run Limitation Percentage     | (B / Vt1) x 100 = Z2                  | 0        |
| B. Circumferential Exams (Indications Perpend | dicular To Weld)                      |          |
| 1. Compute Exam Volume (height x              | width x length) = Vt2                 | 24.25    |
| 2. Compute Vol. Not Covered CW                | · = C                                 | 23.03    |
| 3. Compute CW Limitation Percentage           | (C / Vt2) x 100 = Z3                  | 94.97    |
| 4. Compute Vol. Not Covered CCW               | = D                                   | 23.03    |
| 5. Compute CCW Limitation Percentage          | (D / Vt2) x 100 = Z4                  | 94.97    |
| C. Total Coverage                             |                                       |          |
| 1. Compute Total Limitation Percentage        | (Z1+Z2+Z3+Z4) / 4 = L                 | 47-49    |
| 2. Compute Total Coverage                     | 100 – L                               | 52.51    |
| EMARKS:                                       | · · · · · · · · · · · · · · · · · · · |          |

|                                    |               |                           | 1                                       |                                  |                              |                                       |                                        |                                       |          |
|------------------------------------|---------------|---------------------------|-----------------------------------------|----------------------------------|------------------------------|---------------------------------------|----------------------------------------|---------------------------------------|----------|
| 3305                               | 40 Sw         | RI MAGI                   | NETIC                                   | PARTIC                           | LE EXAMINA                   | TION RE                               | CORD                                   |                                       |          |
| PROJECT No:                        |               | SITE: Salem G             | Senerating                              | Station.                         | DATE: IDAY - MONTH - Y       |                                       |                                        | SHEET No.:                            | {        |
| 17-6399 Unit 2                     |               |                           |                                         | - · · · •                        | 280CT 94                     | EXAM START                            | ED: 1316                               | 12001                                 | 16       |
| EXAMINATION AREA: (S               | YST/COMP]     | LINE/SUBASSEMBI           | LY:                                     |                                  | IDENTIFICATION:              | L. LOCATION                           |                                        | W LOCATION:                           |          |
| BOILER FEE                         | D SYSTEM      | 14-BF-                    | 2231                                    |                                  | ITPS                         | 6                                     |                                        | EDGE OF                               | NEID     |
| EXAMINER:                          |               | SNT LEVEL                 | PROCEDURE                               |                                  | SURFACE FINISH:              |                                       | (FLOW                                  | YOKE SPACING:                         |          |
| W. ANGELL II NOSAMB-MITI           |               | AS WELDED                 | PIPE S                                  | VPPORT                           | YOKE BRAND: WIT              | ~ 4                                   |                                        |                                       |          |
| EXAMINER:                          | <u>, fran</u> | SNT LEVEL                 | REV / 🛪                                 |                                  | BRAND: MAGNAFLUX             |                                       |                                        | SERIAL No .: WL                       |          |
|                                    |               |                           | CHG /                                   | 5                                |                              |                                       |                                        |                                       |          |
| <u>M.COT7</u><br>CALIBRATION BLOCK |               | レンデー<br>IBRATION VERIFICA |                                         | ISTANCE FROM                     | BATCH No.: 85 JO48           |                                       |                                        | SURFACE TEMP.                         | ۴F       |
| SERIAL No.:<br>870/9814            | TIME:         |                           |                                         | LACK LIGHT                       | TYPE: DRY POWDER             | MIXED NO                              | YES                                    | THERMOMETER /                         | V/A      |
| WEIGHT: //.3LBS.                   | INITIALS:     | 12.30 1435<br>WA WA       | - A 1                                   | o sensor<br>Ell /v/A in          | COLOR: IGRAY                 | MIXED WITH                            |                                        | SERIAL No .:                          |          |
| BLACK LIGHT                        | INTENSITY     |                           |                                         | SHT OUTPUT                       | BLACK LIGHT OUTPUT           | VERIFICATION                          | MATERIAL<br>APPLICATION:               | DUSTING                               |          |
| BRAND: N/A                         | BRAND         |                           |                                         |                                  | TIME: N                      | ·                                     |                                        | FLOODING                              |          |
| SERIAL No.:                        | SERIAL No     | N/A                       | NIA                                     | µw/cm <sup>2</sup>               | INITIALS:                    | A                                     | 1                                      | SPRAYING                              |          |
| IND No. L                          | W.            | LOCATION                  | ROUND OR<br>LINEAR                      | SIZE DIA.<br>OR LENGTH           |                              | REMARK                                |                                        |                                       | INITIALS |
|                                    |               |                           |                                         | UN LENGTH                        |                              |                                       |                                        |                                       |          |
| NO RECO                            | RDABLE        | INDICAT                   | IONS_                                   | ļ                                |                              | £ 30->                                |                                        |                                       | un       |
|                                    |               |                           | l                                       |                                  | *                            |                                       |                                        |                                       | WA       |
|                                    |               |                           |                                         |                                  | Se El                        | 0                                     |                                        |                                       |          |
|                                    |               |                           | }                                       |                                  |                              |                                       |                                        |                                       | wA       |
|                                    |               |                           |                                         | -                                | ACCEPTED                     | 7                                     | <u> </u>                               |                                       |          |
|                                    |               |                           |                                         | FACTOR                           | * אטוטהי י ייד               | /                                     | INSPECTION S                           | SERVICES                              |          |
|                                    |               |                           | E                                       | HGINEFAING                       | ASSOCIATION                  | · · · · · · · · · · · · · · · · · · · | Reviewed and                           |                                       |          |
|                                    |               |                           |                                         | <b>ħ</b> <i>[</i> <b>       </b> | 1- (1 1 9 99)                |                                       |                                        | 13/94                                 |          |
| Ì                                  |               | ļ                         | 1                                       | NUCLEAR INSER                    | VICE INSP. DATE              |                                       | N.D.E. SUPE                            | RVISOR                                |          |
|                                    |               |                           | [ · · · · · · · · · · · · · · · · · · · | -                                |                              |                                       | ······································ |                                       | -+       |
|                                    | TATION IN AIR |                           | L                                       | I                                | * VS2_SS-IS<br>STRAINT 41/0" | . 22-007                              | O REV.OO                               | · · · · · · · · · · · · · · · · · · · |          |
| (IM) TED EVAL                      |               | E, JU SIAIEI              | · • · · · - · ·                         |                                  |                              | wAsal P                               |                                        |                                       |          |
| REVIEWED BY:                       | i norn        | D FROXIM                  | IT OF                                   | FIFE RE                          | STRAINT 41 101<br>SNT LEVEL  | 40/5% 9nd<br>DAT                      | <u>3320 to 402</u><br>E                | PAGE                                  |          |
|                                    | Kuth          | ~                         | ;                                       |                                  |                              |                                       | 51 OCT 96                              |                                       | )F       |

| SYSTEM:       FEEDWATER       WELD NO.: $14 - GF - 22$ Prepared By:       VICTOR MERTON       Date: $SURFACE EXAMINATIONS$ Butter       SURFACE EXAMINATIONS         Area To Be Examined (length x Width = A) $Merror Mecrosomer Methods         Area Of Limitation (Length x Width = A)       Merror Mecrosomer Methods         Percentage Of Coverage       (A-AI   A) =$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | - AREA<br>F AREA |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| SURFACE EXAMINATIONS         Area To Be Examined (length x Width = A) $\mu$ or $\mu$ | - AREA<br>F AREA |
| Area To Be Examined (length x Width = A) with wet we cass $A = 100\%$ per<br>Area Of Limitation (Length x Width = Al) 4 4 $A = 50\%$ cas<br>Percentage Of Coverage $(A - A!/A) = 50\%$<br><b>VOLUMETRIC EXAMINATIONS</b><br>A. Axial Exams (Indications Parallel To Weld)<br>1. Compute Exam Volume (height x width x length) = Vt1<br>2. Compute Vol. Not Covered Upstream = A<br>3. Compute Upstream Limitation Percentage $(A / Vt1) \times 100 = 21$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | FAREA            |
| Area Of Limitation (Length x Width = Al)       " " Al= 50% color         Percentage Of Coverage       (A-Al (A)= 50%         VOLUMETRIC EXAMINATIONS         A. Axial Exams (Indications Parallel To Weld)         1. Compute Exam Volume       (height x width x length) = Vt1         2. Compute Vol. Not Covered Upstream       = A         3. Compute Upstream Limitation Percentage       (A / Vt1) x 100 = 21                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | FAREA            |
| Percentage Of Coverage       (A-AI (A) = 50 A         VOLUMETRIC EXAMINATIONS         A Axial Exams (Indications Parallel To Weld)         1. Compute Exam Volume       (height x width x length) = Vt1         2. Compute Vol. Not Covered Upstream       = A         3. Compute Upstream Limitation Percentage       (A / Vt1) x 100 = Z1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                  |
| VOLUMETRIC EXAMINATIONS         A. Axial Exams (Indications Parallel To Weld)         1. Compute Exam Volume       (height x width x length) = Vt1         2. Compute Vol. Not Covered Upstream       = A         3. Compute Upstream Limitation Percentage       (A / Vt1) x 100 = Z1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                  |
| A. Axial Exams (Indications Parallel To Weld)         1. Compute Exam Volume       (height x width x length) = Vt1         2. Compute Vol. Not Covered Upstream       = A         3. Compute Upstream Limitation Percentage       (A / Vt1) x 100 = Z1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                  |
| 1. Compute Exam Volume       (height x width x length) = Vt1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                  |
| 2. Compute Vol. Not Covered Upstream= A3. Compute Upstream Limitation Percentage(A / Vt1) x 100 = Z1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                  |
| 3. Compute Upstream Limitation Percentage (A / Vt1) x 100 = Z1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  |
| 4 Compute Vol. Not Covered Downstream = B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  |
| 5. Compute Downstream Limitation Percentage (B / Vt1) x 100 = Z2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <u> </u>         |
| B. Circumferential Exams (Indications Perpendicular To Weld)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                  |
| 1. Compute Exam Volume (height x width x length) = Vt2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | NIA              |
| 2. Compute Vol. Not Covered CW = C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                  |
| 3. Compute CW Limitation Percentage (C / Vt2) x 100 = Z3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                  |
| 4. Compute Vol. Not Covered CCW = D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                  |
| 5. Compute CCW Limitation Percentage (D / Vt2) x 100 = Z4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ¥                |
| C. Total Coverage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |
| 1. Compute Total Limitation Percentage (Z1+Z2+Z3+Z4) / 4 = L                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | nla              |
| 2. Compute Total Coverage 100 - L                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <u> </u>         |
| REMARKS:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  |

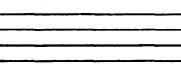
QUESTION

2.2(a) For certain component attachments and support welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

| Summary #      | 330540                           |                |
|----------------|----------------------------------|----------------|
| Component I.D. | 14-BF-2231-17PS                  | _              |
| Description    | PIPE SUPPORT                     | _              |
|                |                                  | Comments       |
| 1              | Weld X-Section                   | N/A            |
| 2              | Material                         | Carbon Steel   |
| 3              | Thickness / weld Crown           | N/A            |
| 4              | Obstruction                      | PIPE RESTRAINT |
| 5              | Exam Area Highlighted on Drawing | Yes X No       |
| 6              | Transducer ray exit point        | N/A            |

#### Comments

MT exam was conducted of this component. The MT exam was limited to 50% of the code required exam due to proximity of permanent pipe restraint in close to the weld that prevented sufficient access for the weld to be examined in two directions. The lugs were examined completely in one direction and no unacceptable indications were observed. A system pressure test was also performed with no unacceptable indications observed.



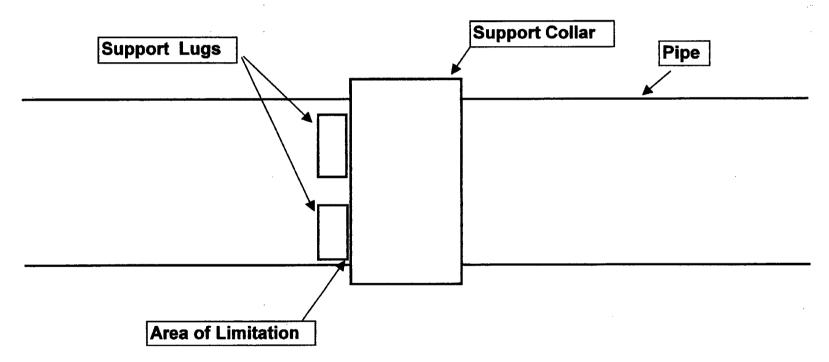
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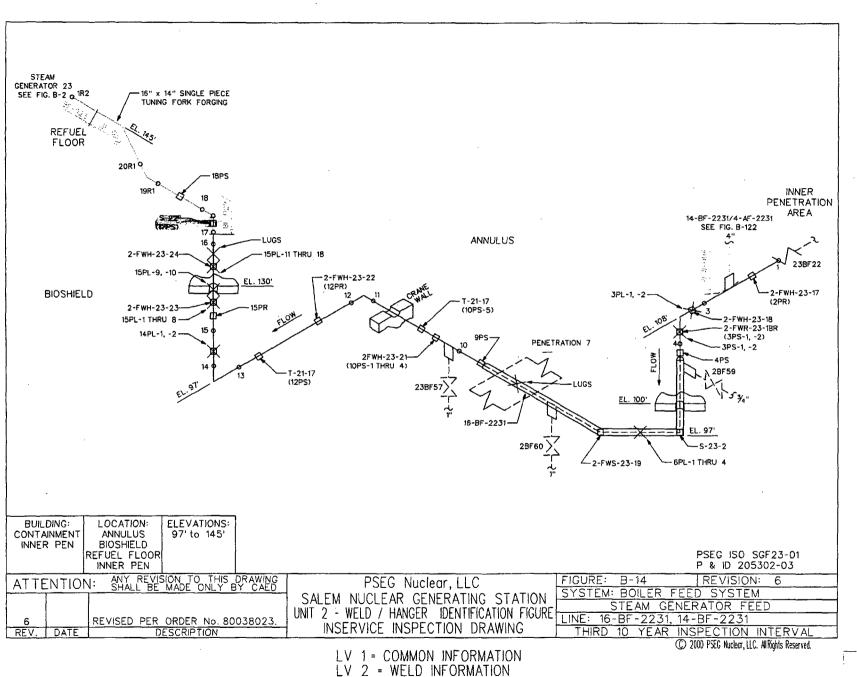


Comments

The MT exam. Was limited to 50% because of a permanently installed pipe collar in the area that prevented sufficient access to examine the weld in two directions

Sketch





LV 3 = HANGER INFORMATION

SUMMARY #: 330540 EXAMINATION SUMMARY RECORD SALEM NUCLEAR POWER STATION, UNIT 2 SYSTEM/COMPONENT: FEEDWATER SYSTEM PIPE SUPPORT S-22 LINE/SUBASSEMBLY: 14-BF-2231 IDENTIFICATION: 14-BF-2231-17PS RELIEF REQUEST #: RR-C1 LTP INSTRUCTIONS: EXAM LIMITED TO 50% CODE COVERAGE, DUE TO PROXIMITY OF A PERMANENT PIPE RESTRAINT. **RESULTS REMARKS:** 94 - W.O. #941023023 TO PERFORM NDE. LIMITATION: EXAM LIMITED TO 50% CODE COVERAGE. DUE TO THE PROXIMITY OF A PERMANENT PIPE RESTRAINT. RESULTS NDE FILE G 0 N 0 E Т METHOD NDE EXAM CALIBRATION RESOLUTION R H IN LTP PROCEDURE EXAM RECORD RECORD 0 RECORD MT X VS2SSISZZ0070Q MT 120009 **REVIEWED & ACCEPTED** FACIORY MUTUAL RING ASSOCIATION UTH. NUCLEAR INSERVICE Prepared by: Ateven العامن لا Steve JL Todd (SwRI) Date: 11/05/94 South W. Sienkiewicz (PSE&G) Reviewed by:

SECOND INTERVAL, FIRST PERIOD, SECOND OUTAGE (94RF)

| PROJECT: 17-6399                                                          | UNIT: <u>Salem unit 2</u>        |
|---------------------------------------------------------------------------|----------------------------------|
| SYSTEM: FEEDWATER                                                         | WELD NO .: 14-BF - 2231 - 18 PS  |
| Prepared By: VICTOR MORTON                                                | Date: <u>5 Nov 94</u>            |
| SURFAC                                                                    | E EXAMINATIONS                   |
| Area To Be Examined (length x Width $\leq$ A) $\omega_{10}$ or $\mu_{10}$ | NOT NECESSARY A= 100% OF AREA    |
| Area Of Limitation (Length x Width = Al) $\mu$                            | Al= 50% OF AREA                  |
| Percentage Of Coverage                                                    | (A-AI/A)= 50%                    |
| VOLUME                                                                    | TRIC EXAMINATIONS                |
| A. Axial Exams (Indications Parallel To Weld)                             |                                  |
| 1. Compute Exam Volume (height x                                          | width x length) = Vt1 $\sqrt{A}$ |
| 2. Compute Vol. Not Covered Upstream                                      | = A                              |
| 3. Compute Upstream Limitation Percentage                                 | (A / Vt1) x 100 = Z1             |
| 4. Compute Vol. Not Covered Downstream                                    | = B                              |
| 5. Compute Downstream Limitation Percentage                               | (B / Vt1) x 100 = Z2             |
| B. Circumferential Exams (Indications Perpend                             | licular To Weld)                 |
| 1. Compute Exam Volume (height x                                          | width x length) = Vt2 $NA$       |
| 2. Compute Vol. Not Covered CW                                            | ≖ C                              |
| 3. Compute CW Limitation Percentage                                       | (C / Vt2) x 100 = Z3             |
| 4. Compute Vol. Not Covered CCW                                           | = D                              |
| 5. Compute CCW Limitation Percentage                                      | (D / Vt2) x 100 = Z4             |
| C. Total Coverage                                                         |                                  |
| 1. Compute Total Limitation Percentage                                    | (Z1+Z2+Z3+Z4)/4 = L <u>NA</u>    |
| 2. Compute Total Coverage                                                 | 100 – L                          |
| EMARKS:                                                                   |                                  |
|                                                                           | •                                |

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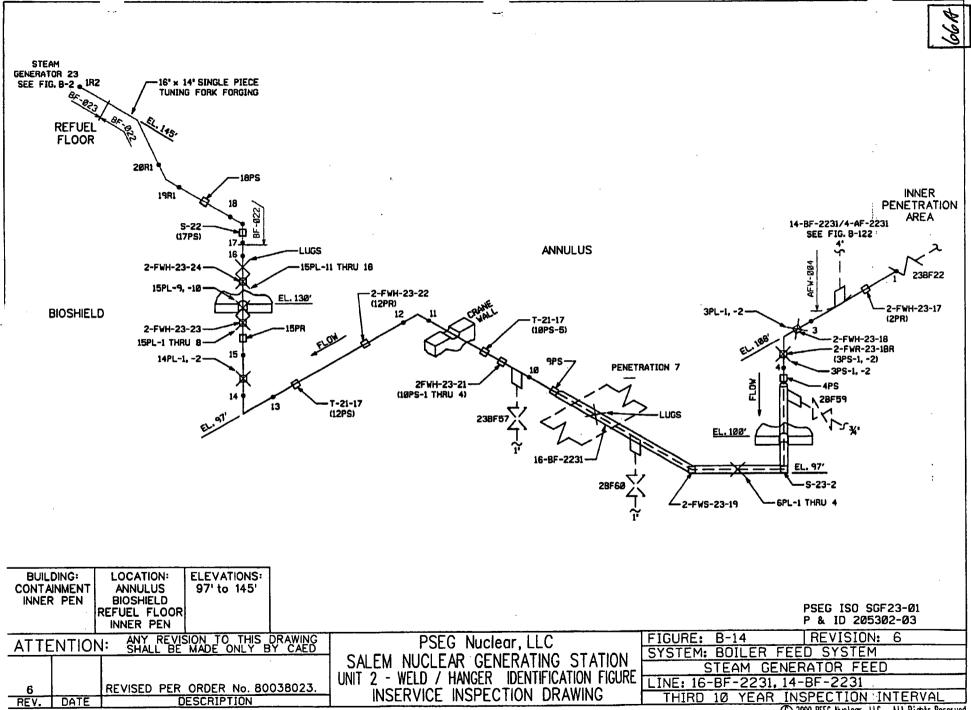
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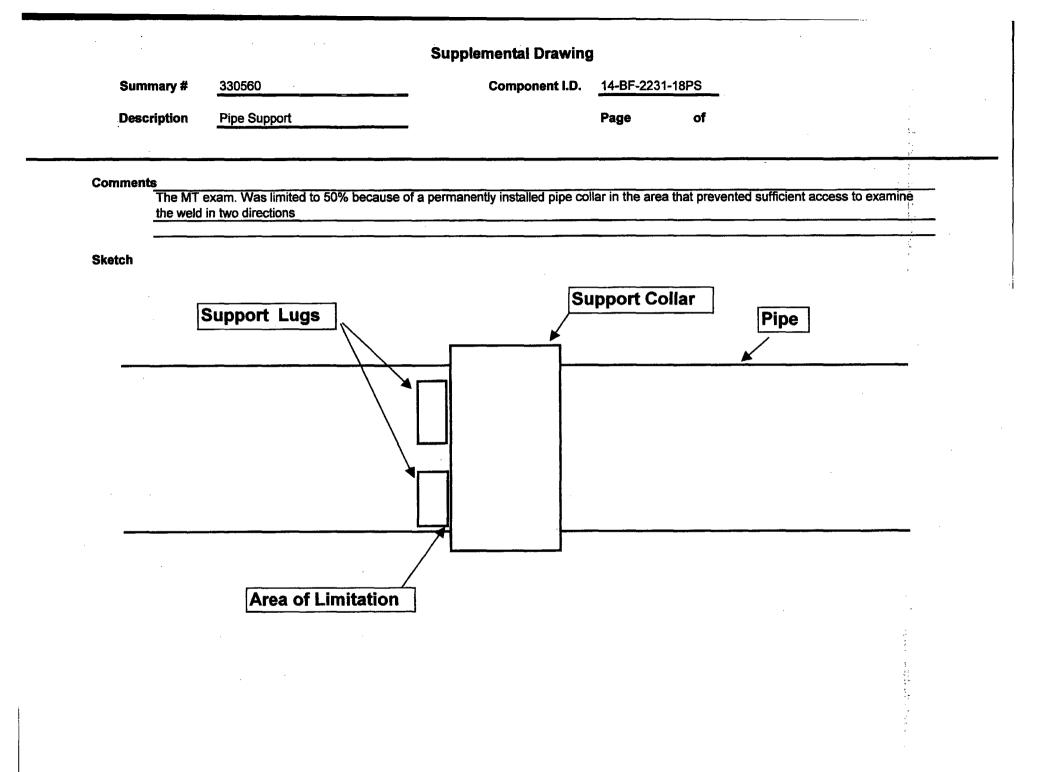
QUESTION 2.2(a) For certain component attachments and support welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

| Summary #      | 330560                           |              |
|----------------|----------------------------------|--------------|
| Component I.D. | 14-BF-2231-18PS                  |              |
| Description    | PIPE SUPPORT                     |              |
| <u> </u>       |                                  | Comments     |
| 1              | Weld X-Section                   | N/A          |
| 2              | Material                         | Carbon Steel |
| 3              | Thickness / weld Crown           | N/A          |
| 4              | Obstruction                      | PIPE COLLAR  |
| 5              | Exam Area Highlighted on Drawing | Yes X No     |
| 6              | Transducer ray exit point        | N/A          |

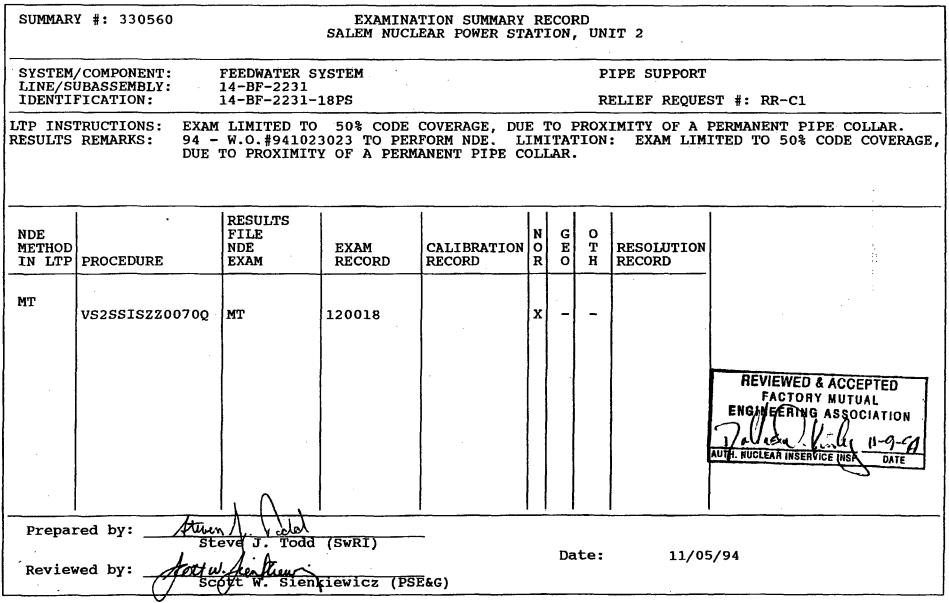
### Comments

MT exam was conducted of this component. The MT exam. Was limited to 50% because of a permanently installed pipe collar in the area that prevented sufficient access to examine the weld in two directions. The MT exam of the lugs was unable to be examined in two directions due to a permanently installed restriction. a system pressure test was also completed with no unacceptable indications observed.

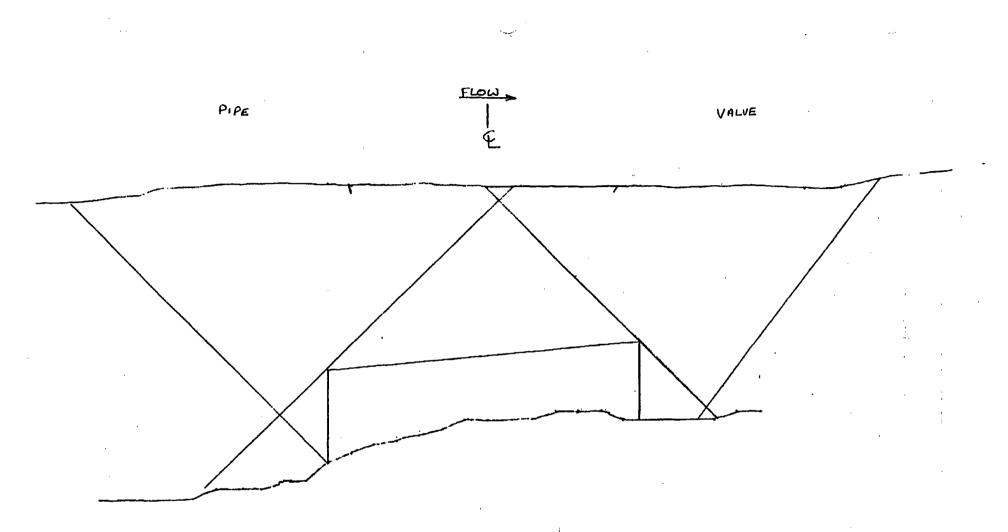
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SECOND INTERVAL, FIRST PERIOD, SECOND OUTAGE (94RF)

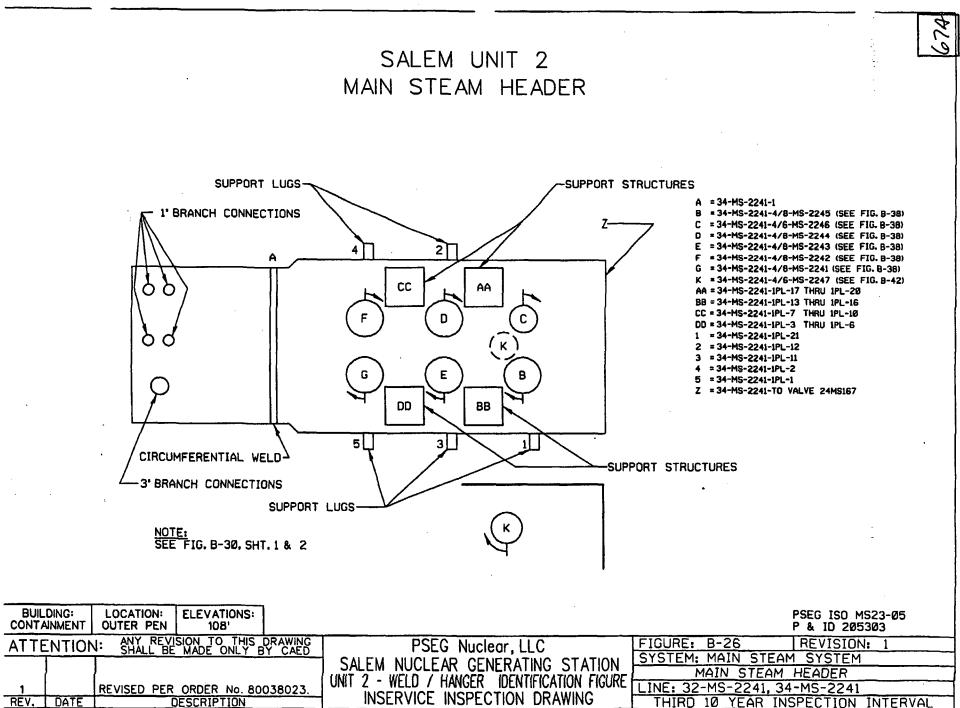


|                                      |                 |                     |               |             | •••                |                              | -                  |                             |                          |                                         |                                        |                                                  |          |
|--------------------------------------|-----------------|---------------------|---------------|-------------|--------------------|------------------------------|--------------------|-----------------------------|--------------------------|-----------------------------------------|----------------------------------------|--------------------------------------------------|----------|
|                                      |                 |                     |               |             |                    |                              |                    |                             |                          |                                         |                                        | •                                                |          |
|                                      |                 |                     |               |             |                    |                              |                    |                             |                          |                                         |                                        | ·                                                |          |
| 3                                    | 30560           | Sw                  | RI M          | IAGN        | IETIC              | PARTIC                       | LE EX              | KAMIN                       | ATIC                     | ON RE                                   | CORD                                   | 1.<br>                                           |          |
| PROJECT No:                          | 17-6399         |                     | SITE: Sa      | lem G<br>Un | eneratinų<br>nit 2 | g Station,                   | 1                  | r - монтн<br><i>Ос</i> + 94 |                          | TIME 124 HR<br>EXAM START<br>EXAM ENDED | ED: 1415                               | SHEET No.:<br>12001                              | 8        |
|                                      | AREA: ISYST/    |                     | LINE/SUB      |             | Y:<br>- 223/       |                              | IDENTIFICAT        |                             |                          | L. LOCATION                             | :<br>eam Side                          | W. LOCATION:<br>Edge of wel                      | 1        |
| EXAMINER:                            | <u>eer 295/</u> | <u>em</u>           | SNT 1         |             | PROCEDU            | 5-15-77-0010                 | SURFACE F          | NISH:                       |                          | WELD TYPE                               | FLOW -                                 | YOKE SPACING: 5                                  |          |
| W. An<br>EXAMINER:                   | yel             |                     | SNT L         |             | REV )              | 12-MTI                       | AS We<br>BRAND: Ma |                             | MATER                    | <i>l'i Pe Si</i><br>Ral<br>Wet 🔲        | <i>DRY</i> B                           | SERIAL No.: WL-                                  | · ·      |
| M. Co.                               | ttow            |                     | IT            | <b>-</b>    | CHG /<br>ICN       |                              | BATCH No.          | -                           | -                        |                                         |                                        | SURFACE TEMP.                                    | •F       |
| CALIBRATION I<br>SERIAL No :<br>B701 | BLOCK           | C'AL<br>TIME:       | IBRATION      | VERIFICAT   |                    | DISTANCE FROM<br>BLACK LIGHT | TYPE: Dr           | _                           |                          |                                         | YES 🗆                                  | THERMOMETER NO.:                                 | 1A       |
| WEIGHT: //.                          |                 | INITIALS:           | NA            | WA          | Firma/             | TO SENSOR<br>CELL N/19-IN    | COLOR: /<br>BLACK  | LIGHT OUT                   |                          | MIXED WITH                              | MATERIAL                               | DUSTING                                          |          |
| BLACK LIGHT                          | NIA             | INTENSITY<br>BRAND: | METER<br>N//y | ,           | BLACK              | LIGHT OUTPUT                 | TIME:              |                             | N/                       | F                                       | APPLICATION:                           | FLOODING                                         |          |
| SERIAL No.:                          | ·//+            | SERIAL No           | .:            |             | 10                 | μw/cm <sup>2</sup>           | INITIALS:          | /                           | - A                      |                                         |                                        | SPRAYING                                         |          |
| IND No.                              | L               | W                   | LOC           | ATION       | ROUND O<br>LINEAR  | R SIZE DIA.<br>OR LENGTH     |                    |                             |                          | REMARK                                  | S:                                     |                                                  | INITIALS |
|                                      |                 | No                  | <u>Reco</u>   | rda         | ble                | Indical                      | ions               |                             |                          | <u></u>                                 |                                        |                                                  | wA.      |
|                                      |                 |                     |               |             | · · · · · ·        |                              |                    |                             |                          |                                         | ······································ |                                                  |          |
|                                      |                 |                     |               |             |                    |                              |                    |                             |                          |                                         |                                        |                                                  |          |
| - <u></u>                            |                 |                     |               |             |                    |                              | <u> </u>           | INSPECTI                    | PSEA                     |                                         |                                        | & ACCEPTED                                       |          |
|                                      |                 |                     |               |             |                    |                              |                    |                             | t and Appro<br>D 11/2/94 |                                         | ENGINEERIN                             | G ASSOCIATION                                    |          |
|                                      |                 |                     |               |             |                    |                              |                    | N.D.E.                      | SUPERVISO                | R                                       | TALASA                                 | RVICE INCP. DATE                                 |          |
|                                      |                 |                     |               |             |                    |                              |                    |                             | ····                     | Ľ                                       |                                        | *                                                |          |
|                                      | AREA LIMITATIO  | N: (IF NON          | E. SO STA     | TEL F       | Vorma 1 AM         | d DowN Str                   | Dawn Si            | de onl                      | V wh                     | 1                                       | <u></u>                                | <del>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</del> | 1        |
| Exami                                | Ned 50          | 70 of u             | veld D        | ia of L     | vq 1"              | Brocketo                     | NUP                | Side                        | wA                       | <u></u>                                 |                                        |                                                  |          |
| WE.                                  | Varia_          |                     |               |             |                    |                              | SNT LEVEL          | 7                           |                          | DAT                                     | BIOCTSY                                |                                                  | F        |
| SWRI FORM No.                        | NOTE 7-12       | IREV. 6/9           | 01            |             |                    |                              |                    |                             |                          | 73                                      | iocts4                                 |                                                  |          |



SALEM UNIT 2 17-6399 MAIN STEAM 34-M5-2241-3 VICTOR MORTON III 11 NOV 94 FOR COVERASE ONLY. 380140

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| QUESTION       | demonstrate impra<br>sketches and/or de | welds, Information submitted by the licensee is not sufficient to<br>acticality. Please submit further information in the form of drawings,<br>ascriptions to support this evaluation for the following components, as<br>se identification numbers listed below. |
|----------------|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Summary #      | 380140                                  |                                                                                                                                                                                                                                                                   |
| Component I.D. | 34-MS-2241-2                            |                                                                                                                                                                                                                                                                   |
| Description    | Pipe to Valve 24-MS-167                 |                                                                                                                                                                                                                                                                   |
|                |                                         | Comments                                                                                                                                                                                                                                                          |
| 1              | Weld X-Section                          | See Attached                                                                                                                                                                                                                                                      |
| 2              | Material                                | Carbon Steel                                                                                                                                                                                                                                                      |
| 3              | Thickness / weld Crown                  | Thickness 2.5" / Weld Crown 2.75"                                                                                                                                                                                                                                 |
| 4              | Obstruction                             | OD valve contour / Branch configuration                                                                                                                                                                                                                           |
| 5              | Exam Area Highlighted on D              | rawing Yes X No                                                                                                                                                                                                                                                   |
| 6              | Transducer ray exit point               | See Attached                                                                                                                                                                                                                                                      |

### Comments

UT exam was performed of this component using 45 and 32 degree shear wave transducer. The ultrasonic examination was limited to 85% of the code required coverage being limited between 7 1/2" W from 5" to 16" and 87 1/2" to 103" due to multiple branch connections. No unacceptable indications were observed. A magnetic particle examination and system pressure test was also completed with no recordable indications observed.

### NOTE:

Weld ID was miss labeled on data report program data base and piping isometrics so pipe to valve 24MS167 weld being weld #2 paperwork states weld 3 this was miss labeled only on data report.

Page

of

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# SECOND INTERVAL, FIRST PERIOD, SECOND OUTAGE (94RF)

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| SUMMAR                  | ¥ #: 380140                                                  |                                                                                        |                                                                          | FION SUMMARY<br>EAR POWER ST                               |                          |                        |                        | IT 2                                                    |                                                                                                                                                   |
|-------------------------|--------------------------------------------------------------|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------|------------------------------------------------------------|--------------------------|------------------------|------------------------|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| LINE/St                 | IBASSEMBLV.                                                  | MAIN STEAM S<br>34-MS-2241<br>34-MS-2241-2                                             | DEFCC #34H                                                               | -2MS1020]                                                  |                          |                        |                        | IPE TO VALVI<br>ELIEF REQUE                             | E 24MS167<br>ST #: RR-C1                                                                                                                          |
|                         | TRUCTIONS: LIMI<br>DOWNS<br>LIMI<br>REMARKS: 94 -<br>SIDE    | TED UT FROM<br>STREAM SIDE<br>FED TO A MIN<br>W.O.#94102<br>OF WELD. U<br>ECTION INSIN | UPSTREAM S<br>DUE TO VALV<br>NIMUM OF 853<br>3023 (NDE).<br>JT45 GEOMETI | VE CONFIGURA<br>CODE COVERA<br>EXAM TO INC<br>RIC REFLECTO | FIO<br>AGE<br>CLU<br>R I | N.<br>, D<br>DE<br>S F | LI<br>UE<br>2.5<br>ROM | MITATION: N<br>TO BRANCH C<br>T OF INTERS<br>THE WELD C | FIGURATION. NO UT FROM<br>UT LONGITUDINAL SEAM IS<br>ONNECTIONS.<br>ECTING LG SEAM ON UP STRM<br>OUNTERBORE & BRANCH<br>ITED TO 85% CODE COVERAGE |
| NDE<br>METHOD<br>IN LTP | PROCEDURE                                                    | RESULTS<br>FILE<br>NDE<br>EXAM                                                         | EXAM<br>RECORD                                                           | CALIBRATION<br>RECORD                                      | N<br>O<br>R              |                        | O<br>T<br>H            | RESOLUTION<br>RECORD                                    |                                                                                                                                                   |
| UT<br>MT                | VS2SSISZZ0070Q<br>"<br>VS2RAISZZ0082Q<br>"<br>VS2RAISZZ0088Q | MT<br>MT<br>UT45<br>UT45T<br>PROFILE                                                   | 120049<br>120045<br>860065<br>860074<br>135062                           | -<br>-<br>147104<br>147112<br>-                            | X<br>-<br>-              | -<br>-<br>-<br>-<br>-  | -                      | -<br>-<br>310043<br>310043<br>-                         | REVIEWED & ACCEPTED<br>EACTORY INTUAL<br>ENGINEERING ASSOCIATION<br>AUTH. NOCLEAR INSERVICE ANSP. DATE                                            |
| -                       | red by:                                                      | eve J. Todd                                                                            | (SwRI)<br>Niewicz (PSE                                                   | -<br>[&G)                                                  |                          | Dat                    | :e:                    | 11/17                                                   | 7/94                                                                                                                                              |

SALEM UNIT 2 17-6399 MAIN STEAM 34-MS-2241-82 VICTOR MORTON III 11 NOV94. GEOMETRIC.

380140

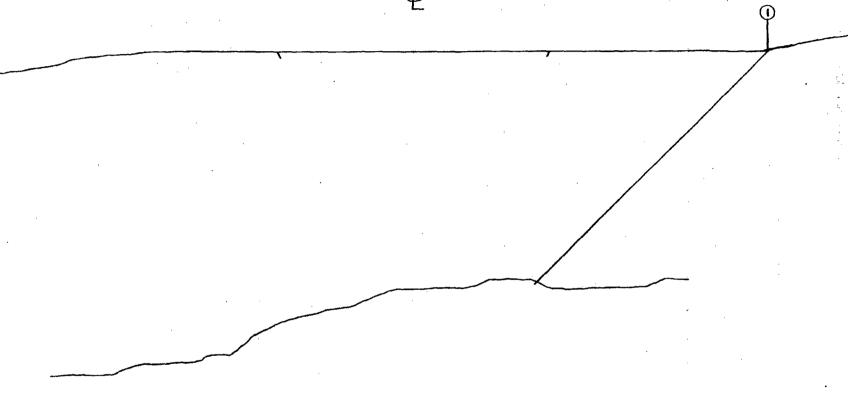
1 COUNTERBORE.

O PSEG INSPECTION SERVICES

Reviewed and Approved

N.D.E. SUPERVIS

DOWN VALVE



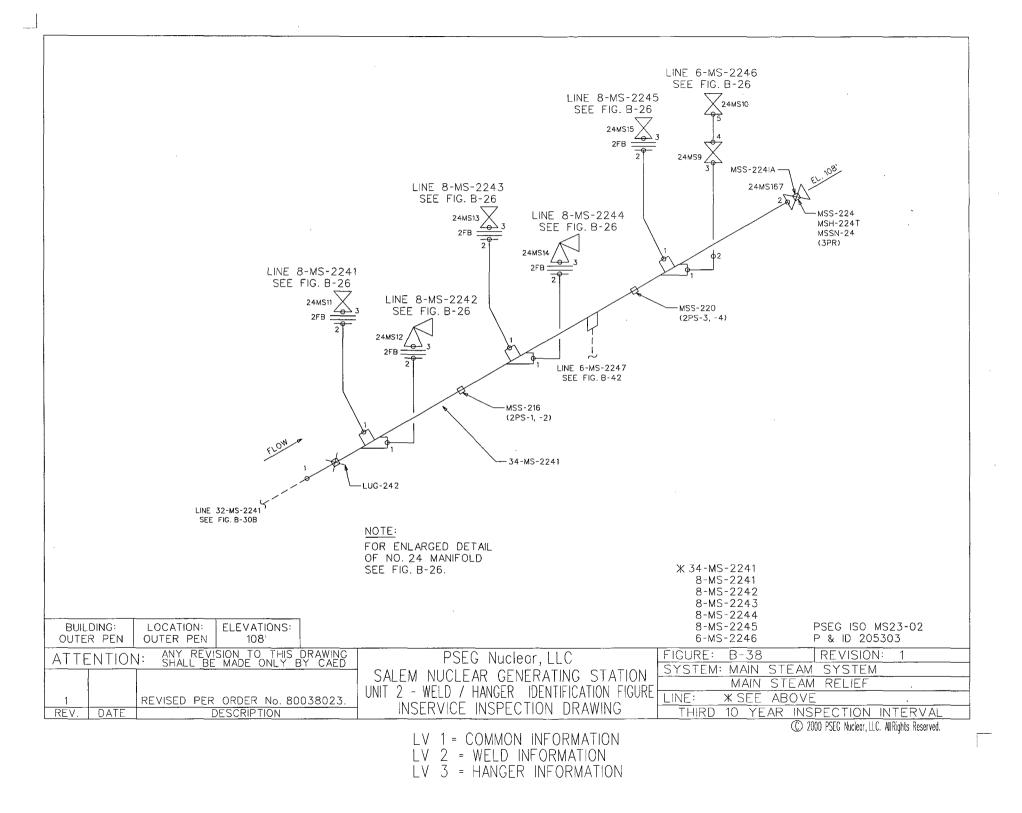
FLOW .

υP

PIPE

| PSE&G LI                                      | MITATION REPORT                      |
|-----------------------------------------------|--------------------------------------|
| PROJECT: 17-6399                              | UNIT: SALEM UNIT 2                   |
| SYSTEM: MAIN STEAM                            | WELD NO .: 34-MS-2241- 2 (LONG SEAM) |
| Prepared By: VICTOR MORTON                    | Date: 14 NOV 94                      |
| SURFACE                                       | EEXAMINATIONS                        |
| NCT REQUIRED                                  | A= 8,75                              |
| Area To Be Examined (length $x_{Width} = A$ ) |                                      |
| Area Of Limitation (Length x Wieth = Al)      | AI= 7.50 (WORST CASE BASIS)          |
| Percentage Of Coverage                        | (A-AI/A)= 85.71%                     |
| VOLUMET                                       | RIC EXAMINATIONS                     |
| A. Axial Exams (Indications Parallel To Weld) |                                      |
| 1. Compute Exam Volume (height x v            | width x length) = Vt1 $Na$           |
| 2. Compute Vol. Not Covered Upstream          | = A                                  |
| 3. Compute Upstream Limitation Percentage     | (A / Vt1) x 100 = Z1                 |
| 4. Compute Vol. Not Covered Downstream        | = B                                  |
| 5. Compute Downstream Limitation Percentage   | (B / Vt1) x 100 = Z2                 |
| B. Circumferential Exams (Indications Perpend | licular To Weld)                     |
| 1. Compute Exam Volume (height x v            | width x length) = Vt2 $NA$           |
| 2. Compute Vol. Not Covered CW                | = C                                  |
| 3. Compute CW Limitation Percentage           | (C / Vt2) x 100 = Z3                 |
| 4. Compute Vol. Not Covered CCW               | = D                                  |
| 5. Compute CCW Limitation Percentage          | (D / Vt2) x 100 = Z4                 |
| C. Total Coverage                             |                                      |
| 1. Compute Total Limitation Percentage        | (Z1+Z2+Z3+Z4)/4 = L $NA$             |
| 2. Compute Total Coverage                     | 100 - L <u>* 85.71%</u>              |
| REMARKS: * THIS IS 85.71% OF THE SURF         | ALE AREA NECCESSARY TO ALHIEVE       |
| 100% OF THE REQUIRED VOLUM                    | E (CALCULATED ON A WORST CASE BASIS) |
|                                               | 380140                               |

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| PROJECT: 17-6399                                          | UNIT: Selen                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Prepared By: VICTOR MORTON                                | and a set of the set o |
|                                                           | Date: <u>14 NOV 94</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                                           | E EXAMINATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Area To Be Examined (length $x_{i} = A$ )                 | <u>A= 8.75</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Not Required<br>Area Of Limitation (Length x Wiettr = Al) | AI= 7.50 (WORST CASE BASIS)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Percentage Of Coverage                                    | (A-AI/A)= 85.71%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| VOLUMET                                                   | RIC EXAMINATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| A. Axial Exams (Indications Parallel To Weld)             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. Compute Exam Volume (height x v                        | width x length) = Vt1 $N A$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. Compute Vol. Not Covered Upstream                      | = A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 3. Compute Upstream Limitation Percentage                 | (A / Vt1) x 100 = Z1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 4. Compute Vol. Not Covered Downstream                    | = B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 5. Compute Downstream Limitation Percentage               | (B / Vt1) x 100 = Z2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| B. Circumferential Exams (Indications Perpend             | icular To Weld)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. Compute Exam Volume (height x w                        | vidth x length) = Vt2N (A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. Compute Vol. Not Covered CW                            | · = C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 3. Compute CW Limitation Percentage                       | (C / Vt2) x 100 = Z3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 4. Compute Vol. Not Covered CCW                           | = D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 5. Compute CCW Limitation Percentage                      | $(D / Vt2) \times 100 = Z4$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| C. Total Coverage                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. Compute Total Limitation Percentage                    | (Z1+Z2+Z3+Z4)/4 = L $NA$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. Compute Total Coverage                                 | 100 - L <u>* 85.71%</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| EMARKS: * THIS IS 85.71 & OF THE SURFI                    | ACE AREA NECCESSARY TO ALHIEVE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                                           | CE AREA NECCESSARY TO ACHIEVE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

|                                                         | MITATION REPORT          |              |
|---------------------------------------------------------|--------------------------|--------------|
| PROJECT: 17-6399                                        |                          |              |
| SYSTEM: MAIN STEAM                                      | WELD NO.: <u>34-M5-2</u> | 241-242 PL 2 |
| Prepared By: VICTOR MCRTON                              | Date: <u>[0 N</u>        | <u>ov 94</u> |
| SURFACE                                                 | EXAMINATIONS             | _            |
| Area To Be Examined (length x_Width = A)                | <u>A=</u>                | 100%         |
| معد REAURCE<br>Area Of Limitation (Length x Width = AI) | <u>Al=</u>               | 28.8         |
| Percentage Of Coverage                                  | (A–AI <u>/A)=</u>        | 11.2%        |
| VOLUMET                                                 | RIC EXAMINATION          | S            |
| A. Axial Exams (Indications Parallel To Weld)           |                          |              |
| 1. Compute Exam Volume (height x w                      | ridth x length) = Vt1    | NA           |
| 2. Compute Vol. Not Covered Upstream                    | = A                      |              |
| 3. Compute Upstream Limitation Percentage               | (A / Vt1) x 100 = Z1     |              |
| 4. Compute Vol. Not Covered Downstream                  | = B                      |              |
| 5. Compute Downstream Limitation Percentage             | (B / Vt1) x 100 = Z2     |              |
| B. Circumferential Exams (Indications Perpendi          | cular To Weld)           |              |
| 1. Compute Exam Volume (height x w                      | idth x length) = Vt2     |              |
| 2. Compute Vol. Not Covered CW                          | = C                      |              |
| 3. Compute CW Limitation Percentage                     | (C / Vt2) x 100 = Z3     |              |
| 4. Compute Vol. Not Covered CCW                         | = D                      |              |
| 5. Compute CCW Limitation Percentage                    | (D / Vt2) x 100 = Z4     |              |
| C. Total Coverage                                       |                          |              |
| 1. Compute Total Limitation Percentage                  | (Z1+Z2+Z3+Z4) / 4 = L    | NA           |
| 2. Compute Total Coverage                               | 100 – L                  |              |
| REMARKS:                                                |                          |              |
|                                                         |                          |              |
|                                                         |                          | •            |

QUESTION 2.2(a) For certain component attachments and support welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

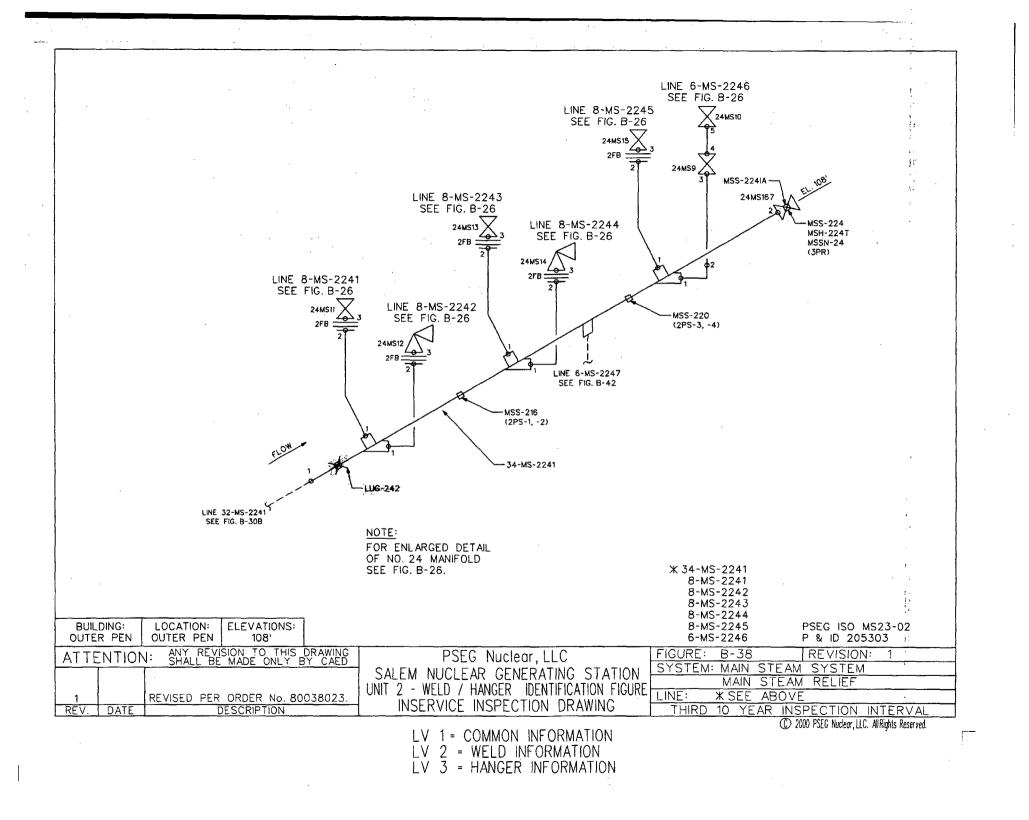
| Summary #      | 381070                           |                |
|----------------|----------------------------------|----------------|
| Component I.D. | 34-MS-2241-242-PL                |                |
| Description    | PIPE LUG                         |                |
|                |                                  | Comments       |
| 1              | Weld X-Section                   | N/A            |
| 2              | Material                         | Carbon Steel   |
| 3              | Thickness / weld Crown           | N/A            |
| 4              | Obstruction                      | PERMANENT BEAM |
| 5              | Exam Area Highlighted on Drawing | Yes X No       |
| 6              | Transducer ray exit point        | N/A            |

### Comments

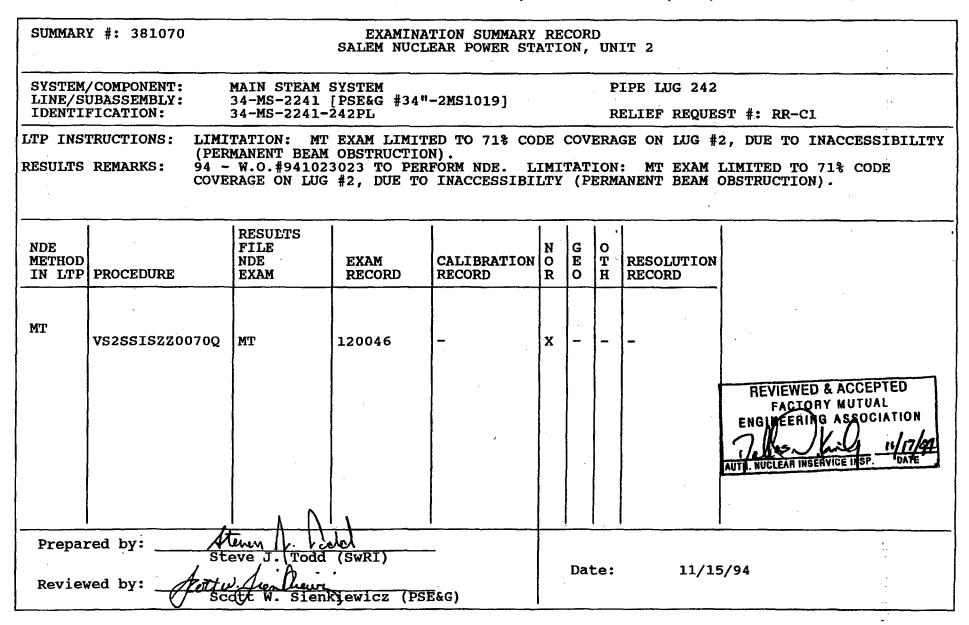
MT -exam was conducted on this component. The MT exam was limited to 71% because of a permanently installed beam that obstructed access to lug #2. No exam could performed from 11-1/2" to 18-1/8" due to the beam's proximity the total weld length is 23". a complete MT exam was performed on lug #1. A system pressure test was also completed with no inaccessible indications observed.

## No Further Information Available

Page of



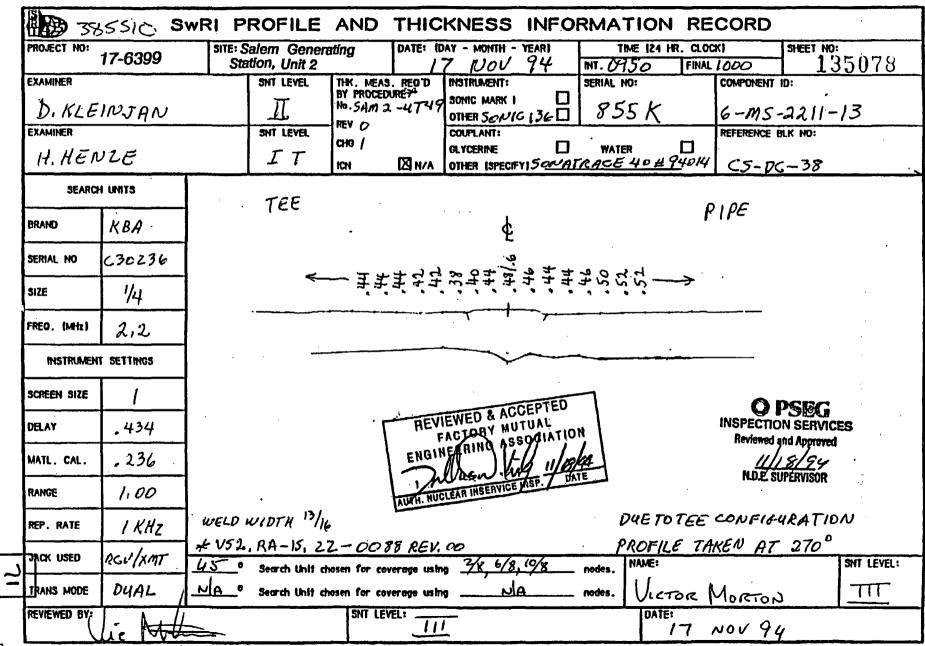
SECOND INTERVAL, FIRST PERIOD, SECOND OUTAGE (94RF)



| <u></u>                                                                                |                                                |                                       |                                 |                    |                          |               | • .         |              |                        |                                             |                                       |          |
|----------------------------------------------------------------------------------------|------------------------------------------------|---------------------------------------|---------------------------------|--------------------|--------------------------|---------------|-------------|--------------|------------------------|---------------------------------------------|---------------------------------------|----------|
| Swri Magnetic Particle Examination Record                                              |                                                |                                       |                                 |                    |                          |               |             |              |                        |                                             |                                       |          |
| PROJECT No:                                                                            |                                                |                                       | SITE: Salem Generating Station, |                    |                          | DATE: IDA     | Y - MONTH   | I - YEAR)    | TIME (24 H             |                                             | SHEET No.:                            |          |
| 1                                                                                      | 17-6399                                        |                                       | Ur                              | nít 2              |                          |               | EXAM STARTE |              |                        | 1200                                        | 146                                   |          |
|                                                                                        |                                                |                                       |                                 |                    | 101                      | <u>Nov 9</u>  | 4           | EXAM ENDED   |                        |                                             |                                       |          |
| EXAMINATION                                                                            | EXAMINATION AREA: (SYST/COMP) LINE/SUBASSEMBLY |                                       |                                 |                    | IDENTIFICA               |               |             | L. LOCATION: |                        | W LOCATION:<br>FUSION LINE OF               |                                       |          |
| MAINSTEAM                                                                              |                                                |                                       | 34-MS-2241                      |                    |                          | 1/4:5         | 2           | 6            |                        | MAIN RUN                                    |                                       |          |
| EXAMINER:                                                                              |                                                |                                       | SNT LEVEL                       | PROCEDURE          |                          | SURFACE F     | INISH:      |              | WELD TYPE              | (FLOW                                       | YOKE SPACING: C                       | GY2 IN   |
|                                                                                        | ð <del>-</del>                                 |                                       |                                 |                    | ヨーバイノ                    | GRO           | UND         |              | PIPE                   | UGS                                         | YOKE BRAND:/MA                        | ENAEIUV  |
| EXAMINER:                                                                              | NRELL                                          |                                       | JZ.<br>SNT LEVEL                | REV ; X            | r                        | 1             |             | MATE         |                        | _                                           | SERIAL No.:43                         |          |
| ENAMINER                                                                               |                                                |                                       | SNI LEVEL                       | CHG /              |                          | BRAND: M      | AGNAP       | -LUX         | WET 🗋                  | DRY 🔀                                       | SERIAL NO. 43                         | 330      |
| M.C                                                                                    | OTTEN                                          |                                       | IT                              | ICN                |                          | BATCH No.     | :8570       | 4 S          | FLOURESCEN             | T 🗖                                         | SURFACE TEMP.                         | •F       |
| CALIBRATION E<br>SERIAL No.:                                                           | Block                                          | CAL                                   | IBRATION VERIFICA               |                    | DISTANCE FROM            | TYPE: DR      | y PowD      | ER           | MIXED N                |                                             | THERMOMETER                           | N/n      |
| 8 70198                                                                                | ( 24                                           | TIME:                                 | 1054 1107                       | IF I               | Black Light<br>To sensor | COLOR: 1      | PDAY        |              | MIXED WITH             |                                             | SERIAL No .:                          | 14       |
| WEIGHT: //、                                                                            | ,<br>3 LBS                                     |                                       | WAWA                            | PAL                | CELL N/A IN              |               |             |              |                        | MATERIAL                                    | L                                     |          |
| BLACK LIGHT                                                                            | <u> </u>                                       | INTENSITY                             |                                 |                    | IGHT OUTPUT              | BLACI         | k light ou  | TPUT VERI    | FICATION               | APPLICATION:                                | DUSTING                               | M        |
| BRAND                                                                                  | nt/n                                           | BRAND:                                | N/Ja                            |                    |                          | TIME:         |             | N_           |                        |                                             | FLOODING                              | s 🔲      |
| SERIAL No .:                                                                           |                                                |                                       | N/A uw/cm <sup>2</sup>          |                    | INITIALS:                |               | A           |              |                        | SPRAYING                                    |                                       |          |
| IND No.                                                                                | L                                              | w                                     | LOCATION                        | ROUND OR<br>LINEAR | SIZE DIA.<br>OR LENGTH   |               |             |              | REMAR                  | <s:< td=""><td></td><td>INITIALS</td></s:<> |                                       | INITIALS |
|                                                                                        |                                                |                                       |                                 |                    |                          | ALO DE        | CAPDI       | BRIE         | TADIC                  | ATIONS                                      |                                       | in A     |
|                                                                                        |                                                | ·····                                 |                                 |                    | _                        | <u> 10 12</u> |             |              | <u> 4 / Y LO I N</u> u |                                             |                                       |          |
|                                                                                        |                                                |                                       |                                 | ·                  | _                        |               |             |              |                        |                                             |                                       |          |
|                                                                                        |                                                |                                       |                                 |                    |                          |               |             |              |                        |                                             |                                       |          |
|                                                                                        |                                                |                                       |                                 |                    |                          |               |             |              | DTED                   | <u>AD</u>                                   | SEG                                   |          |
|                                                                                        |                                                |                                       |                                 |                    |                          | RE            | VIEWED      |              |                        | INSPECTION                                  | SERVICES                              |          |
|                                                                                        |                                                | · · · ·                               |                                 |                    | -                        | ENG           | FACTOR      |              |                        | Reviewed an                                 |                                       |          |
|                                                                                        |                                                |                                       |                                 |                    |                          |               | M YE        | 1            |                        | 19                                          | Jululay                               |          |
|                                                                                        |                                                |                                       |                                 |                    |                          | 11/1          | Marn X      | ruly .       | NnA                    | N.D.E. SUF                                  | PERVISOR                              |          |
|                                                                                        |                                                | · · · · · · · · · · · · · · · · · · · |                                 |                    |                          | AUTY. NU      | CLEAR INSER | VICE INSP.   | DATE                   | N.D.E. 001                                  |                                       |          |
|                                                                                        |                                                |                                       |                                 |                    |                          |               |             |              |                        |                                             |                                       |          |
|                                                                                        |                                                |                                       |                                 |                    | -                        |               |             |              |                        |                                             | · · · · · · · · · · · · · · · · · · · |          |
|                                                                                        |                                                | L <u></u>                             |                                 |                    |                          | A VSJ.        | <u>SS-J</u> | <u>S, Z</u>  | 2-007                  | O REV. On                                   |                                       | WA       |
| EXAMINATION AREA LIMITATION: (IF NONE, SO STATE)                                       |                                                |                                       |                                 |                    |                          |               |             |              |                        |                                             |                                       |          |
| LUG2, NO EXAM FROM LO 11/2 TO 18 18 DUE TO BEAM PROXIMITY, WELD LENGTH & 3 EACH LUG WA |                                                |                                       |                                 |                    |                          |               |             |              |                        |                                             |                                       |          |
| REVIEWED BY:                                                                           |                                                | Intal                                 | · · ·                           |                    |                          | SNT LEVEL     | T           |              | DA                     | n<br>11/11/94                               | PAGE                                  | 0F/      |
| SWRI FORM No.                                                                          | NDTR 17-12                                     | (REV. 6/90                            | )}                              |                    |                          | · · ·         |             |              |                        |                                             |                                       |          |
|                                                                                        | N                                              |                                       |                                 |                    |                          |               |             |              |                        |                                             | • .                                   |          |

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SWRI FORM No. NDTR 17-135 (REV. 6/90)

R

QUESTION

2.1 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

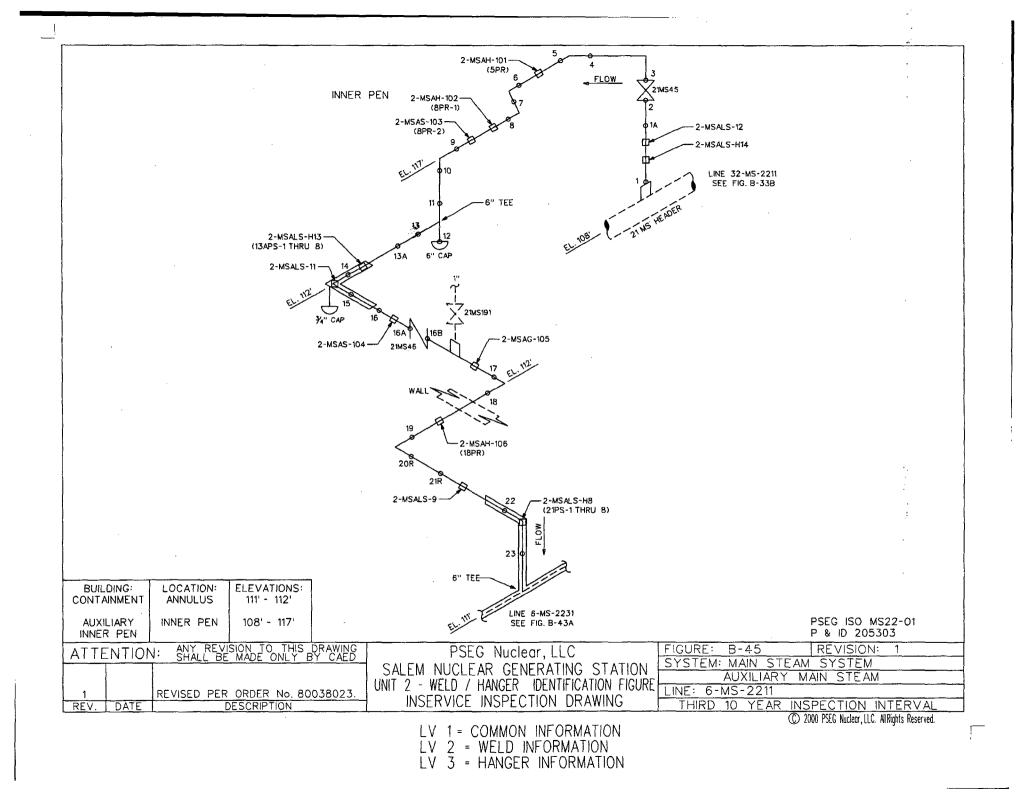
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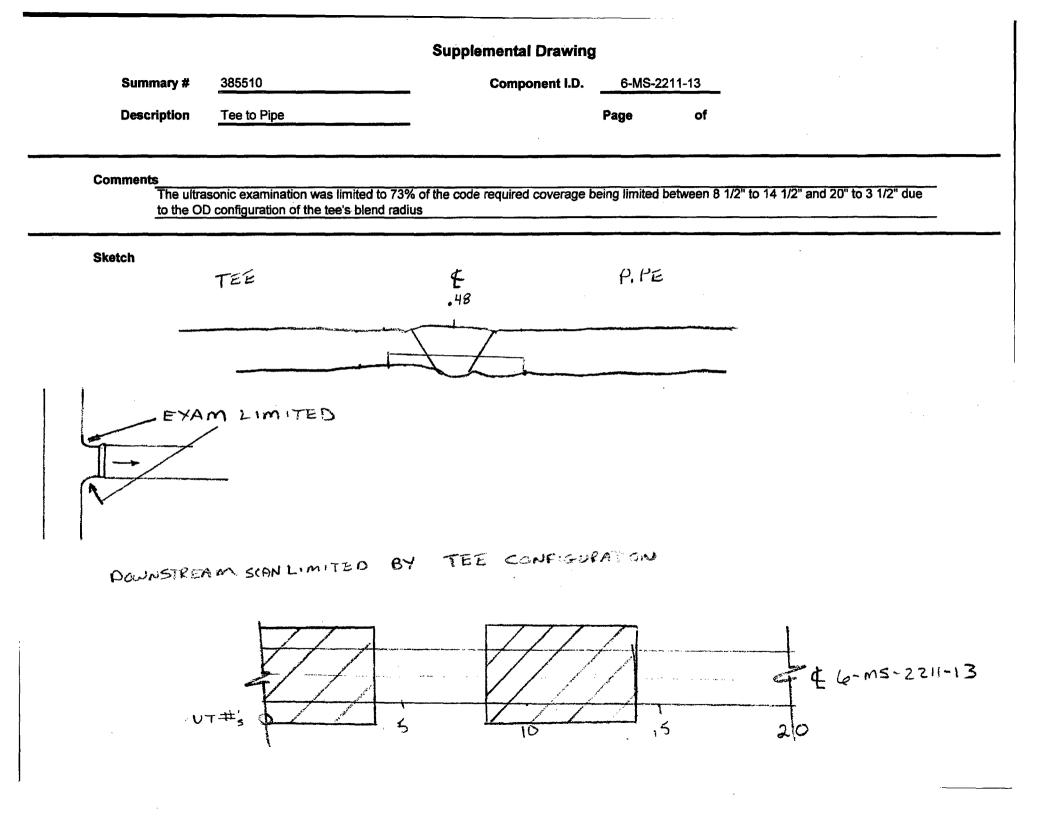
| Summary #      | 385510                           |                                 |
|----------------|----------------------------------|---------------------------------|
| Component I.D. | 6-MS-2211-13                     |                                 |
| Description    | Tee to Pipe                      |                                 |
|                |                                  | Comments                        |
| 1              | Weld X-Section                   | See Attached                    |
| 2              | Material                         | Carbon Steel                    |
| 3              | Thickness / weld Crown           | Thickness .48" / weld Crown .8" |
| 4              | Obstruction                      | Tee OD Contour                  |
| 5              | Exam Area Highlighted on Drawing | Yes X No                        |
| 6              | Transducer ray exit point        | See Attached                    |

### Comments

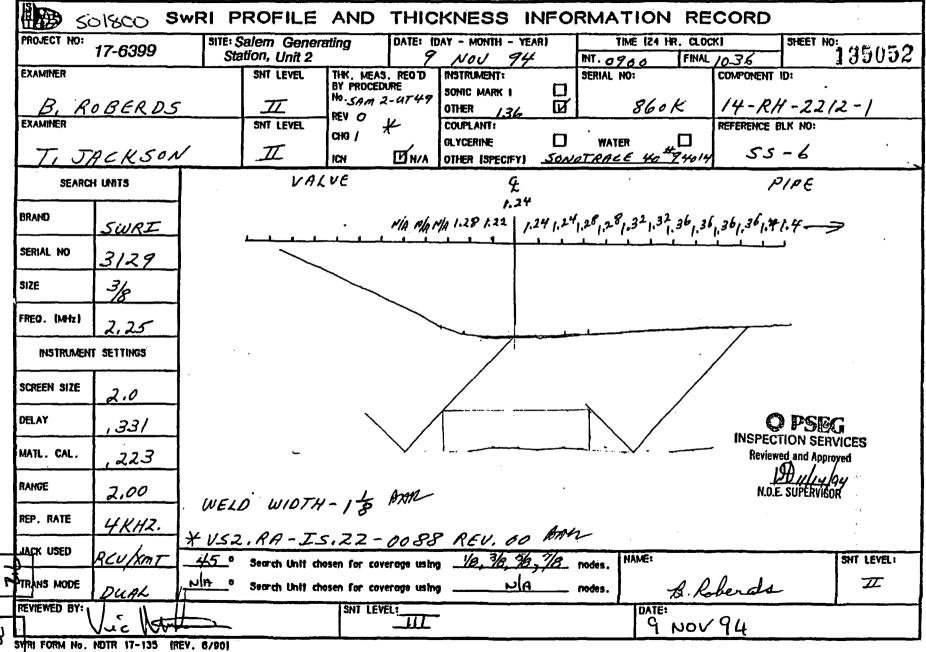
UT exam was performed of this component using 45 degree shear wave transducer. The ultrasonic examination was limited to 73% of the code required coverage being limited between 8 1/2" to 14 1/2" and 20" to 3 1/2" due to the OD configuration of the tee's blend radius. UT scans were performed on and across the weld in both directions No unacceptable indications were observed. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.

Page of

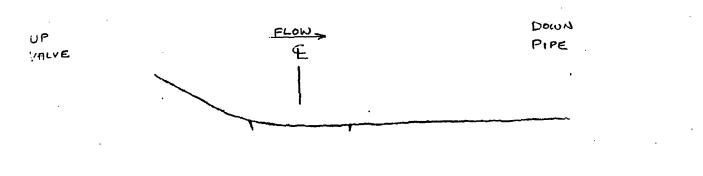


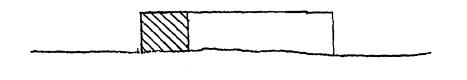






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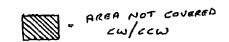


RESIDUAL HEAT REMOVAL

14-RH-2212-1 VICTOR MORTON JIT. 9NOV94 FOR LIMITATIONS ONLY.

501800

73



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|               | PSE&G L                                       | IMITATION REPORT         |        |
|---------------|-----------------------------------------------|--------------------------|--------|
| ·             | PROJECT: 17-6399                              | UNIT: SALEM              | UNIT 2 |
|               | SYSTEM: RESIDUAL HEAT REMOVAL                 | WELD NO.: <u>14~RH-2</u> | 212-1  |
|               | Prepared By: VICTOR MCIETON                   | Date: <u>9 NOV</u>       | 94     |
| ·             | SURFAC                                        | E EXAMINATIONS           |        |
|               | Area To Be Examined (length x Width = A)      | A= N                     | AA     |
|               | Area Of Limitation (Length x Width = AI)      | <u>Al=</u>               |        |
|               | Percentage Of Coverage                        | (A−AI <u>/A)</u> =       |        |
| ÷             |                                               |                          |        |
| ·             | 1                                             | TRIC EXAMINATIONS        | 5      |
|               | A. Axial Exams (Indications Parallel To Weld) |                          | 29.7/  |
| •             |                                               | width x length) = Vt1    | 32.36  |
|               | 2. Compute Vol. Not Covered Upstream          | = A                      |        |
|               | 3. Compute Upstream Limitation Percentage     | (A / Vt1) x 100 = Z1     | _0     |
| . :           | 4. Compute Vol. Not Covered Downstream        | = B                      |        |
|               | 5. Compute Downstream Limitation Percentage   | (B / Vt1) x 100 = Z2     |        |
|               | B. Circumferential Exams (Indications Perpend | licular To Weld)         |        |
|               | 1. Compute Exam Volume (height x v            | width x length) = Vt2    | 42.69  |
|               | 2. Compute Vol. Not Covered CW                | = C                      | 10.34  |
|               | 3. Compute CW Limitation Percentage           | (C / Vt2) x 100 = Z3     | 24.22  |
|               | 4. Compute Vol. Not Covered CCW               | = D                      | 10.34  |
| ·             | 5. Compute CCW Limitation Percentage          | (D / Vt2) x 100 = Z4     | 24.22  |
| ·             | C. Total Coverage                             |                          |        |
|               | 1. Compute Total Limitation Percentage        | (Z1+Z2+Z3+Z4) / 4 = L    | 12.11  |
|               | 2. Compute Total Coverage                     | 100 – L                  | 87.89% |
|               | REMARKS:                                      |                          |        |
| -             |                                               |                          |        |
| <b>*</b> 2007 |                                               |                          | 501800 |
|               |                                               |                          |        |

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# REQUEST FOR ADDITIONAL INFORMATION REQUEST FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR IN-SERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

QUESTION

2.1 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

| Summary #      | 501800                           |                                     |
|----------------|----------------------------------|-------------------------------------|
| Component I.D. | 14-RH-2212-1                     |                                     |
| Description    | Valve 2RH2 to Pipe               |                                     |
|                |                                  | Comments                            |
| 1              | Weld X-Section                   | See Attached                        |
| 2              | Material                         | Stainless Steel                     |
| 3              | Thickness / weld Crown           | Thickness 1.24" / weld Crown 1.125" |
| 4              | Obstruction                      | Valve OD Contour                    |
| 5              | Exam Area Highlighted on Drawing | Yes X No                            |
| 6              | Transducer ray exit point        | See Attached                        |

### Comments

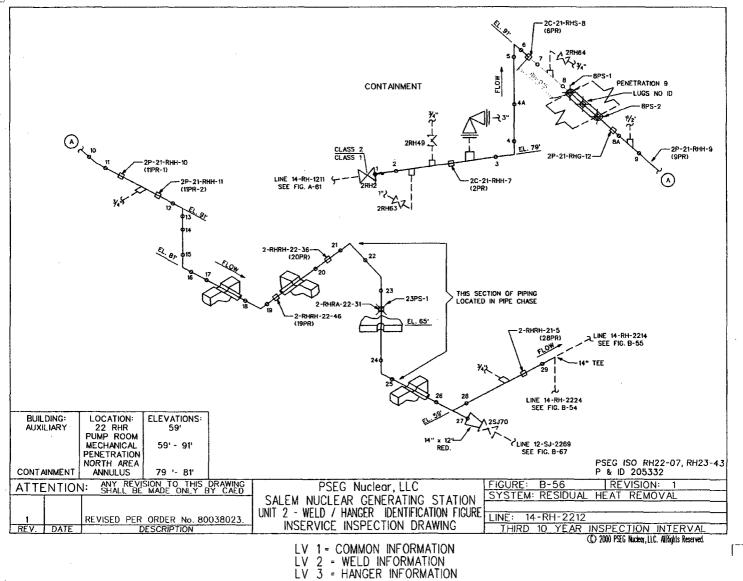
UT exam was performed of this component using 45 degree shear wave transducer. The ultrasonic examination was limited to 87% of the code required coverage being limited due to upstream side valve OD configuration that restricted scanning. UT scans were performed on and across the weld in both directions No unacceptable indications were observed. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.

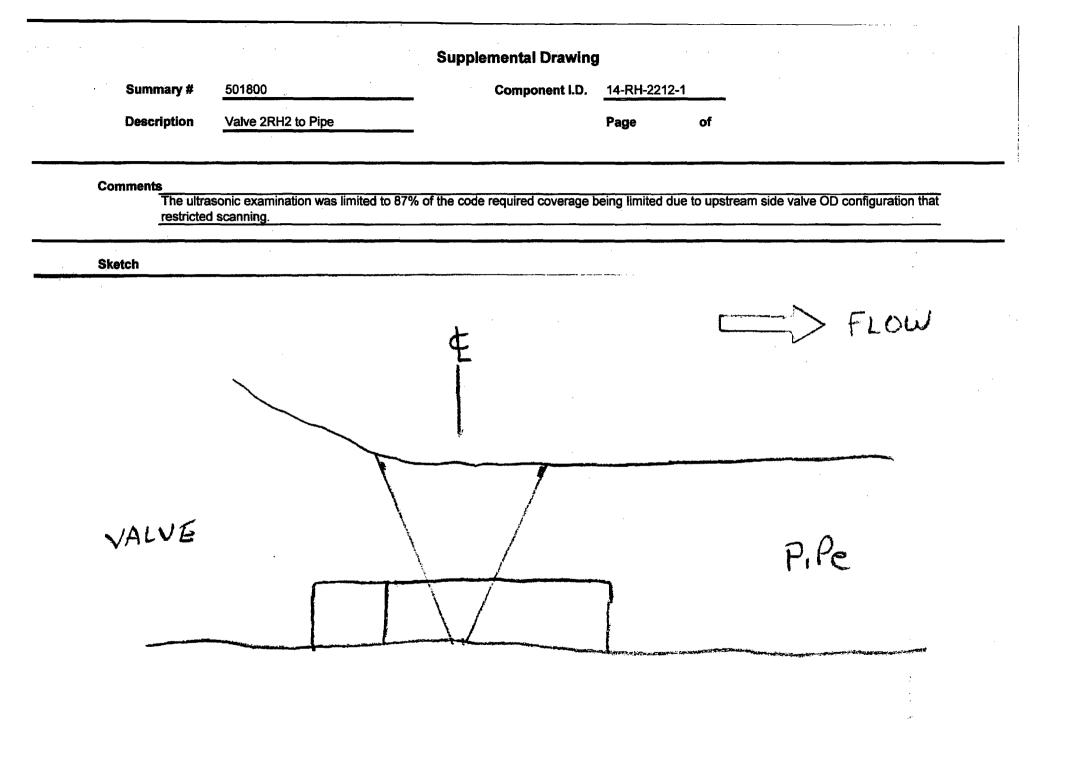
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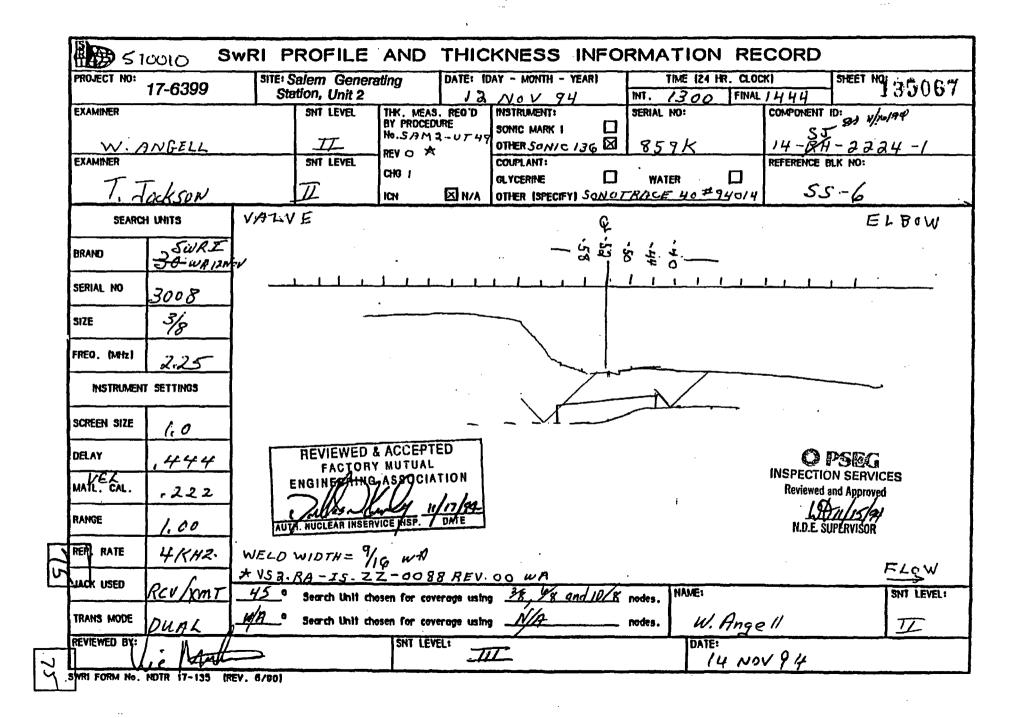
of

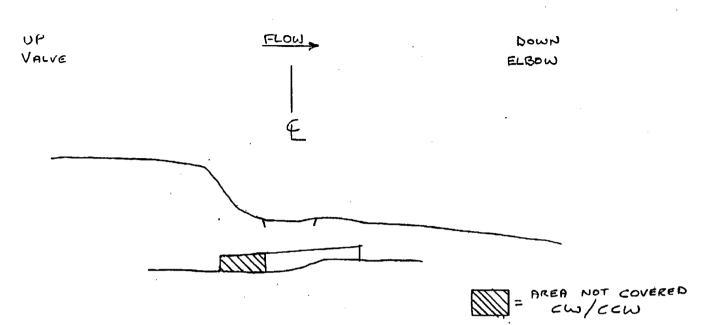
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SALEM UNIT 2 17-6399 RESIDUAL HEAT REMOVAL 14-5J-2224-1 VICTOR MORTON III 14 NOV 94 FOR LIMITATIONS ONLY. 570010

|                                               | MITATION REPORT       |           |    |
|-----------------------------------------------|-----------------------|-----------|----|
| PROJECT: <u>17-6399</u>                       |                       | n ninat   |    |
| SYSTEM: RESIDUAL HEAT REMOVAL                 | WELD NO .: 14-184 - ; | ,         |    |
| Prepared By: VICTOR MORTON                    | Date: <u>/4- Nou</u>  | / 93      |    |
| SURFACE                                       | E EXAMINATIONS        |           |    |
| Area To Be Examined (length x Width = A)      | <u>A=</u>             | NA        |    |
| Area Of Limitation (Length x Width = Al)      | <u>Al=</u>            | 4         | ,  |
| Percentage Of Coverage                        | (A-AI <u>/A)=</u>     | ¥         |    |
| VOLUMET                                       | RIC EXAMINATIONS      | 5         |    |
| A. Axial Exams (Indications Parallel To Weld) | •                     |           |    |
| 1. Compute Exam Volume (height x v            | vidth x length) = Vt1 | 9.97      |    |
| 2. Compute Vol. Not Covered Upstream          | = A                   | <u> </u>  |    |
| 3. Compute Upstream Limitation Percentage     | (A / Vt1) x 100 = Z1  | O         |    |
| 4. Compute Vol. Not Covered Downstream        | = B                   | 0         |    |
| 5. Compute Downstream Limitation Percentage   | (B / Vt1) x 100 = Z2  | 0         |    |
| B. Circumferential Exams (Indications Perpend | icular To Weld)       |           |    |
| 1. Compute Exam Volume (height x w            | vidth x length) = Vt2 | 13.30     |    |
| 2. Compute Vol. Not Covered CW                | = C                   | 6.65      |    |
| 3. Compute CW Limitation Percentage           | (C / Vt2) x 100 = Z3  | _50.00    |    |
| 4. Compute Vol. Not Covered CCW               | = D                   | 6-65      |    |
| 5. Compute CCW Limitation Percentage          | (D / Vt2) x 100 = Z4  | 50.00     |    |
| C. Total Coverage                             |                       |           |    |
| 1. Compute Total Limitation Percentage        | (Z1+Z2+Z3+Z4) / 4 = L |           |    |
| 2. Compute Total Coverage                     | 100 — L               | <u>5%</u> |    |
| REMARKS:                                      | ·                     |           | 27 |
|                                               |                       |           |    |

# REQUEST FOR ADDITIONAL INFORMATION REQUEST FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR IN-SERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

QUESTION

2.1 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

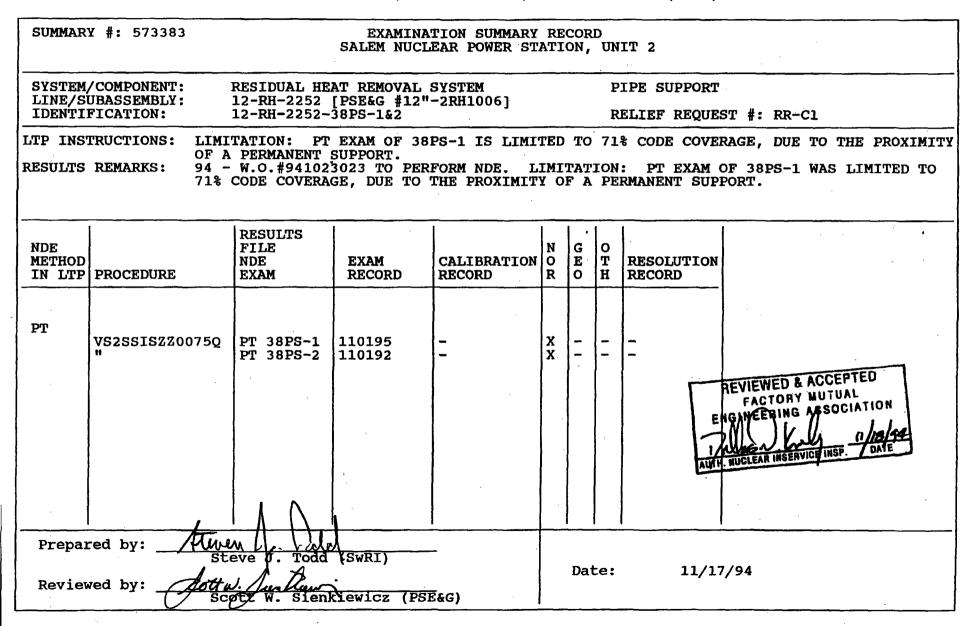
| Summary #      | 570010                           |                                   |
|----------------|----------------------------------|-----------------------------------|
| Component I.D. | 14-RH-2224-1                     |                                   |
| Description    | Valve 22SJ44 to Elbow            |                                   |
|                |                                  | Comments                          |
| 1              | Weld X-Section                   | See Attached                      |
| 2              | Material                         | Stainless Steel                   |
| 3              | Thickness / weld Crown           | Thickness .52" / weld Crown .600" |
| 4              | Obstruction                      | Valve OD Contour                  |
| 5              | Exam Area Highlighted on Drawing | Yes X No                          |
| 6              | Transducer ray exit point        | See Attached                      |

### Comments

UT exam was performed of this component using 45 degree shear wave transducer. The ultrasonic examination was limited to 75% of the code required coverage being limited due to upstream side valve OD configuration that restricted scanning. UT scans were performed on and across the weld in both directions No unacceptable indications were observed. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.

Page of

SECOND INTERVAL, FIRST PERIOD, SECOND OUTAGE (94RF)



| PROJECT No:                  | SITE: Se              | STE: Salem Generating Station,<br>Unit 2 |           |                       |         | DATE: IDAY - MONTH - YEARI Wo LOCATION |                |               |            | SHEET No<br>1101                      | 195          |        |
|------------------------------|-----------------------|------------------------------------------|-----------|-----------------------|---------|----------------------------------------|----------------|---------------|------------|---------------------------------------|--------------|--------|
| EXAMINATION AREA (SYST/COMP) |                       | LINE/SU                                  | BASSEMELY |                       |         | IDENTIFICATI                           |                |               | L, LOCATIC |                                       | WELD TYPE: ( |        |
| RESIDUA                      | L HEAT REMOVA         | L 18                                     | R - RH    | -2252                 |         | 38                                     | PS -1          |               | 6          |                                       | PIPE SUP     | PORT   |
| XAMINER                      |                       |                                          | PROCEDUR  |                       |         | SURFACE TI                             | MP F           |               |            | THERMOMETER S                         | erial Number |        |
| <u> </u>                     | ckson                 | SNT LEVEL                                | REV 2     |                       |         | SURFACE FIN                            | 6              | 78            | 5          | WELD LENGTH                           | I 187        |        |
|                              | AEROS                 |                                          | ICHG /    |                       |         |                                        | ROUN           |               |            | 28                                    | 2            |        |
| RE CLEANER                   |                       | PEN                                      | ETRANT    |                       |         | REMOVER                                | <u> 2 KOUI</u> | ¥ <i>μ</i>    |            | DEVELOPER                             | <u>}</u>     |        |
| RAND                         | CATCHERE              | BRA                                      | ND        | S DOTO U F            |         | BRAND                                  | a              | Ar Trai       | (Fab       | BRAND                                 | com ur       |        |
| YPE                          | SASTCHECE             | TYP                                      | E         | SPCTCHEO              |         | TYPE                                   | 1              | PoTciz        |            | TYPE                                  | SAOTCHE      |        |
| ATCH No                      | Stc-s                 | BAT                                      | CH No     |                       |         | BATCH No                               |                | <u>skc -s</u> |            | BATCH No                              | SKD-N        |        |
| LEANING                      | 94605K                |                                          | E APPLIED | 92K08                 | K       | REMOVAL                                |                | 94G05         | <u>к</u>   | TIME APPLIED                          | 92AOIP       |        |
| OMPLETED                     |                       |                                          | E REMOVED | 14.54                 |         | COMPLETED                              |                | 151           | 2          | TIME READ                             | 1518         |        |
|                              | 1447                  |                                          | LOCATION  | <u>/507</u><br>1 IVPE | Siz     | <u></u>                                |                |               |            |                                       | 1526         |        |
| INDICATION<br>No             | Ł                     |                                          | P OR DOWN |                       | DIAMETE | ROR                                    |                |               | REM        | ARKS                                  | •            | INITI  |
| NO                           | RECORDARLE            | IND                                      | ICAT /C   |                       |         | *                                      | ia s           | S-IS,         | zz-a       | 076 REV. 1                            | !            | BRI    |
|                              |                       |                                          |           |                       |         |                                        | •              |               | •          |                                       |              |        |
| •                            |                       |                                          | ········· |                       |         | REVIEWE                                | 2 & AC         | CEPTED        | -          | · · · · · · · · · · · · · · · · · · · |              |        |
|                              |                       |                                          |           |                       | ╂─-╂──  |                                        | 1.2.0          |               | N          | - <u></u>                             |              |        |
|                              |                       |                                          |           |                       |         | ENGINEERN                              | NG AS          |               |            |                                       |              |        |
|                              |                       |                                          |           |                       |         | 7 Masin                                | لمذال          | H 118         |            | IN SERVICES                           |              |        |
| ·                            |                       |                                          |           |                       | AUT     | M. NUCLEAR INS                         | ERVICE         |               |            | and Approved                          |              |        |
|                              |                       |                                          |           | _ <b>_</b>            |         |                                        |                |               | W          | )11/16/94                             |              |        |
|                              |                       |                                          |           | 1                     | 1       |                                        |                |               | N.D.E. S   | UPERVISOR                             |              |        |
|                              | :                     |                                          |           |                       |         |                                        |                |               |            |                                       | 1            |        |
| XAMINATION A                 | REA LIMITATION - IF N | ONE. 50 51                               | ATE       | <u> </u>              | L       | l                                      |                | <u>.</u>      |            |                                       |              |        |
|                              | Λ                     |                                          |           | L = 20 To             | L=      | 28 DUE                                 | TO             | PROXIM        | ITY OF     | OTHER SUL                             | PORT COMP    | DNENTS |
| EVIEWED BY:                  |                       |                                          | SNT LEVEL | 11                    | JAIE    | NOV 94                                 |                | VUED ON SH    | EET        | P                                     | AGE          |        |

| PROJECT No:                           | 573383              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                 | JID PENE                   |                           |            | EXAM                    |                  |            | CORD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | SHEET No                              |          |
|---------------------------------------|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|----------------------------|---------------------------|------------|-------------------------|------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|----------|
|                                       | 17-6399             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Unit                            |                            |                           | 14         | NOV 9                   | 74               | LINE 1     | PIPE BIDE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1101                                  |          |
| EXAMINATION /                         | VREA (SYST/COMP)    | ILIN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | E/SUBASSEMBL                    | ()                         |                           |            | CATION)                 |                  | Lo LOCATIO |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | WELD TYPE: ( FL                       |          |
|                                       | HEAT REMOVAL        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 12-RH-                          | 2253                       |                           |            | PS-2                    |                  | 6          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | PIPE SUPPO                            | RT       |
| EXAMINER                              |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | LEVEL PROCEDU                   | ne <del>x</del><br>1 R-NTU |                           | SURFAC     | E TEMP F                | PENETRA          | NT TEMP "F | THERMOMETER S                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ERIAL . NIMBER<br>M. A. IN/144/94     |          |
| <u> </u>                              | ackson              | 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | REV                             |                            | Ļ                         | SURFACE    | 76                      | 7                | 8          | WELD LENGTH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 187                                   |          |
| EXAMINER                              |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | LEVEL CHG (                     |                            |                           | SURFACE    |                         |                  |            | )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                       |          |
| PRE CLEANER                           | ORERAS              | 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | PENETRANT                       |                            |                           | REMOV      | GRAUN                   | 0                |            | DEVELOPER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | )                                     |          |
|                                       |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                 | <del>,</del>               |                           |            |                         |                  |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | · · · · · · · · · · · · · · · · · · · |          |
| BRAND                                 | 9POTC/ECK           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | BRAND                           | GPOTCHEC                   | <u>k</u>                  | BRAND      | 6                       | ANTCHE           | ck         | BRAND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | SADTCHECK                             |          |
| TYPE                                  | SKC-S               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | TYPE                            | SKL-SP                     |                           | TYPE       |                         | SKC-S            |            | TYPE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | SKD-NF                                |          |
| BATCH No                              |                     | ·                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | BATCH No                        |                            | С.                        | BATCH      | No                      | 94G05            | · レ        | BATCH No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 92AOIP                                |          |
| CLEANING                              | 94605K              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | TIME APPLIED                    | 92KOB                      | 6                         | REMOV      | /AL                     | MEDO             | κ          | TIME APPLIED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                       |          |
| COMPLETED                             | 1750                | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                 | 1406                       |                           | COMPL      | ETED                    | 1110             | · ·        | TIME READ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1430                                  |          |
|                                       | i358                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | TIME REMOVED                    | 1917                       | فوجان فيساند بيريدى       |            |                         | /42              | 0          | TIME READ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1438                                  |          |
| INDICATION<br>No                      | L                   | W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | LOCATION<br>UP OR DOW<br>STREAM | N ROUND OR<br>LINEAR       | SIZE<br>DIAMETES<br>LENGT | R OR       |                         |                  | REM        | ARKS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | •                                     | INITIAL  |
|                                       | NO RECOR            | DABLE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | - INDIC                         | ATIONS                     |                           | *          | V52.55                  | - <u>IS.ZZ</u> - | 0075 Re    | 2001                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                       | the for  |
|                                       |                     | •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                 |                            |                           |            |                         | •                | · ·        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                       |          |
| •                                     |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                 |                            |                           |            |                         | - <u></u>        |            | - <u>.</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                       | 1        |
|                                       |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                 |                            | 1                         | T          | REVIEWED                | & ACCE           | TED        | O PSEG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                       | 1        |
| · · · · · · · · · · · · · · · · · · · | <u> </u>            | · · · · · · · · · · · · · · · · · · ·                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                 |                            | <u> </u>                  |            | -FACTO                  | AY MUTU          | LATIONINE  | PECTION SERV                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ICES                                  | -        |
|                                       |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | _                               | · .                        | L.                        |            |                         | 7.11             |            | eviewed and Approv                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ed                                    |          |
| •                                     | { }                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                 | ł                          |                           | <b>FAU</b> | 132                     | hill.            | NRA        | JD 11/16/                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | R.                                    | 1        |
|                                       |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                 |                            | <u> </u>                  |            | VOLEAR INC              | ATTICE INSP.     |            | N.D.E. SUPERVISO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>R</b>                              |          |
|                                       |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                 |                            | ļ                         |            |                         |                  | ·          | · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · _ |                                       |          |
|                                       |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                 |                            | <b>i</b>                  | 1          |                         |                  |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                       |          |
| EXAMINATION                           | AREA LIMITATION - 1 | F NONE, S                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                 | BAR                        | <u> </u>                  |            |                         | · · · · · · · ·  | · · · ·    | ·                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                       | <b>L</b> |
|                                       | Λ                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | · /                             | NONE.                      |                           |            | مرجة بزدي المحصر المدري | tinued on s      |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                       |          |
|                                       |                     | ويتحقق والمتحج والمتحج والمتحج والمتحج والمتحج والمراجع والمتحج والمتح | SNT LEVE                        |                            | DATE                      |            |                         |                  |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | AGE                                   |          |

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| PSE&G LI                                                                           | AITATION REPORT              |
|------------------------------------------------------------------------------------|------------------------------|
| PROJECT: 17-6399                                                                   | UNIT: SALEM UNIT 2           |
| SYSTEM: RESIDUAL HEAT REMOVAL                                                      | WELD NO .: 12-RH-2252-38 PS3 |
| Prepared By: VICTOR MORTON                                                         | Date:                        |
| SURFACE                                                                            | EXAMINATIONS                 |
| مەت Reavie<br>Area To Be Examined (length x-Widtit= A)                             | A= 45.5                      |
| Not $\mathcal{L}$ equired<br>Area Of Limitation (Length x $\mathcal{W}$ idth = Al) | AI= 13.0                     |
| Percentage Of Coverage                                                             | (A-AI/A)= 71.43              |
| VOLUMETI                                                                           | RIC EXAMINATIONS             |
| A. Axial Exams (Indications Parallel To Weld)                                      |                              |
| 1. Compute Exam Volume (height x wi                                                | dth x length) = Vt1 $NA$     |
| 2. Compute Vol. Not Covered Upstream                                               | = A                          |
| 3. Compute Upstream Limitation Percentage                                          | (A / Vt1) x 100 = Z1         |
| 4. Compute Vol. Not Covered Downstream                                             | = B                          |
| 5. Compute Downstream Limitation Percentage                                        | (B / Vt1) x 100 = Z2         |
| B. Circumferential Exams (Indications Perpendic                                    | cular To Weld)               |
|                                                                                    | dth x length) = Vt2          |
| 2. Compute Vol. Not Covered CW                                                     | = C                          |
| 3. Compute CW Limitation Percentage                                                | (C / Vt2) x 100 = Z3         |
| 4. Compute Vol. Not Covered CCW                                                    | = D                          |
| 5. Compute CCW Limitation Percentage                                               | (D / Vt2) x 100 = Z4         |
| C. Total Coverage                                                                  |                              |
| 1. Compute Total Limitation Percentage                                             | (Z1+Z2+Z3+Z4)/4 = L NA       |
| 2. Compute Total Coverage                                                          | 100 – L                      |
| REMARKS:                                                                           |                              |
|                                                                                    |                              |
|                                                                                    | 57                           |

# REQUEST FOR ADDITIONAL INFORMATION REQUEST FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR IN-SERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

QUESTION

2.2(a) For certain component attachments and support welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

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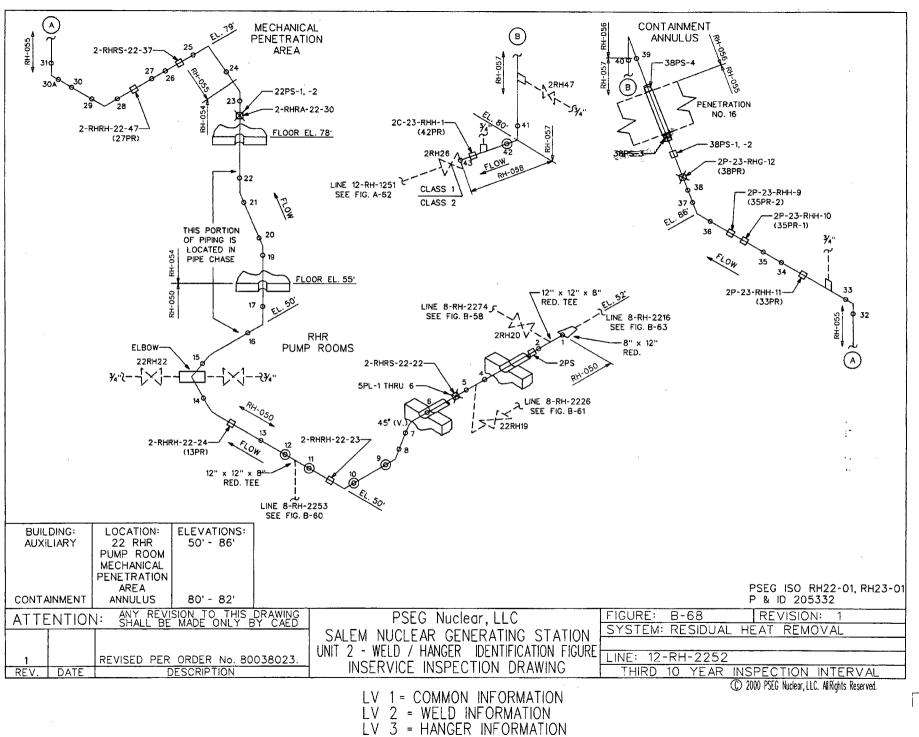
| Summary #      | 573387                           |                 |
|----------------|----------------------------------|-----------------|
| Component I.D. | 12-RH-2252-38PS-3                |                 |
| Description    |                                  |                 |
|                |                                  | Comments        |
| 1              | Weld X-Section                   | N/A             |
| 2              | Material                         | Stainless Steel |
| 3              | Thickness / weld Crown           | N/A             |
| 4              | Obstruction                      | ADJACENT PIPING |
| 5              | Exam Area Highlighted on Drawing | Yes X No        |
| 6              | Transducer ray exit point        | N/A             |

### Comments

PT exam was conducted of this component. The PT exam was limited to 71% because of a permanently installed component support that obstructed the exam. No exam could be performed from 7-1/2" to 14" and 30" to 36-1/2" due to the adjacent piping interfering with the exam. This component is located at containment penetration # 16 and is in close proximity with other containment penetration piping. A system pressure test was also completed with no unacceptable indications observed.

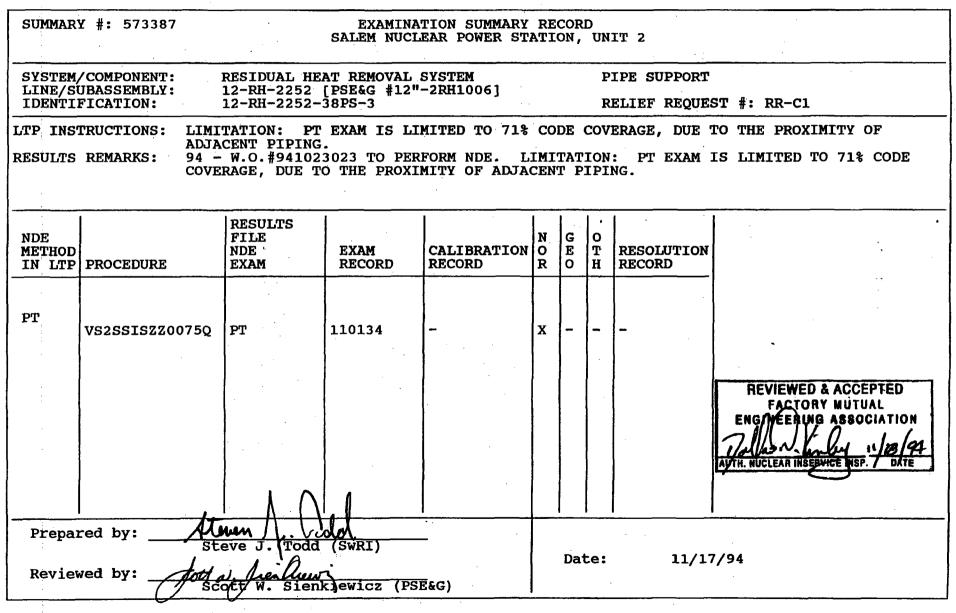
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SECOND INTERVAL, FIRST PERIOD, SECOND OUTAGE (94RF)



| PROJECT No:                | 17-6399          | S        |                       | enerating Stat      | ion,                      | DATE: (DAY - N  |                | . ·      | N FUSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | SHEET No        | 71         |
|----------------------------|------------------|----------|-----------------------|---------------------|---------------------------|-----------------|----------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------------|
|                            | REA (SYST/COMP)  | ī        | Un<br>LINE/SUBASSEMEN | <u>it 2</u>         |                           | 14 NO           | 01 94_         | LINE PI  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | WELD TYPE: ( FL |            |
|                            |                  |          |                       |                     |                           | 3BR9            |                | TAC      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | FIPE SUPPO      |            |
| <u>RCSIQAA</u><br>EXAMINER | HEAT REMO        | SUAL S   | NT LEVEL PROCED       | <u>-2252</u><br>IRE |                           | SURFACE TEMP    | *F PENETRAN    |          | THERMOMETER S                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 | <u>e</u> [ |
|                            | CKSON            |          | TT NO.SA              | M2-PT1              |                           | 76              |                | 8        | SWRI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |            |
| EXAMINER                   |                  | . 9      | NT LEVEL CHG          | ×                   |                           | SURFACE FINISH  |                |          | WELD LENGTH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1               |            |
| B. Ro.                     | BERDS            |          |                       |                     |                           | GROU            | ND             |          | 45%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Z               |            |
| PRE CLEANER                |                  |          | PENETRANT             |                     | •                         | REMOVER         |                |          | DEVELOPER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |            |
| BRAND                      | SPOT CH          | ECK      | BRAND                 | SPOTCI              | HECK                      | BRAND           | SPOTCH         | IECK     | BRAND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | SPOTCHED        | ĸ          |
| TYPE                       | SKC-S            |          | TYPE                  | SKL-SI              |                           | TYPE            | SKC-S          |          | TYPE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | SKO-NF          |            |
| BATCH No                   | 94605            |          | BATCH No              | 92K08               |                           | BATCH No        | 9460:          | εV       | BATCH No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 92.A011         |            |
| CLEANING                   | 11000            | <u> </u> | TIME APPLIED          |                     | ,                         | REMOVAL         | 1700           | 2/5      | TIME APPLIED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1522            |            |
| COMPLETED                  | 144E             | ?        | TIME REMOVE           |                     |                           | CUMPLEIED       | 151            | >        | TIME READ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1534            |            |
| INDICATION<br>No           | L                | W        | LOCATION<br>UP OR DOI | N TYPE              | SIZE<br>DIAMETER<br>LENGT | t or            |                | REMA     | RKS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 | INITI/     |
| Nr                         | RECORDABL        | EIN      | DICATION              |                     |                           |                 | 2,55-I         | 5,22     | -6075 RI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | SN.             | BR         |
|                            |                  |          |                       |                     |                           |                 |                |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 3.              |            |
| •                          |                  |          |                       |                     |                           |                 |                |          | <b>A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A <b>B B A B A B <b>B A B A B <b>B A B A B <b>B A B A B A B <b>B A B A </b></b></b></b></b></b> |                 |            |
|                            |                  |          |                       |                     |                           | REVIEW          | ED & ACCEP     | TED INSP | O PSEL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | CES             |            |
|                            |                  |          |                       |                     |                           |                 | NIG ASSOCI     | Re       | viewed and Approve                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | d i             | 1          |
|                            |                  |          |                       |                     |                           | 1 AWate of      |                | Juha     | N.D.E. SUPERVISOR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <u>щ</u>        | +          |
|                            |                  |          |                       |                     |                           | AUTH NOCLEAR IN |                | EXTEN.   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |            |
|                            |                  |          |                       |                     | -                         |                 |                | <u>`</u> | ······································                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |            |
|                            | REA LIMITATION - | •        |                       | EXAM FROM           | ト=ケイ27                    | TOL=14 AN       | OFROML=        | BO TO L: |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ANA<br>DAR      |            |
| REVIEWED BY:,              |                  |          | SNT LEVE              | il                  | DATE                      |                 | ONTINUED ON SH | EET      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | AGE             |            |
|                            | lie Note         | ]        | E                     | ///                 | 15 NO                     |                 |                | 1A       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | OF              | 1          |

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| 107130 S                                  | WRI PROFILE AND THICKNESS INFORMATION RECORD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PROJECT NO: 17-6399                       | SITE: Salem Generating DATE: (DAY - MONTH - YEAR) TIME (24 HR. CLOCK) SHEET NOT 35001<br>Station, Unit 2 (9007 94 INT. 1420 FINAL 17/1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| EXAMINER<br><u>7. JACKSON</u><br>EXAMINER | SNT LEVEL THK. MEAS. REO D<br>BY PROCEDURE X-<br>No. SAM2-UT49<br>THE REV O<br>SNT LEVEL REV O<br>INSTRUMENT: SERIAL NO: COMPONENT ID:<br>SONIC MARK I<br>OTHER SONIC 1.36<br>COUPLANT: REFERENCE BLK NO:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| B. ROBERDS                                | JII     CHG /     GLYCERINE     WATER     Internet of the charge of the cha                                                     |
| SEARCH UNITS                              | 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| BRAND SWRJ                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| SERIAL NO 3129                            | FLANGE & PIPE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| SIZE 3/8                                  | Je de la companya de |
| FRED. (MHz) 2.25                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| INSTRUMENT SETTINGS                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| SCREEN SIZE                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| DELAY : 369                               | O PSEG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| MATL. CAL.                                | Reviewed and Approved                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| RANGE 1.00                                | <u>Laver 1199</u><br>N.D.E. SUPERVISOR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| REP. RATE 4 KHZ                           | C.ROWN WIDTH 7/8<br>* VS2, KA-IS, ZZ-0088(Q) REX. O                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| JACK USED RCV/XMT                         | 45 ° Search Unit chosen for coverage using 3/8, 6/8, 19/8 nodes. NAME: SNT LEVEL:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| TRANS MODE QUAL                           | NA BEARCH Unit chosen for coverage using NA nodes. VICTOR MORTON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| vic forme                                 | EV. 6/80)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

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SWRI FORM No. NDTR 17-135 (REV. 6/80)

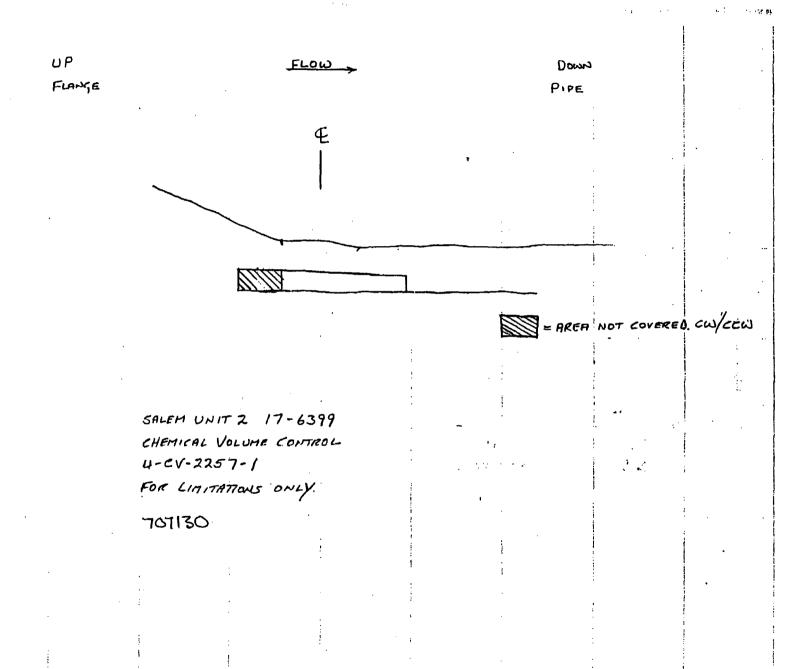
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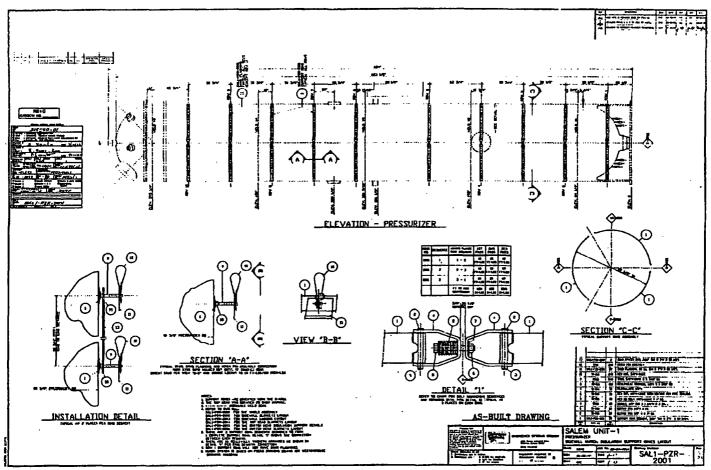
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| PROJECT: 17-6399                              | UNIT: _SALEM                 | UNIT 2  |
|-----------------------------------------------|------------------------------|---------|
| YSTEM: CHEMICAL VOLUME CONTROL                |                              | -2257-1 |
| repared By: VICTOR MORTON                     |                              | v 1994  |
| SURFAC                                        | E EXAMINATIONS               |         |
| Area To Be Examined (length x Width = A)      | <u>A=</u>                    | JA      |
| Area Of Limitation (Length x Width = AI)      | <u>AI=</u>                   | l       |
| Percentage Of Coverage                        | (A~AI <u>/A)</u> =           | ł       |
| VOLUME                                        |                              | S       |
| A. Axial Exams (Indications Parallel To Weld) |                              |         |
| 1. Compute Exam Volume (height x              | width x length) = Vt1        | 5.00    |
| 2. Compute Vol. Not Covered Upstream          | = A                          | 0       |
| 3. Compute Upstream Limitation Percentage     | (A / Vt1) x 100 = Z1         | 0       |
| 4. Compute Vol. Not Covered Downstream        | = B                          | O       |
| 5. Compute Downstream Limitation Percentage   | <b>(</b> B / Vt1) x 100 = Z2 | O       |
| B. Circumferential Exams (Indications Perpend | licular To Weld)             |         |
| 1. Compute Exam Volume (height x v            | width x length) = Vt2        | 6.80    |
| 2. Compute Vol. Not Covered CW                | = C                          | 1.79    |
| 3. Compute CW Limitation Percentage           | (C / Vt2) x 100 = Z3         | 26.32   |
| 4. Compute Vol. Not Covered CCW               | = D                          | 1.79    |
| 5. Compute CCW Limitation Percentage          | (D / Vt2) x 100 = Z4         | 26.32   |
| C. Total Coverage                             |                              |         |
| 1. Compute Total Limitation Percentage        | (Z1+Z2+Z3+Z4) / 4 = L        | 13.16   |
| 2. Compute Total Coverage                     | 100 – L                      | 86.84%  |
| EMARKS:                                       |                              |         |
|                                               |                              |         |

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| معرفة        |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | •          |
|--------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Sun *        | 010400 51      | VRI PROFILE AND THICKNESS INFORMATION RECORD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | -          |
| PROJECT NO:  | ·····          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 135002     |
| EXAMINER     |                | SNT LEVEL THK. MEAS. REO'D INSTRUMENT: SERIAL NO: COMPONENT ID:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 133002     |
| L.D          | Uron           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Long D     |
| examiner     | K/EINJAI       | SNT LEVEL CHG ( COUPLANT: REFERENCE BLK N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | c 25       |
| SEARCH       |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |
| BRAND        | AEROTECH       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ccω        |
| SERIAL NO    | 108363         | Cω                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |
| SIZE         | 3/4            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |
| FREQ. (MHz)  | 2,25           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |
| INSTRUMENT   | SETTINGS       | REVIEWED & ACCEPTED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |
| SCREEN SIZE  | 10             | FACTORY MUTUAL<br>ENGINEERING ASSOCIATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |
| DELAY        | ,006           | AUTH. NUCLEAR INSERVICE INSP. DATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |
| MATL. CAL.   | .231           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ,          |
| RANGE        | 10             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |
| REP. RATE    | 2K             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | · · · ·    |
| JACK USED    | RCV            | <u>Perpiavent</u> TROCHATICU BRACKET ON COW 51/ From 4 of<br>45 ° Search Unit chosen for coverage using 12 18 16 19 nodes. NAME:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | SNT LEVEL: |
| TRANS MODE   | PE             | <u><math>40^{\circ}</math></u> Search Unit chosen for coverage using $\frac{1}{12}$ , $\frac{1}{2}$ , $1$ | II         |
| REVIEWED BY: | flecto         | - Change SNT LEVEL: DATE: 75EPT 96                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | l          |
| WRI FORM No. | NDTR 17-135 (F |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |

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|      | VESSE                                  | LVC           | LUMETRIC                | EXA          | MINATION CO                 | VER  | AGE REPORT                      |  |
|------|----------------------------------------|---------------|-------------------------|--------------|-----------------------------|------|---------------------------------|--|
| UNIT | r: <u>5</u> ,                          | len.          | wit 2                   |              | LTP.SUMMAR                  | Y NO | D.: 010400                      |  |
| SYST | TEM: <u>Pre</u>                        | <u> 950 0</u> | rizer                   |              | LTP COMPON                  | ENT  | ID: Z-PZR-Low D                 |  |
| PREF | PARED BY:                              | h             | ector ?                 | <u>م ر</u> ( | 27 LUIT                     | _ 1  | DATE: 16557796                  |  |
| REVI | EWED BY:                               | M             | Then A lice             | 12           | Lu. II                      | _ 1  | DATE: 16 Sept. 96               |  |
|      | (                                      | Jon           | tw. Heafler             | /٩           | 2/16                        |      |                                 |  |
| 1.0  | CALCULATE<br>FLAWS                     | REQ           | UIRED EXAN              | A VC         | DLUME FOR ST                | RAIC | HT BEAM PLANAR                  |  |
|      | Exam height                            | х             | Exam width              | х            | Exam length                 | =    | Exam Volume                     |  |
|      |                                        | х             | <u></u>                 | x            |                             | =    | <u> </u>                        |  |
| 2.0  | CALCULATE<br>FLAWS                     | REQ           | UIRED EXAN              | A VC         | LUME FOR ST                 | RAIG | HT LAMINAR PLANAR               |  |
| ]    | Exam height                            | х             | Exam width              | x            | Exam length                 | =    | Exam Volume                     |  |
|      | <u></u>                                | ٠X            | <del></del>             | x            |                             | =    | <u> </u>                        |  |
| 3.0  | CALCULATE                              | REQ           | UIRED PARA              | LLE          | L EXAM VOLU                 | ME I | FOR 45° AND 65°                 |  |
|      | Exam height                            | х             | Exam width              | х            | Exam length                 | =    | Exam Volume                     |  |
|      | •                                      | х             |                         | x            | •                           | =    | X                               |  |
| 4.0  | CALCULATE                              | REQ           | UIRED TRAN              | ISVE         | RSE EXAM VO                 | LUM  | E FOR 45° AND 65°               |  |
|      | Exam height                            | х             | Exam width              | х            | Exam length                 | =    | Exam Volume                     |  |
|      | ·                                      | х             |                         | x            | ·                           | =    | <del>X</del>                    |  |
| 5.0  | CALCULATE                              | STR           | AIGHT BEAM              | I PLA        | NAR EXAM C                  | )VEF | RAGE                            |  |
|      | 5.1 LIMITED ABOVE/CW EXAM VOLUME       |               |                         |              |                             |      |                                 |  |
|      | Height of obstructed volu              | ıme           | Width of obstructed an  | ea           | Length of obstructed are    | a    | Volume with NO exam coverage    |  |
|      | •••••••••••••••••••••••••••••••••••••• | x             | •,                      | x            |                             | H    | <del>``````</del>               |  |
|      | 5.2 LIMITE                             | ED BI         | ELOW/CW EX              | (AM          | VOLUME                      |      |                                 |  |
|      | Height of<br>obstructed volu           | me            | Width of obstructed are | ea           | Length of<br>obstructed are | a    | Volume with NO<br>exam coverage |  |
|      |                                        | х             | <b></b>                 | x            |                             | =    | <u> </u>                        |  |
|      | Total straight b                       | eam j         | planar exam vo          | lume         | not examined                | =    | <u> </u>                        |  |
|      |                                        |               |                         |              |                             |      |                                 |  |

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|     | VESSEL VO                                        | LUMETRIC EX              | KAMINATION (                  | COVER   | AGE REPORT                               | <b>Г</b>  | t In the set |
|-----|--------------------------------------------------|--------------------------|-------------------------------|---------|------------------------------------------|-----------|--------------|
|     | 5.3 PERCENT V                                    | OLUME EXAM               | INED                          | 、       | Sum. # 0                                 | 10400     |              |
|     | Percent Volume<br>Examined =                     |                          | Fotal 0° vol<br>v/No coverage | 1       | Total 0°<br>Exam Vol                     | x         | 100          |
|     | =                                                | 100 - {                  | ſ <b>Ĺ</b>                    | 1       | ]                                        | x<br>9    | 100}<br>%    |
| 6.0 | CALCULATE STR                                    | AIGHT BEAM L             | AMINAR EXAN                   | I COVE  | RAGE                                     |           |              |
| ·.  | 6.1 LIMITED A                                    | BOVE/CW EXA              | M VOLUME                      |         |                                          |           |              |
|     | Height of obstructed volume                      | Width of obstructed area | Length of obstructed          | area    | Volume with<br>exam covera               | -         |              |
|     | X                                                | >                        | ۲                             | _ =     | <u> </u>                                 | <u> </u>  |              |
|     | 6.2 LIMITED B                                    | ELOW/CW EXA              | M VOLUME                      |         |                                          |           |              |
| •   | Height of<br>obstructed volume                   | Width of obstructed area | Length of obstructed          | area    | Volume with<br>exam covera               |           |              |
|     | X                                                | <u> </u>                 | <                             | _ =     | *                                        |           |              |
|     | Total straight beam                              | laminar exam vol         | lume not examine              | d =     | *                                        |           |              |
|     | 6.3 PERCENT V                                    | OLUME EXAM               | INED                          |         |                                          |           |              |
|     | Percent Volume<br>Examined =                     | 100 - T                  | fotal 0° vol<br>v/No coverage | 1       | Total 0°<br>Exam Vol                     | x         | 100          |
| 7.0 | EAMIN<br>Achieved w<br>WAS deve<br>CALCULATE PAR | All Areas whe            | Le Augle ber<br>Angle ber     | /<br>14 | 1006                                     | X<br>9 HD | 100}<br>%    |
| •   | 7.1 LIMITED A                                    | BOVE/CW EXAL             | M VOLUME                      |         |                                          |           |              |
|     | Height of<br>obstructed volume                   | Width of obstructed area | Length of obstructed a        | area    | Above/CW e<br>volume with<br>exam covera | NO        |              |
|     | X                                                | X                        | <u></u>                       | _ =     |                                          | _         |              |
|     | 7.2 LIMITED BI                                   | ELOW/CCW EX.             | AM VOLUME                     | •       | Below/CCW                                | exam      |              |
|     | Height of<br>obstructed volume                   | Width of obstructed area | Length of obstructed          | area    | volume with<br>exam covera               | NO        |              |
|     | X                                                | X                        | <u> </u>                      | _ =     | <del>X</del>                             | _         |              |
|     | Total 45° parallel ex                            | cam volume not e         | examined =                    |         | *                                        |           |              |

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| <u> </u> | 7.3 PERCENT                              | VOLUME EXAMINI           | ED                                 | SUM. # 010400                               | . <u> </u> |  |  |  |
|----------|------------------------------------------|--------------------------|------------------------------------|---------------------------------------------|------------|--|--|--|
|          | Percent Volume<br>Examined =             | Tota<br>100 - w/N        | l 45° parallel vol<br>o coverage / | Total 45° parallel<br>Exam Vol X            | 100        |  |  |  |
|          | =                                        | 100 - {[                 |                                    | ] X                                         | 100        |  |  |  |
|          | =                                        |                          |                                    | 69                                          | %          |  |  |  |
| 8.0      | CALCULATE PAI                            | RALLEL 60° EXAM          | COVERAGE                           |                                             |            |  |  |  |
|          | 8.1 LIMITED A                            | BOVE/CW EXAM             | VOLUME                             | Above/CW exam                               |            |  |  |  |
|          | Height of obstructed volume              | Width of obstructed area | Length of obstructed area          | volume with NO<br>exam coverage             |            |  |  |  |
|          | X                                        | X                        | =                                  | *                                           |            |  |  |  |
|          | 8.2 LIMITED E                            | ELOW/CCW EXAM            | VOLUME                             | Below/CCW exam                              |            |  |  |  |
|          | Height of obstructed volume              | Width of obstructed area | Length of obstructed area          | volume with NO<br>exam coverage             |            |  |  |  |
|          | X                                        | X                        | =                                  | *                                           |            |  |  |  |
|          | Total 60° parallel e                     | exam volume not exam     | nined =                            | *                                           |            |  |  |  |
|          | -                                        | VOLUME EXAMINE           |                                    |                                             |            |  |  |  |
|          | Percent Volume<br>Examined =             | Tota<br>100 - w/N        | l 60° parallel vol<br>o coverage / | Total 60° par.<br>Exam Vol X                | 100        |  |  |  |
|          | =                                        | 100 - {[                 | /                                  | ×                                           | 100<br>%   |  |  |  |
| 9.0      | CALCULATE TRA                            | ANSVERSE 45° EXA         | M COVERAGE                         | an a    |            |  |  |  |
|          | 9.1 LIMITED CLOCKWISE EXAM VOLUME        |                          |                                    |                                             |            |  |  |  |
|          | Height of<br>obstructed volume           | Width of obstructed area | Length of obstructed area          | CW exam<br>volume with NO<br>exam coverage  |            |  |  |  |
|          | X                                        | X                        | =                                  | <u> </u>                                    |            |  |  |  |
|          | 9.2 LIMITED COUNTERCLOCKWISE EXAM VOLUME |                          |                                    |                                             |            |  |  |  |
|          | Height of obstructed volume              | Width of obstructed area | Length of obstructed area          | CCW exam<br>volume with NO<br>exam coverage |            |  |  |  |
|          | x                                        | x                        | =                                  | *                                           |            |  |  |  |

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|      | .9.3 PERCENT VOLUME EXAMINED               |        |                 |                  |               |                              | <u></u> | Sum. # 010400                               |           |  |
|------|--------------------------------------------|--------|-----------------|------------------|---------------|------------------------------|---------|---------------------------------------------|-----------|--|
|      | Percent Volum<br>Examined                  | e<br>= | 100             | -                | Total<br>w/No | l 45° parallel<br>o coverage | vol     | Total 45° parallel<br>Exam Vol X            | 100       |  |
|      |                                            | =      | 100             | -                | {[            |                              | 1       | ×                                           | 100}      |  |
|      |                                            | =      |                 |                  |               |                              |         | 69                                          | %         |  |
| 10.0 | CALCULATE TRANSVERSE 60° EXAM COVERAGE     |        |                 |                  |               |                              |         |                                             |           |  |
|      | 10.1 LIMITE                                | D C    | LOCKY           | WISE E           | XAM           | VOLUME                       |         |                                             |           |  |
|      | Height of obstructed volu                  | me     | Widtl<br>obstri | h of<br>ucted ar | rea           | Length of obstructed         | area    | CW exam<br>volume with NO<br>exam coverage  |           |  |
|      |                                            | x      |                 |                  | x             |                              | _ =     | <u> </u>                                    |           |  |
|      | 10.2 LIMITE                                | D C    | OUNT            | ERCLO            | CKWI          | SE EXAM V                    | OLUME   | ······                                      |           |  |
|      | Height of<br>obstructed volu               |        | Widtl           | h of             |               | Length of obstructed         |         | CCW exam<br>volume with NO<br>exam coverage |           |  |
|      |                                            | х      |                 |                  | x             |                              | _ =     | <u>*</u>                                    |           |  |
|      | 10.3 PERCENT VOLUME EXAMINED               |        |                 |                  |               |                              |         |                                             |           |  |
|      | Percent Volum                              | e      |                 |                  | Total         | l 60° trans vo               | ol      | Total 60° trans                             |           |  |
|      | Examined                                   | Ξ      |                 | -                | W/NO          | o coverage                   | 1       | Exam Vol X                                  | 100       |  |
|      | -                                          | H      | 100             | -                | {[            |                              | 1       | <u> </u>                                    | 100}<br>% |  |
| 11.0 | CALCULATE PERCENT OF TOTAL VOLUME EXAMINED |        |                 |                  |               |                              |         |                                             |           |  |
|      | Examination<br>Coverage                    | . =    | (step           | 8-7 1            | 10)           | /No. of exa                  | 2ms(6)  | •                                           | •         |  |
|      |                                            | =      |                 | 17               | <u>.</u>      | %                            |         | CW exam                                     |           |  |
|      | REMARKS:                                   |        |                 |                  |               |                              |         |                                             |           |  |
|      | * Examperformed from 0" to 9" And was      |        |                 |                  |               |                              |         |                                             |           |  |
|      | limited from 9" to 13" due to permanent    |        |                 |                  |               |                              |         |                                             |           |  |
|      | Insulation                                 | m      | brA             | <u>-c.Ke</u>     | <u>ts.</u>    | ·                            |         |                                             |           |  |
| •    |                                            |        |                 |                  |               |                              |         |                                             |           |  |

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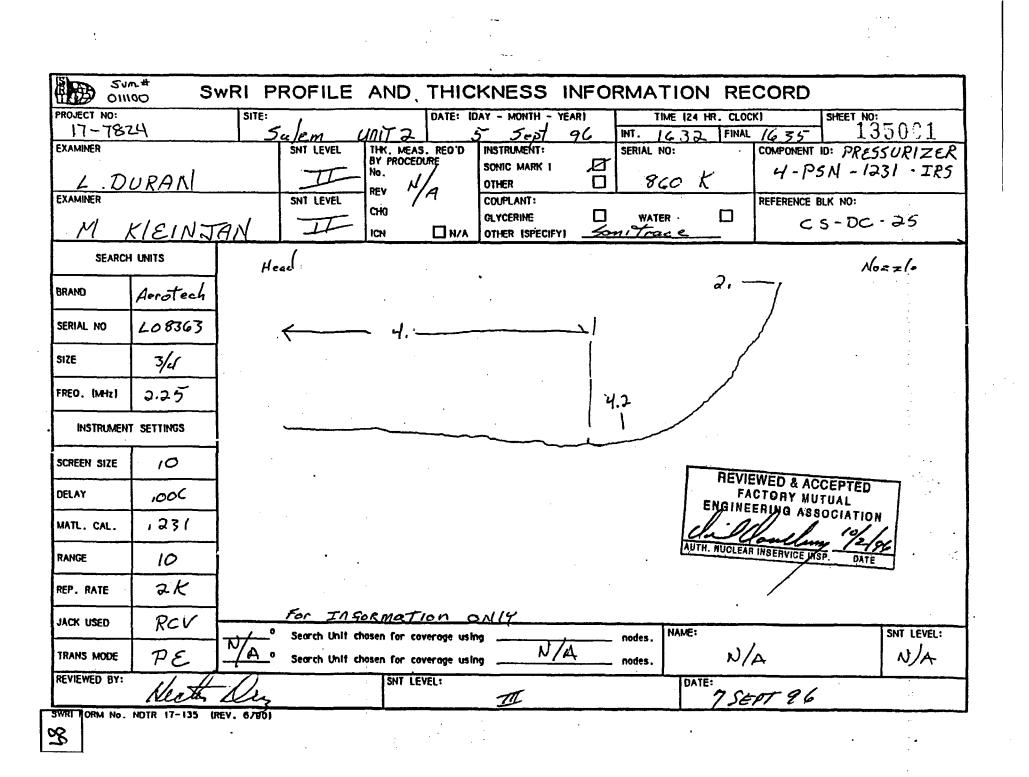
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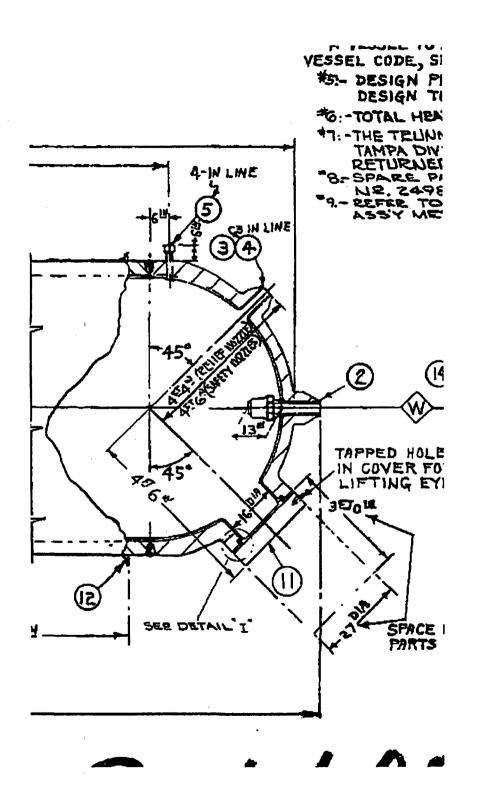
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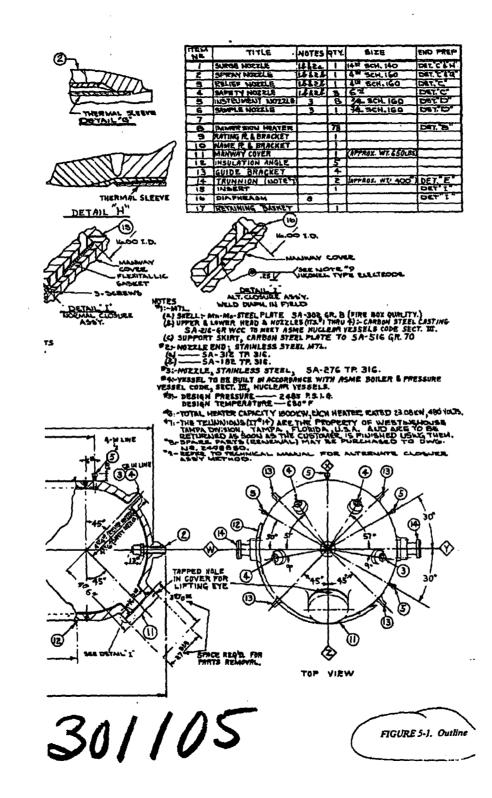
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|          | VESSEL V                                                | OLUMETRIC EXAN                   | MINATION COVER            | AGE REPORT                      |  |  |  |  |  |
|----------|---------------------------------------------------------|----------------------------------|---------------------------|---------------------------------|--|--|--|--|--|
| UNI      | T: <u>SA/em</u>                                         | Unit 2                           | LTP SUMMARY NO            | 0.: 011100                      |  |  |  |  |  |
|          |                                                         |                                  |                           | ID: 4-PSN-1231-IR               |  |  |  |  |  |
| PRE      | PARED BY:                                               | teg Diaz                         | I                         | DATE: 17 SEPT96                 |  |  |  |  |  |
| REV      | IEWED BY:                                               | en Allal                         | · I                       | DATE: 17 Sept. 1996             |  |  |  |  |  |
| <b> </b> |                                                         | Jullul 10/2/96                   |                           |                                 |  |  |  |  |  |
| 1.0      | CALCULATE REG                                           | QUIRED EXAM VOI                  | LUME FOR STRAIG           | HT BEAM PLANAR                  |  |  |  |  |  |
|          | Exam height X                                           | Exam width X                     | Exam length =             | Exam Volume                     |  |  |  |  |  |
|          | x                                                       | x                                | <del></del>               | N/r                             |  |  |  |  |  |
| 2.0      | CALCULATE REG                                           | QUIRED EXAM VOI                  | UME FOR STRAIG            | HT LAMINAR PLANAR               |  |  |  |  |  |
| }        | Exam height X                                           | Exam width X                     | Exam length =             | Exam Volume                     |  |  |  |  |  |
|          | X                                                       | X                                | ==                        | N/t                             |  |  |  |  |  |
| 3.0      | CALCULATE REQUIRED PARALLEL EXAM VOLUME FOR 45° AND 65° |                                  |                           |                                 |  |  |  |  |  |
|          | Exam height X                                           | Exam width X                     | Exam length =             | Exam Volume                     |  |  |  |  |  |
|          | X                                                       | X                                | · **                      | N/t                             |  |  |  |  |  |
| 4.0      | CALCULATE REC                                           | QUIRED TRANSVER                  | SE EXAM VOLUM             | E FOR 45° AND 65°               |  |  |  |  |  |
|          | Exam height X                                           | Exam width X                     | Exam length =             | Exam Volume                     |  |  |  |  |  |
| ļ        | X                                                       | X                                | ==                        | N/H                             |  |  |  |  |  |
| 5.0      | CALCULATE STR                                           | AIGHT BEAM PLAY                  | NAR EXAM COVER            | AGE                             |  |  |  |  |  |
|          | 5.1 LIMITED A                                           | 5.1 LIMITED ABOVE/CW EXAM VOLUME |                           |                                 |  |  |  |  |  |
|          | Height of<br>obstructed volume                          | Width of obstructed area         | Length of obstructed area | Volume with NO<br>exam coverage |  |  |  |  |  |
|          | X                                                       | X                                | =                         | NA                              |  |  |  |  |  |
|          | 5.2 LIMITED B                                           | ELOW/CW EXAM V                   | OLUME                     |                                 |  |  |  |  |  |
|          | Height of obstructed volume                             | Width of obstructed area         | Length of obstructed area | Volume with NO<br>exam coverage |  |  |  |  |  |
|          | X                                                       | X                                | =                         | N/#                             |  |  |  |  |  |
|          | Total straight beam                                     | planar exam volume r             | not examined =            | N/#                             |  |  |  |  |  |

Salem/Hope Creek Common

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VESSEL VOLUMETRIC EXAMINATION COVERAGE REPORT Sum.#011100 5.3 PERCENT VOLUME EXAMINED Percent Volume Total 0° vol Total 0° 100 Examined w/No coverage 1 Exam Vol Х 100 100 **{**[ х = 100-----% 6.0 CALCULATE STRAIGHT BEAM LAMINAR EXAM COVERAGE 6.1 LIMITED ABOVE/CW EXAM VOLUME Width of Length of Height of Volume with NO obstructed volume obstructed area obstructed area exam coverage Х Х LIMITED BELOW/CW EXAM VOLUME 6.2 Width of Height of Length of Volume with NO obstructed volume obstructed area obstructed area exam coverage х Х Total straight beam laminar exam volume not examined = 6.3 PERCENT VOLUME EXAMINED Percent Volume Total 0° vol Total 0° Examined 100 w/No coverage Exam Vol 1 Χ 100 100 X **{** 100= 72 53 7.0 CALCULATE PARALLEL EXAM COVERAGE LIMITED ABOVE/CW EXAM VOLUME 7.1 Above/CW exam Height of Width of Length of volume with NO obstructed volume obstructed area obstructed area exam coverage Х Х 7.2 LIMITED BELOW/CCW EXAM VOLUME Below/CCW exam Height of Length of volume with NO Width of obstructed volume obstructed area obstructed area exam coverage Х X Total 45° parallel exam volume not examined

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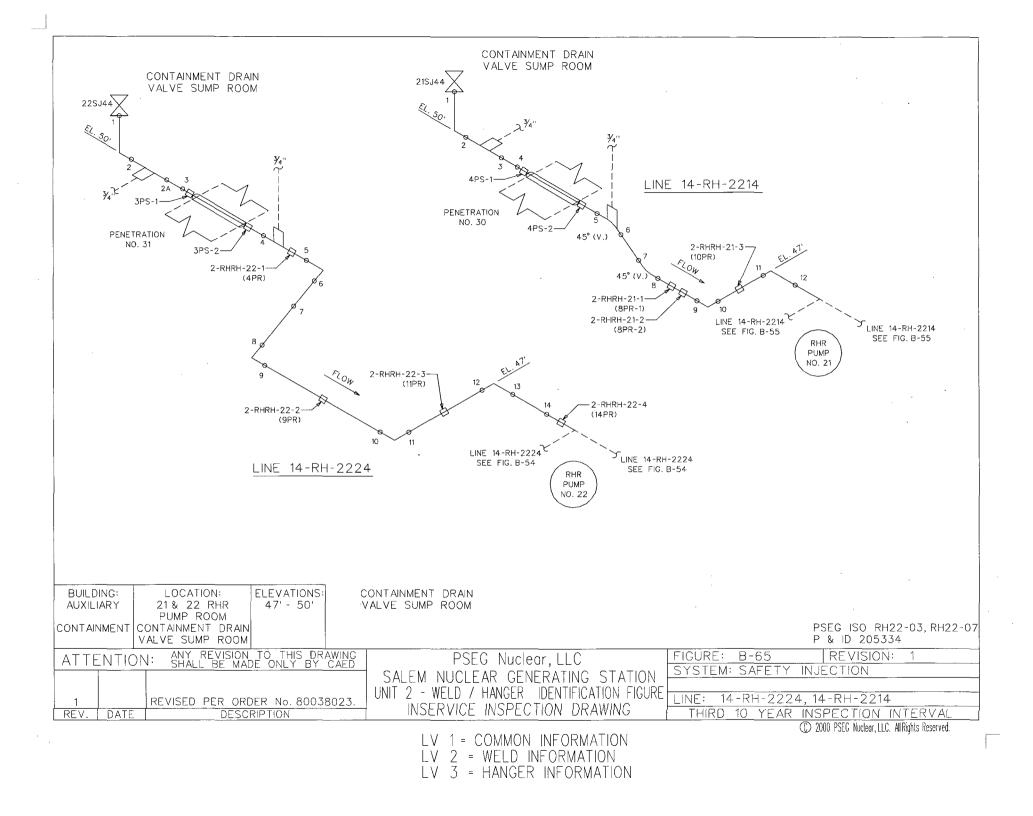
### FORM 3 (Page 3 of 4)

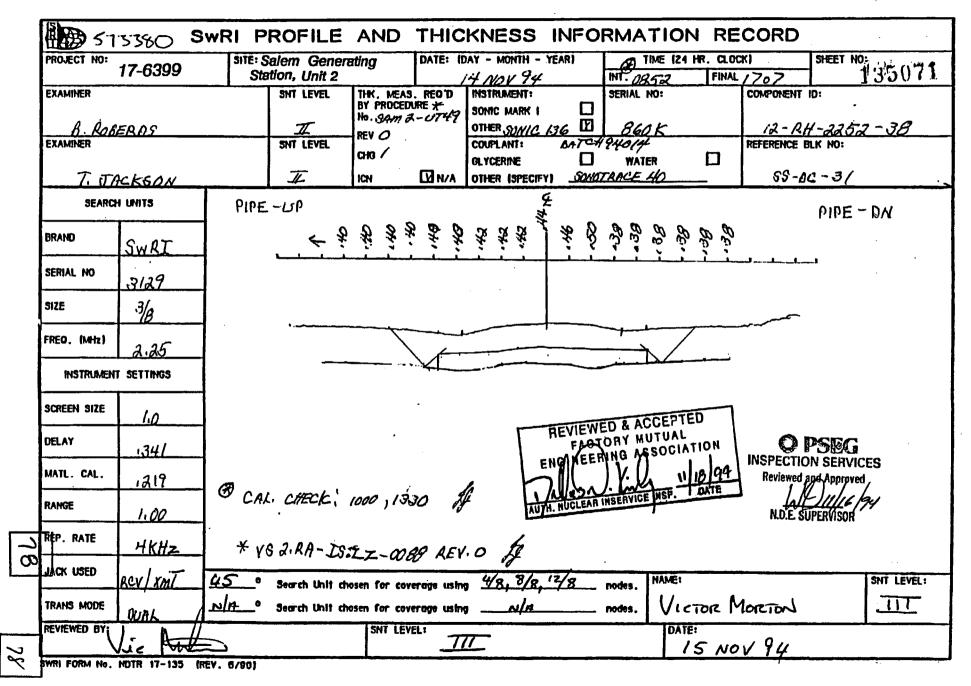
|     | 7.3 PERCEN                                   | t vol       | UME EX                 | AMINI         | D ~3° (0                 | >        |                                                   |               |  |
|-----|----------------------------------------------|-------------|------------------------|---------------|--------------------------|----------|---------------------------------------------------|---------------|--|
|     | Percent Volume<br>Examined                   | = 10        | 0 -                    | Tota<br>w/N   | o coverage               | vol<br>/ | Total 45° parallel<br>Exam Vol X                  | 100           |  |
|     |                                              | = 10        | 0 ~                    | {[            |                          | 1        | _N/A_J X                                          | 100           |  |
|     |                                              | =           |                        |               |                          |          | * 50                                              | %             |  |
| 8.0 | CALCULATE P                                  | ARALI       | LEL 60° 1              | EXAM          | COVERAGE                 | 2        |                                                   |               |  |
|     | 8.1 LIMITED                                  | ABOV        | /E/CW E                | XAM V         | OLUME                    |          |                                                   |               |  |
|     | Height of obstructed volum                   | W<br>ie ob  | idth of<br>structed a  | rea           | Length of<br>obstructed  | агеа     | Above/CW exam<br>volume with NO<br>exam coverage  |               |  |
|     |                                              | x _         |                        | х             | <del></del>              | _ =      | N/tt                                              |               |  |
|     | 8.2 LIMITED                                  | BELO        | w/ccw                  | EXAM          | VOLUME                   |          |                                                   |               |  |
|     | Height of<br>obstructed volum                |             | idth of<br>structed a  | rea           | Length of obstructed     | area     | Below/CCW exam<br>volume with NO<br>exam coverage |               |  |
|     |                                              | x           |                        | х             |                          | _ =      | N/A                                               |               |  |
|     | Total 60° paralle<br>8:3 PERCEN              |             |                        |               |                          | =        | <u>N/A</u>                                        |               |  |
|     | Percent Volume<br>Examined                   | = 10        | 0 -                    | Total<br>w/No | 60° parallel<br>coverage | vol<br>/ | Total 60° par.<br>Exam Vol 🛛 X                    | 100           |  |
|     |                                              | = 10        | 0 -                    | {[            |                          | 1        | <u>N/F</u> X<br>N/A                               | ،(00 ا<br>100 |  |
| 9.0 | CALCULATE TRANSVERSE 45° EXAM COVERAGE       |             |                        |               |                          |          |                                                   |               |  |
|     | 9.1 LIMITED CLOCKWISE EXAM VOLUME<br>CW exam |             |                        |               |                          |          |                                                   |               |  |
|     | Height of<br>obstructed volum                |             | idth of<br>structed a  | rea           | Length of obstructed     | area     | volume with NO<br>exam coverage                   |               |  |
|     |                                              | x _         | ·                      | x             | <b></b>                  | _ =      | ~/+                                               |               |  |
|     | 9.2 LIMITED COUNTERCLOCKWISE EXAM VOLUME     |             |                        |               |                          |          |                                                   |               |  |
|     | Height of<br>obstructed volum                | Wi<br>e ob: | idth of<br>structed as | rea           | Length of obstructed     | area     | CCW exam<br>volume with NO<br>exam coverage       |               |  |
|     |                                              |             |                        |               |                          |          |                                                   |               |  |

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Rev. 0





| PSE                                      | &G LIMITATION REPOR            | \T                                     |
|------------------------------------------|--------------------------------|----------------------------------------|
| PROJECT: 17-6399                         | UNIT: <u>Saler</u>             | M UNIT 2                               |
| SYSTEM: RESIDUAL HEAT REMOVAL            | WELD NO .: 12-R                | <u>2H-2252-38</u>                      |
| Prepared By: VICTOR MORTON               | Date: <u>15</u>                | Nov 94                                 |
| SUF                                      | RFACE EXAMINATIONS             | ····                                   |
| Area To Be Examined (length x Width = A) | ) <u>A=</u>                    | NA                                     |
| Area Of Limitation (Length x Width = Al) | <u>Al=</u>                     |                                        |
| Percentage Of Coverage                   | (A-AI <u>/A)=</u>              |                                        |
| VOL                                      | UMETRIC EXAMINATIO             | NS                                     |
| A. Axial Exams (Indications Parallel To  | Weld)                          |                                        |
| 1. Compute Exam Volume (h                | neight x width x length) = Vt1 | 18.46                                  |
| 2. Compute Vol. Not Covered Upstream     | = A                            | 5.98                                   |
| 3. Compute Upstream Limitation Percent   | age (A / Vt1) x 100 = Z1       | 32.39                                  |
| 4. Compute Vol. Not Covered Downstream   | m = 8                          | <u> </u>                               |
| 5. Compute Downstream Limitation Perce   | entage (B / Vt1) x 100 = Z2    | 32.39                                  |
| B. Circumferential Exams (Indications F  | Perpendicular To Weld)         |                                        |
| 1. Compute Exam Volume (h                | neight x width x length) = Vt2 | 22.47                                  |
| 2. Compute Vol. Not Covered CW           | = C                            | 28_                                    |
| 3. Compute CW Limitation Percentage      | (C / Vt2) x 100 = Z3           | 32.39                                  |
| 4. Compute Vol. Not Covered CCW          | = D                            | 7.28                                   |
| 5. Compute CCW Limitation Percentage     | (D / Vt2) x 100 = Z4           | 32.39                                  |
| C. Total Coverage                        |                                |                                        |
| 1. Compute Total Limitation Percentage   | (Z1+Z2+Z3+Z4) / 4 =            | L <u>32.39</u>                         |
| 2. Compute Total Coverage                | 100 – L                        | 67.61%                                 |
|                                          |                                |                                        |
| REMARKS:                                 |                                | ······································ |
| REMARKS:                                 |                                |                                        |

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# REQUEST FOR ADDITIONAL INFORMATION REQUEST FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR IN-SERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

QUESTION 2.1 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

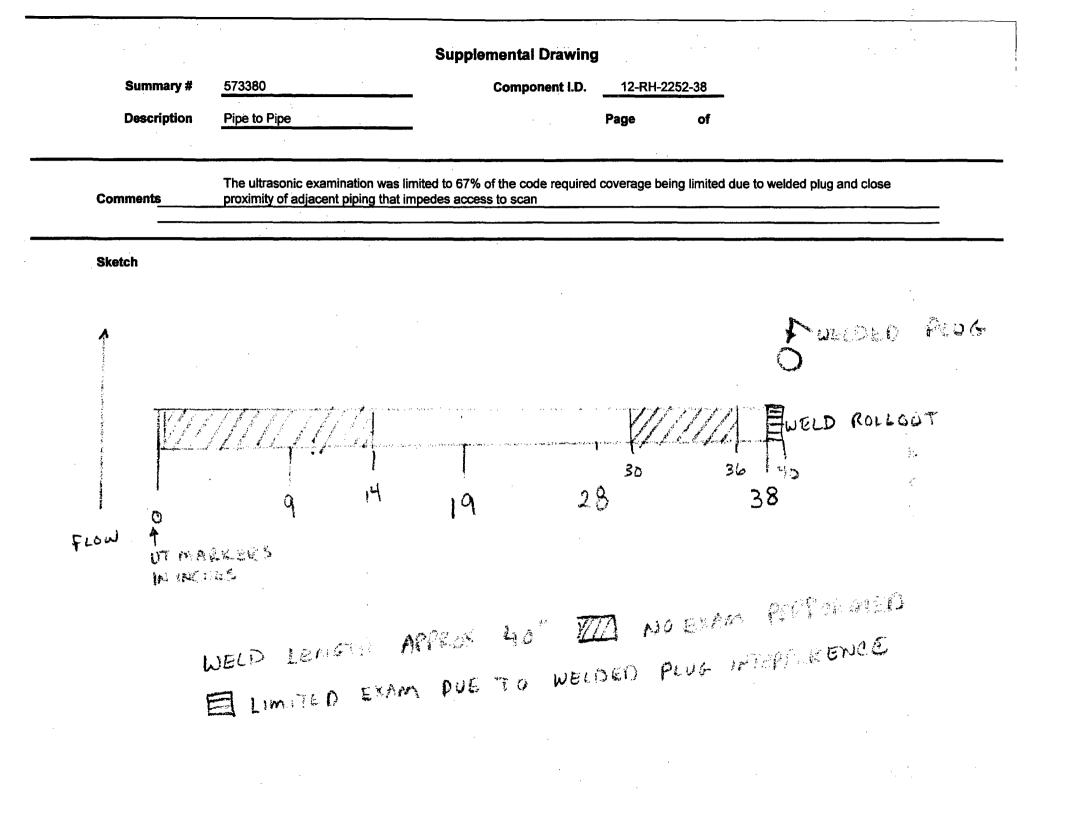
| Summary #      | 573380                           |                                          |
|----------------|----------------------------------|------------------------------------------|
| Component I.D. | 12-RH-2252-38                    |                                          |
| Description    | Pipe to Pipe                     |                                          |
|                |                                  | Comments                                 |
| 1              | Weld X-Section                   | See Attached                             |
| 2              | Material                         | Stainless Steel                          |
| 3              | Thickness / weld Crown           | Thickness .44" / Weld Crown 1 3/4"       |
| 4              | Obstruction                      | Welded Plug / Proximity to adjacent weld |
| 5              | Exam Area Highlighted on Drawing | Yes X No                                 |
| 6              | Transducer ray exit point        | See Attached                             |

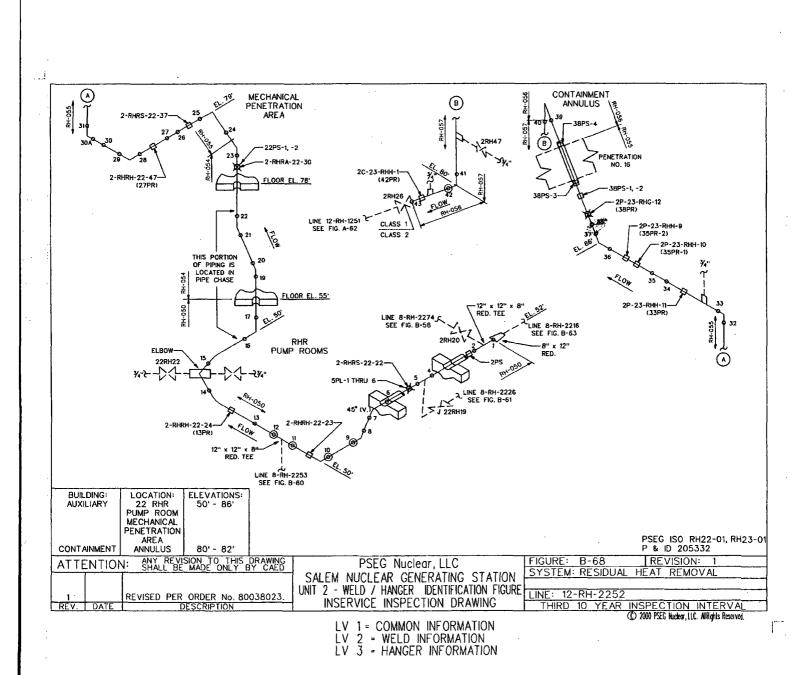
#### Comments

UT exam was performed of this component using 45 degree shear wave transducer. The ultrasonic examination was limited to 67% of the code required coverage being limited due to welded plug and close proximity of adjacent piping that impedes access to scan the examination area to achieve full coverage. No UT exam could be performed from 7 1/2" to 14" and 30" to 36 1/2" due to the proximity of adjacent piping. In addition the downstream side scan was limited 1 3/8" W from 38 11/16" to 40 1/8" due to a welded plug. No unacceptable indications were observed. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.

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| PSE8                                      | G LIMITATION REPORT                     |
|-------------------------------------------|-----------------------------------------|
| PROJECT: 17-6399                          | UNIT: SALEM UNIT 2                      |
| SYSTEM: Residual HEAT REMOVAL             | WELD NO .: 12-RH-2252-38PS-1            |
| Prepared By: VICTOR MORTON                | Date: 15 NOV 94                         |
| SUR                                       | FACE EXAMINATIONS                       |
| Area To Be Examined (length x Width = A)  | A= 28.00                                |
| Area Of Limitation (Length x Width = Al)  | <u>AI= 8.00</u>                         |
| Percentage Of Coverage                    | (A-AI/A)= 71-43                         |
|                                           |                                         |
| VOLU                                      | METRIC EXAMINATIONS                     |
| A. Axial Exams (Indications Parallel To W | 1                                       |
| 1. Compute Exam Volume (he                | $ght x width x length) = Vt1 \qquad NA$ |
| 2. Compute Vol. Not Covered Upstream      | = A                                     |
| 3. Compute Upstream Limitation Percentag  | e (A / Vt1) x 100 = Z1                  |
| 4. Compute Vol. Not Covered Downstream    | = B                                     |
| 5. Compute Downstream Limitation Percen   | tage (B / Vt1) x 100 = Z2               |
| B. Circumferential Exams (Indications Pe  | rpendicular To Weld)                    |
| 1. Compute Exam Volume (hei               | ght x width x length) = Vt2 $NA$        |
| 2. Compute Vol. Not Covered CW            | = C                                     |
| 3. Compute CW Limitation Percentage       | (C / Vt2) x 100 = Z3                    |
| 4. Compute Vol. Not Covered CCW           | = D                                     |
| 5. Compute CCW Limitation Percentage      | $(D / Vt2) \times 100 = Z4$             |
| C. Total Coverage                         |                                         |
| 1. Compute Total Limitation Percentage    | (Z1+Z2+Z3+Z4)/4 = L NA                  |
| 2. Compute Total Coverage                 | 100 – L                                 |
| REMARKS:                                  |                                         |
| ·                                         |                                         |
| · · · · · · · · · · · · · · · · · · ·     | 573583                                  |
|                                           |                                         |

# REQUEST FOR ADDITIONAL INFORMATION REQUEST FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR IN-SERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

QUESTION 2.2(a) For certain component attachments and support welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

| Summary #      | 331095                           |                 |
|----------------|----------------------------------|-----------------|
| Component I.D. | 14-BF-2211 - 11PL11& 11PL12      |                 |
| Description    | TRUNION                          |                 |
|                |                                  | Comments        |
| 1              | Weld X-Section                   | N/A             |
| 2              | Material                         | Carbon Steel    |
| 3              | Thickness / weld Crown           | UNKNOWN         |
| 4              | Obstruction                      | 11 PIPE SUPPORT |
| 5              | Exam Area Highlighted on Drawing | Yes X No        |
| 6              | Transducer ray exit point        | N/A             |

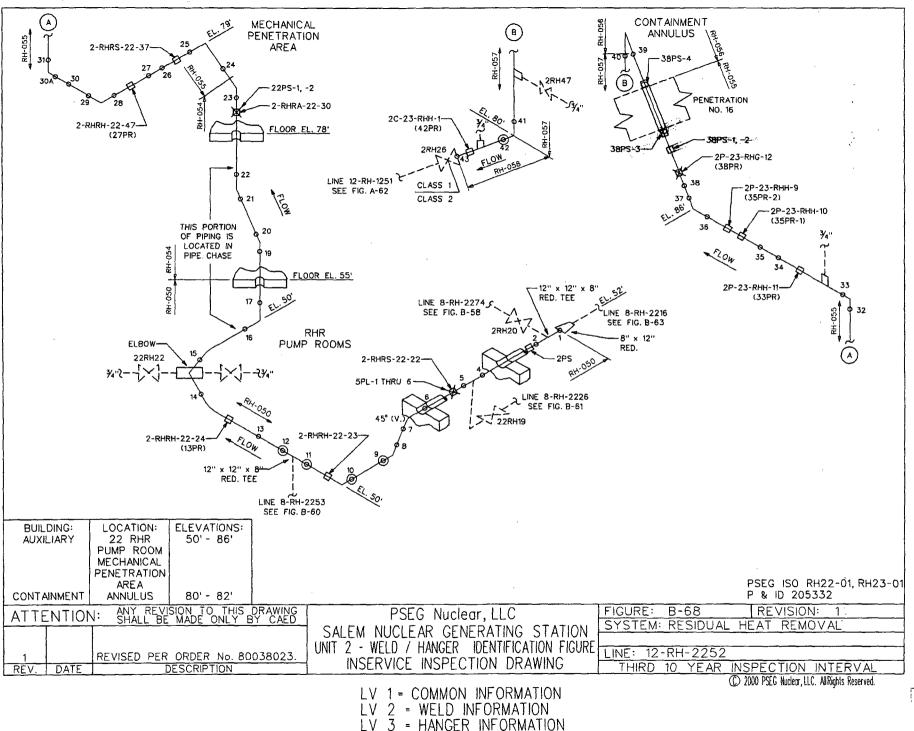
#### Comments

MT- EXAM WAS CONDUCTED. THE EXAM COMPLETED WAS LIMITED TO 80% CODE REQUIRED COVERAGE BEING OBTAINED DUE TO 1-1/2" OF THE TOTAL 7-1/2"LONG WELD NOT BEING ABLE TO BE EXAMINED DUE TO AN ADJACENT PIPE SUPPORT INTERFERENCE (11PS). NO UNACCEPTABLE INDICATIONS WERE OBSERVED. A SYSTEM PRESSURE TEST WAS ALSO COMPLETED WITH NO RECORDABLE INDICATIONS OBSERVED.

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# FORM 3 (Page 4 of 4)

|      | 9.3 PERCEN                    | τv       | OLUM            | IE EXA         | MINE          | D                        |            |                                  |          |
|------|-------------------------------|----------|-----------------|----------------|---------------|--------------------------|------------|----------------------------------|----------|
|      | Percent Volume<br>Examined    | =        | 100             | -              | Total<br>w/No | 45° parallel<br>coverage | vol<br>/   | Total 45° parallel<br>Exam Vol X | 100      |
|      |                               | =        | 100             | -              | {[            |                          | 1          | <u>N</u> X                       | 100      |
|      |                               | =        |                 |                |               |                          |            | - N/A                            | %        |
| 10.0 | CALCULATE T                   | RAJ      | NSVER           | SE 60°         | ' EXAI        | M COVERA                 | GE         | •                                |          |
|      | 10.1 LIMITED                  | CL       | .OCKV           | VISE E         | XAM '         | VOLUME                   |            | CW exam                          |          |
|      | Height of<br>obstructed volum | e        | Width<br>obstru | of<br>cted are | ea            | Length of obstructed     | area       | volume with NO<br>exam coverage  |          |
|      |                               | х        |                 |                | x             | <del></del>              | _ =        | N/A                              |          |
|      | 10.2 LINITED                  | CC       | OUNTE           | RCLO           | CKWIS         | SE EXAM V                | OLUME      | CCW exam                         |          |
|      | Height of<br>obstructed volum |          |                 | of<br>cted are |               | Length of obstructed a   | area       | volume with NO<br>exam coverage  |          |
|      |                               | x        |                 | <u> </u>       | x             | <u>,</u>                 | - =        | _N/F                             |          |
|      | Total 60° transve             | erse     | exam v          | volume         | not exa       | amined                   |            | N/A                              |          |
|      | 10.3 PERCEN                   | ΓV       | OLUM            | E EXA          | MINE          | D                        |            |                                  |          |
|      | Percent Volume<br>Examined    | =        | 100             | -              | Total<br>w/No | 60° trans vo<br>coverage | 1          | Total 60° trans<br>Exam Vol X    | 100      |
|      |                               | =        | 100             | -              | {[            |                          | 1          | <u>X[#]</u> X                    | 100<br>% |
| 11.0 | CALCULATE P                   | ERC      | ENT (           | OF TOT         | TAL V         | OLUME EX.                | AMINEI     | )                                |          |
|      | Examination<br>Coverage       | =        | (step 5         | -              | Volun<br>0)   | nes %<br>/No. of exa     | ms(6)      |                                  |          |
|      |                               | =        | * (             | 50             |               | %                        |            | CW exam                          |          |
|      | REMARKS:                      |          |                 |                |               |                          | ,          |                                  |          |
|      | + NO F                        | KA<br>L  | <u>m fr</u>     | on             | <u>0° A</u>   | 5 180° d                 | <u>eto</u> | FAISEd ID A                      |          |
|      |                               |          |                 |                |               |                          | NATION     | perfromed                        |          |
|      | from 180                      | <u> </u> | TO              | 560            | 01            | 2/                       |            |                                  | <u> </u> |
|      |                               |          |                 |                |               | <u> </u>                 | <u> </u>   |                                  |          |

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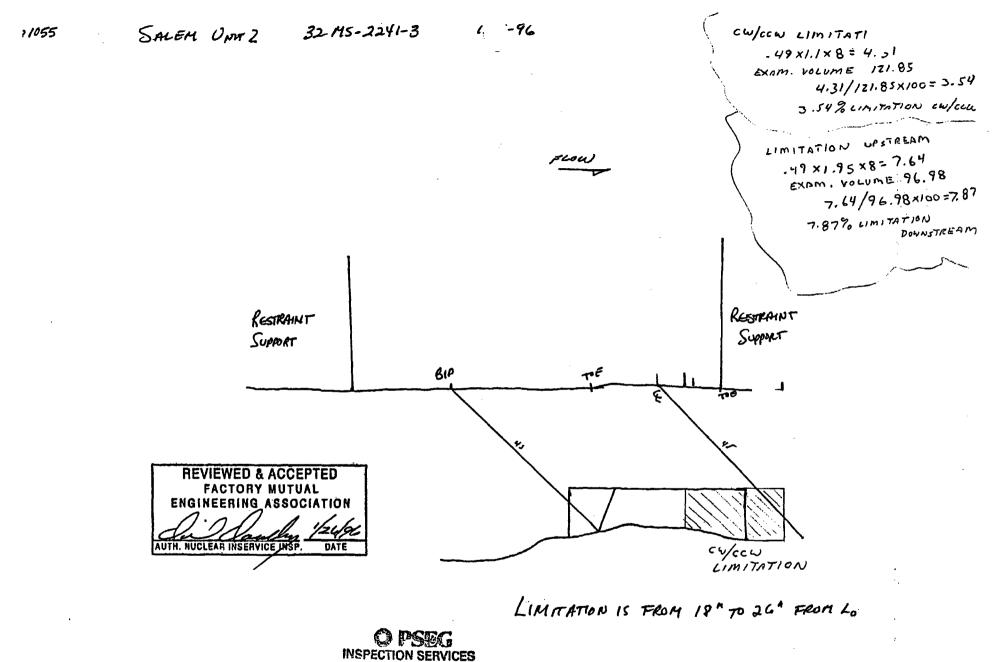
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# ULTRASONIC WELD PROFILE AND THICKNESS EXAMINATION RECORD Summary No.: 381055

SH.RA-AP.ZZ-0101(Q) FORM 11

| NDE Lab:       | CR         |                   | SITE:                        |       |                      | ~          |                        | 1    | DATE     |    |                                  |             | 5/        | _         | _                 | _   |     | L        | The I24 HR. CLOCKI         SHEET NO:           INT. 1445         FINAL 1458         090022 |                |          |          |       |       |          |              |                                                                                                                |               |              |           |                  |           |         |
|----------------|------------|-------------------|------------------------------|-------|----------------------|------------|------------------------|------|----------|----|----------------------------------|-------------|-----------|-----------|-------------------|-----|-----|----------|--------------------------------------------------------------------------------------------|----------------|----------|----------|-------|-------|----------|--------------|----------------------------------------------------------------------------------------------------------------|---------------|--------------|-----------|------------------|-----------|---------|
|                |            |                   | SAL                          | Em (  | Init                 | 2          |                        |      |          | 1. | -11                              |             |           |           |                   |     |     |          | 11.                                                                                        | _              | _        |          | F     | INAL  | <u> </u> | 58           | the second s |               | <u>0</u>     | 90        | <u>)</u> <u></u> | 27        | <u></u> |
| Examiner (S    | ignature)  |                   |                              | ISNI  | Level                |            | Couplar                |      |          |    |                                  | nsti<br>Iod | un<br>al· | ien<br>FP | t<br>Dori         | HT  | t   | S        | ERIA                                                                                       |                |          |          |       |       | 1        |              | ENT                                                                                                            |               |              |           |                  |           |         |
| Pathe          | 1 Cole     |                   |                              |       | T.                   | _\         | Specify<br>Sonotk      | AC   | E        | 40 | Model: EPOCH II<br>5/N: 92086704 |             |           |           |                   |     |     | _        | 9                                                                                          | 20             | 8        | 67       | 0     | 4     | 3        | 32-M5-224/-3 |                                                                                                                |               |              |           |                  |           |         |
| Examiner (S    |            | /                 | 7                            |       | Level                | :          | # 95                   | 24   | 3        |    | P                                |             |           |           |                   |     | Rev |          | _                                                                                          |                | -<br>- ^ |          | •     | 、     | REI      | _            | _                                                                                                              | BLK           | _            |           |                  |           |         |
| XIIII (        | Muller     | $\underline{\nu}$ |                              |       | <b>a</b>             |            |                        |      |          |    | Ŀ                                | ЭН.         | KA        | -1.       | S.:               | Z Z | 2-6 | 2/3      | .7 (                                                                                       | <del>?</del> ( | R        | <u> </u> | 0.    | )<br> |          | -93          | 2 -                                                                                                            | 66            | 83           | 3         |                  |           |         |
| SEARCH         | UNITS      |                   |                              | ┝╌┠╴  | ┥                    | ┢          |                        |      |          | -  | _                                | -           | -         | -         |                   |     |     |          | _                                                                                          | _              |          |          |       |       |          |              |                                                                                                                | -             | -            |           | H                |           |         |
| BRAND          | КВА        | _                 |                              |       |                      | F          |                        |      |          |    | 7                                | 4           |           |           |                   |     |     |          | -                                                                                          |                |          |          |       |       |          | -            |                                                                                                                |               |              |           | Ħ                | 4         | _       |
|                |            | -1                |                              |       | 1-1-                 | $\top$     |                        |      |          |    |                                  |             | -†        | -         |                   |     |     |          | -1                                                                                         | -†             | -+       | -1       |       |       | -        | ╂──          |                                                                                                                | ┢──           |              |           | ┝─┦              | -1        |         |
| SERIAL NO      | 04872      |                   |                              |       |                      |            |                        | 90   |          | 2  | 8                                | চ           | 2         | 7         | 2                 | দ্ব | 2   | 5        | -                                                                                          | 5              | দ্বা     | দ্ব      | 62    | 2     | 5        | <u> </u>     | <u> </u>                                                                                                       | <u>†</u>      |              |           | $\vdash$         |           | _       |
| SIZE           |            |                   |                              |       |                      | T          |                        | 1    |          | -  | -                                | -           | Ŀ         |           | •••               |     | -   |          |                                                                                            | -              | 31       | -        | -4    |       |          | 1            |                                                                                                                | 1-            | $\mathbf{t}$ | 1         | $\vdash$         | -1        |         |
|                | .35*10     |                   |                              |       |                      | L          |                        |      |          |    |                                  |             |           |           |                   |     |     |          |                                                                                            |                |          |          |       |       |          |              |                                                                                                                | $\Box$        |              |           |                  |           |         |
| FRED. INHE     | 4          | -                 | ====                         | ╞═╞═  | ╞═╞═                 |            |                        | 4    |          |    | Ц                                | 4           |           | Ц         |                   | 1   |     |          |                                                                                            |                | Ц        | 4        | 1     |       |          |              |                                                                                                                |               | $\Box$       |           | $\Box$           |           |         |
|                | 4 mhz      | $\rightarrow$     |                              | ┝╾┠╴  | ┼╾┼                  | ╞╌         |                        |      | Ы        | _  |                                  | _           | _         | _         |                   |     |     |          | _                                                                                          |                | 2        |          |       |       |          |              | <u> </u>                                                                                                       |               |              |           | П                |           |         |
| INSTRUMENT     | SETTINGS   | $\rightarrow$     |                              | ┝──┼─ | ╋╍┼╸                 | ┢╌         | ╉╾┠╾╎                  | _    |          |    |                                  | -+          |           |           | _                 |     |     |          | -+                                                                                         |                | _        | _        |       |       |          |              |                                                                                                                | ╞             |              |           |                  |           |         |
|                |            |                   |                              | ┠─┼╸  | ┾╌┾╌                 | +          | ┼╌┼╾┤                  | -    |          |    | $ \leftarrow  $                  | 5           | -         | $\neg$    |                   |     |     |          | -+                                                                                         | -+             | -+       |          |       | н     |          | EW           | ED                                                                                                             | <u>k</u>      | CC           | EP        | FE               | 피         | 7       |
| SCREEN SIZE    | 5. D , web | -+                |                              |       | ╋╋                   | ┢╌         | ┼╼┼╌┤                  |      | ┝─┤      |    | *                                | 4           |           | -         |                   |     |     |          | {                                                                                          | -+             | -+       |          |       | ENG   | IN       | EEA          | INC                                                                                                            |               | UT           | <u>لم</u> | ┢╤┤              |           | -       |
| DELAY          |            |                   |                              |       |                      |            |                        |      |          |    |                                  | ľ           | 5         |           |                   |     |     |          | -                                                                                          | 1              |          | -1       |       | 11    |          | 5            | $\nabla$                                                                                                       | 7             |              | 1         |                  |           | 1       |
|                | 9.700      |                   |                              |       |                      |            |                        |      |          |    |                                  |             |           | J         |                   |     |     |          |                                                                                            |                |          |          | Ű     |       | $\geq$   | Ż            | 乞                                                                                                              | U.            | Ľ            | ten la    | 7                | 24        | j.      |
| MATL. CAL,     | . 2293     |                   |                              | ┝─┝─  |                      |            |                        | _    |          | _  | _                                |             | _         | _         | $\mathbf{\Sigma}$ |     |     |          | _                                                                                          | _              | _        | ¥        |       | 1. NU |          | AR IN        | SER                                                                                                            | VICE          | NSP          |           | DA               | TE        |         |
|                |            |                   |                              | ┝╾┼╌  | ┼╌┼╌                 | · <b> </b> | +                      | _    | $\vdash$ | -  |                                  | -+          | -+        |           | Π.                |     | _   | -        | =                                                                                          | =              | =        | =        |       | <     |          |              | $\vdash$                                                                                                       | $\not\models$ | ┢            | <u> </u>  | $\vdash$         | $\neg$    |         |
| RAHGE          | . 500      |                   |                              |       | +-+-                 | -          | +                      |      |          | _  | _                                | 7           | ≯         | 4         |                   |     |     |          | +                                                                                          |                | -+       | -        |       |       | -        | ┝            | $\vdash$                                                                                                       | ┢             | $\vdash$     |           | ┝╌┤              | -         | _       |
| REP. RATE      | FIXED      |                   |                              |       | $\left\{ - \right\}$ |            | $\left\{ -\right\} $   | _    |          | _  | _                                | -           | _         |           |                   | F   | Lóv | <u>_</u> |                                                                                            | _              | -        | $\neg$   |       | _     |          |              |                                                                                                                | F             | $\Box$       | $\Box$    | $\square$        | $\square$ |         |
| JACK USED      |            |                   |                              |       |                      | t          |                        |      |          |    |                                  | 1           |           | 1         |                   |     |     |          |                                                                                            | +              | Ť        |          |       |       |          |              | <u> </u>                                                                                                       | E             |              | E         | H                |           |         |
|                | TIR        |                   | <u>45</u> •<br>// <u>A</u> • |       |                      |            | sen for c<br>sen for c |      | -        |    |                                  |             |           |           | <u></u>           |     |     |          | odes                                                                                       | •              | PR       | sfic     | .E    | так   | en.      | Ar           | 96                                                                                                             | * F;          | æМ           | ' 4       |                  |           |         |
| Trans Mode     | LONG       | _/\               | <u>/~_</u> *                 | Scor  | ch Unil              | chos       | sen for c              | DVEI | rage     | us | ing                              |             |           | -//       | <u>ч</u>          |     |     | - ^      | odes                                                                                       | ·              |          |          |       |       |          |              |                                                                                                                |               |              |           |                  |           | _       |
| Reviewed By:   | Z h        | ر                 | L,                           | ,     |                      |            | SNT                    | Le   | evel     | :  | -                                | Z           | 21        | -         |                   |     | 6   | ി        |                                                                                            | SV             |          | Date     | €:    |       | /-       | 13           | - )                                                                                                            | 96            |              |           |                  |           |         |
|                |            |                   |                              |       |                      |            |                        |      |          |    |                                  |             |           |           |                   | INS |     | ČTI      |                                                                                            |                | 1.1      | CES      | 3     |       |          |              |                                                                                                                |               |              |           |                  |           |         |
|                |            |                   |                              |       |                      |            |                        |      |          |    |                                  |             |           |           |                   |     |     | ewed     |                                                                                            |                |          |          |       |       |          |              |                                                                                                                |               |              |           |                  |           |         |
| /1 <b>1</b> /1 |            |                   |                              |       |                      |            |                        |      |          |    |                                  |             |           |           |                   |     |     | 12       | <i>( / /</i> )                                                                             |                |          |          | ,<br> |       |          |              |                                                                                                                |               |              |           |                  |           | R       |



Reviewed and Approved

N.D.E. SUPERVISOR

IWS II. 96

# FORM 2 (Page 1 of 1)

| ı    |             | VOLUMETRIC PIPING EXAMINATION COVERAGE RE                                                                           | PORT       |
|------|-------------|---------------------------------------------------------------------------------------------------------------------|------------|
| UNI  | Г:          | 2 LTP SUMMARY NO.:                                                                                                  | 81055      |
| SYST | TEM:        | MAIN STEAM LTP COMPONENT ID: 32                                                                                     | -MS-224/.3 |
| PRE  | PARED       | BY: Ja W. Lay DATE: _                                                                                               | 1-25-96    |
| REV  | IEWED       | BY: dot w hertening DATE: DATE:                                                                                     | 1/27/94    |
|      |             | VOLUMETRIC PIPING EXAMINATIONS                                                                                      |            |
| 1.0  | AXIA        | L EXAMS (INDICATIONS PARALLEL TO WELD)                                                                              |            |
|      | 1.1         | $\begin{array}{rcl} .49 & 1.95 & 101.5 \\ \text{Compute Exam Volume} & (height x width x length) = Vt1 \end{array}$ | 96.98      |
|      | 1.2         | Compute Vol. Not Covered Upstream * * * = A                                                                         | 7.64       |
|      | 1.3         | Compute Upstream Limitation Percentage<br>(A / Vt1) x 100 = Z1                                                      | 7.87       |
|      | 1.4         | Compute Vol. Not Covered Downstream = B                                                                             |            |
|      | 1.5         | Compute Downstream Limitation Percentage<br>(B / Vtl) x 100 = Z2                                                    | 0          |
| 2.0  | CIRC        | CUMFERENTIAL EXAMS (INDICATIONS PERPENDICULAR                                                                       | TO WELD)   |
| 2    | 2.1         | Compute Exam Volume (height x width x length) = Vt2                                                                 | 121.85     |
|      | 2.2         | Compute Vol. Not Covered CW * * * = C                                                                               | 4.31       |
|      | 2.3         | Compute CW Limitation Percentage ( $\cancel{k}$ / Vt2) x 100 = Z3                                                   | 3.54       |
|      | 2.4         | Compute Vol. Not Covered CW * * $\neq$ = D                                                                          | 4.31       |
|      | 2.5         | Compute CCW Limitation Percentage $(27 / Vt2) \times 100 = Z4$                                                      | 3.54       |
| 3.0  | TOT         | AL COVERAGE                                                                                                         |            |
|      | 3.1         | Compute Total Limitation Percentage<br>(Z1 + Z2 + Z3 + Z4)/4 = L                                                    | 14.95      |
|      | 3.2         | Compute Total Coverage 100 - L                                                                                      | 85.05%     |
|      | LIM         | TATION EXPLANATION / REMARKS:                                                                                       |            |
|      | <u>* c.</u> | ALCULATION ON PLOT/PROFILE                                                                                          |            |
|      |             |                                                                                                                     |            |
|      |             | · · · · · · · · · · · · · · · · · · ·                                                                               |            |
|      |             |                                                                                                                     |            |

lem/Hope Creek Common

SH.RA-IS.ZZ-0145(Q)

# FORM 1 (Page 1 of 1)

|          |                              | SURFACE EXAMINA           | TION COVER            | AGE REPORT              |                                        |
|----------|------------------------------|---------------------------|-----------------------|-------------------------|----------------------------------------|
| UNII     | : <u>SAL</u>                 | EM_2                      | LTP SUMMA             | RY NO.:                 | 181120                                 |
| SYST     | TEM: MAIN                    | STEAM                     | LTP COMPO             | NENT ID: <u>32-/</u>    | ns-2231-183-2                          |
| PREI     | PARED BY:                    | Zwly                      | ·                     | DATE:                   | 1-17-96                                |
| REVI     | EWED BY:                     | Etw. Auflin               |                       | DATE:                   | 1/26/96                                |
|          | V                            | SURFACE                   | EXAMINATIO            | NS                      | ······································ |
| 1.0      | CALCULATE                    | REQUIRED EXAM A           | REA                   |                         |                                        |
|          | Exam length                  | X Exam Width              | =                     | Exam Area               | FOR TWO DIRECTION                      |
|          | 101.25                       | 24                        |                       | 405×2 = 810             |                                        |
| 2.0      | CALCULATE                    | AREA NOT EXAMIN           | ED                    |                         |                                        |
|          | 2.1                          | Length of obstructed area | Width of obstructed a | area                    | Area with NO exam coverage             |
|          | · A. *                       | K <u>101.25</u> X         | 24                    | =                       | 405                                    |
|          | B.                           | <u> </u>                  | NR                    | <b>=</b>                | <u> </u>                               |
| ļ        | С.                           | x                         | <del></del>           | =                       |                                        |
| Í        | D.                           | X                         |                       |                         |                                        |
| 3.0      | CALCULATE                    | PERCENT AREA NO           | T EXAMINED            |                         |                                        |
|          | Percent Area<br>NOT Examined | = Total Are<br>i w/No Co  |                       | Exam<br>Area            | X 100                                  |
|          |                              | = 405                     | /                     | 810                     | X 100                                  |
|          |                              | = <u>50</u>               | %                     |                         |                                        |
| 4.0      | CALCULATE                    | PERCENT OF TOTAL          | . AREA EXAM           | NED                     |                                        |
|          | 100%                         | - Percent A<br>NOT Exa    |                       | Examination<br>Coverage |                                        |
|          | 100%                         | 50                        | a                     | _ 50 ,                  | 6                                      |
|          | LIMITATION                   | EXPLANATION / RE          | MARKS:                |                         |                                        |
|          | <u>* m.T. E</u>              | XAM. PERFOR               | MED IN C              | NLY ONE                 | DIRECTION                              |
|          | DUE TO                       | CONFIGURA                 | TION.                 |                         |                                        |
|          |                              |                           |                       | ····                    |                                        |
| <u>.</u> |                              |                           |                       |                         |                                        |

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Rev. 0

# REQUEST FOR ADDITIONAL INFORMATION REQUEST FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR IN-SERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

QUESTION

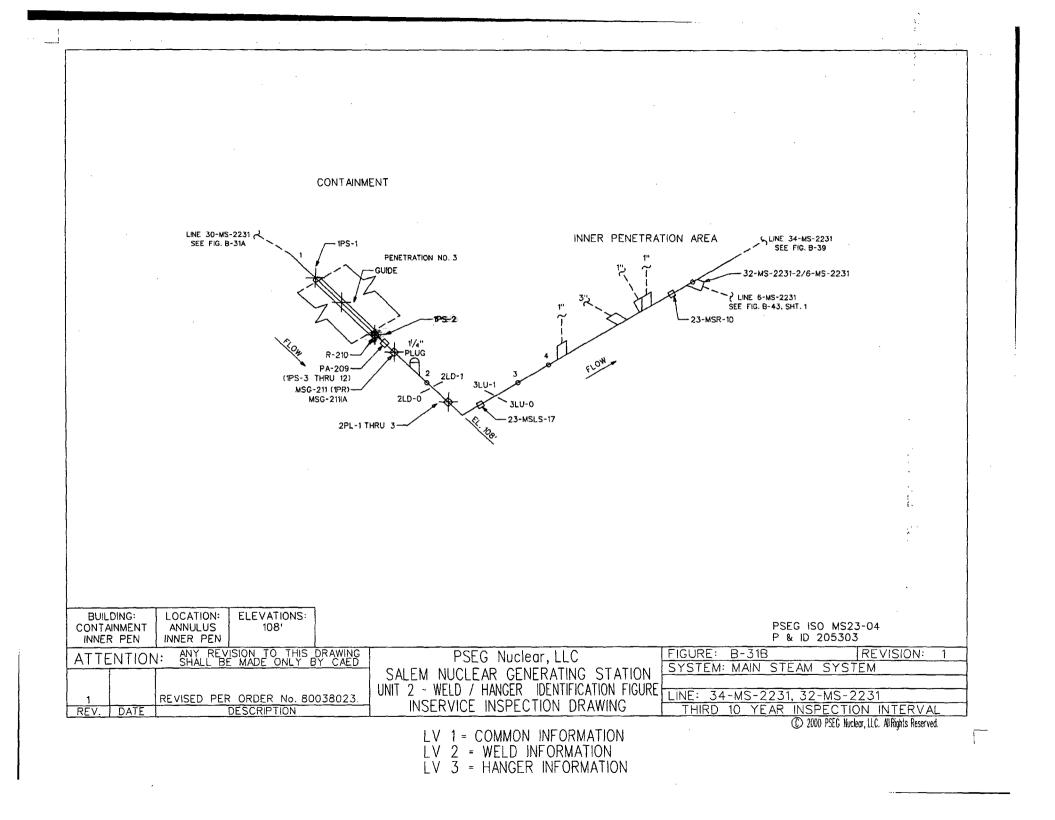
2.2(a) For certain component attachments and support welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

| Summary #      | 381120                          |                   |
|----------------|---------------------------------|-------------------|
| Component I.D. | 32-MS-2231-1PS-2                |                   |
| Description    | SUPPORT                         | _                 |
|                |                                 | Comments          |
| 1              | Weld X-Section                  | N/A               |
| 2              | Material                        | Carbon Steel      |
| 3              | Thickness / weld Crown          | N/A               |
| 4              | Obstruction                     | LUG CONFIGURATION |
| 5              | Exam Area Highlighted on Drawin | gYes X No         |
| 6              | Transducer ray exit point       | N/A               |

#### Comments

MT exam was conducted of this component. The MT exam was limited to 50% because of the configuration of the lug that precluded examination of the lug in two directions. The MT was unable to be examined in two directions due to its configuration, there is no IWF support associated with this attachment. This component is located at a containment wall penetration and is limited due to inaccessibility to back portion of lugs, a system pressure test was also completed with no unacceptable indications observed. Component selected for MEB 3-1 Augmented exam requirements.

Page of



# SECOND INTERVAL, SECOND PERIOD, FIRST OUTAGE

| SUMMARY                 | <b>#:</b> 381120 |      |                                                  |                                       | AMINATION SU<br>LAR GENERATI |             |             |     |                      | 2                                                                                                                                                                                                                                                    |
|-------------------------|------------------|------|--------------------------------------------------|---------------------------------------|------------------------------|-------------|-------------|-----|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LINE/SU                 | BASSEMBLY:       | 32-1 | I STEAM SYSTEM<br>15-2231 [PSE&<br>15-2231-1P5-2 | G <b>#</b> 32″−2                      | MS1011]                      |             |             |     | ·                    | PPORT R-210<br>REQUEST:                                                                                                                                                                                                                              |
| LTP INS                 | TRUCTIONS:       |      |                                                  |                                       | =                            |             |             |     |                      | URFACE, DUE TO THE<br>REQUEST REQUIRED (A-E).                                                                                                                                                                                                        |
| NDE<br>METHOD<br>IN LTP | PROCEDURE        |      | RESULTS FILE<br>NDE<br>EXAMS                     | EXAM<br>RECORD                        | CALIBRATION<br>RECORD        | N<br>O<br>R | G<br>E<br>O | -   | RESOLUTION<br>RECORD | REMARKS                                                                                                                                                                                                                                              |
| MT                      | SHRAISZZ011      | .7Q  | MT                                               | 090038                                | -                            | х           | -           | -   | -                    | 96RF - W.O. #960508025 TO<br>PERFORM NDE. PERFORM EXAM IAW<br>MEB 3-1. LIMITATION:<br>EXAMINED (MT) 50% OF THE CODE<br>REQUIRED SURFACE, DUE TO THE<br>CONFIGURATION OF THE LUG.<br>REVIEWED & ACCEPTED<br>FACTORY MUTUAL<br>ENGINEERING ASSOCIATION |
| -                       | red by:          | tu C | kerfling<br>Denhogen                             | · · · · · · · · · · · · · · · · · · · |                              | Da          | ite:        | : 0 | 1/19/96              | Total dose received while<br>performing the required<br>NDE examinations:                                                                                                                                                                            |

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# MAGNETIC PARTICLE EXAMINATION RECORD

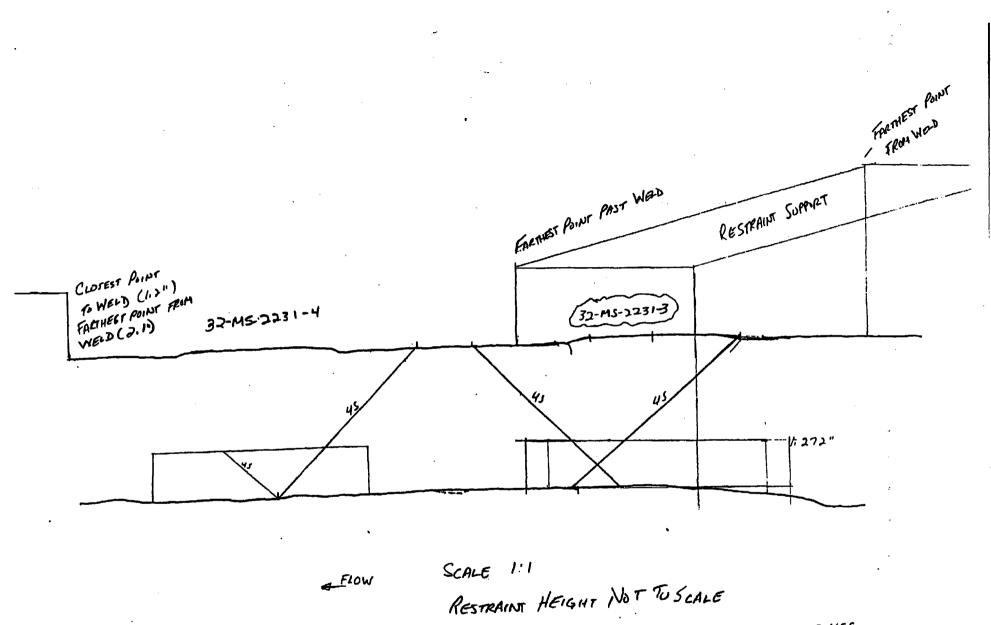
÷.,

# SH.RA-AP.ZZ-0101(Q) FUKM 7

Summary No.: 361120

| and the second se |               |                  |              |           |                          |                          |                                                                                                                 |           |                                              |                                        | the second s | _         |          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------------|--------------|-----------|--------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------|-----------|----------------------------------------------|----------------------------------------|----------------------------------------------------------------------------------------------------------------|-----------|----------|
| NDE Lab:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | SITE:         | DATE:            | Dia:         |           | Sched:                   |                          | Length:                                                                                                         |           | TIME (24 HR.                                 |                                        | SHEET No                                                                                                       |           |          |
| VER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Salem 2       | 1-16-95          | NI           | Δ         | N/A                      |                          | NIA                                                                                                             |           | EXAM START                                   |                                        | 09                                                                                                             | 0038      | 3        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | FICATION:     |                  |              |           | ENO & REV.               |                          |                                                                                                                 |           |                                              |                                        | LOCATION:                                                                                                      | W. L      | DCATION: |
| Area: 32-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |               | 51-1P5-2         |              |           | -15.22-0                 | (a) rii                  | Rev 2                                                                                                           |           | Width: Vac                                   | Ted Ru                                 | ele la                                                                                                         | t d       |          |
| Examiner &                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | MIT Le        | vel:             |              |           |                          | SURFACE                  | FINISH                                                                                                          |           | WELD TYPE                                    | PIPE                                   | YOKE SPA                                                                                                       | CING: 6   | . N      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               | $Q_{\Lambda}$    | 1 1 1        |           | ~                        | ASG                      | mond                                                                                                            |           | Fille                                        | T SUPPORT                              | YOKE BRA                                                                                                       |           |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <u>NC Po</u>  | 4 Jerry          | 4. hade      |           |                          | { .                      |                                                                                                                 | HATE      |                                              |                                        | SERIAL No                                                                                                      |           |          |
| Examiner l                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |               | vei:             | _            |           |                          | BRAND:                   | Detek                                                                                                           |           | WET D                                        | DRY 🕑                                  | SURFACE                                                                                                        |           |          |
| V Yet                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | dru           | m II             | _            |           |                          | BATCH N                  | a.:7801-20                                                                                                      | 2-60      | FLOURESCENT                                  | a                                      | THERMOME                                                                                                       | -         | י די     |
| CALIBRATION BL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | OCX ·         | CALIBRATION      | I VERIFICATI |           | DISTANCE FROM            | TYPE: A                  | IA                                                                                                              |           | MAXED NO                                     | YES D                                  | SERIAL NO                                                                                                      | SV-ND     | E-0065   |
| SERIAL No.:<br>SV-NDE-00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 15            | TIME: OBIO       | 1220         |           | BLACK LIGHT<br>TO SENSOR |                          | Yellow                                                                                                          | •         | MIXED WITH .                                 |                                        | Cal Due                                                                                                        | Date: 2   | 29-95    |
| WEIGHT: 1016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |               | RUTIALS: 100     | pu           |           | CELL N/A N               | and so the second second | CK LIGHT DUT                                                                                                    |           |                                              | MATERIAL                               | <u> </u>                                                                                                       |           |          |
| BLACK LIGHT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | $\sim$        | INTENSITY METER  |              |           | IGHT OUTPUT              | J                        | The second se | IPUT VEKI | ICATION                                      | APPLICATION                            |                                                                                                                | USTING    | -        |
| BRAND:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |               | BRAND: 74        | -            | 1         | V                        | THE:                     |                                                                                                                 | N         | $\pm$                                        | 1                                      |                                                                                                                | locome [  | -        |
| SERHAL No .:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |               | SERHAL No. :     | 1            |           | // 4/am <sup>2</sup>     | INTIALS:                 |                                                                                                                 | 1-11      |                                              |                                        | 3                                                                                                              | PRAYING [ | ם ב      |
| ND No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | L             | W LC             | CATION       | ROLIND OR | SIZE DIA.<br>OR LENGTH   |                          |                                                                                                                 |           | REM                                          | ARKS:                                  |                                                                                                                |           | NTIALS   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                  |              | LELIN     |                          |                          |                                                                                                                 |           |                                              |                                        |                                                                                                                |           | Da       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                  |              |           |                          | No                       | Recordat                                                                                                        | ble I     | ndicatio                                     | 205                                    |                                                                                                                |           | pa       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                  |              |           | 1.                       |                          |                                                                                                                 |           |                                              |                                        |                                                                                                                |           | -        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                  |              |           |                          |                          |                                                                                                                 |           |                                              |                                        |                                                                                                                |           |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                  |              |           |                          |                          |                                                                                                                 |           |                                              |                                        | . <u></u>                                                                                                      |           |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                  |              |           |                          |                          |                                                                                                                 |           |                                              |                                        |                                                                                                                | · 1       |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                  |              |           |                          |                          |                                                                                                                 |           | WEWED                                        | ACCEPTEL                               |                                                                                                                |           |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                  |              |           |                          |                          |                                                                                                                 |           |                                              |                                        |                                                                                                                |           |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1             |                  |              |           |                          |                          | -                                                                                                               | ENG       | INEERING                                     | ASSOCIATI                              | ON                                                                                                             |           |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                  |              |           | -                        |                          |                                                                                                                 | 77        | 1.11                                         | all chan                               | 6                                                                                                              |           |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                  |              |           |                          |                          |                                                                                                                 | 4         | <u>/////////////////////////////////////</u> | lly 124                                | ATE                                                                                                            |           |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | -             |                  |              |           |                          |                          |                                                                                                                 | AUTH. NU  | CLEAH INSER                                  | VICE INST.                             |                                                                                                                |           |          |
| XAMINATION AR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | EA LIMITATION | I IF NONE, SO SI | TATEL        | SEC       | E LIMIT                  | ATION                    | REP                                                                                                             | ORT       |                                              | ······································ |                                                                                                                |           |          |
| Exam Pers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | rmed in       | one Direction    | on on        | y Dur     | TO CONST                 | watio                    | 0                                                                                                               |           |                                              |                                        |                                                                                                                | PS        | I        |
| EVIEWED BY:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |                  | 1            | 1         |                          | SNT LEVE                 |                                                                                                                 |           | DATI                                         | 17.0                                   | PAGE                                                                                                           |           | · ,      |
| ······                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |               | $-\omega$        | 65           |           |                          |                          |                                                                                                                 |           |                                              | -17-90                                 | 5                                                                                                              | OF        | <u> </u> |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                  | 1            |           |                          |                          | INSPECT                                                                                                         | PS        |                                              |                                        |                                                                                                                |           |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                  |              |           |                          |                          |                                                                                                                 | ed and Ap |                                              |                                        |                                                                                                                |           |          |
| em/Hope C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | reek Cor      | nmon             |              |           | 18                       | of 43                    | noright                                                                                                         | ĩ /A      | horea                                        |                                        |                                                                                                                |           | Rev. 5   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                  |              |           |                          |                          | LA NOT                                                                                                          | L SUPERVI | 120/96                                       |                                        |                                                                                                                |           |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               | -                |              |           |                          |                          | IV.U.P                                                                                                          | - Jureky  | SUK                                          |                                        |                                                                                                                |           |          |

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I C G TT 1-18-96

# SH.RA-AP.ZZ-0101(Q) FGAM 11

# ULTRASONIC WELD PROFILE AND THICKNESS EXAMINATION RECORD Summary $N_0$ .: <u>381155</u>

| NDE Lab:    | - 0                                                                                                            |                          | IE:        |                         |                | -           | _     | DATEI<br>1-16-96 |            |           |              |             |                        |          |          |                 |       |        | THE 124 HR. CLOCKI<br>INT. 0850 [FHAL 0903 |     |     |             |      |       |       |            |          | SHEET NO:<br>09004/            |     |           |  |  |  |
|-------------|----------------------------------------------------------------------------------------------------------------|--------------------------|------------|-------------------------|----------------|-------------|-------|------------------|------------|-----------|--------------|-------------|------------------------|----------|----------|-----------------|-------|--------|--------------------------------------------|-----|-----|-------------|------|-------|-------|------------|----------|--------------------------------|-----|-----------|--|--|--|
|             | <u>CR</u>                                                                                                      | 5                        | ALE        | M I                     |                |             |       |                  |            |           |              |             |                        |          |          |                 | _     | -      | and the owned when                         | 50  |     | HAL         | _    | _     | -     | _          | <u>o</u> | 70                             | 09  | 1.1       |  |  |  |
| Examiner (S | Signature)                                                                                                     |                          |            | SN                      | T Le           | vel:        | Co    |                  | •          | . –       | ł            | Inst        | rum                    | mt       |          | <del>.</del> т. | SE    | RIAL   | H0:                                        |     |     |             | 00   | PON   | ENT   | 10:<br>10: |          |                                |     |           |  |  |  |
|             | hil ale                                                                                                        | •                        |            | -                       | Г              |             |       | ecity            |            |           |              |             | lel:  <br>; <u>9</u> 2 |          |          |                 |       | 92     | 109                                        | 36- | 70  | 4           | 2    | 32    | M     | 5 -        | 22       | 23                             | 1-3 | <b>,</b>  |  |  |  |
|             | the second s |                          |            | _                       | Le             |             |       | 43<br>43         |            |           |              | _           | edu                    |          |          |                 | 1     |        |                                            |     |     |             |      |       | ICE E | _          |          |                                |     |           |  |  |  |
| Examinar A  |                                                                                                                | ר                        |            |                         | Le<br>T        | vei:        | #     | 952              | 2.4        | 3         |              |             | . RA                   |          |          | ••••            | •     | 13     | 7(                                         | دی  | Rev | r 0         |      |       | 12    |            | -        | 33                             |     | 9         |  |  |  |
|             | IV-TO P                                                                                                        | <b>—</b> —               | <b>r-1</b> |                         | T              |             |       | -                | T          |           |              | <b>T</b> -7 |                        | -        | T        |                 | T     | -T     | T                                          | Ť-  | 1   | <u> </u>    | ┟┯╍  |       |       |            |          | T                              | Т   | TT        |  |  |  |
| SEARCH      |                                                                                                                |                          |            |                         | +              | +           |       | 1                |            |           | +-           |             |                        | +        | +-       |                 |       | +      | +                                          |     |     |             |      |       |       |            |          |                                |     |           |  |  |  |
| BRAND       | KBA                                                                                                            |                          |            |                         |                |             | _     |                  | -          |           | +            |             | -                      | +        | +        |                 |       | -      | +-                                         | +   | -   |             |      |       |       |            |          |                                |     |           |  |  |  |
| SERIAL NO   | 04872                                                                                                          |                          |            |                         | +              | 2           | 23    | - E              | 2          | E         | R            | 65          |                        |          | 00       | 3               |       | 1 2    | <u>र</u><br>र ह                            | 1 - | -   | 74          | 13   | 67    | 97    | ۲<br>۲     |          | $\square$                      |     | ┼╍┼       |  |  |  |
| SIZE        | .35 × 10                                                                                                       |                          | - 24       | 1.59                    | 5              | Ē           | 4     | ÷                |            |           | P            |             |                        | 1        |          | Ħ               |       |        |                                            |     |     |             | -    |       |       | ž          |          |                                | +   |           |  |  |  |
| FREQ. IMILE | +mhz-                                                                                                          | -                        | Ŀ          | 1                       |                | Ī           | -1    |                  | Ī          |           | 1            |             |                        | 1        | ⋣        |                 |       |        | Ţ                                          | 1   | 1   | 1           | 1    | ſ     | 1     | 1          |          |                                | 1   |           |  |  |  |
| INSTRUMENT  | SETTINGS -                                                                                                     | 7-                       | H          | ¥                       | Ł              | Π           |       | -                | F          |           | Ţ            |             |                        | +        | 4        |                 | _     | +      | 1                                          | -   | F   | -           |      |       |       |            | ~        | 7                              | ÷   | +         |  |  |  |
| SCREEN SIZE | 5.0 -                                                                                                          |                          | H          |                         | ╀              | R           |       | -                |            |           |              |             | 1                      | 1        |          |                 |       | 1      | ╀                                          |     | F   | <b>—</b>    |      | -     | F     | Z          |          |                                | 1   | +         |  |  |  |
| DELAY       | 9.700                                                                                                          |                          | $\square$  |                         | $\overline{-}$ |             | Ę     | -                |            | $\square$ |              |             |                        | ╀        | F        |                 |       |        | +                                          |     | -   | _           | 4-   | -/    |       | E          |          |                                |     |           |  |  |  |
| MATL. CAL.  | .2293                                                                                                          | +                        |            | -                       |                |             |       | 4                |            |           | -            |             |                        |          | -        |                 |       |        |                                            |     |     |             | Ľ    |       |       |            |          |                                |     |           |  |  |  |
| ANGE        | . 500                                                                                                          | +                        |            | ╪                       | $\pm$          | H           | =     | ŧ                |            |           | $\pm$        |             | =                      | +        | $\pm$    | E               |       |        |                                            | E   | 1   | É           |      |       |       |            | E        |                                |     |           |  |  |  |
| EP. RATE    | FILED                                                                                                          | ╞                        |            | +                       | +              | ╞┤          | $\pm$ | +-               |            |           |              |             | 0                      | <u>1</u> | ┢        |                 | $\pm$ |        |                                            | E   | E   |             |      |       |       | E          |          |                                | +   | ┼┼        |  |  |  |
| ACK USED    | TIR                                                                                                            | 45                       |            | <br>Sear                | <br>ch U       | Ji<br>nit d | hosen | for              | L          | rage      | _l<br>vs Inj | ⊥_1<br>□ _  |                        | 1.       | 12       | L               |       | des.   |                                            | Po. | L   | ــــــ<br>ج | <br> | <br>/ | <br>( | <br>7*     | പ<br>റോ  | ــلــــا<br>ميم <sup>ر</sup> ا | ZOM |           |  |  |  |
| Frans Mode  | LONG -                                                                                                         | NIA                      | <u>+</u> • | \$ear                   | ch U           | nti d       | hasen | for              | COVE       | rage      | us Ing       | ) _         |                        | Ы        | <u>A</u> |                 | - ^4  | odes . |                                            |     |     | <u>م</u>    |      |       | • *   |            |          |                                | (   | 60<br>100 |  |  |  |
| Reviewed By | Lu                                                                                                             | $\overline{\mathcal{I}}$ | L          | $\overline{\mathbf{v}}$ |                |             | Τ     | SNI              | Le         | vel:      |              | _           | Ī                      | Ĩ        |          |                 |       |        |                                            | Da  | te: | /           | '-/  | 18    | -9    | 76         |          |                                |     |           |  |  |  |
| m/Hope Ci   | reek Commo                                                                                                     |                          |            |                         | - F A          |             |       | - 10 14          | 11U<br>500 | AL<br>HAT | 101          |             | r 43                   |          |          |                 |       |        |                                            |     | PE  | STIC        |      | SER   | VIC   | ES<br>/    |          | -                              |     | Re        |  |  |  |

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32-MS-2231-4

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1.12 32-45-2231-3 RESTRAINT SUPPORT 1 101 Xy f Lo 57.25 "sci<sup>8</sup>'55" 97. 75" 92.75 ۶ŗ -ا<sup>و</sup>د، ک · 2 - 15 51.1" 12-13-91" INFELTION AREA FOR CW AND COW SLANS. 52.26 . 34.375" 381155 July 1-18-96

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RESTRAINT SUPPORT

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#### FORM 2 (Page 1 of 1)

| UNII                                         | Г:    | <u>SALEM UNIT 2</u> LTP SUMMARY NO.: 3                           | 881155        |
|----------------------------------------------|-------|------------------------------------------------------------------|---------------|
| SYST                                         | TEM:  | MAIN STEAM LTP COMPONENT ID: 3:                                  | 2-MS-2231-3   |
| PREI                                         | PARED |                                                                  | 1-16-96       |
| REV                                          | IEWED | BY: The G and DATE:                                              | 1-16-96       |
| <u>.                                    </u> |       | VOLUMETRIC PIPING EXAMINATIONS                                   |               |
| 1.0                                          | AXIA  | L EXAMS (INDICATIONS PARALLEL TO WELD)                           |               |
|                                              | 1.1   | Compute Exam Volume (height x width x length) = Vt1              | 132.64"       |
|                                              | 1.2   | Compute Vol. Not Covered Upstream = A                            | 0,004         |
|                                              | 1.3   | Compute Upstream Limitation Percentage<br>(A / Vt1) x 100 = Z1   | 0%            |
|                                              | 1.4   | Compute Vol. Not Covered Downstream = B                          | 0.004         |
|                                              | 1.5   | Compute Downstream Limitation Percentage<br>(B / Vt1) x 100 = Z2 | 0%            |
| 2.0                                          | CIRC  | UMFERENTIAL EXAMS (INDICATIONS PERPENDICULAR                     | TO WELD)      |
| ;                                            | 2.1   | Compute Exam Volume (height x width x length) = $Vt2$            | 189.34 •      |
|                                              | 2.2   | Compute Vol. Not Covered CW = C                                  | 48.96*        |
|                                              | 2.3   | Compute CW Limitation Percentage (A / Vt2) x $100 = Z3$          | 2 5.86 %      |
|                                              | 2.4   | Compute Vol. Not Covered CW = D                                  | 48,96"        |
|                                              | 2.5   | Compute CCW Limitation Percentage (B / Vt2) x $100 = Z4$         | 25.86%        |
| 3.0                                          | TOT   | AL COVERAGE                                                      |               |
|                                              | 3.1   | Compute Total Limitation Percentage<br>(Z1 + Z2 + Z3 + Z4)/4 = L | 12.93%        |
|                                              | 3.2   | Compute Total Coverage 100 - L                                   | 187,07%       |
|                                              | LIMI  | TATION EXPLANATION / REMARKS:                                    |               |
|                                              | LIM   | TATION DUE TO WHERE THE RESTRAINT SUPPORT CRO                    | SSES OVER 71- |
|                                              | WEL   | D AND THE Y2" AREA ON THE UP STREAM SIDE OF T                    | THE WELD.     |

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# SH.RA-AP.ZZ-0101(Q) FURM 11

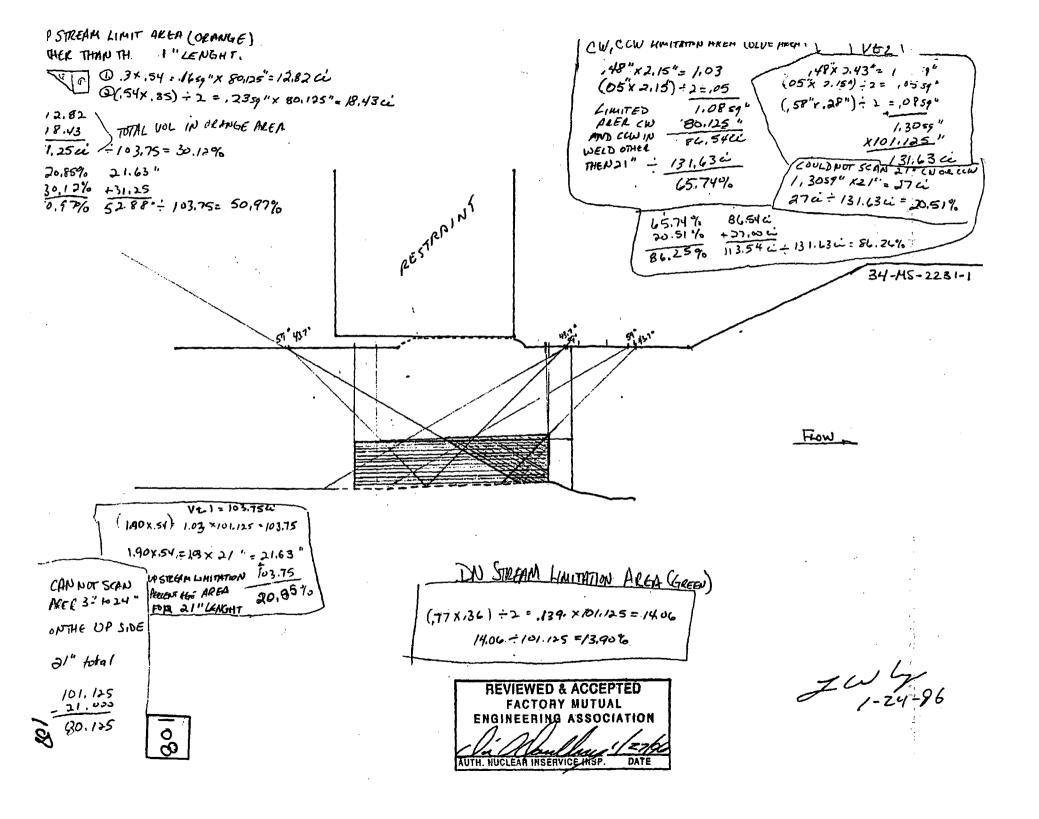
# ULTRASONIC WELD PROFILE AND THICKNESS EXAMINATION RECORD Summary No.: 381175

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| NDE Lab:    |            | · • • • • • • • • • • • • • • • • • • • |          |     |                          |      |                                      |              |               |            |                    |         |       | DATE:    |      |          |                    |              |        | TINE 124 HR. ELOUXI |              |          |            |              |               | SIRET HO: |      |      |                    |           |     |             |              |
|-------------|------------|-----------------------------------------|----------|-----|--------------------------|------|--------------------------------------|--------------|---------------|------------|--------------------|---------|-------|----------|------|----------|--------------------|--------------|--------|---------------------|--------------|----------|------------|--------------|---------------|-----------|------|------|--------------------|-----------|-----|-------------|--------------|
| V           | CR         |                                         | SA       | LE  | y U                      | 1    | r 7                                  | 2            |               |            | l                  | -2      | -0-   | ·7 \_    | 2    |          |                    |              | IN     | r. Ie               | 305          |          | F          | HAL          | 1015 09008    |           |      | 7_   | _                  |           |     |             |              |
| Examiner (  | Signature) |                                         |          | s   | NT I                     | .eve | 1: 0                                 | Cou          | plan          | ıt,        |                    |         |       |          | men  | t        |                    |              | 55     | RIAL                | HO:          |          |            |              | COMPONENT IO: |           |      |      |                    |           |     |             |              |
| Specify     |            |                                         |          |     |                          | Тур  | Type: Model:<br>ACE 40 8/N: 92086704 |              |               |            |                    |         | 9     | 92086704 |      |          |                    | 34-15-2231-1 |        |                     |              |          |            |              |               |           |      |      |                    |           |     |             |              |
| Examiner (  |            | _                                       |          | 18  | NT I                     | eve  |                                      |              |               |            |                    |         | Pre   | cec      | lure | No       | . &                | Rev          | <br>/: |                     |              |          | ·          |              | REF           | EREN      | CE B | LK H | 0:                 |           |     | _           |              |
| Junis 1     | 111-11/1   | J                                       | 1        |     | Ψ                        |      |                                      |              | ~             |            |                    |         | 5     | н.       | RA   | -15      | :. z               | 2 Z          |        | 37                  | 769          | 2)       | Rev        | 0            | Ľ             | 12        | -6   | 68   | 3                  |           |     |             | - <b>-</b>   |
| SEARCH      |            |                                         |          |     |                          | -    | -                                    | F            |               |            | -                  | ┦       | Ŧ     | +        |      |          |                    | _            | -      |                     | +            | $\vdash$ |            |              |               |           |      |      | $\rightarrow$      | +         | +   | +-          | +            |
| BRAND       | КВА        |                                         |          | 1   | H                        | 7    | +                                    | F            |               |            | 4                  | 7       | 7     | Ŧ        | -    |          |                    | _            |        | -                   |              | F        | <b>—</b>   |              |               |           |      |      | $\neg$             | +         |     |             | ╞            |
| SERIAL NO   | 04872      |                                         |          |     |                          | 1    |                                      | 1            | F             |            |                    | 1       | 1     | ╀        | F    | st       |                    | 65           |        | 53                  | 2            | _        | F          |              |               |           |      |      | 2                  | 7         |     | Ţ           | Ŧ            |
|             |            | 1-                                      | 5        | +-  | ┼╌┼                      | -    | đ                                    | ╆            | <del>ko</del> | ~          | $\vdash$           | ╉       | ╉     | +-       | ┼─   | 5        | $\left  - \right $ |              | ┝╼╂    | 콱                   | 1-           | -        | ┣──        | <del> </del> |               | Ħ         |      |      | ┝╼╉                | +         | +   | +-          | $^{+}$       |
| SIZE        | 3.5×10mm   |                                         | <i>₩</i> | +-  | ┼╌┼                      | -ť   | $\uparrow$                           | +            |               | H          |                    | +       | +     | 1-       |      |          | $\vdash$           |              | ┝─┦    | . A                 | 51           |          |            |              |               |           |      |      |                    | 1         |     | T           | T            |
|             |            |                                         |          | 1   |                          |      | T                                    | T            | Γ             |            |                    | 1       | 1     | ┡        | 1-   |          | Г                  |              |        | ₩                   | 1            | E        | P          |              |               |           |      |      |                    |           |     |             | T            |
| FRED. IMILI | 4mhz       |                                         |          |     |                          |      |                                      | T            |               |            |                    |         | T     |          |      |          |                    |              | 1      | 2                   |              |          |            |              |               |           |      |      |                    |           |     |             | T            |
| INSTRUMEN   | T SETTINGS |                                         |          | -   | $\left\{ \cdot \right\}$ |      | ┯                                    | -            | -             | _          |                    | -       | -     | +-       |      | · /      | ~                  | -            | 2      |                     | +-           |          | -          | <u> </u>     |               |           |      |      |                    | +         |     | +-          | +            |
| SCREEN SIZE |            |                                         |          |     | $\Box$                   |      |                                      |              |               |            | $\Box$             |         | T     |          | Ł    |          | $\mathbf{\Sigma}$  |              |        |                     | L            |          |            |              |               |           |      |      |                    |           |     | 1_          | $\downarrow$ |
|             | 5.0 inches |                                         |          |     | ┼╼┼                      |      |                                      | +            | ╂             |            | ┝╼╄                | _¥      | Ľ     | -        | W    | -        |                    |              | ┝─┤    |                     | ╋            | ╂        |            |              |               |           |      |      | $\vdash$           | -+-       | ╉   | ╉╾          | ╉            |
| DELAY       | 9.700      | <u> </u>                                | ┝╾┼╸     |     | ╄╼╉                      |      | +-                                   | +-           |               | $\square$  | ト                  | 4       | ╉     |          | 14   | [        |                    | '            | ┝─┤    |                     | +            | ┼        | ┨──        |              |               |           |      | 150  | $\vdash$           | -+        |     | ╉           | ╋            |
|             |            | ┼──                                     | ┝╌┼╴     |     | ┼╍╂                      | -+-  | ╌┼╌                                  | ╉╼           | †>            |            | ┝─╊                | -       | -†-   | ┢        | 1-   |          |                    | <b> </b>     |        | -†-                 | -1-          | +        | f—         | <b> </b>     |               |           |      |      | 51                 | 71        | TO  | あ           | T            |
| MATE. CAL.  | . 2293     |                                         |          |     |                          |      |                                      | 1            |               |            |                    |         | Ŀ     | 1        | 上    | L        |                    |              |        | 上                   | T            |          |            |              |               |           |      |      |                    |           | 2/2 |             | T            |
| RANGE       | .500       | F                                       |          | T   | +                        |      | 1                                    | -            | -             |            | $\left  - \right $ | _       | 4     |          | -    | $\vdash$ |                    |              | -      | ╺╍┠╌                |              | ┢        | _          | ┨            |               |           |      |      | $\left  - \right $ | -+        | +-  | ╋           | +            |
|             |            | ┢─                                      | ┝╼┾╴     |     | ┼╌┦                      | - -  | ╉╴                                   | ╉            | ┢             |            | ┠─┦                | -+      | ╶┼╴   | ╋        | ╉╾   | ┝─       |                    | ┢──          | ┟╼┤    | ╉                   |              | ┼─       | +          |              |               |           |      |      |                    | -         | ┽   | +-          | $\dagger$    |
| REP. RATE   | FIXED      |                                         |          | 1-  |                          |      | 1-                                   |              | T             |            |                    |         |       |          |      |          |                    |              |        |                     | T            | 匚        |            |              |               |           |      |      |                    | $\square$ | T   |             | Ŧ            |
| JACK USED   | TIR        | F                                       | 45       |     | L<br>Search              | Unii | she                                  | 510          | Í.            | L]<br>cove | rage               | <br>vs1 | <br>^ | <u> </u> |      | 1/2      |                    |              |        | odes.               | +            |          | <u> </u>   | 1            | L             | <b>I</b>  | L    | L    | <u> </u>           |           |     | <u> </u>    | <b>ــ</b> ــ |
| Trans Mode  | SHEAR      | 1_                                      | 60       |     | search                   |      |                                      |              |               |            |                    |         |       |          |      |          |                    |              | - '    | odes.               |              |          |            |              |               |           |      |      |                    |           |     | <i>os</i> 1 | <u> </u>     |
| Reviewed B  | "ZL        | l<br>v                                  | 4        |     |                          |      |                                      | T            | SNI           | L          | evel               | :       | Z     | Π        | -    |          | _                  |              |        |                     |              | Da       | te:        | /            | -2            | 2.6       | -96  | 6    |                    |           |     |             |              |
| em/Hope C   | Creek Comr | <u></u>                                 |          | ENG | FAI                      |      | NG                                   | " M(<br>,A'S | SO<br>SO      | CIA        |                    |         | 22    | of       | 43   |          |                    |              | IN     | ISPE<br>Revi        | CTI<br>iewed |          | SEF<br>App | RVIC<br>pvet |               | •         |      |      |                    |           |     |             | R            |

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# FORM 2 (Page 1 of 1)

|      |            | VOLUMETRIC PIPING EXAMINATION COVERAGE REPO                      | DRT                                   |
|------|------------|------------------------------------------------------------------|---------------------------------------|
| UNIT | :          | SALEN, UNIT Z LTP SUMMARY NO .: 33                               | 1175                                  |
| SYST | EM:        | MAIN STEAM LTP COMPONENT ID: 34-                                 | MS-2231-1                             |
| PREP | ARED       | BY: DENNIS P. STRICKLAND DATE: U                                 | -20-96                                |
| REVI | EWED       | BY: Z C G M 1/27/14 DATE:                                        | 1-24-96                               |
|      |            |                                                                  |                                       |
|      |            | VOLUMETRIC PIPING EXAMINATIONS                                   |                                       |
| 1.0  |            | AL EXAMS (INDICATIONS PARALLEL TO WELD)                          | 10275                                 |
|      | 1.1        |                                                                  | <u>نە 103.75 (</u>                    |
|      | 1.2        | Compute Vol. Not Covered Upstream = A _                          | 52.88 <u>i</u>                        |
|      | 1.3        | Compute Upstream Limitation Percentage<br>(A / Vt1) x 100 = Z1   | 50,97%                                |
|      | 1.4        | Compute Vol. Not Covered Downstream = B                          | 14.06 ci                              |
|      | 1.5        | Compute Downstream Limitation Percentage<br>(B / Vt1) x 100 = Z2 | 13.90%                                |
| 2.0  | CIRC       | CUMFERENTIAL EXAMS (INDICATIONS PERPENDICULAR TO                 | ) WELD)                               |
| 1    | 2.1        | Compute Exam Volume (height x width x length) = Vt2              | 131, 43 0                             |
| 1    | 2.2        | Compute Vol. Not Covered CW = C                                  | 113.54 ci                             |
|      | 2.3        | Compute CW Limitation Percentage (A / Vt2) x $100 = Z3$          | 86.26%                                |
|      | 2.4        | Compute Vol. Not Covered CW = D                                  | 13,54 ii                              |
|      | 2.5        | Compute CCW Limitation Percentage (B / Vt2) x 100 = Z4           | 26.26%                                |
| 3.0  | TOT        | AL COVERAGE                                                      |                                       |
|      | 3.1        | Compute Total Limitation Percentage $(Z1 + Z2 + Z3 + Z4)/4 = L$  | 59.85%                                |
|      | 3.2        | Compute Total Coverage 100 - L                                   | 40,15%                                |
|      | LIMI       | ITATION EXPLANATION / REMARKS:                                   |                                       |
|      | <u>()p</u> | STREAM SCANS LIMITED BETWEEN 3" AND 24" DUE TO ATTA              | CHMENT MOUNTED                        |
|      |            | IPE RESTRAINT; RESTRAINT SUPPORT COVERS WELD 340° ARON           |                                       |
|      |            | ITING CLANNING ACROSS THE WELD CROWN.                            | · · · · · · · · · · · · · · · · · · · |
|      |            |                                                                  |                                       |

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#### FORM 1 (Page 1 of 1)

| SURFACE                     | E EXAMINATION COVERAGE REPORT                                     |
|-----------------------------|-------------------------------------------------------------------|
| UNIT:SALEM                  | 2 LTP SUMMARY NO.:                                                |
| SYSTEM: MAIN STER           | m LTP COMPONENT ID: <u>32-ms-2221-105-2</u>                       |
| PREPARED BY:                | J La DATE: 1-19-96                                                |
| REVIEWED BY:                | DATE: 1/26/96                                                     |
| (/(//                       | SURFACE EXAMINATIONS                                              |
| 1.0 CALCULATE REQUIRE       | ED EXAM AREA                                                      |
| Exam length X               | Exam Width = Exam Area                                            |
| 101.25                      | <u>3"</u> <u>303.75 x 2</u> = 607.5                               |
| 2.0 CALCULATE AREA NO       | OT EXAMINED                                                       |
| 2.1 Length of obstructed    | of Width of Area with NO<br>ed area obstructed area exam coverage |
| A. <u>101</u> .             | $\frac{25}{25} \times \frac{3}{25} = \frac{303.75}{25}$           |
| BNA                         | X $NA $ = $NA$                                                    |
| c                           | x =                                                               |
| D                           | <u> </u>                                                          |
| 3.0 CALCULATE PERCENT       | r area not examined                                               |
| Percent Area = NOT Examined | Total Area / Exam X 100<br>w/No Coverage Area                     |
| <del></del>                 | [ <u>303.75</u> / <u>607.5</u> ] X 100                            |
| • =                         | _50_%_                                                            |
| 4.0 CALCULATE PERCEN        | r of total area examined                                          |
| 100% -                      | Percent Area = Examination<br>NOT Examined Coverage               |
| 100% -                      | 50 = 50%                                                          |
| LIMITATION EXPLANA          | ATION / REMARKS:                                                  |
| <u>* m.T. EXAM. P</u>       | ERFORMED IN ONLY ONE DIRECTION                                    |
| DUE TO CONFI                | GURATION.                                                         |
|                             |                                                                   |
|                             |                                                                   |

Salem/Hope Creek Common

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Page 5 of 10

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Rev. 0

# REQUEST FOR ADDITIONAL INFORMATION REQUEST FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR IN-SERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

QUESTION

2.2(a)

For certain component attachments and support welds, information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

| Summary #      | 381220                        |                   |
|----------------|-------------------------------|-------------------|
| Component I.D. | 32-MS-2221-1PS-2              |                   |
| Description    |                               |                   |
|                |                               | Comments          |
| 1              | Weld X-Section                | N/A               |
| 2              | Material                      | Carbon Steel      |
| 3              | Thickness / weld Crown        | N/A               |
| 4              | Obstruction                   | LUG CONFIGURATION |
| 5              | Exam Area Highlighted on Draw | ing Yes X No      |
| 6              | Transducer ray exit point     | N/A               |

#### Comments

MT exam was conducted of this component. The MT exam was limited to 50% because configuration of the lug that precluded examination of the lug in two directions. The MT exam was unable to be examined from two directions due to its configuration. There was no IWF support associated with this weld attachment. a system pressure test was also completed with no unacceptable indications observed.

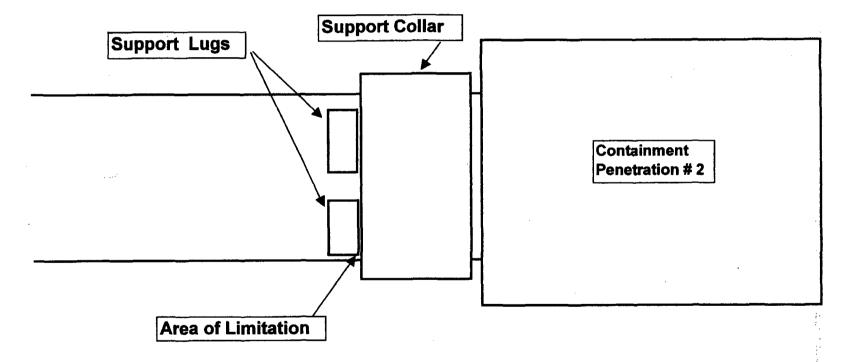
Page of

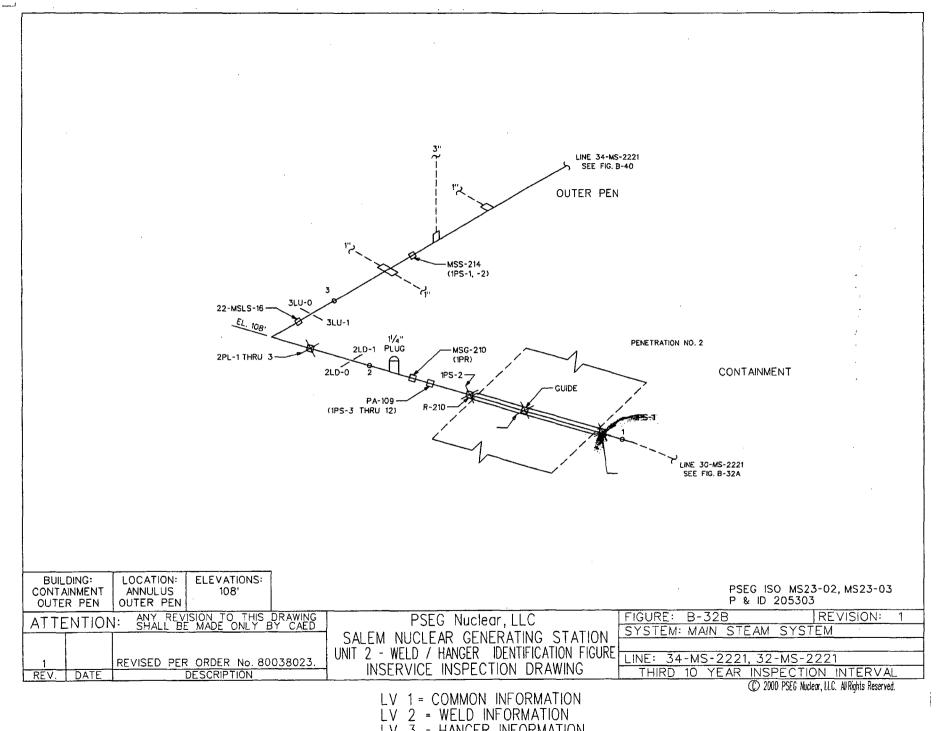
# Supplemental Drawing Summary # 381220 Component I.D. 32-MS-2221-1PS-2 Description Pipe Support Page of

#### Comments

The MT exam. Was limited to 50% because of a permanently installed pipe collar in the area that prevented sufficient access to examine the weld in two directions

#### Sketch





LV 3 = HANGER INFORMATION

# . SECOND INTERVAL, SECOND PERIOD, FIRST OUTAGE

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| SUMMARY                 | r <b>#:</b> 381220                                                                                                                                                                                                                                                                                                                                                                          |                              |                           | AMINATION S<br>EAR GENERATI |    |             |             |                                   | 2                                                                                                                                                                                                                                                    |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|---------------------------|-----------------------------|----|-------------|-------------|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LINE/SU<br>IDENTIF      | SYSTEM/COMPONENT: MAIN STEAM SYSTEM       /PIPE SUPPORT R-210         LINE/SUBASSEMBLY: 32-MS-2221 [PSE&G #32"-2MS1027]       RELIEF REQUEST:         IDENTIFICATION: 32-MS-2221-1PS-2       32-MS-2221-1PS-2         LTP INSTRUCTIONS: LIMITATION: EXAMINED (MT) 50% OF THE CODE REQUIRED SURFACE, DUE TO THE CONFIGURATION OF THE LUG. A-E IAW MEB 3-1. NO RELIEF REQUEST REQUIRED (A-E). |                              |                           |                             |    |             |             |                                   |                                                                                                                                                                                                                                                      |
| NDE<br>METHOD<br>IN LIP | PROCEDURE                                                                                                                                                                                                                                                                                                                                                                                   | RESULTS FILE<br>NDE<br>EXAMS | THE LUC<br>EXAM<br>RECORD | CALIBRATION                 | N  | G<br>E<br>O | о<br>т<br>н | NO RELIEF<br>RESOLUTION<br>RECORD |                                                                                                                                                                                                                                                      |
| MT                      | SHRAISZ20117Q                                                                                                                                                                                                                                                                                                                                                                               | MT                           | 090051                    | -                           | x  | -           | -           | -                                 | 96RF - W.O. #960508025 TO<br>PERFORM NDE. PERFORM EXAM IAW<br>MEB 3-1. LIMITATION:<br>EXAMINED (MT) 50% OF THE CODE<br>REQUIRED SURFACE, DUE TO THE<br>CONFIGURATION OF THE LUG.<br>REVIEWED & ACCEPTED<br>FACTORY MUTUAL<br>ENGINEERING ASSOCIATION |
| _                       | ved by: Actwo                                                                                                                                                                                                                                                                                                                                                                               | fiertieur<br>Denling         |                           |                             | Da | ate         | : 0         | 1/19/96                           | AUTH. NUCLEAR INSERVICE MSP. DATE<br>Total dose received while<br>performing the required<br>NDE examinations:<br>O Man Mrem                                                                                                                         |

MAGNETIC PARTICLE EXAMINATION RECORD Summary No.: <u>381220</u>

4.5

SH.RA-AP.ZZ-0101(Q) FORM 7

| · · ·                    |              |               |                 |           |                               |           |                 | THE 124 HR.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | A 0041                   | SHEET No .:     |              |
|--------------------------|--------------|---------------|-----------------|-----------|-------------------------------|-----------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----------------|--------------|
| NDE Lab:                 | SITE:        | DATE:         | Dia:            | S         | iched:                        |           | engih:          | EXAL STARTE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0955                     |                 |              |
| VCR                      | Salem 2      | 1-18-9        | 6 36            | o*        | N/A                           |           | 101 1/4"        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1100                     |                 | 05/          |
| Exam IDENTI              | FIGATION:    |               |                 | PROCEDURE |                               |           |                 | Width:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | " Lo                     |                 | WO LOCATION: |
|                          | M5-222       | 1-1P5-        | 2               | SH.RA-    | IS. 22-0                      | 0117 Q    | Rev 2           | angru:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Ru                       | el              | <u>4</u>     |
| Examiner                 |              |               | <u></u>         |           |                               | SURFACE F | MSH:            | WELD TYPE I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | +UPPODT                  | YOKE SPACIN     |              |
|                          | 1136         | $\mathcal{A}$ | 1170            |           |                               | As G      | around          | and the local division of the local division | Penetration              | YOKE BRAND:     | Electospect  |
| 1 14                     | $N^{-1}$     | Jerry 1       | 4 wode          |           |                               |           |                 | TERIAL'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                          | SERIAL No. :    | VCR-4-02     |
| Examiner                 | SNT Lev      |               | -+              |           |                               | BRAND: D  | etek            | WET 🖸                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                          | SURFACE TEM     |              |
| VVA                      | 2+~          | Juin          |                 |           |                               | BATCH No. | : 7801-202-00   | FLOURESCENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                          | THERMOMETER     |              |
| CALIBRATION B            |              | CALIBR        | ATION VERIFICAT |           | STANCE FROM                   |           | A MAW-410       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | YES 🛛                    | SERIAL No.: S   | SV-NDE-0065  |
| SERIAL No .:             |              |               | 21 1154         |           | LACK LIGHT                    | COLOR: Y  |                 | MIXED WITH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | NIA                      | Cal Due Da      | te: 2-27-96  |
| SV-MDE-00<br>WEIGHT: 101 |              |               | is Da           |           | o sensor<br>Ell <u>N/A</u> IN |           |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                 |              |
| BLACK LIGHT              | <u>os</u>    | INTENSITY NE  |                 |           | CHT OUTPUT                    | BLACI     | LIGHT OUTPUT VE | RIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | MATERIAL<br>APPLICATION: |                 | _            |
| BRAND: No                | $\sim$       | BRAND:        | . /             | N         |                               | TME       |                 | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                          | FLOC            |              |
| SERIAL No.:              | <del>1</del> | SERIAL No.1   | <b>A</b>        |           | // w/am²                      | HUTIALS:  |                 | 74                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                          | SPBJ            | VINC []      |
| HO No.                   |              | W 1           | LOCATION        | ROUND OR  | SIZE DIA<br>OR LENGTH         |           |                 | REM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ARKS:                    |                 | INITIALS     |
| <b>WED (190.</b>         |              |               |                 | LINEAR    | UN LENGIN                     |           |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                 | Like         |
|                          | ,            |               |                 |           |                               | No Ke     | condable I      | mication                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <u>۶</u>                 |                 | - Data       |
|                          |              |               |                 |           |                               |           |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                 |              |
|                          |              |               |                 |           |                               |           |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                 |              |
|                          |              |               |                 |           |                               |           |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                 |              |
| [                        |              |               |                 |           | 1                             |           |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                 |              |
|                          |              |               | {}              |           |                               |           |                 | REVIE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | WED & ACCE               | PTED            |              |
|                          |              |               |                 | · ·       |                               | -         |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | TORY MUTU                |                 |              |
|                          |              |               |                 |           | 1                             |           |                 | ENGINEE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | FING ASSOC               | CIATION         | 1<br>1-      |
| ]                        |              | ·             |                 |           | -                             |           |                 | 1.Th                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | t all                    | 1/autor         |              |
|                          |              |               |                 |           |                               |           |                 | da 11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | TNSEHVICE DASP.          | 1/24/96<br>DATE |              |
|                          |              |               |                 |           |                               |           | Ľ               | Norm. Nooellan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | MOLINIOL HUIT.           | UNIC            |              |
|                          |              |               | EO BIATEL       |           |                               | L         |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                 |              |
| EXAMINATION A            |              |               |                 |           | - (+                          | ì         |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                 | psI          |
| Exam Lim                 | TO CONTRACT  | one Disc      | otton Due       | TD (a     | U TI GUARDI                   | SNT LEVEL |                 | DAT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | IE                       | PAGE            |              |
|                          | 11           | $\sim 1$      | <i>A</i>        |           |                               |           | TIL             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1-19-96                  | =               | OF           |
| L                        |              |               | /               |           |                               |           |                 | A m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                 |              |
|                          |              |               |                 |           |                               |           | 28.1            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | S                        |                 |              |
|                          | C            |               |                 |           | 10                            | of 43     | 1 EV            | SPECTION S<br>Reviewed and                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                          |                 | Rev.         |
| alem/Hope (              | Creek Vo     | mmon          |                 |           | 10                            | UL 43     |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                 |              |
|                          |              |               |                 |           |                               |           |                 | UT1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1/20/96                  |                 |              |

N.D.E.

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#### ULTRASONIC WELD PROFILE AND THICKNESS EXAMINATION RECORD Summary No.: <u>381260</u>

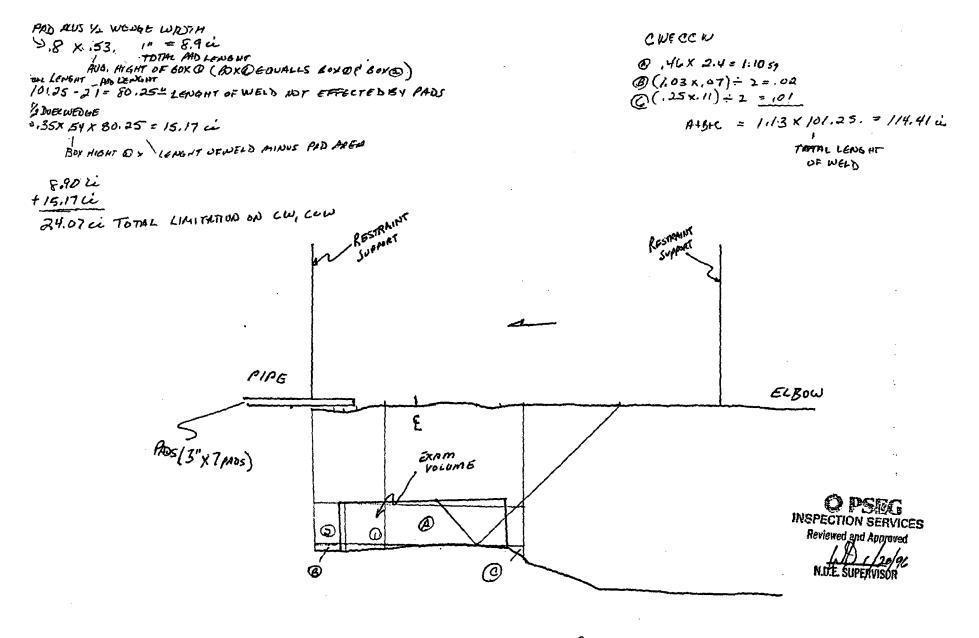
# SII.RA-AP.ZZ-0101(Q) FORM 11

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NDE Lab: SHEET NO: TIME (24 HR. CLUCK) DATE: SITE: 090028 1-13-96 SALEM UNIT 2 INT. 1025 FINAL 1035 VCR COMPONENT ID: Instrument Model: EPOCHII SERIAL NO: SNT Level: Couplant, Examiner (Signature) Specify Type: 92086704 32-MS-2221-3 votel il ale S/N: 92086704 T JONOTRACE 40 REFERENCE BLK NO: SNT Level: #95243 Procedure No. & Rev: Examiner (Signature) SH.RA-15.22 0137(Q) Rev O 92-6683 T Mun Paralel SEARCH UNITS ELBOW DARE BRAND KBA SERIAL NO 04872 2 2 2 2 2 2 6 6 2 232 30 3 0100 02 5 444 1 10 1 1 2 2 2 -2 NIN ri. ÷ Ń N SIZE 35 × 10 FRED. (MIZ) 4mhz INSTRUMENT SETTINGS SCREEN SIZE 5.0 REVIEWED & ACCEPTED FACTORY MUTUA DELAY 9.700 INTERING ASSOCIATION CHOP SERVICES . 2293 MATL, CAL. STORING PEC DATE Reviewed and Approved .500 RANGE D.E. SUPERVISOR FITED REP. RATE E E E JACK USED TIR 11/2 nodes. 45 . Search Unit chosen for coverage using N/A NA . Search Unit chosen for coverage using nodes. <u>TS</u>I Trans Model LING Date: SNT Level: 1-15-96 **Reviewed By:** 11

**C I** IIY

Rev. 4



32-MS-2221-3 1-13-94

SUMMARY # 381240

ZW5-96

FORM 2 (Page 1 of 1) .

|      | · .      | VOLUMETRIC PIPING EXAMINATION COVERAGE REL                       | PORT         |
|------|----------|------------------------------------------------------------------|--------------|
| UNIT | ·        | 2 , SALEM LTP SUMMARY NO .: 38                                   | 1260         |
| SYST | EM:      | MAIN STEAM LTP COMPONENT ID: 32                                  | -MS-2221-3   |
| PREP | ARED     | BY: DENNIS P. STRICKLAND DATE:                                   | 1-13-96      |
| REVI | EWED     | BY: Zula & 1/27/96 DATE: _                                       | 1-23-96      |
|      |          | VOLUMETRIC PIPING EXAMINATIONS                                   |              |
| 1.0  | AXIA     | L EXAMS (INDICATIONS PARALLEL TO WELD)                           |              |
|      | 1.1      | Compute Exam Volume (height x width x length) = Vt1              | 99.81        |
|      | 1.2      | Compute Vol. Not Covered Upstream = A                            | 8.30         |
|      | 1.3      | Compute Upstream Limitation Percentage<br>(A / Vt1) x 100 = Z1   | 8.32%        |
|      | 1.4      | Compute Vol. Not Covered Downstream = B                          | 0.00         |
|      | 1.5      | Compute Downstream Limitation Percentage<br>(B / Vt1) x 100 = Z2 | 0%           |
| 2.0  | CIRC     | UMFERENTIAL EXAMS (INDICATIONS PERPENDICULAR                     | TO WELD)     |
|      | 2.1      | Compute Exam Volume (height x width x length) = $Vt2$            | 114.41       |
| ĺ    | 2.2      | Compute Vol. Not Covered CW = C                                  | 24-07        |
|      | 2.3      | Compute CW Limitation Percentage (A / Vt2) x $100 = Z3$          | 21.04 %      |
|      | 2.4      | Compute Vol. Not Covered CW = D                                  | 24.07        |
|      | 2.5      | Compute CCW Limitation Percentage (B / Vt2) x $100 = Z4$         | 21.04 %      |
| 3.0  | TOTA     | L COVERAGE                                                       |              |
|      | 3.1      | Compute Total Limitation Percentage $(Z1 + Z2 + Z3 + Z4)/4 = L$  | 1260%        |
|      | 3.2      | Compute Total Coverage 100 - L                                   | 87.40%       |
|      | LIMI     | TATION EXPLANATION / REMARKS:                                    |              |
|      | <u> </u> | Lamination SCAN COULD NOT BE PERFORMED ON TH                     | E DOWNSTREAM |
|      | SIDE     | OF THE WELD OR ON THE UPSTREAM SIDE WHELE THE B                  | LRS OF THE   |
|      | Rer      | RAINT Cross over the exam area.                                  |              |
|      |          |                                                                  |              |

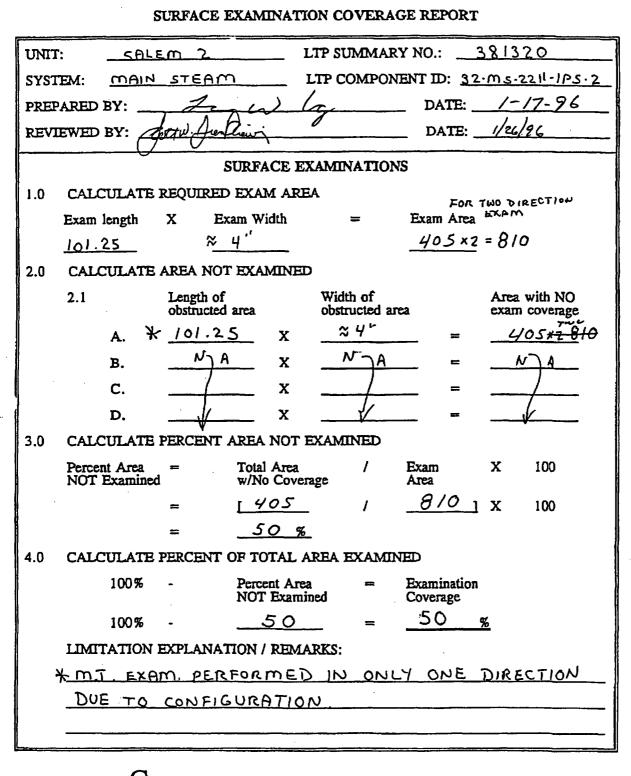
alem/Hope Creek Common

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#### FORM 1 (Page 1 of 1)



Salem/Hope Creek Common

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4

Rev. 0

# REQUEST FOR ADDITIONAL INFORMATION REQUEST FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR IN-SERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

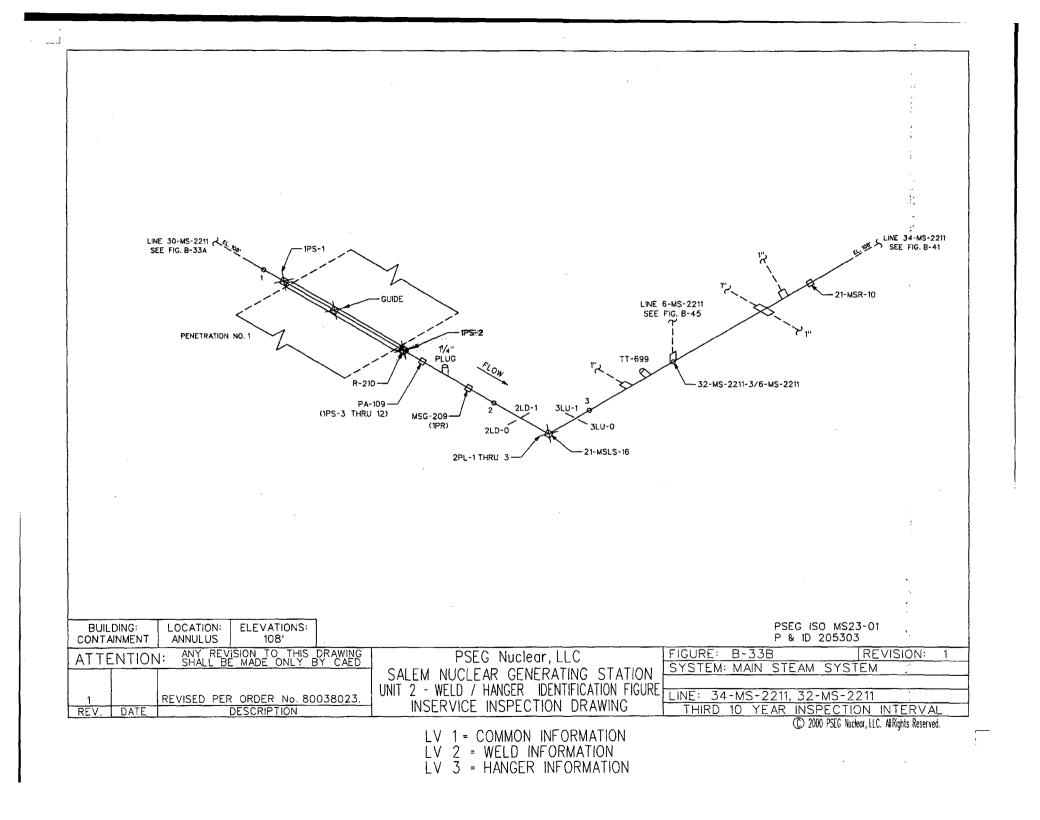
QUESTION 2.2(a) For certain component attachments and support welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

| Summary #      | 381320                           |                   |
|----------------|----------------------------------|-------------------|
| Component I.D. | 32-MS-2211-1PS-2                 |                   |
| Description    | SUPPORT                          |                   |
|                |                                  | Comments          |
| 1              | Weld X-Section                   | N/A               |
| 2              | Material                         | Carbon Steel      |
| 3              | Thickness / weld Crown           | N/A               |
| 4              | Obstruction                      | LUG CONFIGURATION |
| 5              | Exam Area Highlighted on Drawing | Yes X No          |
| 6              | Transducer ray exit point        | N/A               |

#### Comments

MT exam was conducted of this component. The MT exam was limited to 50% because of the configuration of the lug that precluded examination of the lug in two directions. The MT was unable to be examined in two directions due to its configuration, there is no IWF support associated with this attachment. This component is located at a containment wall penetration and is limited due to inaccessibility to back portion of lugs, a system pressure test was also completed with no unacceptable indications observed. Component selected for MEB 3-1 Augmented exam requirements.

Page of



# SECOND INTERVAL, SECOND PERIOD, FIRST OUTAGE

-11

| SUMMARI                 | <b>x #:</b> 381320                                                                                                                                                                                               |     |                              | •              | AMINATION S           |             |             |            |                      | 2                                                                                                                                                                                                                                                                                          |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------------------------------|----------------|-----------------------|-------------|-------------|------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LINE/SU                 | SYSTEM/COMPONENT: MAIN STEAM SYSTEM       /PIPE SUPPORT R-210         LINE/SUBASSEMBLY: 32-MS-2211 [PSE&G #32"-2MS1002]       RELIEF REQUEST:         COENTIFICATION: 32-MS-2211-1PS-2       SIGNAL STEAM SYSTEM |     |                              |                |                       |             |             |            |                      |                                                                                                                                                                                                                                                                                            |
| LTP INS                 | LTP INSTRUCTIONS: LIMITATION: EXAMINED (MT) 50% OF THE CODE REQUIRED SURFACE, DUE TO THE<br>CONFIGURATION OF THE LUG. A-E IAW MEB 3-1. NO RELIEF REQUEST REQUIRED (A-E).                                         |     |                              |                |                       |             |             |            |                      |                                                                                                                                                                                                                                                                                            |
| NDE<br>METHOD<br>IN LTP | PROCEDURE                                                                                                                                                                                                        |     | RESULTS FILE<br>NDE<br>EXAMS | EXAM<br>RECORD | CALIBRATION<br>RECORD | N<br>O<br>R | G<br>E<br>O | <b>∔</b> ▲ | RESOLUTION<br>RECORD | REMARKS                                                                                                                                                                                                                                                                                    |
| MT                      | SHRAISZZOI                                                                                                                                                                                                       | 170 | МТ                           | 090037         | -                     | x           |             |            |                      | 96RF - W.O. #960508025 TO<br>PERFORM NDE. PERFORM EXAM IAW<br>MEB 3-1. LIMITATION:<br>EXAMINED (MT) 50% OF THE CODE<br>REQUIRED SURFACE, DUE TO THE<br>CONFIGURATION OF THE LUG.<br>REVIEWED & ACCEPTED<br>FACTORY MUTUAL<br>ENGINEERING ASSOCIATION<br>AUTH. NUCLEAR INSERVICE (NSP. DATE |
| -                       | Prepared by: Act a Aen Reviewed by: heye Denlingen                                                                                                                                                               |     |                              |                |                       |             |             |            | 1/19/96              | Total dose received while<br>performing the required<br>NDE examinations:                                                                                                                                                                                                                  |

# MAGNETIC PARTICLE EXAMINATION RECORD

**.** .

## SH.RA-AP.ZZ-0101(Q) FUMM 7

Summary No.: 381.320

· ×;

| NDE Lab:      | SITE:                | DATE              | Dia:         |             | Sched:                  | Length:                                                                                                          | TIME 124 HR.<br>EXAM STARTE | 0940            | SHEET No.:                                                                                                     |           |          |
|---------------|----------------------|-------------------|--------------|-------------|-------------------------|------------------------------------------------------------------------------------------------------------------|-----------------------------|-----------------|----------------------------------------------------------------------------------------------------------------|-----------|----------|
|               |                      |                   |              | · •         | NI/A                    | мIA                                                                                                              | EXAM STATE                  | 1015            | - · ·                                                                                                          | 0037      |          |
| VCR           | Sciem 2<br>FICATION: | 1-16-95           |              | ROCEDURE    | No & REV.               |                                                                                                                  |                             |                 | LOCATION:                                                                                                      | WO LOCA   | ATION:   |
| I manual      |                      | -1P5-2            | 1            |             |                         | 17(0) Rev 2                                                                                                      | Width:                      | ed Ruk          | 6                                                                                                              | <u> </u>  |          |
| Ekaminer/     |                      |                   |              |             |                         | SURFACE FINISH:                                                                                                  | WELD TYPE F                 | flow            | YOKE SPACE                                                                                                     | NG: 6     | <b>N</b> |
|               |                      | 1                 |              | -           |                         | As Ground                                                                                                        | Fillet                      | PIPE<br>SUPPORT | YOKE BRAND                                                                                                     | ):Eanos   | Paet     |
| 1-11          | the !.               | Derry A.W         | ice III      | <u> </u>    |                         |                                                                                                                  | MATERIAL                    |                 | SERIAL No.                                                                                                     | VCR-Y-C   | 07       |
| Examiner      | & SNT Le             | vel:              |              |             |                         | BRAND: DETEK                                                                                                     | WET                         |                 | SURFACE TE                                                                                                     | MP. 54    | •F       |
| P-            | F De                 | m = I             |              |             |                         | BATCH No.: 7801-202-0                                                                                            |                             | <u> </u>        | THERMOMETE                                                                                                     | R         | ·        |
| CALEBRATION B | LOCK                 | CALIBRATIO        | VERIFICATION |             | NSTANCE FROM            | TYPE: N/A                                                                                                        | MIXED NO                    | YES 🗋           | SERIAL No.3                                                                                                    |           |          |
| SERIAL No .:  |                      | TIME: 0810        | 1220         |             | lack light<br>10 sensor | COLOR: Yellow                                                                                                    | MIXED WITH .                | NIA             | Cal Due D                                                                                                      | late: 2-2 | 9-96     |
| SV-NDE- 00    |                      | INITIALS: JOW     | 1 DW         |             | ELL N/A N               | and the second |                             | MATERIAL        | the second s | STING P   | جر       |
| WEIGHT: 1016  | »                    | NTENSITY HETER    |              |             | GHT OUTPUT              | BLACK LIGHT DUTPUT                                                                                               | VERIFICATION                | APPLICATION:    | -                                                                                                              |           |          |
| BRAND: M      |                      | BRAND: N          |              | N           |                         | THE:                                                                                                             | N                           |                 |                                                                                                                |           |          |
| SERIAL No .:  | 4                    | SERIAL No. 1      |              |             | // w/am <sup>2</sup>    | HETIALS:                                                                                                         | -14                         |                 | SPI                                                                                                            | TAN ING   |          |
| NO No.        | L                    |                   | CATION P     | IDUND OR    | SIZE DIA.<br>OR LENGTH  |                                                                                                                  | REM/                        | RKS:            |                                                                                                                |           | ATIALS   |
|               |                      |                   |              | LINEAR      | ON FEMAL                |                                                                                                                  |                             |                 |                                                                                                                |           | Je/      |
|               |                      |                   |              |             | _                       | No Recordabl                                                                                                     | e Indirctic                 | <u>ms</u>       |                                                                                                                |           |          |
|               |                      |                   |              |             |                         |                                                                                                                  |                             |                 |                                                                                                                |           |          |
|               |                      |                   |              |             |                         | · · · · · · · · · · · · · · · · · · ·                                                                            | <u></u>                     |                 |                                                                                                                |           |          |
|               |                      |                   |              |             |                         |                                                                                                                  |                             |                 |                                                                                                                | ł-        |          |
| ·             |                      |                   |              |             |                         |                                                                                                                  |                             |                 |                                                                                                                |           |          |
|               |                      |                   |              |             |                         |                                                                                                                  | REVIE                       | WED & ACC       | Charles                                                                                                        |           |          |
|               |                      |                   |              |             |                         | <u> </u>                                                                                                         |                             |                 |                                                                                                                |           |          |
|               |                      |                   |              |             | 1                       |                                                                                                                  | ENGINE                      | ERING ASSO      | UAL<br>CLÁTION                                                                                                 |           |          |
|               |                      |                   | -            |             |                         |                                                                                                                  | 11-2                        | 7               | <u>~</u>                                                                                                       |           |          |
|               |                      |                   |              |             |                         |                                                                                                                  | AUTIN                       | INSERVICE INSE  | 1/24/0                                                                                                         | ;┥_┥      |          |
|               |                      |                   |              |             |                         |                                                                                                                  | AUCLEAR                     | INSERVICE INSE  | DATE                                                                                                           | 4         |          |
|               |                      | N: (IF NONE, SO S | TATEL        |             |                         | ATION REPOR                                                                                                      | ~7                          |                 |                                                                                                                |           |          |
| •             |                      |                   | ~            | ~           |                         | noit mue for                                                                                                     | - <i>-</i>                  |                 | •                                                                                                              | -         | 25I      |
| Exam Per      | formed in            | only one          | Direction    | <u>, pu</u> | <u>e 10 Lo</u>          | SNT-LEVEL                                                                                                        | DAT                         | E C             | PAGE                                                                                                           | ,         | ,        |
| VCAICIMEN DI: | 1                    | 1 > 1             | <b>•</b> ·   |             | ¢                       | _11_                                                                                                             |                             | 1-17-96         |                                                                                                                | OF _      |          |
|               |                      |                   |              |             |                         |                                                                                                                  |                             |                 |                                                                                                                |           |          |
|               |                      |                   |              |             |                         |                                                                                                                  | O PS                        |                 |                                                                                                                |           |          |
|               |                      |                   |              |             | 10                      | of 43                                                                                                            | INSPECTION S                | · · · · •       |                                                                                                                | 2         | Rev.     |
| lem/Hope      | Creek 🛡 a            | mmon              |              |             | 18                      | UI 4J                                                                                                            | Reviewed and R              | pproved         |                                                                                                                | 4,        |          |
|               |                      |                   |              |             |                         |                                                                                                                  | M                           | 20/96           |                                                                                                                | 3         |          |
|               |                      |                   |              |             |                         |                                                                                                                  | N.D.E. SUPER                | /ISOR           |                                                                                                                |           |          |

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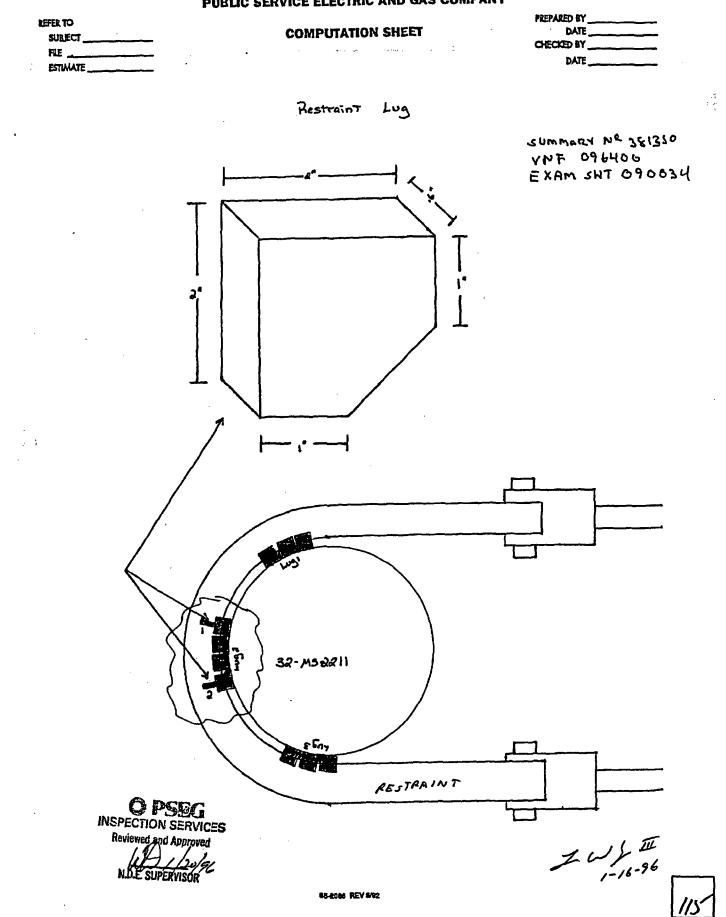
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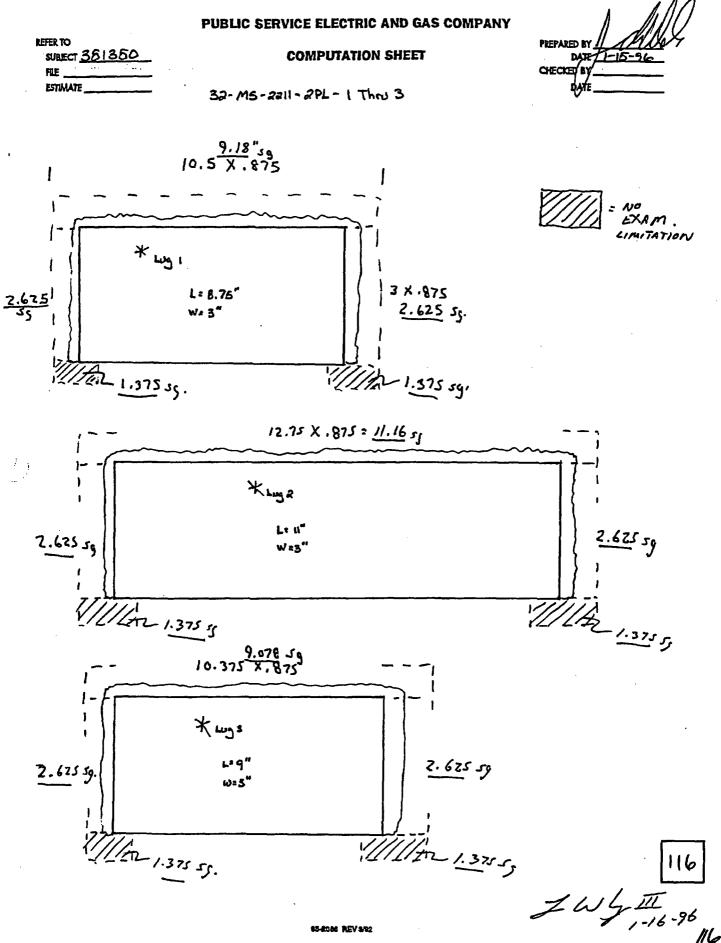
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## PUBLIC SERVICE ELECTRIC AND GAS COMPANY



15-2086 REV 3/92

### FORM 1 (Page 1 of 1)

|      | 1                            | SURFACE                 | EXAM          | INATIO            | ON COVE             | RAGE F        | EPORT             |               |                     |     |
|------|------------------------------|-------------------------|---------------|-------------------|---------------------|---------------|-------------------|---------------|---------------------|-----|
| UNI  | : <u>Sal</u>                 | EM 2                    |               | L                 | TP SUMM             | IARY NO       | D.:               | 38135         | 0                   |     |
| SYST | EM:                          | N STEA                  | m             | L                 | TP COMP             | ONENT         | ID: <u>32-</u>    | ms-27         | 211 -2 PE-1 TL      | LRU |
| PREI | ARED BY:                     | 20                      | 16            | g                 |                     | )             | DATE: _           | 1-16          | -96                 |     |
| REVI | EWED BY:                     | fott w fre              | fin           | 2                 | <u></u>             | ]             | DATE: _           | 1-27          | -96                 |     |
|      |                              |                         | SURFA         | CE EX             | AMINAT              | IONS          |                   |               |                     |     |
| 1.0  | CALCULATE                    | REQUIREI                | ) EXAI        | M ARE             | 4                   |               |                   |               |                     |     |
|      | Exam length                  | X E                     | xam Wi        | idth              |                     | Exa           | am Area           |               |                     |     |
|      | <u> </u>                     | PLOTS_                  | 3 LU          | <u>65 </u>        |                     | _5            | 3.42 5            | 59.           |                     |     |
| 2.0  | CALCULATE                    | AREA NO                 | r exai        | MINED             |                     |               |                   |               |                     |     |
|      | 2.1                          | Length of<br>obstructed | l area        |                   | Width of obstructed |               |                   |               | with NO<br>coverage |     |
|      | А.                           | LUG 1                   | <u>*</u>      | x                 |                     |               | =                 | <u> </u>      | 75                  |     |
|      | B.                           | LUG2                    | ×             | x                 | •                   |               | E                 | 2.            | 75                  |     |
|      | С.                           | LUG3                    | *             | x                 |                     |               | =                 | _2.           | 75                  |     |
|      | D.                           |                         |               | x                 |                     |               | =                 |               |                     |     |
| 3.0  | CALCULATE                    | PERCENT                 | AREA          | NOT E             | XAMINEI             | >             |                   |               |                     |     |
|      | Percent Area<br>NOT Examined | =                       | Total<br>w/No | Area<br>Covera    | ge /                | Exa<br>Are    |                   | x             | 100                 |     |
|      |                              | #                       | <u>[ 8</u>    | 25                | 1                   | <u>53</u>     | .42 ]             | х             | 100                 |     |
|      |                              | =                       | 16,           | 37 %              |                     |               |                   |               |                     |     |
| 4.0  | CALCULATE                    | PERCENT                 | of to         | TAL AI            | REA EXAI            | MINED         |                   |               |                     |     |
|      | 100%                         | -                       |               | nt Area<br>Examin | ed =                |               | mination<br>erage |               |                     |     |
|      | 100%                         | -                       | _16           | .37               | _ =                 | 8             | 3.63 9            | 6             |                     |     |
|      | LIMITATION                   | EXPLANA                 | TION /        | REMAI             | RKS:                |               |                   |               |                     |     |
| 1    | SEE ATT                      | ACHED                   | PLO           | т / ре            | ROFILE              | OF            | LUGS              |               | 2,+3_               |     |
|      | WELD SI                      | ZE VAR                  | VED           | CAL               | ULATIO              | N BI          | <u>9560</u>       | ON            | AVG.                |     |
|      | . 375 .                      | LIMIT                   | ATION         | RECO              | NRDED 11            | <u>AW COD</u> | E INT             | <u> XI-1-</u> | 89-38               |     |

Salem/Hope Creek Common

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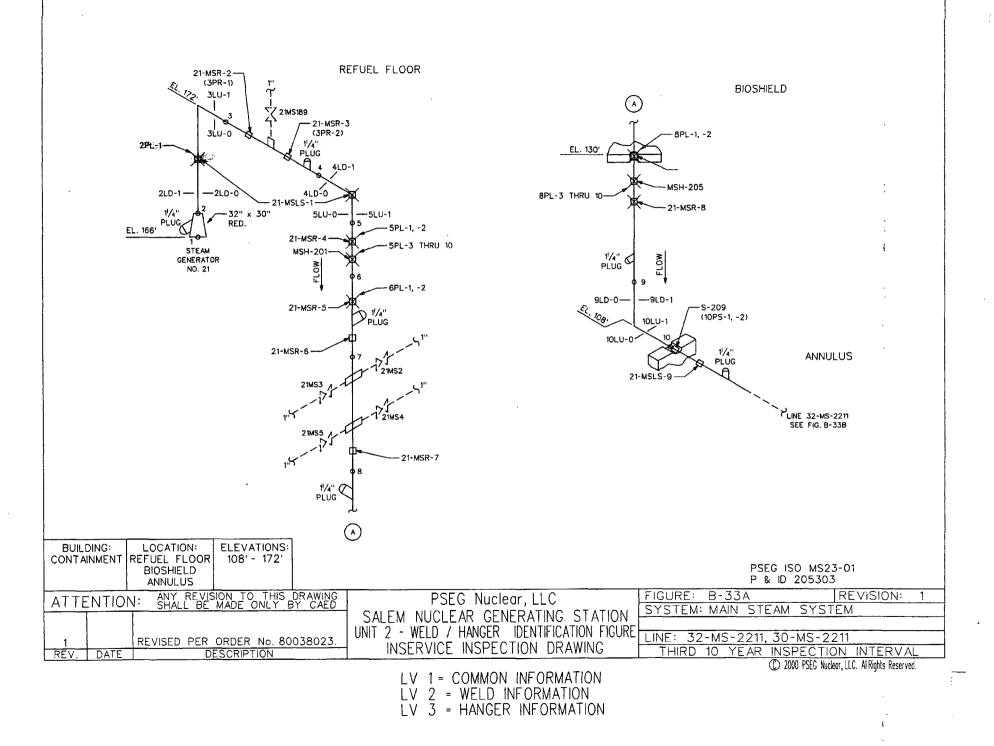


|                                                                                                                 | REQUEST FOR RELIEF REGARDING EXAMI                                                                                                                                                                      | •                                                                                                                                                                                                          |
|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| and the state of the | SECOND TEN-YEAR IN-SERVICE INSPE                                                                                                                                                                        | ·                                                                                                                                                                                                          |
|                                                                                                                 | SALEM NUCLEAR GENERATING STATI                                                                                                                                                                          | ION, UNIT NO. 2                                                                                                                                                                                            |
|                                                                                                                 | DOCKET NO. 50-311                                                                                                                                                                                       |                                                                                                                                                                                                            |
| QUESTION                                                                                                        | submitted by the licensee is not<br>Please submit further informatio<br>and/or descriptions to support th                                                                                               | ents and support welds, information<br>sufficient to demonstrate impracticality.<br>In in the form of drawings, sketches<br>his evaluation for the following<br>ensee identification numbers listed below. |
| Summary #                                                                                                       | 381350                                                                                                                                                                                                  |                                                                                                                                                                                                            |
| Component I.D.                                                                                                  | 32-MS-2211-2PL-1 thru 3                                                                                                                                                                                 |                                                                                                                                                                                                            |
| Component I.D.                                                                                                  | 32-W3-22   1-2FL-   unu 3                                                                                                                                                                               |                                                                                                                                                                                                            |
| Description                                                                                                     | PIPE LUGS                                                                                                                                                                                               |                                                                                                                                                                                                            |
|                                                                                                                 |                                                                                                                                                                                                         | Comments                                                                                                                                                                                                   |
| 1                                                                                                               | Weld X-Section                                                                                                                                                                                          | N/A                                                                                                                                                                                                        |
| 2                                                                                                               | Material                                                                                                                                                                                                | Carbon Steel                                                                                                                                                                                               |
| 3                                                                                                               | Thickness / weld Crown                                                                                                                                                                                  | N/A                                                                                                                                                                                                        |
| 4                                                                                                               | Obstruction                                                                                                                                                                                             | CONFIGURATION                                                                                                                                                                                              |
| 5                                                                                                               | Exam Area Highlighted on Drawing                                                                                                                                                                        | Yes X No                                                                                                                                                                                                   |
| 6                                                                                                               | Transducer ray exit point                                                                                                                                                                               | N/A                                                                                                                                                                                                        |
| lug that precluded e<br>two directions due to<br>system pressure tes                                            | lucted of this component. The MT exam was lin<br>examination of the lug in two directions. The MT<br>to its configuration. There was no IWF support a<br>st was also completed with no unacceptable inc | Fexam was unable to be examined from<br>associated with this weld attachment. a<br>dications observed.                                                                                                     |
|                                                                                                                 |                                                                                                                                                                                                         |                                                                                                                                                                                                            |
|                                                                                                                 |                                                                                                                                                                                                         |                                                                                                                                                                                                            |
|                                                                                                                 |                                                                                                                                                                                                         |                                                                                                                                                                                                            |

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### FORM 2 (Page 1 of 1)

|        |      | VOLUMETRIC PIPING EXAMINATION COVERAGE REPORT                               |
|--------|------|-----------------------------------------------------------------------------|
|        | ·:   | SALEM 2 LTP SUMMARY NO.: 381355                                             |
| SYST   | EM:  | MAIN STEAM LTP COMPONENT ID: 32-MS-2211-3                                   |
| PREP   | ARED | BY: M. OLIVERI DATE: 3-13-97                                                |
| REVI   | EWED | BY: fortw. Aerollowing DATE: 3/13/97                                        |
|        |      | VOLUMETRIC PIPING EXAMINATIONS                                              |
| 1.0    | AXIA | L EXAMS (INDICATIONS PARALLEL TO WELD)                                      |
|        | 1.1  | Compute Exam Volume (height x width x length) = Vt1 $259.84s_1$ "           |
|        | 1.2  | Compute Vol. Not Covered Upstream = A $41.58 s_{4}$ "                       |
| -<br>- | 1.3  | Compute Upstream Limitation Percentage<br>(A / Vtl) x 100 = Z1 $16\%$       |
|        | 1.4  | Compute Vol. Not Covered Downstream = B $5.58_{SG}$ "                       |
|        | 1.5  | Compute Downstream Limitation Percentage<br>(B / Vt1) x 100 = Z2 $2\%$      |
| 2.0    | CIRC | UMFERENTIAL EXAMS (INDICATIONS PERPENDICULAR TO WELD)                       |
|        | 2.1  | Compute Exam Volume (height x width x length) = $Vt2$ $\frac{N}{\Delta}$    |
|        | 2.2  | Compute Vol. Not Covered CW = C $N/A$                                       |
|        | 2.3  | Compute CW Limitation Percentage (A / Vt2) x 100 = Z3 $\frac{N/4}{4}$       |
|        | 2.4  | Compute Vol. Not Covered CW = D $\frac{N/A}{A}$                             |
|        | 2.5  | Compute CCW Limitation Percentage (B / Vt2) x 100 = Z4 $\frac{N/A}{}$ .     |
| 3.0    | TOTA | L COVERAGE                                                                  |
|        | 3.1  | Compute Total Limitation Percentage<br>(Z1 + Z2 + Z3 + Z4)/4 = L <u>18%</u> |
|        | 3.2  | Compute Total Coverage 100 - L <u>82%</u>                                   |
|        | LIMI | TATION EXPLANATION / REMARKS:                                               |
|        | Per  | MANENT BRACKET CAUSED LIMITATION B                                          |
|        | PER  | MANENT BRANCH CONNECTIONS CAUSED LIMITATION "A"                             |
| }      |      |                                                                             |
| L      |      |                                                                             |

Salein/Hope Creek Common

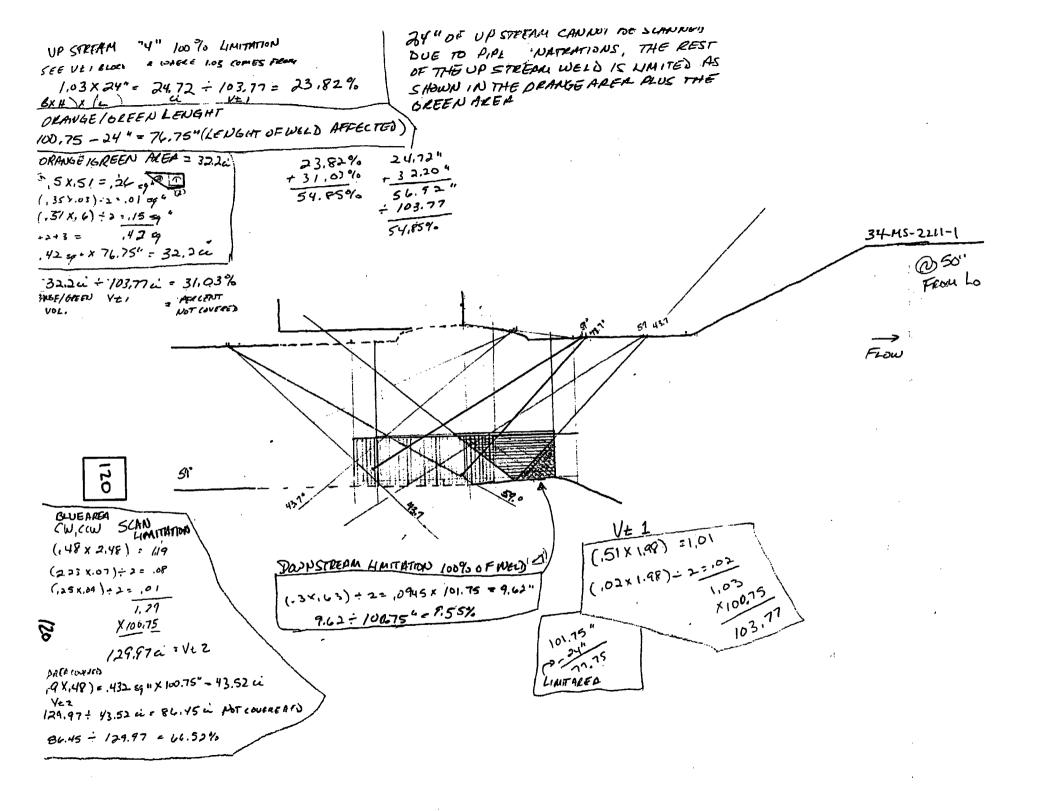
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REF# 3817-15 32-ms-201-3 Steet NO. BRACKET LIMITATIONS NO SAAN IN THE DOWN STREAM DIRECTION , 312 Sq " OF COVERAGE IS OBTAINED FROM EXAM JOLUME FROM 62.5" TO 80.5" (18") [184.312=5.58+ THE DOWNSTREAM SCAN TOTALS . 312 x 101,5"-31.68 ---------UPSTREAM MNO 3-13.97 NO SAN IN THE DOWNSTREAM DIRECTION MO 30,17 FROM 94.5" TO 7.5" = (14.5") 45.54 H.5x, 365 = 44354 2.248" MA 31 " EXAM VOLUME = 1.28 sy" WELD LENGTH = 101,5" FROM THE UPSTREAM SCAN TUTAL WELD VOLUME = 129.92 sq" THE UPSTREAM SCAN TOTAL = NUMBER OF DIRECTIONS 1960 × 101.5" = 98.2539" 2.248" mrs. 97 228.17 SCANNED = 2 NO SCAN IN THE UPSTREAM DIRECTION 8,992" FROM 74.5" TO 78.5" (4") 41 × 908 - 3,84 5 129.9255 <u>~~</u> 259.84 m TOTAL LIMITATIONS = 23.95 sq" 47.16 18% . 20

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FORM 2 (Page 1 of 1)

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|        | . •    | VOLUMETRIC PIPING EXAMINATION COVERAGE RE                        | PORT        |
|--------|--------|------------------------------------------------------------------|-------------|
|        |        | 2, SALEM LTP SUMMARY NO .: _ 3                                   | 381370      |
| SYST   | EM:    | MAIN STEAM LTP COMPONENT ID: 34                                  | 4-MS-2211-1 |
| PREF   | ARED   | BY: DENNIS P. STRICKLAND DATE:                                   | 1-20-96     |
| REVI   | EWED   | BY: ZCV & 80 1/27/96 DATE: _                                     | 1-24-96     |
|        |        | VOLUMETRIC PIPING EXAMINATIONS                                   |             |
| 1.0    | AXIA   | L EXAMS (INDICATIONS PARALLEL TO WELD)                           |             |
|        | 1.1    | Compute Exam Volume (height x width x length) = Vt1              | 103.77      |
|        | 1.2    | Compute Vol. Not Covered Upstream = A                            | 56.92       |
|        | 1.3    | Compute Upstream Limitation Percentage<br>(A / Vt1) x 100 = Z1   | 54.85%      |
|        | 1.4    | Compute Vol. Not Covered Downstream = B                          | <u> </u>    |
|        | 1.5    | Compute Downstream Limitation Percentage<br>(B / Vtl) x 100 = Z2 | 9.55%       |
| 2.0    | CIRC   | UMFERENTIAL EXAMS (INDICATIONS PERPENDICULAR                     | TO WELD)    |
| \<br>\ | 2.1    | Compute Exam Volume (height x width x length) = $Vt2$            | 129.97      |
| )<br>  | 2.2    | Compute Vol. Not Covered CW = C                                  | 86.45 "     |
|        | 2.3    | Compute CW Limitation Percentage (A / Vt2) x $100 = Z3$          | 66.52%      |
|        | 2.4    | Compute Vol. Not Covered CW = D                                  | 86.45 "     |
|        | 2.5    | Compute CCW Limitation Percentage (B / Vt2) x 100 = Z4           | 66.52%      |
| 3.0    | TOTA   | AL COVERAGE                                                      |             |
|        | 3.1    | Compute Total Limitation Percentage<br>(Z1 + Z2 + Z3 + Z4)/4 = L | 49.36%      |
|        | 3.2    | Compute Total Coverage 100 - L                                   | 50.64%      |
|        |        | TATION EXPLANATION / REMARKS:                                    |             |
|        | Upstr  | PEAN SCAN LIMITED JUE TO THE FOLLOWING APE OBSTO                 | UCTIONS :   |
|        | 22 1/2 | "+027"6", 79" 1081", 88 +0 90" AND 933/4" \$ 7" (14"             | ) FOR A     |
| e<br>I | TOTAL  | - OF 24"; RESTRAINT SUPPORT PARTIALLY COULES WELD 36             | o*          |
|        |        |                                                                  |             |

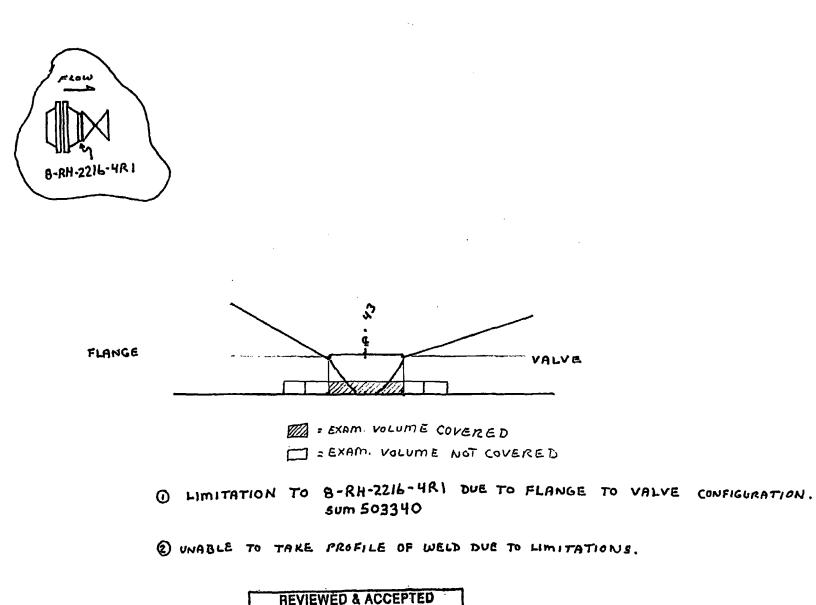
vlem/Hope Creek Common Page 6 of 10

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FACTORY MUTUAL

ENGINEERING ASSOCIATION

DATE

AUTH. NUCLEAR INSERVICE INSP.

La W La Jott w. ferflin \$16/26

### FORM 2 (Page 1 of 1)

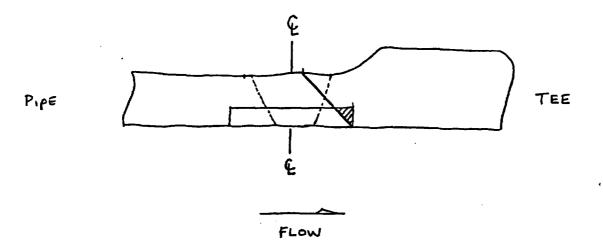
### VOLUMETRIC PIPING EXAMINATION COVERAGE REPORT

| UNI  | Г:    | SALEM 2 LTP SUMMARY NO .:                                                   | 503340           |
|------|-------|-----------------------------------------------------------------------------|------------------|
| SYS: | TEM:  |                                                                             | RH-2216-4RI      |
| PRE  | PARED | BY: TRAVIS W. LANG DATE:                                                    | 5-16-96          |
| REV  | IEWED | BY: Aot w. Are Princip DATE:                                                | 5-16-94          |
|      |       | VOLUMETRIC PIPING EXAMINATIONS                                              |                  |
| 1.0  | AXIA  | L EXAMS (INDICATIONS PARALLEL TO WELD)                                      |                  |
|      | 1.1   | Compute Exam Volume (height x width x length) = $Vtl$                       | 4.61             |
|      | 1.2   | Compute Vol. Not Covered Upstream $= A$                                     | 4.611            |
|      | 1.3   | Compute Upstream Limitation Percentage<br>(A / Vt1) x 100 = Z1              | /00              |
|      | 1.4   | $\begin{array}{rcl}$                                                        | 4.611            |
|      | 1.5   | Compute Downstream Limitation Percentage<br>(B / Vt1) x 100 = Z2            | 100              |
| 2.0  | CIRC  | UMFERENTIAL EXAMS (INDICATIONS PERPENDICULAR                                | TO WELD)         |
|      | 2.1   | Compute Exam Volume (height x width x length) = $Vt2$                       | 6,385            |
|      | 2.2   | Compute Vol. Not Covered CW $./29x/.0x27.5 = C$                             | 3.548            |
|      | 2.3   | Compute CW Limitation Percentage ( $A^{c}/Vt2$ ) x 100 = Z3                 | 55.568           |
|      | 2.4   | Compute Vol. Not Covered $\mathbb{C}_{\mathcal{C}_{12}}$ .129x10 x 27.5 = D | 3.548            |
|      | 2.5   | Compute CCW Limitation Percentage ( $\mathbf{k}^{D}$ / Vt2) x 100 = Z4      | 55.568           |
| 3.0  | TOTA  | AL COVERAGE                                                                 |                  |
|      | 3.1   | Compute Total Limitation Percentage<br>(Z1 + Z2 + Z3 + Z4)/4 = L            | 77.784           |
|      | 3.2   | Compute Total Coverage 100 - L                                              | 22.216           |
|      | LIMI  | TATION EXPLANATION / REMARKS:                                               |                  |
| n    | _UNA  | BLE TO FROFILE COMPONENT DUE TO FLANGE TO VALL                              | VE CONFIGURATION |
|      | HEI   | GHT BASED ON THICKNESS AT WELD CONTERLINE                                   |                  |
|      |       |                                                                             |                  |
| L    |       |                                                                             |                  |

Salem/Hope Creek Common

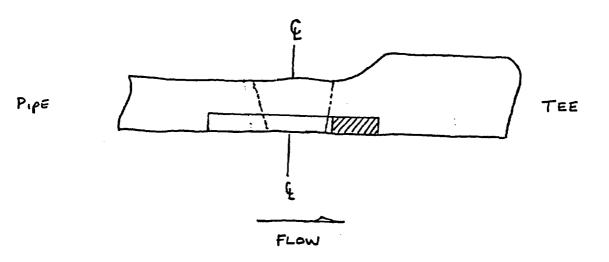
Page 6 of 10

REVIEWED & ACCEPTED FACTORY MUTUAL I ENGINEERING ASSOCIATION Rev. 0 al AUTH. NUCLEAR INSERVE Z



NOT EVAMINED EXAMINED 4PR-1200-7 WELD : FIGURE#: 89.11.003 Smmary : 054400 Nominal Pipe OD: 4.0" Beam DIRECTION! AXIAL 44° RL WAVE 124 43° SHEAR WAVE

PAGE 6 OF 8 124



NOT EVAMINED

EXAMINED

WELD: 4PR-1200-7

FIGURE #: 89.11.003

Summary : 054400

Nominal Pipe 00: 4.0"

Beam Direction: Circ

43° SHEAR WAVE

PAGE 7 OF 8

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| CUSTOM         | ER: PSE&G<br>SALEM UNIT-2, 10 RFO         |                                          | OR COOLANT SYSTEM,                                                                                                                  |
|----------------|-------------------------------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| SUMMAR         |                                           | COMPONENT ID:                            | 4-PR-1200-7                                                                                                                         |
|                |                                           |                                          | PIPE TO TEE WELD                                                                                                                    |
|                | VOLUMETE                                  | RIC PIPING EXAMINATIO                    | DNS                                                                                                                                 |
| 1.0 <u>AXI</u> | AL ULTRASONIC EXAMINATIONS (In            | dications Parallel to the W              | <mark>/eld)</mark>                                                                                                                  |
| <b>1</b> .1    | Compute Examination Volume (Heig          | ght x Width x Length) = $Vt_1$           | <u>0.177" x 1.4" x 11.9" = 2.95 cu. in.</u>                                                                                         |
| 1.2            | Compute Volume Not Examined on U          | pstream Side of Weld = A                 | 2.95 in. <sup>3</sup> (Beam Direction-US)                                                                                           |
| 1.3            | Compute Upstream Limitation Percen        | tage (A + Vt <sub>i</sub> ) x 100 = Z1   | 100 % (Beam Direction-US)                                                                                                           |
| 1.4            | Compute Volume Not Examined on D          | ownstream Side of Weld = E               | $\frac{0.177" \times 0.16" \times 11.9" = 0.34 \text{ in.}^3}{10.100}$                                                              |
| 1.5            | Compute Downstream Limitation Perc        | entage (B + Vt <sub>1</sub> ) x 100 = 22 | 2 0.34 in. <sup>3</sup> + 2.95 in. <sup>3</sup> x 100 = 11.5 %<br>(Beam Direction-DS)                                               |
| 2.0 <u>CIR</u> | CUMFERENTIAL ULTRASONIC EXAM              | IINATIONS (Indications Pe                | rpendicular to the Weld)                                                                                                            |
| 2.1            | Compute Examination Volume (Heig          | aht x Width x Length) = Vta              | <u>0.177" x 1.9" x 11.9" = 4.00 cu in.</u>                                                                                          |
| 2.2            | Compute Volume Not Examined in the        |                                          | 0.177" x 0.50" x 11.9" = 1.05 in. <sup>3</sup>                                                                                      |
| 2.3            | Compute Clock Wise Limitation Perce       |                                          | $1.05 \text{ in.}^3 + 4.00 \text{ in.}^3 \times 100 = 26.3 \%$                                                                      |
| 2.4            | Compute Volume Not Examined in the        | Counter CW Direction = D                 | <u>0.177" x 0.50" x 11.9" = 1.05 in.<sup>3</sup></u>                                                                                |
| 2.5            | Compute Counter CW Limitation Perc        | entage (D + Vt <sub>2</sub> ) x 100 = Z4 | $\frac{1.05 \text{ in.}^3 + 4.00 \text{ in.}^3 \times 100 = 26.3 \%}{1.05 \text{ in.}^3 + 4.00 \text{ in.}^3 \times 100 = 26.3 \%}$ |
| 3.0 <u>TOT</u> | TAL EXAMINATION COVERAGE OBTA             | INED                                     |                                                                                                                                     |
| 3.1            | Compute Total Limitation Percentage       | (Z1 + Z2 + Z3 + Z4) / 4 = L              | 41.0 %                                                                                                                              |
| 3.2            | Compute Total Coverage 1                  | 00 — L                                   | 59.0 %                                                                                                                              |
|                | LIMITATIO                                 |                                          | <u>(S</u>                                                                                                                           |
| Lim            | tation exists on the Tee side of the weld | for the circumferential and a            | axial examinations. See the                                                                                                         |
|                | ched UT Coverage Plot. The 45 degree      |                                          |                                                                                                                                     |
|                | lired volume from the pipe side of the we |                                          |                                                                                                                                     |
|                |                                           |                                          |                                                                                                                                     |
|                | erage in the downstream axial direction.  |                                          |                                                                                                                                     |
|                | ream axial examination due to the Tee o   |                                          |                                                                                                                                     |
| OD             | pipe sizes and schedule wall thicknesses  | s. The Length value is comp              | outed using the diameter at the inner                                                                                               |
|                | third of the pipe wall thickness.         |                                          |                                                                                                                                     |
| PREPARE        | 1                                         | ATE: REVIEWER:                           | DATE:                                                                                                                               |
| N-S.           | Langenfeld 05/17                          | 199 7                                    | ll - 5/20/99                                                                                                                        |

| WANT ISI | PTD8 | CRIJFRP | 00/22694 |  |
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| <u></u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | TECHX                                 | ATOM          |            |                      | , e .              |                             |                     | EXAMI                |                            |                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|---------------|------------|----------------------|--------------------|-----------------------------|---------------------|----------------------|----------------------------|----------------------------------------|
| Custom<br>SA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | er:<br>LEM UNIT-2, 10 RI              | 7 <b>0</b>    |            | Exam Date:<br>04/29/ | 99                 |                             |                     | Figure No.:<br>B10.1 | 0.001                      | ······································ |
| iystem/<br>4-]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | /Component I.D.:<br>PS-1231-11PS-1 Th | ıru 4 (Sum    | . #061     | 700)                 |                    |                             |                     | Nominal Thi<br>N/A   | ickness:                   |                                        |
| Component Description:<br>Pipe Support Weld                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                       |               |            |                      |                    |                             |                     |                      |                            |                                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Fabrication (End Pre                  | ep, Repair, R | toot, In I | Process, Fina        | al):               | ISO/Drawing No.<br>RC-2-3,  |                     |                      |                            |                                        |
| iurface<br>IS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | (ISI Prep, As Welded<br>I PREP        | , Ground, Ot  | her):      |                      |                    | Procedure No./<br>54-ISI-24 |                     | . 36                 |                            | Temperature (F):<br>79                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | lo. (Thermometer):<br>B# 15361        |               |            | Calibration<br>07/19 | Due Date:<br>/1999 |                             |                     | Acceptance<br>ASMI   | Std (ASME/A<br>E 1986, SEC | NSI, etc):<br>TION XI                  |
| A&TE N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | No. (Black Light Meter):<br>A         |               |            | Calibration<br>N/A   | Due Date:          |                             |                     | Measure Int<br>N/A   | ensity uW/CN               | M2:                                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | nt Material Cieane                    | er: 98A11K    | ζ          | ·                    | Penetra            | nt: 95L03K                  |                     | Develo               | per: 98L031                | ĸ                                      |
| INDIC/                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ATION LOCATION                        | ,             |            | · · · · ·            |                    |                             | TYPI                | CAL                  |                            |                                        |
| ND#                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Ref Point<br>Location                 | Size          | L          | ocation<br>W         | Status<br>A / U    | Orientation to<br>Weld      |                     |                      |                            | Reference<br>Point                     |
| NRI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                       |               |            |                      |                    | · _ · · _ · · _             | 1                   |                      |                            | 1                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                       |               |            |                      |                    |                             | L=dis               | t to                 |                            |                                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                       |               |            |                      |                    |                             | refe<br>pol         | nt .                 | + w⊭                       | +                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                       |               |            |                      |                    |                             | −W≕dia<br>tov       | weld £               |                            |                                        |
| -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                       |               |            |                      |                    |                             | 1                   | I                    | 1                          | I                                      |
| emark:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | s/Sketch (If necessary)               | )             |            | <u></u>              | LI                 |                             | <u> </u>            |                      |                            |                                        |
| No recordable indications found.<br>Bottom of welds inaccessible due to PERMANENT obstruction from a FIXED pipe clamp.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                       |               |            |                      |                    |                             |                     |                      |                            |                                        |
| xamine                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | P. L. Cave<br>eler L. Ca              | <br>ve        | evel:      | Date:<br>04/29       | 3/99               | Examiner:                   | N/A<br>Fac          | TORY MUT             | Level: N/A                 | Date:                                  |
| Reviewed: D.J. Langenfeld Level: II Date: ANII Review: Determine Accepting A |                                       |               |            |                      |                    |                             |                     |                      |                            |                                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                       |               |            |                      |                    |                             |                     |                      |                            |                                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                       | <u>v 1</u>    |            | 4-3C<br><br>Date:    | - 77               | Sign.                       | (#2 <i>5</i><br>N/A | A                    |                            | 5-12-99                                |

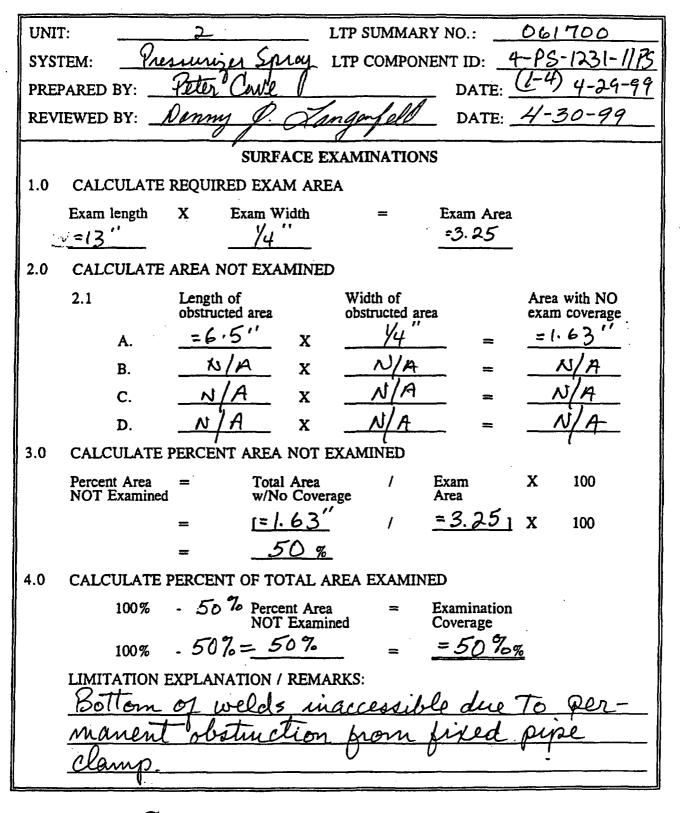
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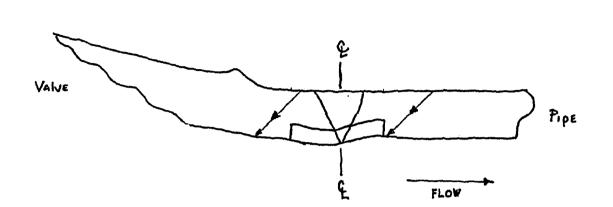
PAGE Z OF 3

### SH.RA-IS.ZZ-0145-1 (Page 1 of 1)

### SURFACE EXAMINATION COVERAGE REPORT



Salem/Hope Creek Common



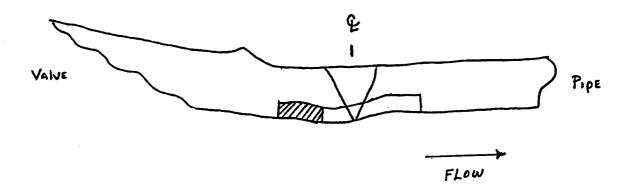
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NOT EYAMINED

- WELD: 4-PS-1231-20 FIGURE NO: B9.11.005 SUMMARY: 063000 NOBLINAL OD: 4.0" BERM DIRECTION: AXIAL
- 45° RL WAVE (NOMINAL ANGLE) ¢ 45° SHEAR WAVE (NOMINAL ANGLE)

129



77772

NOT EXAMINED

WELD: 4-PS-1231-ZO FLOURE NO: B9.11.005 SUMMARY: 063000 NOBLINAL OD: 4.0" BEAM DIRECTION: CIRC 45° SHEAR WAVE (NOMINAL ANGLE)

PAGE 7 OF 8

|                                                                     |                                         | N COVERAGE REPORT                                               |
|---------------------------------------------------------------------|-----------------------------------------|-----------------------------------------------------------------|
| CUSTOMER: PSE&G<br>SALEM UNIT-2, 10 RFO                             | 1                                       | RIZER SPRAY                                                     |
| SUMMARY NO.: 063000                                                 |                                         | PS-1231-20<br>ALVE 2PS28 TO PIPE WELD                           |
| VOLUMETRI                                                           | C PIPING EXAMINATION                    |                                                                 |
| VOLOMETRI                                                           | C FIFING EXAMINATION                    |                                                                 |
| 1.0 AXIAL ULTRASONIC EXAMINATIONS (Indi                             | cations Parallel to the Wel             | <u>d)</u>                                                       |
| 1.1 Compute Examination Volume (Heigh                               | it x Width x Length) = Vt <sub>1</sub>  | <u>0.177" x 1.1" x 11.9" = 2.32 cu. in.</u>                     |
| 1.2 Compute Volume Not Examined on Ups                              | stream Side of Weld = A                 | 0.00 cu. in. (Beam Direction-US)                                |
| 1.3 Compute Upstream Limitation Percenta                            | ge (A + Vt <sub>1</sub> ) x 100 = Z1    | 0.00% (Beam Direction-US)                                       |
| 1.4 Compute Volume Not Examined on Dov                              | wnstream Side of Weld = B               | 2.32 in. <sup>3</sup> (Beam Direction-DS)                       |
| 1.5 Compute Downstream Limitation Perce                             | ntage (B + Vt <sub>1</sub> ) × 100 = Z2 | 100 % (Beam Direction-DS)                                       |
| 2.0 CIRCUMFERENTIAL ULTRASONIC EXAMIN                               | NATIONS (Indications Perr               | endicular to the Weld)                                          |
| 2.1 Compute Examination Volume (Heigh                               | t x Width x Length) = Vt <sub>2</sub>   | <u>0.177" x 1.6" x 11.9" = 3.37cu. in.</u>                      |
| 2.2 Compute Volume Not Examined in the (                            | Clock Wise Direction = C                | <u>0.177" x 0.52" x 11.9" = 1.1 in.<sup>3</sup></u>             |
| 2.3 Compute Clock Wise Limitation Percent                           | tage (C + Vt <sub>2</sub> ) x 100 = Z3  | <u>1,1 in.<sup>3</sup>+ 3.37 in.<sup>3</sup> x 100 = 32.6 %</u> |
| 2.4 Compute Volume Not Examined in the 0                            | Counter CW Direction = D                | <u>0.177" x 0.52" x 11.9" = 1.1 in.<sup>3</sup></u>             |
| 2.5 Compute Counter CW Limitation Percer                            | ntage (D + Vt <sub>2</sub> ) x 100 = Z4 | <u>1.1 in.<sup>3</sup>+ 3.37 in.<sup>3</sup> x 100 = 32.6 %</u> |
| 3.0 TOTAL EXAMINATION COVERAGE OBTAIL                               | NED                                     |                                                                 |
| 3.1 Compute Total Limitation Percentage (2                          | Z1 + Z2 + Z3 + Z4) / 4 = L              | 41.3 %                                                          |
|                                                                     | )-L                                     | 58.7 %                                                          |
|                                                                     | EXPLANATION/REMARKS                     |                                                                 |
| Limitation exists on the Valve side of the weld                     |                                         |                                                                 |
| attached UT Coverage Plot. The 45 degree re                         |                                         |                                                                 |
|                                                                     |                                         |                                                                 |
| required volume from the pipe side of the weld                      |                                         |                                                                 |
| coverage in the upstream axial direction. No v                      | volumetric (100% limitation)            | coverage was obtained from the                                  |
| downstream axial examination due to the valve                       | e configuration. The exam v             | olume was computed using actual                                 |
| OD pipe sizes and schedule wall thicknesses.                        | The Length value is compu               | ted using the diameter at the inner                             |
| one third of the pipe wall thickness.                               |                                         |                                                                 |
| PREPARED BY: DA                                                     | TE: REVIEWER:                           | DATE:                                                           |
| D.g. Langenfeld 05/17/99                                            | 1 2et                                   | 0 6 5/20/99                                                     |
| LAGLONA<br>(Markeening)<br>() () () () () () () () () () () () () ( | MUIUAL<br>Abrightigh<br>//Ico           | PAGE 5 OF 8                                                     |

### REQUEST FOR ADDITIONAL INFORMATION REQUEST FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR IN-SERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

QUESTION

1.3 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

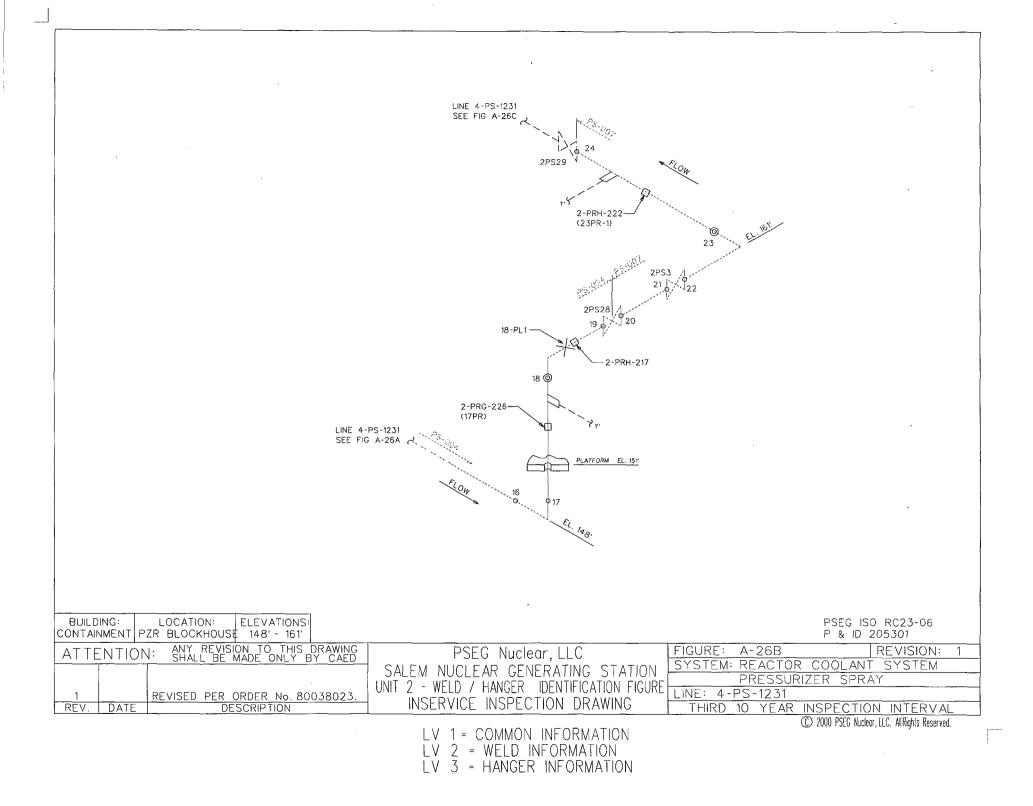
| Summary #      | 063000                           |                                |
|----------------|----------------------------------|--------------------------------|
| Component I.D. | 4PS-1231-20                      |                                |
| Description    | Valve to Pipe                    |                                |
|                |                                  | Comments                       |
| 1              | Weld X-Section                   | See Attached                   |
| 2              | Material                         | Stainless Steel                |
| 3              | Thickness / weld Crown           | Thickness .6" / weld Crown .6" |
| 4              | Obstruction                      | OD contour on valve side       |
| 5              | Exam Area Highlighted on Drawing | Yes X No                       |
| 6              | Transducer ray exit point        | See Attached                   |

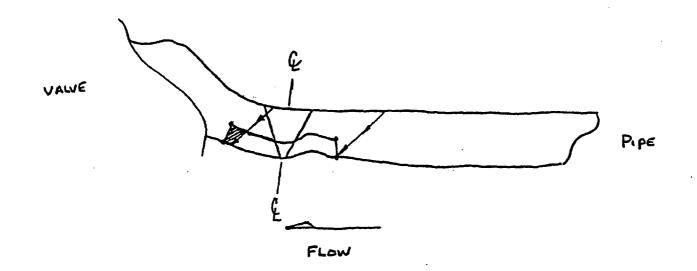
#### Comments

UT exam was performed of this component using 45 degree shear refracted longitudinal wave transducer. The ultrasonic examination was limited to 59% of the code required coverage being limited due to upstream side valve OD configuration that restricted scanning. UT scans were performed on and across the weld in both directions No unacceptable indications were observed. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.

Page of

|                                 |                                              | Supp                                               | lemental Drawing | )             |    |          |     |
|---------------------------------|----------------------------------------------|----------------------------------------------------|------------------|---------------|----|----------|-----|
| Summary #                       | 063000                                       |                                                    | Component I.D.   | Valve to Pipe |    |          |     |
| Description                     | 4PS-1231-20                                  |                                                    |                  | Page          | of |          |     |
| Comments                        | The ultrasonic exar<br>configuration that re | nination was limited to 599<br>estricted scanning. |                  |               |    |          |     |
| Sketch                          | <u></u>                                      |                                                    |                  | <u></u>       |    | <u> </u> |     |
|                                 |                                              |                                                    |                  |               |    |          | •   |
|                                 |                                              |                                                    |                  |               |    |          |     |
|                                 |                                              |                                                    |                  | Powr<br>      | >  |          |     |
|                                 |                                              |                                                    | ą                |               |    |          |     |
|                                 |                                              |                                                    | VZZ              | In            |    |          |     |
|                                 |                                              |                                                    |                  |               |    |          |     |
| EXAM LIN<br>IN THE C<br>DIRECTO | Sound                                        | 27777]                                             |                  |               |    |          | : . |



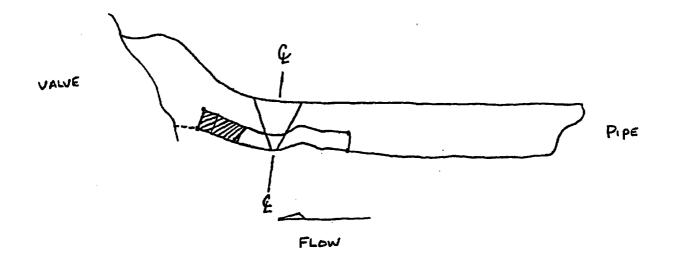


WELD: 4-PS-1231-21 FILURE ND: B9.11.006 SUMMARY: 063100 NOMMAR OD: 4.0" BEAM DIRECTION: AXIAL 44° RL WAVE ¢ 43° SHEAR WAVE

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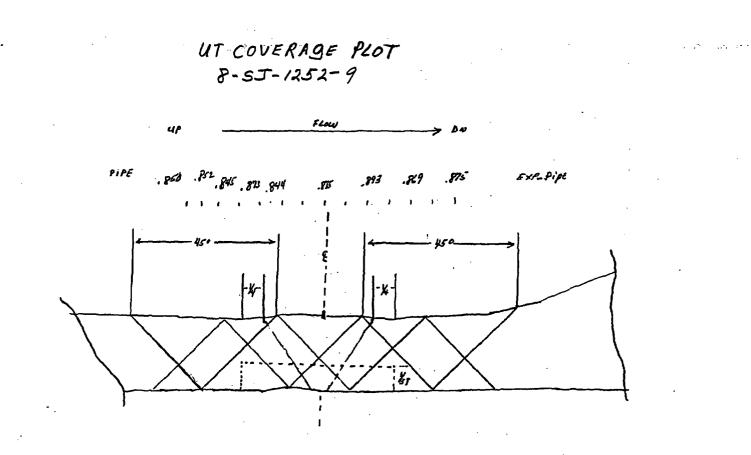
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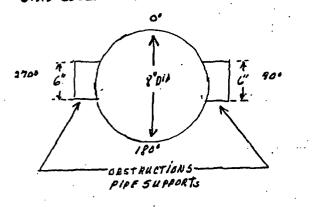
WELD : 4-PS- 1231-21 FILLULE NO: B9.11.006 SUMMARY : 063100 NOMINAL OD : 4.0" BERM DIRECTION: CIRC 43° SHEAR WAVE

PAGE 7 OF 8

| CUSTO        | MER: PSE&G<br>SALEM UNIT-2, 10 RFO          |                                          | R COOLANT SYSTEM,<br>RIZER SPRAY                                 |
|--------------|---------------------------------------------|------------------------------------------|------------------------------------------------------------------|
| SUMM         | ARY NO.: 063100                             | COMPONENT ID: 4                          | PS-1231-21<br>IPE TO VALVE 2PS3                                  |
|              | VOLUMET                                     | RIC PIPING EXAMINATION                   | <u>vs</u>                                                        |
| 1.0 <u>A</u> | XIAL ULTRASONIC EXAMINATIONS (In            | dications Parallel to the We             | <u>ld)</u>                                                       |
| 1            | 1 Compute Examination Volume (Hei           | aht x Width x Length) = Vt.              | <u>0.177" x 1.0" x 11.9" = 2.10 cu. in.</u>                      |
| •            | 2 Compute Volume Not Examined on L          | -                                        | 2.10 in. <sup>3</sup> (Beam Direction-US)                        |
|              | 3 Compute Upstream Limitation Percer        |                                          | 100 % (Beam Direction-US)                                        |
|              | 4 Compute Volume Not Examined on E          |                                          | <u>0.177" x 0.176" x 11.9" = 0.37 in.<sup>3</sup></u>            |
| •            | 5 Compute Downstream Limitation Pen         |                                          | $0.37 \text{ in.}^3 + 2.10 \text{ in.}^3 \times 100 = 17.6 \%$   |
| -            |                                             |                                          | (Beam Direction-DS)                                              |
| 2.0 <u>C</u> | IRCUMFERENTIAL ULTRASONIC EXAM              | MINATIONS (Indications Per               | pendicular to the Weld)                                          |
| 2            | 1 Compute Examination Volume (Hei           | ght x Width x Length) = $Vt_2$           | <u>0.177" x 1.5" x 11.9" = 3.15 cu. in.</u>                      |
| 2.           | 2 Compute Volume Not Examined in th         | e Clock Wise Direction = C               | $0.177'' \times 0.47'' \times 11.9'' = 1.0 \text{ in.}^3$        |
| 2.           | 3 Compute Clock Wise Limitation Perce       | entage (C + Vt <sub>2</sub> ) x 100 = Z3 | <u>1.0 in.<sup>3</sup> + 3.15 in.<sup>3</sup> x 100 = 31.7 %</u> |
| 2.           | 4 Compute Volume Not Examined in th         | e Counter CW Direction = D               | <u>0.177" x 0.47" x 11.9" = 1.0 in.<sup>3</sup></u>              |
| · 2.         | 5 Compute Counter CW Limitation Perc        | entage (D + Vt <sub>2</sub> ) x 100 = Z4 | <u>1.0 in,<sup>3</sup> + 3.15 in.<sup>3</sup> x 100 = 31.7 %</u> |
| 3.0 T        | OTAL EXAMINATION COVERAGE OBT               |                                          |                                                                  |
| <u></u>      |                                             | 11120                                    |                                                                  |
| 3.           | 1 Compute Total Limitation Percentage       | (Z1 + Z2 + Z3 + Z4) / 4 = L              | 45.3 %                                                           |
| 3.           | 2 Compute Total Coverage 1                  | 00 – L                                   | .54.7 %                                                          |
|              | LIMITATIO                                   | N EXPLANATION/REMARKS                    | <u>}</u>                                                         |
| Li           | mitation exists on the Valve side of the we | Id for the circumferential and a         | axial examinations. See the                                      |
| at           | tached UT Coverage Plot. The 45 degree      | refracted longitudinal wave tra          | ansducer was scanned over the                                    |
| re           | quired volume from the pipe side of the w   | eld only (one-sided examinatio           | on), in order to achieve 54.7 percent                            |
|              | overage in the downstream axial direction.  |                                          |                                                                  |
|              |                                             |                                          |                                                                  |
|              | ostream axial examination due to the valve  |                                          |                                                                  |
|              | pe sizes and schedule wall thicknesses. 1   | ne Length value is computed              | using the diameter at the inner one                              |
| th           | ird of the pipe wall thickness.             |                                          |                                                                  |



NITE EXAM OBSTRUCTION DOWN ST BEAM ON AT 90°, 6° AND 270° 6" TOTAL 12" CIRC COVERAGE 100%



WELD: 8-55-1252-9 SUMMARY # 168200 SALEM UNIT 2, 10 REO 45" REFRACTED SHEAR ID, OD, ID 45" REFRACTED LONG: TUDINAL HALF VEE. BEOM DIDERTION: AXIAL

BEAM DIRECTION: AXIAL FIGURE No.: B9.11.020

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2

| CUS  | FOMER: PSE&<br>SALEM UNIT | -                       | SYSTEM: SAFE                          | TY INJECTION                                               |
|------|---------------------------|-------------------------|---------------------------------------|------------------------------------------------------------|
| SUN  | MARY NO.: 1682            |                         | COMPONENT ID:                         | 8-SJ-1252-9<br>PIPE TO PIPE                                |
|      |                           | VOLUMETRIC              | PIPING EXAMINAT                       | IONS                                                       |
| 1.0  | AXIAL ULTRASONIC E        | XAMINATIONS (India      | ations Parallel to the                | Weld)                                                      |
|      | 1.1 Compute Examination   | ation Volume (Height    | x Width x Length) = Vt                | 0.325" x 1.8" x 21.36" = 12.50                             |
|      | 1.2 Compute Volume        | Not Examined on Ups     | tream Side of Weld = $I$              | 0.00 cu. in.                                               |
|      | 1.3 Compute Upstrea       | m Limitation Percentag  | le (A + Vt <sub>1</sub> ) x 100 = Z1  | 0.00 %                                                     |
|      | 1.4 Compute Volume        | Not Examined on Dow     | nstream Side of Weld                  | = B <u>0.325" x 1.8" x 12.0" = 7.02 cu</u>                 |
|      | 1.5 Compute Downst        | ream Limitation Percen  | tage (B + Vt <sub>1</sub> ) x 100 =   | Z2 $7.02 \text{ in.}^3 + 12.50 \text{ in.}^3 \times 100 =$ |
| 2.0  | CIRCUMFERENTIAL U         | LTRASONIC EXAMIN        | ATIONS (Indications                   | Perpendicular to the Weld)                                 |
|      | 2.1 Compute Examina       | ation Volume (Height    | x Width x Length) = Vt                | 2 <u>0.325" x 2.3" x 21.36" = 16.0 c</u>                   |
|      | 2.2 Compute Volume        | Not Examined in the C   | lock Wise Direction =                 | C 0.00 cu. in                                              |
|      | 2.3 Compute Clock W       | ise Limitation Percenta | age (C + Vt <sub>2</sub> ) x 100 = Z  | 30.00 %                                                    |
|      | 2.4 Compute Volume        | Not Examined in the C   | ounter CW Direction =                 | D0.00 cu. in                                               |
|      | 2.5 Compute Counter       | CW Limitation Percent   | rage (D + Vt <sub>2</sub> ) x 100 = ) | Z40.00 %                                                   |
| 3.0  | TOTAL EXAMINATION         | COVERAGE OBTAIN         | ED                                    |                                                            |
|      | 3.1 Compute Total Lir     | nitation Percentage (Z  | 1 + Z2 + Z3 + Z4) / 4 =               | L 14.0 %                                                   |
|      | 3.2 Compute Total Co      | verage 100              | – L                                   | 86.0 %                                                     |
|      |                           | LIMITATION I            | XPLANATION/REMA                       | RKS                                                        |
|      | Limitation exists at ~90  | and ~270 degrees arou   | nd the pipe for a total o             | of 12 inches. See the                                      |
|      | attached UT Coverage I    | Plot. The 45 degree tra | nsducers were scanne                  | d over the required volume from both                       |
|      | sides of the weld with th | e exception of the two  | obstructed areas from t               | he permanently installed welded pip                        |
|      | supports on the downstr   | eam side of the weld.   | No limitation existed for             | r the circumferential examinations                         |
|      | due to the fact the perm  | anently installed welde | d pipe support obstruct               | ions were located beyond the require                       |
|      | volume. The exam volu     | me was computed usin    | g actual OD pipe sizes                | and schedule wall thicknesses.                             |
|      |                           |                         |                                       | d of the pipe wall thickness.                              |
| PREI | ARED BY:                  | DAI                     |                                       | DAT                                                        |
| D    | anny J. La                | ugarfell 5-19-          | 99 Ser Vo                             | Laky 5-19-9                                                |
|      | FABT                      | SKY MUTUAL              |                                       | PAGE <u>5</u> OF <u>7</u>                                  |
|      | The same and the set      | ine Abeuriation         |                                       |                                                            |

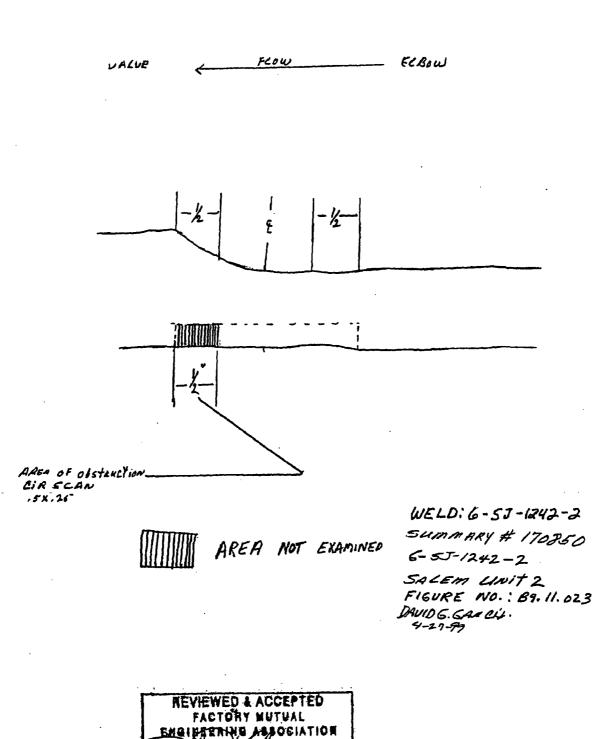
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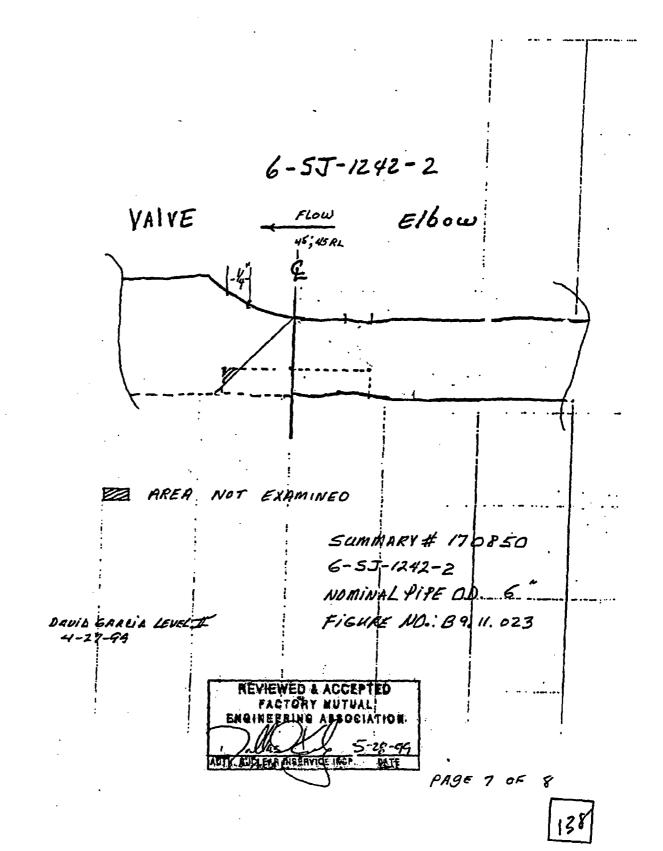
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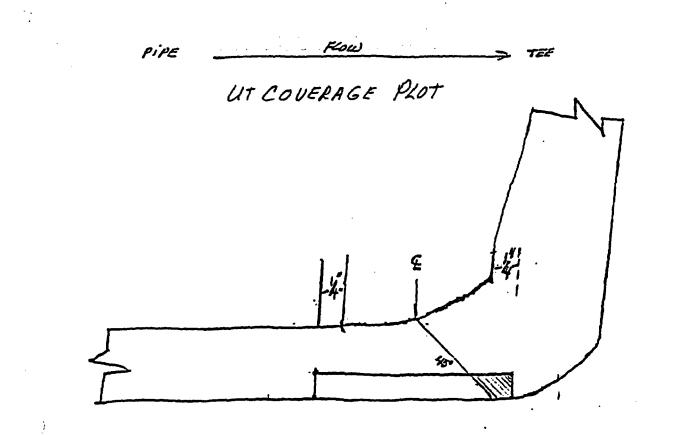
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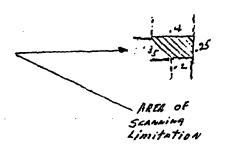
## UT COVERAGE PLOT

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| SUMMARY NO.:       170650       COMPONENT ID:       6-SJ-1242-2<br>ELBOW TO VALVE 24SJ43         VOLUMETRIC PIPING EXAMINATIONS         10 AXIAL ULTRASONIC EXAMINATIONS (Indications Parallel to the Weld)         1.1       Compute Examination Volume (Height x Width x Length) = VI;       0.255" x 1.66" x 17.6" = 7.45;         1.2       Compute Volume Not Examined on Upstream Side of Weld = A       0.255" x 1.66" x 17.6" = 7.45;         1.3       Compute Volume Not Examined on Downstream Side of Weld = B       0.015 in." x 17.6" = 0.284 cu,         1.5       Compute Volume Not Examined on Downstream Side of Weld = B       0.015 in." x 17.6" = 0.284 cu,         1.5       Compute Downstream Limitation Percentage (B + VI;) x 100 = Z1       20.226 in." + 7.45 in." x 17.6" = 9.246 cu,         1.5       Compute Examination Volume (Height x Width x Length) = VI;       0.255" x 0.50" x 17.6" = 9.246 cu,         2.1       Compute Examination Volume (Height x Width x Length) = VI;       0.255" x 0.50" x 17.6" = 9.246 cu,         2.1       Compute Examination Volume (Height x Width x Length) = VI;       0.255" x 0.50" x 17.6" = 2.246 cu,         2.2       Compute Volume Not Examined in the Clock Wise Direction = C       0.255" x 0.50" x 17.6" = 2.246 cu,         2.3       Compute Volume Not Examined in the Counter CW Direction = D       2.255 m 0.50" x 17.6" = 2.246 cu,         3.1       Compute Total Limitation Percentage (D + VI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | CUST         | OMEF           |                 | PSE&G         |                                                                                                                 | S                  | YSTEM:                     | SAFE                   | TY INJECTION                     | Vi za tegeto a secon                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|-----------------|---------------|-----------------------------------------------------------------------------------------------------------------|--------------------|----------------------------|------------------------|----------------------------------|-----------------------------------------|
| 1.0       AXIAL ULTRASONIC EXAMINATIONS (Indications Parallel to the Weid)         1.1       Compute Examination Volume (Height x Width x Length) = VI;       0.255" x 1.66" x 17.6" = 7.45c         1.2       Compute Volume Not Examined on Upstream Side of Weld = A       0.255" x 1.66" x 17.6" = 7.45c         1.3       Compute Upstream Limitation Percentage (A + Vt <sub>1</sub> ) x 100 = Z1       100 % (Beam Direction-US)         1.4       Compute Volume Not Examined on Downstream Side of Weld = B       0.015 in. <sup>3</sup> x 17.6" = 0.264 cu         1.5       Compute Volume Not Examined on Downstream Side of Weld = B       0.015 in. <sup>3</sup> x 17.6" = 0.264 cu         1.5       Compute Downstream Limitation Percentage (B + Vt <sub>1</sub> ) x 100 = Z2       0.264 in. <sup>3</sup> + 7.45 in. <sup>3</sup> x 100 = 1         1.6       Compute Examination Volume (Height x Width x Length) = Vt <sub>2</sub> 0.255" x 2.10" x 17.6" = 9.24 cu         2.1       Compute Examination Volume (Height x Width x Length) = Vt <sub>2</sub> 0.255" x 0.50" x 17.6" = 9.24 cu         2.2       Compute Volume Not Examined in the Clock Wise Direction = C       0.255" x 0.50" x 17.6" = 2.24 cu         2.3       Compute Volume Not Examined in the Counter CW Direction = D       2.55" x 0.50" x 17.6" = 2.24 cu         2.5       Compute Total Limitation Percentage (D + Vt <sub>2</sub> ) x 100 = Z4       2.24 in. <sup>3</sup> + 9.24 in. <sup>3</sup> x 100 = 2         3.0       TOTAL EXAMINATION COVERAGE OBTAINED       3.1       Compute Total Coverage       100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | SUMN         | IARY           |                 |               | in the second | C                  | OMPONEN                    | r ID:                  |                                  |                                         |
| 1.1       Compute Examination Volume (Height x Width x Length) = Vi; $0.255^{\circ} x 1.66^{\circ} x 17.6^{\circ} = 7.45c$ 1.2       Compute Volume Not Examined on Upstream Side of Weld = A $0.255^{\circ} x 1.66^{\circ} x 17.6^{\circ} = 7.45c$ 1.3       Compute Upstream Limitation Percentage (A + Vi;) x 100 = Z1       100 % (Beam Direction-US)         1.4       Compute Volume Not Examined on Downstream Side of Weld = B $0.015 \text{ in}^3 x 17.6^{\circ} = 0.264 \text{ cu.}$ 1.5       Compute Downstream Limitation Percentage (B + Vi;) x 100 = Z2 $0.264 \text{ in}^3 + 7.45 \text{ in}^3 x 100 = (Beam Direction-DS)$ 2.0       CIRCUMFERENTIAL ULTRASONIC EXAMINATIONS (Indications Perpendicular to the Weld)         2.1       Compute Examination Volume (Height x Width x Length) = Vi; $0.255^{\circ} x 1.0^{\circ} x 17.6^{\circ} = 9.24c$ 2.2       Compute Volume Not Examined in the Clock Wise Direction = C $0.255^{\circ} x 0.50^{\circ} x 17.6^{\circ} = 9.24c$ 2.3       Compute Volume Not Examined in the Counter CW Direction = D $225^{\circ} x 0.50^{\circ} x 17.6^{\circ} = 9.24cc$ 2.4       Compute Volume Not Examined in the Counter CW Direction = D $225^{\circ} x 0.50^{\circ} x 17.6^{\circ} = 2.24cc$ 2.5       Compute Counter CW Limitation Percentage (D + Vt_2) x 100 = Z4 $2.24 \text{ in}^3 + 9.24 \text{ in}^3 x 100 = 2$ 3.1       Compute Total Limitation Percentage (Z1 + Z2 + Z3 + Z4) /4 = L $38.0^{\circ}$ 3.2       Compute Total Cover                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |              |                |                 |               | VOLL                                                                                                            | JMETRIC P          | IPING EXA                  | MINAT                  | IONS                             |                                         |
| 1.2       Compute Volume Not Examined on Upstream Side of Weld = A $0.255^{\circ} \times 1.66^{\circ} \times 17.6^{\circ} = 7.45c^{\circ}$ 1.3       Compute Upstream Limitation Percentage (A + Vt <sub>1</sub> ) × 100 = Z1       100 % (Beam Direction-US)         1.4       Compute Volume Not Examined on Downstream Side of Weld = B $0.015 \text{ in.}^3 \times 17.6^{\circ} = 0.264 \text{ cu.}$ 1.5       Compute Downstream Limitation Percentage (B + Vt <sub>1</sub> ) × 100 = Z2 $0.264 \text{ in.}^3 + 7.45 \text{ in.}^3 \times 100 = Z$ 2.0       CIRCUMFERENTIAL ULTRASONIC EXAMINATIONS (Indications Perpendicular to the Weld)         2.1       Compute Examination Volume (Height × Width × Length) = Vt <sub>2</sub> $0.255^{\circ} \times 2.10^{\circ} \times 17.6^{\circ} = 9.24 \text{ cc}$ 2.2       Compute Not Examined in the Clock Wise Direction = C $0.255^{\circ} \times 0.50^{\circ} \times 17.6^{\circ} = 2.24 \text{ cc}$ 2.3       Compute Volume Not Examined in the Clock Wise Direction = D $2.255^{\circ} \times 0.50^{\circ} \times 17.6^{\circ} = 2.24 \text{ cc}$ 2.4       Compute Volume Not Examined in the Counter CW Direction = D $2.255^{\circ} \times 0.50^{\circ} \times 17.6^{\circ} = 2.24 \text{ cc}$ 2.5       Compute Volume Not Examined in the Counter CW Direction = D $2.25^{\circ} \times 0.50^{\circ} \times 17.6^{\circ} = 2.24 \text{ cc}$ 3.1       Compute Total Limitation Percentage (D + Vt <sub>2</sub> ) × 100 = Z4 $2.24 \text{ in.}^3 + 9.24 \text{ in.}^3 \times 100 = 2$ 3.1       Compute Total Coverage $100 - L$ $62.0^{\circ}$ $62.$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1.0          | AXIAL          | <u>. ULTR</u>   | ASONIC EX     | AMINATIO                                                                                                        | NS (Indicat        | ions Paralle               | el to the l            | Weld)                            |                                         |
| 1.3       Compute Upstream Limitation Percentage $(A + Vt_1) \times 100 = Z1$ 100 % (Beam Direction-US)         1.4       Compute Volume Not Examined on Downstream Side of Weld = B       0.015 in. $^3 \times 17.6^\circ = 0.264$ cu.         1.5       Compute Downstream Limitation Percentage $(B + Vt_1) \times 100 = Z2$ 0.264 in. $^3 + 7.45$ in. $^3 \times 100 = Z$ 2.0       CIRCUMFERENTIAL ULTRASONIC EXAMINATIONS (Indications Perpendicular to the Weld)         2.1       Compute Examination Volume (Height x Width x Length) = Vt_2       0.255" x 2.10" x 17.6" = 9.24 c         2.2       Compute Volume Not Examined in the Clock Wise Direction = C       0.255" x 0.50" x 17.6" = 2.24 cu         2.3       Compute Volume Not Examined in the Clock Wise Direction = D       2.25" x 0.50" x 17.6" = 2.24 cu         2.4       Compute Volume Not Examined in the Counter CW Direction = D       2.55" x 0.50" x 17.6" = 2.24 cu         2.5       Compute Volume Not Examined in the Counter CW Direction = D       2.55" x 0.50" x 17.6" = 2.24 cu         2.5       Compute Counter CW Limitation Percentage $(D + Vt_2) \times 100 = Z4$ 2.24 in. $^3 + 9.24$ in. $^3 \times 100 = 23$ 3.1       Compute Total Limitation Percentage $(Z1 + Z2 + Z3 + Z4) / 4 = L$ 38.0 %         3.2       Compute Total Coverage       100 ~ L       62.0 %         LIMITATION EXPLANATION/REMARKS         Limitation exists on the Valve side of the weld for the circumferential a                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |              | 1.1            | Compu           | te Examinati  | on Volume                                                                                                       | (Height x          | Width x Len                | gth) = Vt <sub>1</sub> | <u>0.255" x</u>                  | 1.66" x 17.6" = 7.45 c                  |
| 1.4       Compute Volume Not Examined on Downstream Side of Weld = B $0.015 \text{ im} \cdot x 17.6^{\circ} = 0.264 \text{ cu}$ .         1.5       Compute Downstream Limitation Percentage (B + Vt <sub>1</sub> ) x 100 = Z2 $0.264 \text{ in}^3 + 7.45 \text{ in}^3 x 100 = 22$ 2.0       CIRCUMFERENTIAL ULTRASONIC EXAMINATIONS (Indications Perpendicular to the Weld)         2.1       Compute Examination Volume (Height x Width x Length) = Vt <sub>2</sub> $0.255^{\circ} x 2.10^{\circ} x 17.6^{\circ} = 9.24 \text{ cc}$ 2.2       Compute Volume Not Examined in the Clock Wise Direction = C $0.255^{\circ} x 0.50^{\circ} x 17.6^{\circ} = 2.24 \text{ cc}$ 2.3       Compute Clock Wise Limitation Percentage (C + Vt <sub>2</sub> ) x 100 = Z3 $2.24 \text{ in}^3 + 9.24 \text{ in}^3 x 100 = 22$ 2.4       Compute Volume Not Examined in the Counter CW Direction = D $2.255^{\circ} x 0.50^{\circ} x 17.6^{\circ} = 2.24 \text{ cc}$ 2.5       Compute Counter CW Limitation Percentage (D + Vt <sub>2</sub> ) x 100 = Z4 $2.24 \text{ in}^3 x 100 = 23$ 3.1       Compute Total Limitation Percentage (D + Vt <sub>2</sub> ) x 100 = Z4 $2.24 \text{ in}^3 x 100 = 24$ 3.1       Compute Total Coverage $100 \sim L$ $62.0 \%$ LIMITATION EXPLANATION/REMARKS         Limitation exists on the Valve side of the weld for the circumferential and axial examinations. See the         attached UT Coverage Plot. The 45 degree shear & RL wave transducers were scanned over the required volume from the elbow side of the weld only (one-sided examination), and 48 p                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |              | 1.2            | Compu           | te Volume N   | ot Examine                                                                                                      | d on Upstre        | am Side of V               | Veld = A               | <u>0.255" x</u>                  | 1.66" x 17.6" = 7.45 c                  |
| 1.5       Compute Downstream Limitation Percentage (B + Vt <sub>1</sub> ) x 100 = Z2       0.264 in. <sup>3</sup> + 7.45 in. <sup>3</sup> x 100 = (Beam Direction-DS)         2.0       CIRCUMFERENTIAL ULTRASONIC EXAMINATIONS (Indications Perpendicular to the Weid)         2.1       Compute Examination Volume (Height x Width x Length) = Vt <sub>2</sub> 0.255" x 0.10" x 17.6" = 9.24 c         2.2       Compute Volume Not Examined in the Clock Wise Direction = C       0.255" x 0.50" x 17.6" = 2.24 cc         2.3       Compute Clock Wise Limitation Percentage (C + Vt <sub>2</sub> ) x 100 = Z3       2.24 in. <sup>3</sup> + 9.24 in. <sup>3</sup> x 100 = 2         2.4       Compute Volume Not Examined in the Counter CW Direction = D       .255" x 0.50" x 17.6" = 2.24 cu         2.5       Compute Counter CW Limitation Percentage (D + Vt <sub>2</sub> ) x 100 = Z4       2.24 in. <sup>3</sup> + 9.24 in. <sup>3</sup> x 100 = 2         3.0       TOTAL EXAMINATION COVERAGE OBTAINED       3.1       Compute Total Limitation Percentage (Z1 + Z2 + Z3 + Z4) / 4 = L       38.0 %         3.1       Compute Total Coverage       100 ~ L       \$2.0 %       \$2.0 %         LIMITATION EXPLANATION/REMARKS         Limitation exists on the Valve side of the weld for the circumferential and axial examinations. See the attached UT Coverage Plot. The 45 degree shear & RL wave transducers were scanned over the requireer volume from the elbow side of the weld only (one-sided examination), and 48 percent coverage was obtained in the downstream axial direction. No volumetric (100% limitation) coverage was obtained from the upstream axial examination due to the V                                                                                                                                                                                                                                                                                                                                                                                                                                           |              | 1.3            | Compu           | te Upstream   | Limitation I                                                                                                    | Percentage         | (A + Vt <sub>1</sub> ) x 1 | 00 = Z1                | <u>100 % (E</u>                  | Beam Direction-US)                      |
| (Beam Direction-DS)         2.0 CIRCUMFERENTIAL ULTRASONIC EXAMINATIONS (Indications Perpendicular to the Weld)         2.1 Compute Examination Volume (Height x Width x Length) = Vt2       0.255" x 2.10" x 17.6" = 9.24 c         2.2 Compute Volume Not Examined in the Clock Wise Direction = C       0.255" x 0.50" x 17.6" = 9.24 c         2.3 Compute Clock Wise Limitation Percentage (C + Vt2) x 100 = Z3       2.24 in. <sup>3</sup> + 9.24 in. <sup>3</sup> x 100 = 2         2.4 Compute Volume Not Examined in the Counter CW Direction = D       .255" x 0.50" x 17.6" = 2.24 cu         2.5 Compute Volume Not Examined in the Counter CW Direction = D       .255" x 0.50" x 17.6" = 2.24 cu         2.5 Compute Volume Not Examined in the Counter CW Direction = D       .255" x 0.50" x 17.6" = 2.24 cu         2.5 Compute Counter CW Limitation Percentage (D + Vt2) x 100 = Z4       .224 in. <sup>3</sup> + 9.24 in. <sup>3</sup> x 100 = 2         3.0 TOTAL EXAMINATION COVERAGE OBTAINED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              | 1.4            | Compu           | te Volume N   | ot Examine                                                                                                      | d on Downs         | tream Side o               | of Weld =              | B <u>0.015 in.</u>               | <sup>3</sup> x 17.6" = 0.264 cu.        |
| 2.0 CIRCUMFERENTIAL ULTRASONIC EXAMINATIONS (Indications Perpendicular to the Weid)         2.1 Compute Examination Volume (Height × Width x Length) = Vt <sub>2</sub> 0.255* x 2.10* x 17.6* = 9.24 c         2.2 Compute Volume Not Examined in the Clock Wise Direction = C       0.255* x 0.50* x 17.6* = 2.24 c         2.3 Compute Clock Wise Limitation Percentage (C + Vt <sub>2</sub> ) x 100 = Z3       2.24 in.* + 9.24 in.* x 100 = 2         2.4 Compute Volume Not Examined in the Counter CW Direction = D       .255* x 0.50* x 17.6* = 2.24 cu         2.5 Compute Volume Not Examined in the Counter CW Direction = D       .255* x 0.50* x 17.6* = 2.24 cu         2.5 Compute Counter CW Limitation Percentage (D + Vt <sub>2</sub> ) x 100 = Z4       2.24 in.* + 9.24 in.* x 100 = 24         3.0 TOTAL EXAMINATION COVERAGE OBTAINED       3.1 Compute Total Limitation Percentage (Z1 + Z2 + Z3 + Z4) / 4 = L       38.0 %         3.1 Compute Total Coverage       100 ~ L       62.0 %         LIMITATION EXPLANATION/REMARKS         Limitation exists on the Valve side of the weld for the circumferential and axial examinations. See the         attached UT Coverage Plot. The 45 degree shear & RL wave transducers were scanned over the required volume from the elbow side of the weld only (one-sided examination), and 48 percent coverage was obtain in the downstream axial direction. No volumetric (100% limitation) coverage was obtained from the         upstream axial examination due to the Valve configuration.       The exam volume was computed using actual OD pipe sizes and schedule wall thicknesses.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | •            | 1.5            | Compu           | te Downstrea  | am Limitatio                                                                                                    | on Percentag       | ge (B + Vt <sub>1</sub> )  | x 100 = 2              |                                  |                                         |
| 2.2       Compute Volume Not Examined in the Clock Wise Direction = C       0.255" x 0.50" x 17.6" = 2.24 co         2.3       Compute Clock Wise Limitation Percentage (C + Vt <sub>2</sub> ) x 100 = Z3       2.24 in. <sup>3</sup> + 9.24 in. <sup>3</sup> x 100 = 2         2.4       Compute Volume Not Examined in the Counter CW Direction = D       .255" x 0.50" x 17.6" = 2.24 cu         2.5       Compute Volume Not Examined in the Counter CW Direction = D       .255" x 0.50" x 17.6" = 2.24 cu         2.5       Compute Counter CW Limitation Percentage (D + Vt <sub>2</sub> ) x 100 = Z4       2.24 in. <sup>3</sup> + 9.24 in. <sup>3</sup> x 100 = 2         3.0       TOTAL EXAMINATION COVERAGE OBTAINED       38.0 %         3.1       Compute Total Limitation Percentage (Z1 + Z2 + Z3 + Z4) / 4 = L                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2.0 <u>(</u> | CIRCI          | JMFER           | ENTIAL ULT    | RASONIC                                                                                                         | EXAMINAT           | IONS (India                | ations F               | Perpendicular                    | to the Weld)                            |
| <ul> <li>2.3 Compute Clock Wise Limitation Percentage (C + Vt<sub>2</sub>) x 100 = Z3</li> <li>2.24 in.<sup>3</sup> + 9.24 in.<sup>3</sup> x 100 = Zi</li> <li>2.4 Compute Volume Not Examined in the Counter CW Direction = D</li> <li>2.55 x 0.50" x 17.6" = 2.24 cu</li> <li>2.5 Compute Counter CW Limitation Percentage (D + Vt<sub>2</sub>) x 100 = Zi</li> <li>2.24 in.<sup>3</sup> + 9.24 in.<sup>3</sup> x 100 = 2i</li> <li>3.0 TOTAL EXAMINATION COVERAGE OBTAINED</li> <li>3.1 Compute Total Limitation Percentage (Z1 + Z2 + Z3 + Z4) / 4 = L</li> <li>3.2 Compute Total Coverage 100 ~ L</li> <li>62.0 %</li> <li>LIMITATION EXPLANATION/REMARKS</li> <li>Limitation exists on the Valve side of the weld for the circumferential and axial examinations. See the attached UT Coverage Plot. The 45 degree shear &amp; RL wave transducers were scanned over the required volume from the elbow side of the weld only (one-sided examination), and 48 percent coverage was obtain in the downstream axial direction. No volumetric (100% limitation) coverage was obtained from the upstream axial examination due to the Valve configuration.</li> <li>The exam volume was computed using actual OD pipe sizes and schedule wall thicknesses.</li> <li>The Length value is computed using the diameter at the inner one third of the pipe wall thickness.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | :            | 2.1 (          | Compu           | te Examinatio | on Volume                                                                                                       | (Height x )        | Nidth x Leng               | Jth) = Vt <sub>2</sub> | 0.255" x 2                       | 2.10" x 17.6" = 9.24 c                  |
| <ul> <li>2.4 Compute Volume Not Examined in the Counter CW Direction = D .255" x 0.50" x 17.6" = 2.24 cu</li> <li>2.5 Compute Counter CW Limitation Percentage (D + Vt<sub>2</sub>) x 100 = Z4 2.24 in.<sup>3</sup> + 9.24 in.<sup>3</sup> x 100 = 24</li> <li>3.0 TOTAL EXAMINATION COVERAGE OBTAINED</li> <li>3.1 Compute Total Limitation Percentage (Z1 + Z2 + Z3 + Z4) / 4 = L .38.0 %</li> <li>3.2 Compute Total Coverage 100 ~ L .62.0 %</li> <li>LIMITATION EXPLANATION/REMARKS</li> <li>Limitation exists on the Valve side of the weld for the circumferential and axial examinations. See the attached UT Coverage Plot. The 45 degree shear &amp; RL wave transducers were scanned over the required volume from the elbow side of the weld only (one-sided examination), and 48 percent coverage was obtain in the downstream axial direction. No volumetric (100% limitation) coverage was obtained from the upstream axial examination due to the Valve configuration. The exam volume was computed using actual OD pipe sizes and schedule wall thicknesses. The Length value is computed using the diameter at the inner one third of the pipe wall thickness.</li> <li>PREPARED BY: DATE: REVIEWER: A DATE</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | :            | 2.2 (          | Comput          | te Volume No  | ot Examine                                                                                                      | d in the Cloc      | k Wise Dire                | ction = C              | C <u>0.255" x (</u>              | 0.50" x 17.6" = 2.24 c                  |
| <ul> <li>2.5 Compute Counter CW Limitation Percentage (D + Vt<sub>2</sub>) x 100 = Z4 2.24 in.<sup>3</sup> + 9.24 in.<sup>3</sup> x 100 = 24</li> <li>3.0 TOTAL EXAMINATION COVERAGE OBTAINED</li> <li>3.1 Compute Total Limitation Percentage (Z1 + Z2 + Z3 + Z4) / 4 = L 38.0 %</li> <li>3.2 Compute Total Coverage 100 ~ L 62.0 %</li> <li>LIMITATION EXPLANATION/REMARKS</li> <li>Limitation exists on the Valve side of the weld for the circumferential and axial examinations. See the attached UT Coverage Plot. The 45 degree shear &amp; RL wave transducers were scanned over the required volume from the elbow side of the weld only (one-sided examination), and 48 percent coverage was obtain in the downstream axial direction. No volumetric (100% limitation) coverage was obtained from the upstream axial examination due to the Valve configuration.</li> <li>The exam volume was computed using actual OD pipe sizes and schedule wall thicknesses.</li> <li>The Length value is computed using the diameter at the inner one third of the pipe wall thickness.</li> <li>PREPARED BY: DATE: REVIEWER: A DATE</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2            | 2.3 (          | Compu           | te Clock Wise | e Limitation                                                                                                    | Percentage         | e (C + Vt₂) x              | 100 = Z3               | 3 <u>2.24 in.<sup>3</sup></u>    | <u>+ 9.24 in.<sup>3</sup> x 100 = 2</u> |
| 3.0       TOTAL EXAMINATION COVERAGE OBTAINED         3.1       Compute Total Limitation Percentage (Z1 + Z2 + Z3 + Z4) / 4 = L       38.0 %         3.2       Compute Total Coverage       100 ~ L       \$2.0 %         LIMITATION EXPLANATION/REMARKS         Limitation exists on the Valve side of the weld for the circumferential and axial examinations. See the         attached UT Coverage Plot. The 45 degree shear & RL wave transducers were scanned over the required volume from the elbow side of the weld only (one-sided examination), and 48 percent coverage was obtain in the downstream axial direction. No volumetric (100% limitation) coverage was obtained from the         upstream axial examination due to the Valve configuration.       The exam volume was computed using actual OD pipe sizes and schedule wall thicknesses.         The Length value is computed using the diameter at the inner one third of the pipe wall thickness.         DATE:         DATE:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2            | 2.4 (          | Compu           | te Volume No  | ot Examine                                                                                                      | d in the Cou       | nter CW Dir                | ection =               | D <u>.255"_x 0.</u>              | <u>50" x 17.6" = 2.24 cu</u>            |
| 3.1       Compute Total Limitation Percentage (Z1 + Z2 + Z3 + Z4) / 4 = L       38.0 %         3.2       Compute Total Coverage       100 ~ L       62.0 %         LIMITATION EXPLANATION/REMARKS         Limitation exists on the Valve side of the weld for the circumferential and axial examinations. See the attached UT Coverage Plot. The 45 degree shear & RL wave transducers were scanned over the required volume from the elbow side of the weld only (one-sided examination), and 48 percent coverage was obtain in the downstream axial direction. No volumetric (100% limitation) coverage was obtained from the upstream axial examination due to the Valve configuration.         The exam volume was computed using actual OD pipe sizes and schedule wall thicknesses.         The Length value is computed using the diameter at the inner one third of the pipe wall thickness.         PREPARED BY:       DATE:       REVIEWER:       DATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2            | 2.5 (          | Comput          | e Counter C   | W Limitatio                                                                                                     | n Percentag        | e (D + Vt <sub>2</sub> )   | x 100 = Z              | Z4 <u>2.24 in.<sup>3</sup> -</u> | + 9.24 in. <sup>3</sup> x 100 = 2       |
| 3.2 Compute Total Coverage 100 ~ L <u>62.0 %</u><br><u>LIMITATION EXPLANATION/REMARKS</u><br><u>Limitation exists on the Valve side of the weld for the circumferential and axial examinations. See the</u><br>attached UT Coverage Plot. The 45 degree shear & RL wave transducers were scanned over the required<br>volume from the elbow side of the weld only (one-sided examination), and 48 percent coverage was obtain<br>in the downstream axial direction. No volumetric (100% limitation) coverage was obtained from the<br>upstream axial examination due to the Valve configuration.<br>The exam volume was computed using actual OD pipe sizes and schedule wall thicknesses.<br>The Length value is computed using the diameter at the inner one third of the pipe wall thickness.<br>DATE: REVIEWER: DATE: REVIEWER: DATE: REVIEWER: DATE: REVIEWER: DATE: REVIEWER: DATE Coverage Coverag | 3.0 <u>]</u> |                | LEXAN           | NINATION C    | OVERAGE                                                                                                         | OBTAINED           | 2                          |                        |                                  |                                         |
| LIMITATION EXPLANATION/REMARKS         Limitation exists on the Valve side of the weld for the circumferential and axial examinations. See the         attached UT Coverage Plot. The 45 degree shear & RL wave transducers were scanned over the require         volume from the elbow side of the weld only (one-sided examination), and 48 percent coverage was obtain         in the downstream axial direction. No volumetric (100% limitation) coverage was obtained from the         upstream axial examination due to the Valve configuration.         The exam volume was computed using actual OD pipe sizes and schedule wall thicknesses.         The Length value is computed using the diameter at the inner one third of the pipe wall thickness.         PREPARED BY:       DATE:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 3            | 3.1 (          | Comput          | e Total Limit | ation Perce                                                                                                     | entage (Z1 +       | - Z2 + Z3 + 2              | Z4) / 4 = 1            | L3                               | 8.0 %                                   |
| Limitation exists on the Valve side of the weld for the circumferential and axial examinations. See the attached UT Coverage Plot. The 45 degree shear & RL wave transducers were scanned over the required volume from the elbow side of the weld only (one-sided examination), and 48 percent coverage was obtain in the downstream axial direction. No volumetric (100% limitation) coverage was obtained from the upstream axial examination due to the Valve configuration. The exam volume was computed using actual OD pipe sizes and schedule wall thicknesses. The Length value is computed using the diameter at the inner one third of the pipe wall thickness. PREPARED BY: DATE: REVIEWER: DATE:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 3            | 3.2 (          | Compul          | e Total Cove  | erage                                                                                                           | 100 1              | -                          |                        | 6                                | 2.0_%                                   |
| attached UT Coverage Plot. The 45 degree shear & RL wave transducers were scanned over the required volume from the elbow side of the weld only (one-sided examination), and 48 percent coverage was obtain in the downstream axial direction. No volumetric (100% limitation) coverage was obtained from the upstream axial examination due to the Valve configuration.         The exam volume was computed using actual OD pipe sizes and schedule wall thicknesses.         The Length value is computed using the diameter at the inner one third of the pipe wall thickness.         PREPARED BY:       DATE:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |              |                |                 |               | LIMIT                                                                                                           | TATION EX          | LANATION                   | I/REMAF                | RKS                              |                                         |
| in the downstream axial direction. No volumetric (100% limitation) coverage was obtained from the<br>upstream axial examination due to the Valve configuration.<br>The exam volume was computed using actual OD pipe sizes and schedule wall thicknesses.<br>The Length value is computed using the diameter at the inner one third of the pipe wall thickness.<br>PREPARED BY:<br>DATE: REVIEWER:<br>DATE: DATE:                       | Ī            | <u>.imitat</u> | tion exis       | ts on the Va  | ive side of t                                                                                                   | the weld for       | the circumfe               | rential ar             | nd axial examir                  | nations. See the                        |
| volume from the elbow side of the weld only (one-sided examination), and 48 percent coverage was obtained in the downstream axial direction. No volumetric (100% limitation) coverage was obtained from the upstream axial examination due to the Valve configuration.         The exam volume was computed using actual OD pipe sizes and schedule wall thicknesses.         The Length value is computed using the diameter at the inner one third of the pipe wall thickness.         PREPARED BY:       DATE:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | E            | attache        | <u>ed U</u> T ( | Coverage Plo  | <u>t. The 45 c</u>                                                                                              | <u>degree shea</u> | r & RL wave                | transduc               | <u>cers were scan</u>            | ned over the required                   |
| in the downstream axial direction. No volumetric (100% limitation) coverage was obtained from the<br>upstream axial examination due to the Valve configuration.<br>The exam volume was computed using actual OD pipe sizes and schedule wall thicknesses.<br>The Length value is computed using the diameter at the inner one third of the pipe wall thickness.<br>PREPARED BY:<br>DATE: REVIEWER:<br>DATE: DATE:                       |              |                |                 |               |                                                                                                                 |                    |                            |                        |                                  |                                         |
| upstream axial examination due to the Valve configuration.         The exam volume was computed using actual OD pipe sizes and schedule wall thicknesses.         The Length value is computed using the diameter at the inner one third of the pipe wall thickness.         PREPARED BY:       DATE:       REVIEWER:       DATE:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |              |                |                 |               |                                                                                                                 |                    |                            |                        |                                  |                                         |
| The exam volume was computed using actual OD pipe sizes and schedule wall thicknesses.         The Length value is computed using the diameter at the inner one third of the pipe wall thickness.         PREPARED BY:       DATE:       REVIEWER:       DATE:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | -            |                |                 |               |                                                                                                                 |                    |                            |                        | elaye was obla                   |                                         |
| The Length value is computed using the diameter at the inner one third of the pipe wall thickness.         PREPARED BY:       DATE:       REVIEWER:       DATE:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |                |                 |               |                                                                                                                 |                    |                            |                        |                                  |                                         |
| PREPARED BY: DATE: REVIEWER: DAT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Ţ            | <u>he ex</u>   | am volu         | Ime was con   | nputed usir                                                                                                     | ng actual OE       | ) pipe sizes :             | and sche               | dule wall thick                  | nesses.                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <u></u>      | he Le          | ngth va         | lue is compu  | ited using t                                                                                                    | he diameter        | at the inner               | one third              | l of the pipe wa                 |                                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |                | 11              | -             | 2 <b>-</b>                                                                                                      |                    | REVIEW                     |                        |                                  | DAT<br>05-1 <b>1-</b> 99                |

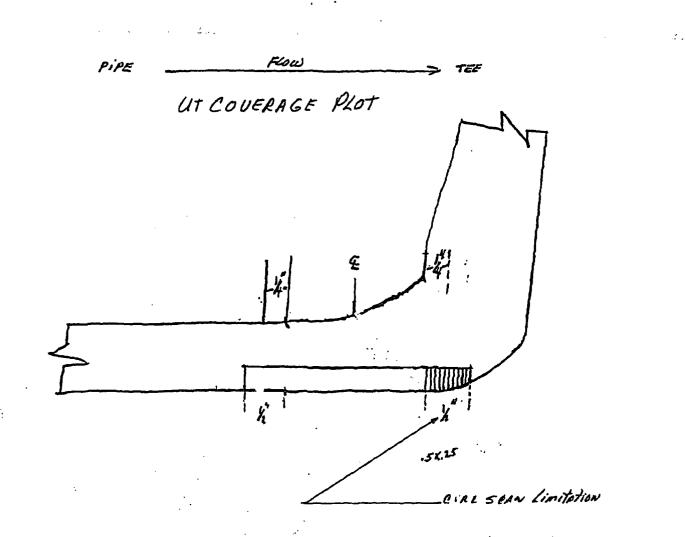




WELO NO. 6-55-1232-12 SALEM UNIT 2 SAMMARY # 173300 FIGURE No.: 89.011.026 NOMINAL PIPE OD: 6.0" BEAM DIRECTION: AXIAL 45° RL \$RS

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WELD NO. 6- 55-1232 -12 SALEM UNIT 2 SUMMARY # 173300 FIGURE NO.: 89.11.026 NOMINAL PIPE OD: 6.0" BEAM DIRECTION : CIRC

PASE 7 OF 8

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| CUSTOMER: PSE&G<br>SALEM UNIT-2, 10 RFO                                                   | SYSTEM: SAFETY I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | NJECTION                                                                                |  |  |  |
|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|--|--|--|
| SUMMARY NO.: 173300                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | SJ-1232-12                                                                              |  |  |  |
|                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                         |  |  |  |
| VOLUMETRIC                                                                                | <b>C PIPING EXAMINATION</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 15                                                                                      |  |  |  |
| 1.0 AXIAL ULTRASONIC EXAMINATIONS (India                                                  | cations Parallel to the Wel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <u>d)</u>                                                                               |  |  |  |
| 1.1 Compute Examination Volume (Height                                                    | t x Width x Length) = Vt <sub>1</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <u>0.255" x 2.20 x 17.6" = 9.87 cu. in.</u>                                             |  |  |  |
| 1.2 Compute Volume Not Examined on Ups                                                    | tream Side of Weld = A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <u>0.255" x 2.20" x 17.6" = 9.87 cu. in.</u>                                            |  |  |  |
| 1.3 Compute Upstream Limitation Percentage                                                | ge (A + Vt <sub>1</sub> ) x 100 = Z1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 100 % (Beam Direction-US)                                                               |  |  |  |
| 1.4 Compute Volume Not Examined on Dow                                                    | vnstream Side of Weld = B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.068 in. <sup>2</sup> x 17.6" ≈ 1.20 cu. in                                            |  |  |  |
| 1.5 Compute Downstream Limitation Percen                                                  | ntage (B + Vt <sub>1</sub> ) x 100 = Z2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <u>1.20 in.<sup>3</sup> + 9.87 in.<sup>3</sup> x 100 = 12.2%</u><br>(Beam Direction-DS) |  |  |  |
| 2.0 CIRCUMFERENTIAL ULTRASONIC EXAMIN                                                     | ATIONS (Indications Perp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | endicular to the Weld)                                                                  |  |  |  |
| 2.1 Compute Examination Volume (Height                                                    | x Width x Length) = $Vt_2$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <u>0.255" x 2.70 x 17.6" = 12.11 cu. in</u>                                             |  |  |  |
| 2.2 Compute Volume Not Examined in the C                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.255" x 0.50" x 17.6" = 2.24 cu. in                                                    |  |  |  |
| 2.3 Compute Clock Wise Limitation Percenta                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | $2.24 \text{ in.}^3 + 9.87 \text{ in.}^3 \times 100 = 22.74\%$                          |  |  |  |
| 2.4 Compute Volume Not Examined in the C                                                  | counter CW Direction = D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <u>0.255" x 0.50" x 17.6" = 2.24 cu. in</u>                                             |  |  |  |
| 2.5 Compute Counter CW Limitation Percent                                                 | tage (D + Vt <sub>2</sub> ) x 100 = Z4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | $2.24 \text{ in.}^3 + 9.87 \text{ in.}^3 \times 100 = 22.74\%$                          |  |  |  |
| 3.0 TOTAL EXAMINATION COVERAGE OBTAIN                                                     | IED.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                         |  |  |  |
|                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                         |  |  |  |
| 3.1 Compute Total Limitation Percentage (Z                                                | 21 + Z2 + Z3 + Z4) / 4 = L                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 39.42 %                                                                                 |  |  |  |
| 3.2 Compute Total Coverage 100                                                            | - L                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 60.6 %                                                                                  |  |  |  |
| LIMITATION F                                                                              | EXPLANATION/REMARKS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                         |  |  |  |
| Limitation exists on the Tee side of the weld for                                         | r the circumferential and axi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | al examinations. See the                                                                |  |  |  |
| attached UT Coverage Plot. The 45 degree sh                                               | ear & RL wave transducers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | were scanned over the required                                                          |  |  |  |
| volume from the pipe side of the weld only (one                                           | e-sided examination), and 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 4 percent coverage was obtained                                                         |  |  |  |
| in the downstream axial direction. No volumetr                                            | ic (100% limitation) coverad                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | e was obtained from the                                                                 |  |  |  |
|                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                         |  |  |  |
| unstream axial examination due to the Tee con                                             | guration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                         |  |  |  |
| upstream axial examination due to the Tee con                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                         |  |  |  |
| The exam volume was computed using actual                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                         |  |  |  |
| The exam volume was computed using actual<br>The Length value is computed using the diame | ter at the inner one third of t                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | the pipe wall thickness.                                                                |  |  |  |
| The exam volume was computed using actual                                                 | ter at the inner one third of the term of term |                                                                                         |  |  |  |

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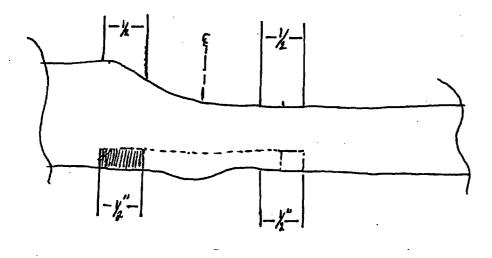
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UT COVERAGE PLOT. CIRC SCAN



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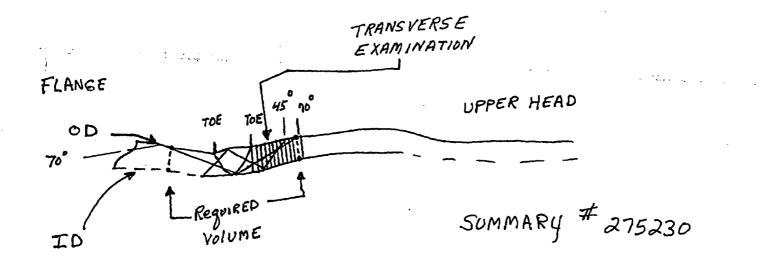
WELD NO. 6-55-1212-2 SUMMARY NO. 175600 SALEM UNIT 2 DAVID GARCIA 4-27-99 NOMINAL PIPE O.D.: 6.0" FIGURE NO.: 89.11.029

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| CUST | OME         | R: PSE&G<br>SALEM UNIT-2, 10 RFO                                       | SYSTEM: SAFETY                             | INJECTION                                                                                                                    |
|------|-------------|------------------------------------------------------------------------|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| SUM  | MARY        | Y NO.: 175600                                                          |                                            | -SJ-1212-2<br>/ALVE 21SJ43 TO PIPE                                                                                           |
|      |             | VOLUMET                                                                | RIC PIPING EXAMINATIO                      |                                                                                                                              |
|      |             |                                                                        |                                            |                                                                                                                              |
| 1.0  | AXIA        | AL ULTRASONIC EXAMINATIONS (II                                         | ndications Parallel to the We              |                                                                                                                              |
|      | 1.1         | Compute Examination Volume (He                                         | ight x Width x Length) = Vt <sub>1</sub>   | <u>0.255" x 1.80 x 17.6" = 8.07 cu. i</u>                                                                                    |
|      | 1.2         | Compute Volume Not Examined on I                                       | Upstream Side of Weld = A                  | <u>0.05 in.<sup>3</sup> x 17.6" = 0.88 cu. in</u>                                                                            |
|      | 1.3         | Compute Upstream Limitation Perce                                      | ntage (A + Vt <sub>1</sub> ) x 100 = Z1    | $0.88 \text{ in.}^3 + 8.07 \text{ in.}^3 \times 100 = 10.9$                                                                  |
|      | 1.4         | Compute Volume Not Examined on I                                       | Downstream Side of Weld = B                | <u>0.255" x 1.80 x 17.6" = 8.07 cu. i</u>                                                                                    |
|      | 1.5         | Compute Downstream Limitation Per                                      | rcentage (B + Vt <sub>1</sub> ) x 100 = Z2 | 100 % (Beam Direction-DS)                                                                                                    |
| 2.0  |             | CUMFERENTIAL ULTRASONIC EXAL                                           | MINATIONS (Indications Per                 | pendicular to the Weld)                                                                                                      |
|      |             |                                                                        |                                            |                                                                                                                              |
|      | 2.1         | Compute Examination Volume (He                                         |                                            | $0.255^{"} \times 2.30 \times 17.6^{"} = 10.32 \text{ cu}$                                                                   |
|      | 2.2         | Compute Volume Not Examined in th                                      |                                            | $\frac{0.255^{\circ} \times 0.50^{\circ} \times 17.6^{\circ}}{2.24 \text{ in.}^{3} + 10.32 \text{ in.}^{3} \times 100} = 21$ |
|      | 2.3         | Compute Clock Wise Limitation Perc                                     | ••••                                       |                                                                                                                              |
|      | 2.4<br>2.5  | Compute Volume Not Examined in th<br>Compute Counter CW Limitation Per |                                            | $\frac{0.255^{\circ} \times 0.50^{\circ} \times 17.6^{\circ}}{2.24 \text{ in.}^{3} + 10.32 \text{ in.}^{3} \times 100} = 21$ |
|      | <u>د.</u> ب |                                                                        | 00mage (0 · 42) × 100 - 24                 | <u>E.E.T. III 10.02 III A 100 = 21</u>                                                                                       |
| 3.0  | TOT         | AL EXAMINATION COVERAGE OBT                                            | AINED                                      |                                                                                                                              |
|      | 3.1         | Compute Total Limitation Percentage                                    | e (Z1 + Z2 + Z3 + Z4) / 4 = L              | 38.58 %                                                                                                                      |
|      | 3.2         | Compute Total Coverage                                                 | 100 – L                                    | 61.42 %                                                                                                                      |
|      |             |                                                                        | N EXPLANATION/REMARK                       | <u>s</u>                                                                                                                     |
|      | Limit       | ation exists on the Valve side of the we                               | eld for the circumferential and            | axial examinations. See the                                                                                                  |
|      | attac       | hed UT Coverage Plot. The 45 degree                                    | e shear & RL wave transducer               | s were scanned over the required                                                                                             |
|      |             | ne from the pipe side of the weld only                                 |                                            |                                                                                                                              |
|      |             | e upstream axial direction. No volume                                  |                                            |                                                                                                                              |
|      |             |                                                                        |                                            |                                                                                                                              |
|      |             | stream axial examination due to the V                                  |                                            |                                                                                                                              |
|      | actua       | I OD pipe sizes and schedule wall thic                                 | knesses. The Length value is               | s computed using the diameter at                                                                                             |
|      | the in      | ner one third of the pipe wall thickness                               |                                            |                                                                                                                              |
| PREP | AREI        | BY:<br>Karnia 5-14-9                                                   | DATE: REVIEWER:                            | Langarfeld 05/19/                                                                                                            |



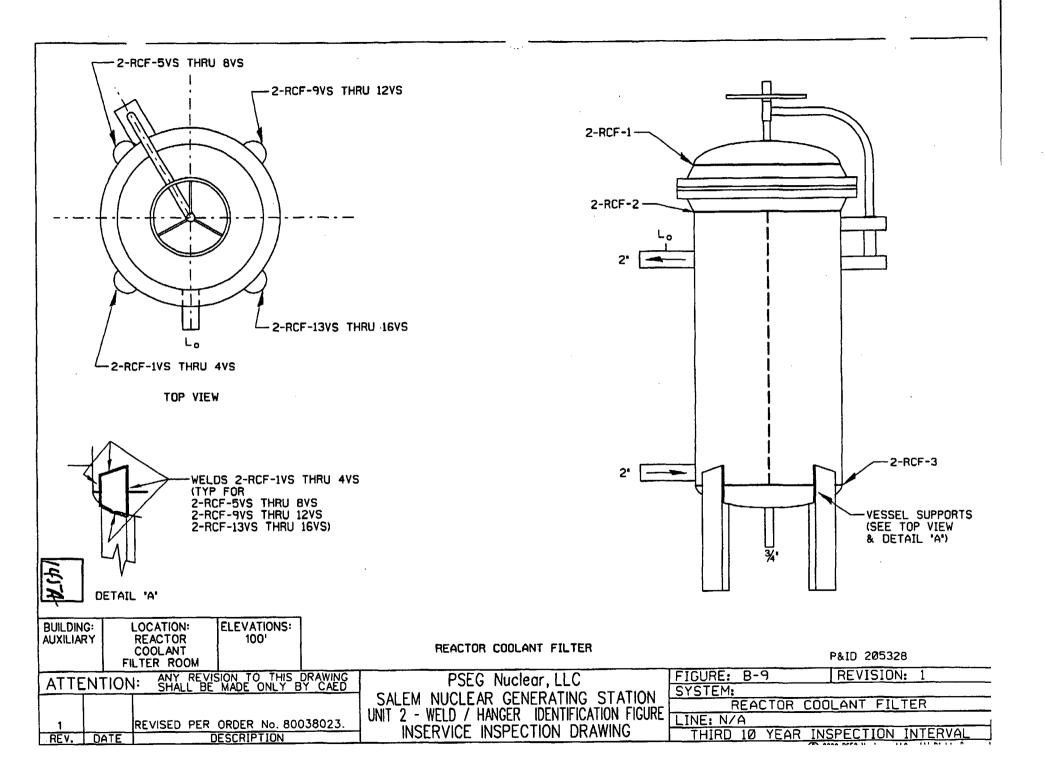
NOTE-1. SKETCH TO SCALE

2. ONE SIDED EXAMINATION FOR Parallel EXAMINATION

UT THICKNESS PROFILE

Dan Zangarfeld 4-9-99

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|      | VESSE                       | L <b>VO</b>     | LUMETRIC                | EXAN             | IINATION COVE             | RAGE REPORT                  |           |             |
|------|-----------------------------|-----------------|-------------------------|------------------|---------------------------|------------------------------|-----------|-------------|
| UNI  | r: 2,                       | 10              | RFO                     | 1                | TP SUMMARY N              | 10.: 2752                    | 30        |             |
| SYST | гем: <u>2</u> -             | R               | CF-1                    | 1                | LTP COMPONEN              | T ID: <u>2-<i>RC</i></u>     | F-1       |             |
| PRE  | PARED BY:                   | 1.              | M.Du                    | <u></u>          | 2                         | DATE: 3-3                    |           |             |
| REV  | IEWED BY: 🔏                 | Tann            | m J. Z.                 | ang              | mfell                     | DATE: <u>4-9-</u>            | 99        |             |
|      |                             | (               | ///                     | 0                |                           |                              |           |             |
| 1.0  | CALCULATE                   | REQI            | JIRED EXAN              | <del>I VOL</del> | UME FOR STRAI             | GHT BEAM PLA                 | NAR       |             |
|      | Exam height                 |                 | <b>.</b> .              |                  |                           | Exam Volum                   | e 📗       |             |
|      | <i>N/A</i>                  | х               | N/A                     | х                | N A =                     | N/A                          | - ·       |             |
| 2.0  | CALCULATE<br>FLAWS          | REQI            | JIRED EXAN              | i vol            | UME FOR STRAI             | GHT LAMINAR                  | PLANAR    |             |
|      | Exam height                 | Х               | Exam width              | х                | Exam length =             | Exam Volum                   | e .       |             |
|      | N/A                         | X               | NA                      | х                | <u>//4</u> =              | N/A                          |           |             |
| 3.0  | CALCULATE                   | REQU            | JIRED PARA              | LLEL             | EXAM VOLUME               | FOR 45° AND 6                | 5- 700    | <b>3-</b> 3 |
|      | Exam height                 |                 | -                       |                  |                           | Exam Volum                   | e         | , ,         |
|      | 0.25"                       | Х               | 1.40"                   | X                | <u>43.9"</u> =            | 15.36 C                      | 4. INCHES |             |
| 4.0  | CALCULATE                   | REQU            | JIRED TRAN              | SVER             | SE EXAM VOLU              | ME FOR 45° <del>ANI</del>    |           |             |
|      | Exam height                 |                 | Exam width              |                  | Exam length =             |                              | e 3-30-49 |             |
|      | 0.25"                       | Х               | 1.40"                   | х                | 43.9" =                   | 15.36                        | -         |             |
| 5.0  | CALCULATE                   | STRA            | JGHT BEAM               | PLAN             | IAR EXAM COVI             | ERAGE NA                     |           |             |
|      | <del>5.1 – LIMITE</del>     | <del>D AB</del> | OVE/CW EX               | AM V             | OLUME ~ N/A               |                              |           |             |
|      | Height of obstructed volu   | me              | Width of obstructed are | ea               | Length of obstructed area | Volume with<br>exam coverage |           |             |
|      |                             | Х               |                         | Х                | =                         | <del></del>                  | -         |             |
|      | -5.2 LIMITE                 | <del>d be</del> | <del>LOW/CW-EX</del>    | AM-V             | OLUME N/A                 |                              | ]         |             |
|      | Height of obstructed volume | me              | Width of obstructed are | ea               | Length of obstructed area | Volume with exam coverag     | 13        |             |
|      |                             | х               | <u></u>                 | Х                |                           |                              |           |             |
|      | Total straight be           | eam p           | lanar exam vo           | lume i           | not examined =            |                              | 146       |             |

Salem/Hope Creek Common

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#### Jun # 275230 5.3-PERCENT VOLUME EXAMINED N/A Percent Volume Total 0° vol Total 0° Exam Vol Examined 100 w/No coverage 1 Х 100 100 {[ Х 100} 1 N/A % -<del>-6.0</del> CALCULATE STRAIGHT BEAM LAMINAR EXAM COVERAGE NIA LIMITED ABOVE/CW-EXAM VOLUME -**6**-1 Width of Length of Volume with NO Height of obstructed volume obstructed area obstructed area exam coverage Х Х 6.2 -LIMITED BELOW/CW EXAM VOLUME Height of Width of Length of Volume with NO obstructed area obstructed volume obstructed area exam coverage Х Х Total straight beam laminar exam volume not examined 6.3 PERCENT VOLUME EXAMINED NIA Total 0° vol Percent Volume Total 0° Exam Vol Examined 100 w/No coverage 1 Х 100 Х 100 100% 7.0 CALCULATE PARALLEL 45° EXAM COVERAGE COVERAGE EXAM 7.1 LIMITED ABOVE/CW EXAM VOLUME ONLY Above/CW exam Length of obstructed area volume with NO Height of Width of obstructed volume obstructed area exam coverage N/A Х X 7.2 LIMITED BELOW/CCW EXAM VOLUME Below/CCW exam Height of Length of volume with NO Width of obstructed volume obstructed area obstructed area exam coverage Х X Total 45° parallel exam volume not examined 147

### **VESSEL VOLUMETRIC EXAMINATION COVERAGE REPORT**

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#### VESSEL VOLUMETRIC EXAMINATION COVERAGE REPORT Sun# 275230 7.3 PERCENT VOLUME EXAMINED Total 45° parallel vol w/No coverage Total 45° parallel Exam Vol X Percent Volume 100 Examined 100 100 Х 100} % -700 D97 3.30-99 8.0 CALCULATE PARALLEL 60° EXAM COVERAGE LIMITED ABOVE/CW EXAM VOLUME 8.1 Above/CW exam Height of Width of Length of volume with NO obstructed volume obstructed area obstructed area exam coverage Х Х 8.2 LIMITED BELOW/CCW EXAM VOLUME Below/CCW exam Height of Width of Length of volume with NO obstructed volume obstructed area obstructed area exam coverage Х Х Total 60° parallel exam volume not examined 8.3 PERCENT VOLUME EXAMINED Total 60° par. Exam Vol Percent Volume Total 60° parallel vol Examined w/No coverage Х 100 100 100 Х $100\}$ NOTE 1: 10° SCAN FROM VESSEL HEAD % 100 TO COVERAGE OF VOLUME ACHIEVES 9.0 CALCULATE TRANSVERSE 45° EXAM COVERAGE (U 9.1 LIMITED CLOCKWISE EXAM VOLUME CW exam Height of Width of Length of volume with NO obstructed volume obstructed area obstructed area exam coverage 0.250 a 90 9.87 CUL. INChes Х 0 X 9.2 LIMITED COUNTERCLOCKWISE EXAM VOLUME CCW exam Height of Width of Length of volume with NO obstructed volume obstructed area obstructed area exam coverage 43.9" 9.87 CU. INChes 0.2 Х 90 Х Total 45° transverse exam volume not examined 9.87 CU. INChes LIMITED FROM THE FLANGE SIDE ONLY. SCANNED FROM THE HEAD SIDE ONLY. (I)

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# VESSEL VOLUMETRIC EXAMINATION COVERAGE REPORT

|                  | 9.3 PERCENT                  | VOLUME EXA              | MINEL         | )                        |                       | Sum# 2752                       | 30        |
|------------------|------------------------------|-------------------------|---------------|--------------------------|-----------------------|---------------------------------|-----------|
|                  | Percent Volume<br>Examined = | - 100 -                 | Total<br>w/No | 45° parallel<br>coverage | vol<br>/              | Total 45° paralle<br>Exam Vol X | el<br>100 |
|                  | =                            | - 100 -                 | {[9.8         | <u>7 1</u> N.            | 1                     | 15.36 1N X                      | 100}      |
|                  | =                            | 100 -                   | 64.2          | 26                       |                       | 35.74                           | %         |
| <del>-10.0</del> | -CALCULATE TR                | ANSVERSE 60°            | · EXAN        | - COVERA                 | GE N                  | A.                              |           |
|                  | 10.1 LIMITED (               | CLOCKWISE E             | XAM V         | OLUME                    |                       | CW exam                         |           |
|                  | Height of obstructed volume  | Width of obstructed are | ea            | Length of obstructed     | area                  | volume with NO<br>exam coverage |           |
| ļ                | X                            | ·                       | X             |                          | _ =                   | <u> </u>                        |           |
|                  | -10.2-LIMITED-(              | COUNTERCLO              | CKWIS         | E EXAM V                 | OLUME-                | _ <i>N A</i><br>CCW exam        |           |
|                  | Height of obstructed volume  | Width of obstructed are | ea            | Length of obstructed     | area                  | volume with NO<br>exam coverage |           |
| ļ                | X                            |                         | x             | - <u></u>                | _ =                   | N/A                             | •         |
|                  | Total 60° transvers          |                         | •             |                          | =                     | NA                              |           |
|                  | -10.3 PERCENT                | VOLUME-EXA              |               | •                        |                       |                                 |           |
|                  | Percent Volume<br>Examined = | = 100 -                 | w/No          | 60° trans vo<br>coverage | 1 /                   | Total 60° trans<br>Exam Vol X   | 100       |
|                  | =                            | = 100 -                 | {[            |                          | 1                     | X                               |           |
|                  |                              |                         | •<br>         |                          |                       | <u> </u>                        | %         |
| 11.0             | CALCULATE PE                 |                         |               |                          |                       | 081 ·                           |           |
|                  | Examination<br>Coverage =    | (                       | 10)           | /No. of exa              | ams <del>(6)</del> (2 | c) <sup>0</sup> 3-30            | -99       |
| 13               | 15.74/2 =                    | 67.8                    | 2             | %                        |                       | EW exam N/A                     | 1         |
|                  | <b>REMARKS</b> :             |                         |               |                          |                       |                                 | ,         |
| ĺ                | PERFORMED                    |                         |               |                          |                       |                                 |           |
|                  | SIDE ONLY                    |                         |               |                          |                       |                                 |           |
|                  | TO ACHIEVE                   |                         |               |                          |                       |                                 |           |
|                  | EXAMS. P                     | <u>ERFORMED</u>         | 45            | Shear                    | SCAN                  | S FROM T                        | HE        |
| ļ                | HEAD SIL                     | DE ONLY                 | FOR           | THE                      | TRAN                  | SVERSE EX                       | AMS.      |
| ¥                | - PARAILEL A.<br>STATEO A.   | NO TRAN.<br>BOVE.       | SVER          | °SE EXA                  | MS PL                 | ERFORMED A                      | 149       |
| Salem/F          | Hope Creek Com               | mon                     | Page 10       | 0 of 10                  |                       |                                 | Rev. 2    |
|                  |                              |                         |               |                          | 7                     | Dans 8 11F 10                   | 149       |

Flange OJ shell OD Note: 1. Sketch to Scale 2. One Sided Examination for parallel exam UT Thickness Profile Summary # 275240

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| UNII | : <u>2</u>                | 10 1      | RFO                     |                 | LTP SUMMAR               | Y NC            | 1: 275240                       |
|------|---------------------------|-----------|-------------------------|-----------------|--------------------------|-----------------|---------------------------------|
| SYST | тем: <u>2</u>             | <u>-R</u> | (For                    |                 | LTP COMPON               | ENT             | ID: 2-RCF-2                     |
| PREP | ARED BY:                  | A         | 1.1.                    | <u> </u>        | 7                        | _ [             | DATE: <u>3-30-99</u>            |
| REVI | EWED BY:                  | Dan       | mu D. c                 | 2               | angafall                 | _ I             | DATE: 4-9-99                    |
|      |                           |           | 11-                     |                 | //-                      |                 |                                 |
| 1.0  | CALCULATE<br>FLAWS        | REQ       | UIRED EXAN              | 4 VO            | LUME FOR STI             | RAIG            | HT BEAM PLANAR                  |
|      | Exam height               | x         | Exam width              | х               | Exam length              | =               | Exam Volume                     |
|      | <u> </u>                  | X         |                         | Х               |                          | =               |                                 |
| 2.0  | CALCULATE<br>FLAWS        | REQ       | UIRED EXAN              | <b>1 VO</b>     | LUME FOR STI             | RAIG            | HT LAMINAR PLANAR               |
|      | Exam height               | Х         | Exam width              | Х               | Exam length              | =               | Exam Volume                     |
|      |                           | x         |                         | х               |                          | =               | ·                               |
| 3.0  | CALCULATE                 | REQ       | UIRED PARA              | LLEI            | L EXAM VOLU              | ME F            | FOR 45 AND 65 70 4              |
|      | Exam height               | Х         | Exam width              | Х               | Exam length              | =               | Exam Volume                     |
|      | 0.25                      | Х         | 1.40"                   | x               | 43.9 4                   | =               | 15.36 3 indies                  |
| 4.0  | CALCULATE                 | REQ       | UIRED TRAN              | ISVE            | RSE EXAM VOI             | LUM             | E FOR 45° AND 65° 72            |
|      | Exam height               | X         | Exam width              | X               | Exam length              | =               | Exam Volume                     |
|      | 0.25"                     | X         | 1.40"                   | х               | <u> </u>                 | =               | 15-36 m <sup>3</sup>            |
| 5.0  | -CALCULATE                | -STR/     | AIGHT-BEAM              | I-PLA           | NAR EXAM CO              | <del>)VER</del> | HOE NA                          |
|      | <del>-5.1 LIMITI</del>    | ED AI     | BOVE/CW EX              | CAM -           | VOLUME                   | · N7.           | <i>q</i>                        |
|      | Height of obstructed volu | ıme       | Width of obstructed ar  | ea              | Length of obstructed are | a               | Volume with NO exam coverage    |
|      |                           | X         | . <u></u>               | Х               |                          | =               |                                 |
|      | <u> -5.2 - LIMITI</u>     | ED BI     | elow/cw ex              | <del>(AM-</del> | <del>volume</del> NI     | 9-              |                                 |
|      | Height of obstructed volu | ıme       | Width of obstructed are | ea              | Length of obstructed are | a               | Volume with NO<br>exam coverage |
|      |                           | х         |                         | х               |                          | =               | h.                              |
|      | Total straight b          | eam j     | olanar exam vo          | olume           | not examined             | =               |                                 |

# VESSEL VOLUMETRIC EXAMINATION COVERAGE REPORT

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5.3 PERCENT VOLUME EXAMINED Percent Volume Total 0° vol Total 0° Examined 100 w/No coverage Exam Vol Х 100 1 100 Х = **{**[ 1 100% -CALCULATE STRAIGHT BEAM LAMINAR EXAM COVERAGE <del>6.0</del> LIMITED ABOVE/CW EXAM VOLUME <del>6.1</del> Length of obstructed area Width of Volume with NO Height of obstructed volume obstructed area exam coverage Х Х LIMITED BELOW/CW EXAM VOLUME 6.2 Length of Height of Width of Volume with NO obstructed volume obstructed area obstructed area exam coverage Х Х Total straight beam laminar exam volume not examined NH -PERCENT VOLUME EXAMINED Total 0° vol Percent Volume Total 0° Exam Vol 100 w/No coverage 1 Х 100 Examined 100 = **{**[ Х 100% 7.0 CALCULATE PARALLEL 45° EXAM COVERAGE 70 Exam Coverage LIMITED ABOVE/CW EXAM VOLUME 7.1 Above/CW exam Height of Width of Length of volume with NO obstructed area obstructed volume obstructed area exam coverage Х X VB LIMITED BELOW/CCW EXAM VOLUME 7.2 Below/CCW exam volume with NO Height of Length of Width of obstructed volume obstructed area obstructed area exam coverage Х Х Total 45° parallel exam volume not examined

## VESSEL VOLUMETRIC EXAMINATION COVERAGE REPORT

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| INIT  | 2                        | ID P             | RED                    | <br>1            | TP STIMMAP               | Y NC            | 0.: 275240                             |
|-------|--------------------------|------------------|------------------------|------------------|--------------------------|-----------------|----------------------------------------|
|       |                          | R                | (E-2                   | <b>'</b>         |                          |                 | ID: 2-RCF-2                            |
|       | EM:                      | 14               | 1195                   | 3                |                          |                 |                                        |
| PREP  | PARED BY:                | <u> 4-1</u>      | 1-N/1                  |                  | A A A                    | - I             | DATE: <u>3-30-49</u>                   |
| REVI  | EWED BY:                 | Nan              | ny V. c                | Za               | -go fall                 | _ I             | DATE: $4 - 9 - 99$                     |
|       |                          |                  | 0-0                    |                  | ·                        | ··              | ······································ |
| 1.0   | CALCULATE<br>FLAWS       | REQ              | UIRED EXAN             | 1 VOL            | UME FOR STI              | RAIG            | HT BEAM PLANAR                         |
|       | Exam height              | Х                | Exam width             | х                | Exam length              | =               | Exam Volume                            |
|       | ;<br>                    | х                |                        | Х                |                          | =               |                                        |
| 2.0   | CALCULATE<br>FLAWS       | REQI             | UIRED EXAN             | 1 VOL            | UME FOR STR              | RAIG            | HT LAMINAR PLANAR                      |
| ÷.,   | Exam height              | х                | Exam width             | х                | Exam length              | =               | Exam Volume                            |
|       | ```£                     | x                |                        | x                | <u> </u>                 | =               |                                        |
| 3.0   | CALCULATE                | REQ              | UIRED PARA             | LLEL             | EXAM VOLU                | ME F            | FOR 45 AND 65 70 4                     |
|       |                          |                  |                        |                  |                          |                 | Exam Volume                            |
|       | D. 25                    | X                | 1.40"                  | X                | 43.9"                    | =               | 15.76 <sup>3</sup> indies              |
| 4.0   | CALCULATE                | REQ              | UIRED TRAN             | ISVER            | SE EXAM VOI              | LUM             | E FOR 45° AND 65° 72                   |
|       | Exam height              | x                | Exam width             | X                | Exam length              | =               | Exam Volume                            |
| ,     | 0.25"                    | x                | 1.40"                  | x                | 43.94                    | =               | <u>15-36</u> <sup>3</sup>              |
| 5.0-  | -CALCULATE               | STR/             | IGHT BEAM              | PLA              | NAR EXAM CO              | <del>)VER</del> | RAGE NID                               |
|       |                          |                  |                        |                  | OLUME                    |                 |                                        |
|       | Height of obstructed vol |                  | Width of obstructed ar |                  | Length of obstructed are |                 | Volume with NO exam coverage           |
|       |                          | x                |                        | х                |                          | =               | <u></u>                                |
|       | - <del>5:2 LIMIT</del>   | <del>ED BE</del> | ELOW/CW-EX             | <del>(AM-\</del> | HILLIME - NI             | 9               |                                        |
|       | Height of obstructed vol | •                | Width of               |                  | Length of obstructed are |                 | Volume with NO exam coverage           |
|       |                          | х                |                        | x                |                          | =               | · · ·                                  |
|       | Total straight           | beam p           | olanar exam vo         | olume            | not examined             | =               | · · · · · · · · · · · · · · · · · · ·  |
|       | -<br>                    |                  |                        |                  |                          |                 |                                        |
| -l    |                          | 1                |                        | <b>Da</b>        | 7 -6 10                  | •               | (153                                   |
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# VESSEL VOLUMETRIC EXAMINATION COVERAGE REPORT

7.3 PERCENT VOLUME EXAMINED Total 45° parallel Exam Vol X Percent Volume Total 45° parallel vol Examined 100 w/No coverage 100 NH 1 100 Х 100= % = 700 CALCULATE PARALLEL 60° EXAM COVERAGE 8.0 LIMITED ABOVE/CW EXAM VOLUME 8.1 Above/CW exam Height of Width of Length of volume with NO obstructed area obstructed volume obstructed area exam coverage <u>3.50</u>" 250 1.40 Х X 8.2 LIMITED BELOW/CCW EXAM VOLUME Below/CCW exam Height of Width of Length of volume with NO obstructed volume obstructed area obstructed area exam coverage k .40 1250 Х X 70 pc Total 60° parallel exam volume not examined PERCENT VOLUME EXAMINED 8.3 70010 Total 60° parallel vol Total 60° Percent Volume par. Examined 100 w/No coverage Exam Vol 100 1 15.36 Mg 1.23 100 Х 100} **{[** = u G 8 % 100 Ξ -\_ CALCULATE TRANSVERSE 45° EXAM COVERAGE 9.0 LIMITED CLOCKWISE EXAM VOLUME 9.1 CW exam volume with NO Height of Width of Length of ota obstructed area exam coverage obstructed area obstructed volume <u>7 сн</u>." 0,90 .150 Down Х 0.90 Х 2. 1250 O 1 -660 9.2 LIMITED COUNTERCLOCKWISE EXAM VOLUME CCW exam Height of Width of Length of volume with NO obstructed volume obstructed area obstructed area exam coverage Ŵ 1)=66m Down Х 90 Х .25 10.6604 Total 45° transverse exam volume not examined () scanned from shell side Ouly.

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|                        | VESSEL                     | VOLUMETRIC              | EXAMINATION CO                         | VERAGE REPO               | RT                  | 5 7,5 F W |
|------------------------|----------------------------|-------------------------|----------------------------------------|---------------------------|---------------------|-----------|
| <u>نىپ بېكان مىنىر</u> | 9.3 PERCEN                 | T VOLUME EXA            | MINED                                  |                           |                     |           |
|                        | Percent Volume<br>Examined | = 100 -                 | Total 45° parallel vo<br>w/No coverage | ol Total 45°<br>/ Exam Vo | parallel<br>I X 100 |           |
|                        |                            | = 100 -                 | {[ <u>10.66</u> m"                     | 1 _15.360                 | ຟ້ X 100}           |           |
|                        |                            | = 100 -                 | 69.4 =                                 | 3(                        | <u>D·6%</u>         |           |
| <del>10:0-</del>       | -CALCULATE T               | FRANSVERSE 60°          | EXAM COVERAG                           | <del>:</del> N/4          |                     |           |
|                        | 10.1 LIMITED               | D CLOCKWISE EX          | KAM VOLUME                             | CW exam                   |                     | Į.        |
| .•                     | Height of obstructed volum | Width of obstructed are | Length of obstructed an                | volume w                  | ith NO              |           |
|                        |                            | x                       | x                                      | = <u>N</u>                | <u>µ_</u>           |           |
|                        | -10:2 LIMITED              | O COUNTERCLOO           | CKWISE EXAM VOI                        | CCW exa                   | ~                   |           |
|                        | Height of obstructed volum | Width of obstructed are | Length of obstructed are               | exam cov                  | ith NO<br>erage     |           |
|                        | +                          | X                       | x                                      | =NA                       | <u>}</u>            |           |
|                        | Total 60° transve          | erse exam volume        | not examined                           | = NI                      | 2                   |           |
|                        |                            | T VOLUME EXAL           | . In                                   | <i>LEE</i>                | 2                   |           |
|                        | Percent Volume             |                         | Total 60° trans vol                    | Total 60°                 | trans               |           |
|                        | Examined                   | = 100 -                 | w/No coverage                          | / Total 60°<br>/ Exam Vol | <b>X</b> 100        |           |
|                        |                            | = 100 -                 | {[                                     | ' <u></u> N/A             | ] X 100}            |           |
|                        |                            |                         | •<br>•                                 | <b>An</b>                 | <u>_N/A</u> %       |           |
| 11.0                   | CALCULATE P                | ERCENT OF TOT           | AL VOLUME EXAN                         | AINED                     |                     | -         |
|                        | Examination<br>Coverage    | -                       | 0) /No. of exam                        | s <del>(0)</del> (2)      |                     |           |
|                        | 122.6/2                    | =(1•3                   | %                                      | - <del>CW exam</del>      | - NIN               |           |
|                        | REMARKS:                   | 1 - 6 1                 |                                        |                           |                     |           |
|                        | Performed                  | d 10 shear u            | VAVE Scans 7                           | row the s                 | hellside            |           |
|                        | only using                 | <u>ga 11/2 V</u>        | oath techniq                           | e. Performe               | d 45° shear         | . [       |
|                        | Scans From                 | the shell               | side only for                          | the trans                 | Verse exems.        |           |
|                        | Parallel an                | A transvers             | e thans per                            | formed as st.             | ted above           |           |
|                        | ····                       | ·                       | / /                                    |                           |                     |           |

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Summary # 27.5250 Requ. Volume Toe Toc 1 Bottom Head Shell O.D. 1.0

Note: 1. Sketch to Scale 2. UT Thickness Profile 3. 11111 - Base Metal Lomination Scan

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**VESSEL VOLUMETRIC EXAMINATION COVERAGE REPORT** LTP SUMMARY NO .: 2752 50 UNIT: LTP COMPONENT ID: 2 SYSTEM: PREPARED BY: DATE: **REVIEWED BY:** DATE: CALCULATE REQUIRED EXAM VOLUME FOR STRAIGHT BEAM PLANAR-TLAWS- N I-Exam width X Exam length  $\doteq$ Exam height Х Exam Volume x Х CALCULATE REQUIRED EXAM VOLUME FOR STRAIGHT LAMINAR PLANAR 2.0 Exam height Х Exam width Х Exam length Exam Volume OD .250 5014 X X CALCULATE REQUIRED PARALLEL EXAM VOLUME FOR 45° AND 3.0 Exam height Х Exam width X Exam length =Exam Volume 5.36W .250 Х 1.40 Х CALCULATE REQUIRED TRANSVERSE EXAM VOLUME FOR 45° AND 65° 4.0 X Exam width X Exam height Exam length Exam Volume = 15.36 eu ' 250 43. Х Х CALCULATE STRAIGHT BEAM PLANAR EXAM COVERAGE N 14 5.0 -5.1 -- LIMITED ABOVE/CW EXAM VOLUME N/D Height of Length of Volume with NO Width of exam coverage obstructed volume obstructed area obstructed area Х Х 5.2-LIMITED BELOW/CW EXAM VOLUME-Height of Length of Volume with NO Width of obstructed volume obstructed area exam coverage obstructed area Х X Total straight beam planar exam volume not examined Rev. 2

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#### VESSEL VOLUMETRIC EXAMINATION COVERAGE REPORT 5.3 PERCENT VOLUME EXAMINED Total 0° vol Percent Volume Total 0° Examined w/No coverage 100 Exam Vol Х 1 100 100 {[ 1 X 100} % = CALCULATE STRAIGHT BEAM LAMINAR EXAM COVERAGE $(\beta M)$ 6.0 LIMITED ABOVE/CW EXAM VOLUME 6.1 Height of Width of Length of Volume with NO obstructed area obstructed volume obstructed area exam coverage .250 20.5 1.0 " 5, Х Х CU LIMITED BELOW/CW EXAM VOLUME 6.2 Height of Width of Length of Volume with NO exam coverage obstructed volume obstructed area obstructed area 1.0" 20.5 5.12 cu 250 " Х X 10•24 cu Total straight beam laminar exam volume not examined 6.3 PERCENT VOLUME EXAMINED Total 0° vol Percent Volume Total 0° Examined 100 w/No coverage Exam Vol Х 100 1 10,24au *۹ς*، Х 100} 100 1} \_ 46.6 1bD % -CALCULATE PARALLEL 45° EXAM COVERAGE 7.0 LIMITED ABOVE/CW EXAM VOLUME 7.1 Above/CW exam Width of Length of volume with NO Height of obstructed volume obstructed area obstructed area exam coverage Ń ,40 20.5 7.2 m ·250" Х Х 7.2 LIMITED BELOW/CCW EXAM VOLUME Below/CCW exam Height of Width of Length of volume with NO obstructed area obstructed volume obstructed area exam coverage ų 1.40 2 20.5 ,250" Х Х Cu. 7.2 Total 45° parallel exam volume not examined = a. ħ. ... •

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| VESSEL                              | VOLUMETRIC E                         | XAMINATION COVERA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | GE REPORT                                                                                                                  |
|-------------------------------------|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| 7.3 PERCEN                          | T VOLUME EXAN                        | MINED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | · · · · · · · · · · · · · · · · · · ·                                                                                      |
| Percent Volume<br>Examined          | = 100 -                              | Total 45° parallel vol<br>w/No coverage /                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Total 45° parallel<br>Exam Vol X 100                                                                                       |
|                                     | = 100 -                              | {[ <u>7:2a</u> ]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <u>15.36 al</u> X 100}                                                                                                     |
|                                     | = 100 -                              | 46.8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <u>53-2</u> %                                                                                                              |
| 8 <del>.0 CALCULATE P</del>         | ARALLEL 60° EX                       | AM COVERAGE NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | · ·                                                                                                                        |
| 8.1 LIMITEI                         | ABOVE/CW EXA                         | AM VOLUME                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Above/CW exam                                                                                                              |
| Height of<br>obstructed volum<br>NA | Width of<br>obstructed area<br>X NH- | Length of<br>obstructed area                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | volume with NO<br>exam coverage                                                                                            |
| <u></u>                             | BELOW/CCW EX                         | $\frac{1}{2} = \frac{1}{2} = \frac{1}$ | <u>Iř / _</u>                                                                                                              |
| Height of<br>obstructed volum       | Width of                             | Length of                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Below/CCW exam<br>volume with NO<br>exam coverage                                                                          |
| NH                                  | x                                    | x =                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | NH                                                                                                                         |
| Total 60° paralle                   | l exam volume not                    | examined =                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | NA                                                                                                                         |
| 8.3 PERCEN                          | T VOLUME EXAN                        | AINED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                            |
| Percent Volume<br>Examined          | = 100 -                              | Total 60° parallel vol<br>w/No coverage /                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Total 60° par.<br>Exam Vol X 100                                                                                           |
| ·                                   | = 100 -                              | { <u>[_N A</u> /                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | $ \underbrace{ \begin{array}{c} \mu \\ \Lambda \end{array} }_{\mathcal{N} \mathcal{H}} X 100 }_{\mathcal{N} \mathcal{H}} $ |
| 9.0 CALCULATE T                     | RANSVERSE 45° 1                      | EXAM COVERAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                            |
| 9.1 LIMITED                         | CLOCKWISE EX                         | AM VOLUME                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | CW exam                                                                                                                    |
| Height of obstructed volum          | Width of<br>e obstructed area        | Length of obstructed area                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | volume with NO<br>exam coverage                                                                                            |
| .250                                | x <u>1.40.4</u>                      | $X = \frac{\partial \rho \cdot f'}{\partial r} =$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 7.2 ac."                                                                                                                   |
| 9.2 LIMITED                         | COUNTERCLOCI                         | KWISE EXAM VOLUME                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | CCW exam                                                                                                                   |
| Height of obstructed volum          | Width of<br>obstructed area          | Length of obstructed area                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | volume with NO<br>exam coverage                                                                                            |
|                                     |                                      | $X = \frac{20.5^{++}}{20.5^{++}} =$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <u>-7.2 au<sup>4</sup></u>                                                                                                 |
| Total 45° transve                   | rse exam volume no                   | ot examined =                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <u>a</u>                                                                                                                   |

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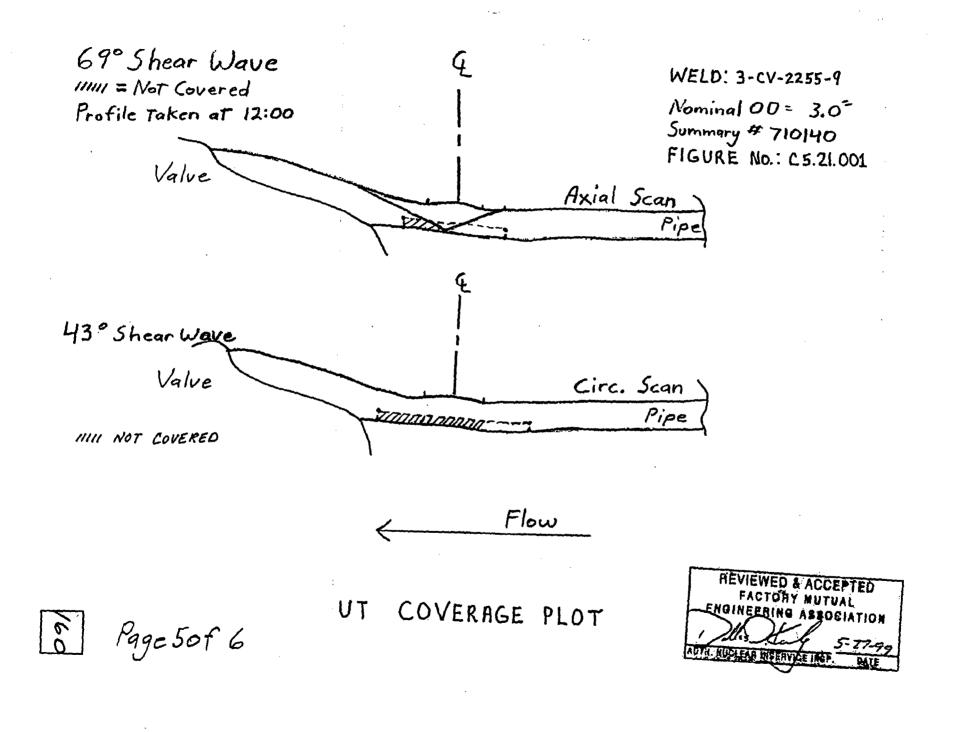
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#### VESSEL VOLUMETRIC EXAMINATION COVERAGE REPORT 9.3 PERCENT VOLUME EXAMINED Total 45° parallel Exam Vol X Total 45° parallel Vol L Percent Volume Examined 100 w/No coverage 100 1 15.362 a X 7.2 on: 100 **{**[ 1 100} = 46.8 100 % CALCULATE TRANSVERSE 60° EXAM COVERAGE <del>-10.0</del> 10.1 LIMITED CLOCKWISE EXAM VOLUME CW exam Height of Width of Length of volume with NO obstructed area exam coverage obstructed volume obstructed area PA MA ۶İA X X = 10.2 LIMITED COUNTERCLOCKWISE EXAM VOLUME CCW exam Height of Width of Length of volume with NO obstructed volume obstructed area obstructed area exam coverage PLA NIA X NIA Х Total 60° transverse exam volume not examined 10.3 PERCENT VOLUME EXAMINED Total 60° trans Exam Vol X Total 60° trans vol Percent Volume 100 100 Examined w/No coverage 1 N/A A/G 100} 100 1 % CALCULATE PERCENT OF TOTAL VOLUME EXAMINED 11.0 Examination Sum of Exam Volumes % /No. of exams(6) 2 Coverage (step 5 thru 10) 159-8 -CW exam NA REMARK Olina can am 04 0 06 レロレイ a

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| CUS | TOME                                                             |            | PSE&       | G<br>2, 10 RFO |                   | SYSTEM:                    | CHEM                                           | ICAL 8       | VOLUME CO                                           | NTROL             | •                   |
|-----|------------------------------------------------------------------|------------|------------|----------------|-------------------|----------------------------|------------------------------------------------|--------------|-----------------------------------------------------|-------------------|---------------------|
| SUM | MARY                                                             |            | 71014      |                |                   | COMPONE                    | NT ID:                                         |              | -2255-9                                             |                   |                     |
|     |                                                                  |            |            |                |                   |                            | / A B & B   A T                                |              | E 2CV70 TO I                                        | PIPE              |                     |
|     |                                                                  |            |            |                |                   | PIPING E                   |                                                |              |                                                     |                   |                     |
| 1.0 | AXIAL ULTRASONIC EXAMINATIONS (Indications Parallel to the Weld) |            |            |                |                   |                            |                                                |              |                                                     |                   |                     |
|     | 1.1                                                              | Compute    | e Examina  | tion Volume    | (Height )         | k Width x Le               | ength) = Vt <sub>1</sub>                       | ı <u>Q.</u>  | <u>12" x 1.125" x</u>                               | <u>8.73" =</u>    | <u>1.18 cu. in.</u> |
|     | 1.2                                                              | Compute    | e Volume l | Not Examine    | ed on Upstr       | eam Side o                 | fWeld = A                                      | <u> </u>     | <u>18 cu. in. (Bea</u>                              | m Direc           | tion-US)            |
|     | 1.3                                                              | Compute    | e Upstrear | n Limitation I | Percentage        | e (A + Vt <sub>1</sub> ) ; | < 100 = Z1                                     | <u>1(</u>    | <u>)0 % (Beam Di</u>                                | rection-          | US)                 |
|     | 1.4                                                              | Compute    | e Volume   | Not Examine    | d on Dowr         | stream Sid                 | e of Weld =                                    | B <u>0.</u>  | <u>12" x 0.40" x 8</u>                              | . <u>73</u> " = 0 | .42 cu. in.         |
|     | 1.5                                                              | Compute    | e Downstro | eam Limitatio  | on Percent        | age (B+Vi                  | a) x 100 = 2                                   | Z2 <u>0.</u> | <u>42 in. <sup>3</sup> + 1.18</u><br>(Beam D        |                   |                     |
| 2.0 |                                                                  | UMFERE     | NTIAL U    | TRASONIC       | EXAMINA           | TIONS (Ind                 | lications F                                    | Perpend      | dicular to the '                                    |                   |                     |
|     | 2.1                                                              | Compute    | Evamina    | tion Volume    | (Height)          | /Midth v i c               | (nath) = 1/t                                   |              | 12 <u>" x 1.625" x</u> I                            | 9 72"             | 170 ou in           |
|     | 2.1                                                              | •          |            | Not Examine    | • •               |                            |                                                |              | <u>12" x 1.125" x 1</u>                             |                   |                     |
|     | 2.2                                                              | •          |            | se Limitation  |                   |                            |                                                | -            | <u>12</u>                                           |                   |                     |
|     | 2.3                                                              | •          |            | Not Examine    | -                 |                            |                                                |              | <u>12" x 1.125" x 1</u>                             |                   |                     |
|     |                                                                  | -          |            | CW Limitatio   |                   |                            |                                                |              | <u>12 x 1.120 x 1</u><br>18 in. <sup>3</sup> + 1.70 |                   |                     |
|     | 2.0                                                              | oompute    | , ocanto.  |                |                   | .90 (2                     | <i>(</i> , , , , , , , , , , , , , , , , , , , |              |                                                     | <u></u>           | 100 - 00,47         |
| 3.0 | TOTA                                                             | LEXAM      | INATION    | COVERAGE       | OBTAINE           | D                          |                                                |              |                                                     |                   |                     |
|     | 3.1                                                              | Compute    | Total Lin  | itation Perce  | entage (Z1        | + Z2 + Z3                  | + Z4) / 4 = I                                  | ι            | 68.6 %                                              |                   |                     |
|     | 3.2                                                              | Compute    | Total Co   | verage         | 100 -             | - L                        |                                                |              | 31.4 %                                              |                   |                     |
|     |                                                                  |            |            | LIME           | TATION E          |                            | DN/REMAR                                       | <u>rks</u>   |                                                     |                   |                     |
|     | <u>Limita</u>                                                    | tion exist | s on the V | alve side of   | the weld fo       | r the circum               | ferential ar                                   | nd axial     | examinations.                                       | See th            | e                   |
|     | <u>attach</u>                                                    | ed UT Co   | overage P  | lot. The 69 a  | degree she        | ar wave tra                | nsducer wa                                     | as scan      | ned over the re                                     | quired v          | /olume              |
|     | from t                                                           | he pipe si | ide of the | weld only (or  | ne-sided ex       | camination).               | and 32.5 c                                     | percent      | coverage was                                        | obtaine           |                     |
|     |                                                                  |            |            |                |                   |                            |                                                |              | vas obtained fro                                    |                   |                     |
|     |                                                                  |            |            |                |                   |                            |                                                |              | was computed                                        |                   | ertual              |
|     |                                                                  |            |            |                |                   |                            |                                                |              | using the diam                                      |                   |                     |
|     |                                                                  |            |            |                | <u>1103808, 1</u> |                            | aiue is con                                    | nputed       | using the diam                                      |                   | le l                |
|     | one th                                                           | ·          | pipe wall  | hickness.      | DATE              |                            | WED.                                           |              |                                                     |                   | DATE:               |
|     |                                                                  |            | 10         |                | 5/19/1            |                            | n n                                            | 1            | anganfeld                                           | 1                 |                     |

# REQUEST FOR ADDITIONAL INFORMATION REQUEST FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR IN-SERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

QUESTION

2.1 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

. . . . . . . . .

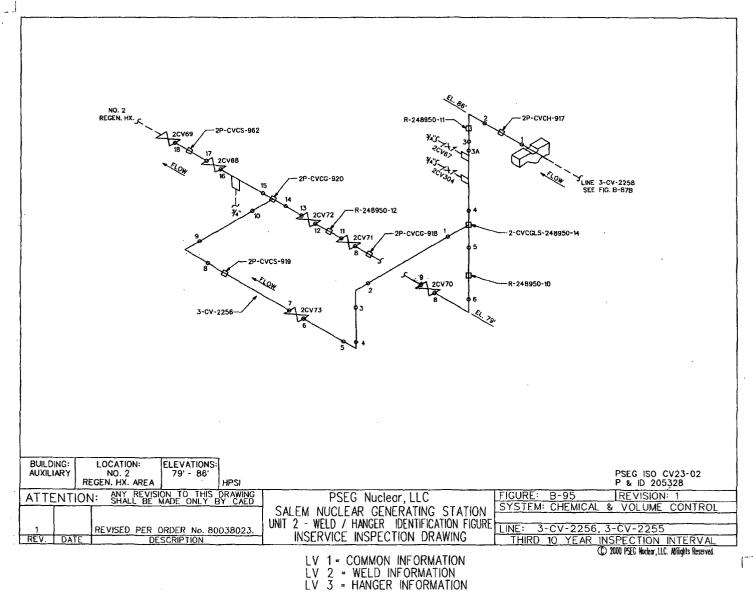
| Summary #      | 710140                           |                                   |
|----------------|----------------------------------|-----------------------------------|
| Component I.D. | 3-CV-2255-9                      |                                   |
| Description    | Valve 2CV70 to Pipe              |                                   |
|                |                                  | Comments                          |
| 1              | Weld X-Section                   | See Attached                      |
| 2              | Material                         | Stainless Steel                   |
| 3              | Thickness / weld Crown           | Thickness .35" / weld Crown .600" |
| 4              | Obstruction                      | Valve OD Contour                  |
| 5              | Exam Area Highlighted on Drawing | Yes X No                          |
| 6              | Transducer ray exit point        | See Attached                      |

#### Comments

UT exam was performed of this component using 45, 60 and 70 degree shear wave transducer. The ultrasonic examination was limited to 31% of the code required coverage being limited due to upstream side valve OD configuration that restricted scanning. UT scans were performed on and across the weld in both directions No unacceptable indications were observed. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.

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SALEM UNIT 2 2-Bit-1 Summary # 715140 UT COVERAGE PLOT BORON INSECTION TRUT NOTE LE TO LOWER HERd AKIAL SCANS NOZZLE E 60' 45 HEAD 7 45" Limitation

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SALEM UNIT 2 2-Bit-1 SUMMARY # 715140 UT COVERAGE Kot CIRC SCANS ANd O' BORON INSECTION TANK NOZZLE TO LOWER HEAD NOZZLE E 4 -NOZZLÉ HENd PAGE 17 OF 18

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# VESSEL VOLUMETRIC EXAMINATION COVERAGE REPORT

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                            | UNIT 2 LORFO            |            |                          |      |                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-------------------------|------------|--------------------------|------|--------------------------------------|
| SYST                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | EM: 2 BIT-                 | 1                       |            | LTP COMPON               | ENT  | ID: HEAD WELD                        |
| PREF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ARED BY: DAN               | ID GARCIA               |            |                          |      | DATE: <u>5-14-99</u>                 |
| REVI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | EWED BY:                   | Danny J. à              | lan        | afell                    | _ I  | DATE: <u>5-15-99</u>                 |
| 1.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | CALCULATE I<br>FLAWS       | REQUIRED EXAN           | M VO       | LUME FOR STR             | RAIG | HT BEAM PLANAR                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Exam height                | X Exam width            | X          | Exam length              | =    | Exam Volume                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | .73                        | X <u>2.0</u>            | Х          | 24.1                     | *    | 35.19                                |
| 2.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | FLAWS PA                   | ERFORMED L              | AMIN       | NATION SCAN              | ' BU | HT LAMINAR PLANAR<br>T NO VOLUMETRIC |
| ł                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Exam height                | X Exam width            | X          | Exam length              | =    | Exam Volume                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | N/A                        | X/A                     | Х          | NA                       | 2    | NA                                   |
| 3.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | CALCULATE F                | REQUIRED PARA           | LLEI       | . EXAM VOLUI             | ME F | OR 45° AND 65°                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Exam height                | X Exam width            | X          | Exam length              | ~    | Exam Volume                          |
| li in the second | . 73                       | X <u>2.0</u>            | х          | 24.1                     | =    | 36.19                                |
| 4.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | CALCULATE R                | REQUIRED TRAN           | ISVEF      | RSE EXAM VOI             | JUMI | E FOR 45° AND 65°                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Exam height                | X Exam width            | <b>X</b> . | Exam length              | R    | Exam Volume                          |
| i i                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | .73                        | X <u>2.D</u>            | x          | 24.1                     | =    | 35.19                                |
| 5.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | CALCULATE S                | STRAIGHT BEAM           | I PLA      | NAR EXAM CO              | VER  | AGE                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 5.1 LIMITEI                | D ABOVE/CW EX           | (AM V      | VOLUME                   |      |                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Height of obstructed volum | Width of obstructed an  | ea         | Length of obstructed are | a    | Volume with NO<br>exam coverage      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0                          | х <u>о</u>              | Х          |                          | æ    |                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 5.2 LIMITED                | D BELOW/CW EX           | (AM Y      | VOLUME                   |      |                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Height of obstructed volum | Width of obstructed are | ea         | Length of obstructed are | a    | Volume with NO<br>exam coverage      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | .73                        | X <u>1.75</u>           | X          | 24.1                     | =    | 30.78 164                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Total straight bea         | am planar exam vo       | olume      | not examined             | =    |                                      |

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# ATTACHMENT 1

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|     | 5.3 PERCE<br>Percent Volum   | NT VOLUMI<br>e           |               | ned<br>tal 0° vol         |        | Total 0°                                        |            |
|-----|------------------------------|--------------------------|---------------|---------------------------|--------|-------------------------------------------------|------------|
|     | Examined                     | = 100                    | - w/.         | No coverage               | 1      | Exam Vol                                        | X 100      |
|     |                              | = 100                    | - {[_         | 30.78                     | 1      | 35.19                                           | X 100}     |
| •   |                              | = 100                    | - 8           | 7.46                      |        | 12.5                                            | %          |
| 6.0 | CALCULATE                    | STRAIGHT E               | EAM LA        | MINAR EXA                 | M COVI | ERAGE                                           |            |
|     | 6.1 LIMITE                   | D ABOVE/C                | W EXAM        | VOLUME ,                  | NO CO  | VERAGE C                                        | ALCULATED  |
|     | Height of<br>obstructed volu | Width o<br>me obstruct   | of<br>ed area | Length of obstructed      |        | Volume with<br>exam coverag                     |            |
|     | N/A                          | X <u> N/A</u>            | x             | N/A                       |        | N/A                                             |            |
|     | 6.2 LIMITE                   | D BELOW/C                | W EXAM        | VOLUME                    |        |                                                 |            |
| •   | Height of obstructed volur   | Width o<br>ne obstruct   |               | Length of obstructed      | area   | Volume with l<br>exam coverage                  |            |
|     | N/A                          | X N/A                    | x             | N/A_                      | =      | NA                                              |            |
|     |                              |                          |               |                           |        | NIA                                             |            |
|     | Total straight be            |                          |               |                           | :a =   |                                                 | •          |
|     | •                            | IT VOLUME                | •             | l 0° vol                  |        | Total 0°                                        | •          |
|     | Percent Volume<br>Examined   | = 100 -                  | w/N           | o coverage                | 1      | Exam Vol                                        | X 100      |
|     |                              | = 100 -                  | {[            | N/A                       | 1      | ·                                               | X 100}     |
|     |                              |                          |               |                           |        | N/                                              | <u> </u> % |
| 7.0 | CALCULATE P                  | ARALLEL 4                | 5° EXAM       | COVERAGE                  |        |                                                 |            |
|     |                              | ) ABOVE/CW               |               | •                         |        | Above/CW exa                                    |            |
|     | Height of obstructed volum   | Width of obstructe       | d area        | Length of<br>obstructed a | area   | exam coverage                                   |            |
|     |                              | x <u>.</u> 4             |               | 24.1                      | _ =    | 7.03                                            |            |
|     | 7.2 LIMITED                  | BELOW/CC                 | W EXAM        | VOLUME                    |        |                                                 |            |
|     | Height of obstructed volume  | Width of<br>e obstructed | i arca        | Length of obstructed a    | irea   | Below/CCW ex<br>volume with NC<br>exam coverage | am<br>D    |
|     | .73                          |                          |               | 2.4.1                     | _ =    | 35.19                                           |            |
|     | Total 45° parallel           | l exam volume            | e not exam    | ined =                    | 42.    | 22                                              |            |
|     |                              |                          |               |                           |        |                                                 | 1          |

## ATTACHMENT 1

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# VESSEL VOLUMETRIC EXAMINATION COVERAGE REPORT

|     | 7.3 PERCE                     | ent v    | OLUME                  | EXAMI         | NED                           |             |                                 |                |
|-----|-------------------------------|----------|------------------------|---------------|-------------------------------|-------------|---------------------------------|----------------|
|     | Percent Volum<br>Examined     | ne.<br>= | 100 -                  | To<br>w/i     | tal 45° parall<br>No coverage | ici vol     | Total 45° par<br>Exam Vol       | allel<br>X 100 |
|     |                               | =        | 100 -                  | {[            | 42.22                         | 1           | 70.38                           | X 100)         |
| •   |                               | =        | 100 -                  | Ć             | 50                            | •           | 40                              | %              |
| 8.0 | CALCULATE                     | PARA     | LLEL 60                | • EXAM        | COVERAG                       | E           |                                 |                |
|     | 8.1 LIMITE                    | ED AB    | OVE/CW                 | EXAM          | VOLUME                        |             | Above/CW ex                     | · · · ·        |
|     | Height of<br>obstructed volu  | me       | Width of obstructed    | area          | Length of<br>obstructed       | f<br>1 area | volume with I<br>exam coverage  | 10             |
|     | <u> </u>                      | X        | 0                      | _ X           |                               | =           | 0                               | HEAD           |
|     | 8.2 LIMITE                    | D BEI    | LOW/CCV                | V EXAN        | I VOLUME                      |             | Below/CCW e                     | ***            |
| •   | Height of<br>obstructed volur |          |                        |               |                               |             | volume with N<br>exam coverage  | 0              |
|     |                               | х.       | 2.0                    | _ X           | _24./                         | =           | 35.19                           | NOZZLE         |
|     |                               | IT VO    | LUME EX                | (AMINE        | ED                            |             |                                 |                |
|     | Percent Volume<br>Examined    |          | 00 -                   | Total<br>w/No | 60° parallel<br>coverage      | vol<br>/    | Total 60° par.<br>Exam Vol      | ¢ 100          |
|     |                               | = 1      | - 00                   | {[3           | 5.19                          | 1           | <u>70.38</u> ] >                | <b>C</b> 100}  |
|     |                               |          |                        |               |                               |             | 50                              | %              |
| .0  | CALCULATE T                   | RANS     | VERSE 4                | S° EXA        | M COVERA                      | GE          |                                 |                |
|     | 9.1 LIMITED                   | CLO      | CKWISE                 | EXAM '        | VOLUME                        |             | CW exam                         |                |
|     | Height of<br>obstructed volum | e ot     | idth of a structed a   | rea           | Length of obstructed a        | area        | volume with NC<br>exam coverage | )              |
|     | .73                           | x _      | 2.0 .                  | X             | 24./                          | _ =         | 35.19                           |                |
|     | 9.2 LIMITED                   | COU      | NTERCLO                | OCKWIS        | E EXAM VO                     | DLUME       | CCW exam                        | 1              |
|     | Height of obstructed volume   | W<br>ob  | idth of<br>structed ai | rea           | Length of obstructed a        | rea         | volume with NO<br>exam coverage |                |
|     | .73                           | к _/     | 0                      | X             | 24.1                          | _ =         | 17.59                           | Î              |
|     | Total 45° transver            | se exa   | m volume               | not exa       | nined                         | =           | 52.78                           | H H            |

Salem/Hope Creek Common

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### ATTACHMENT 1

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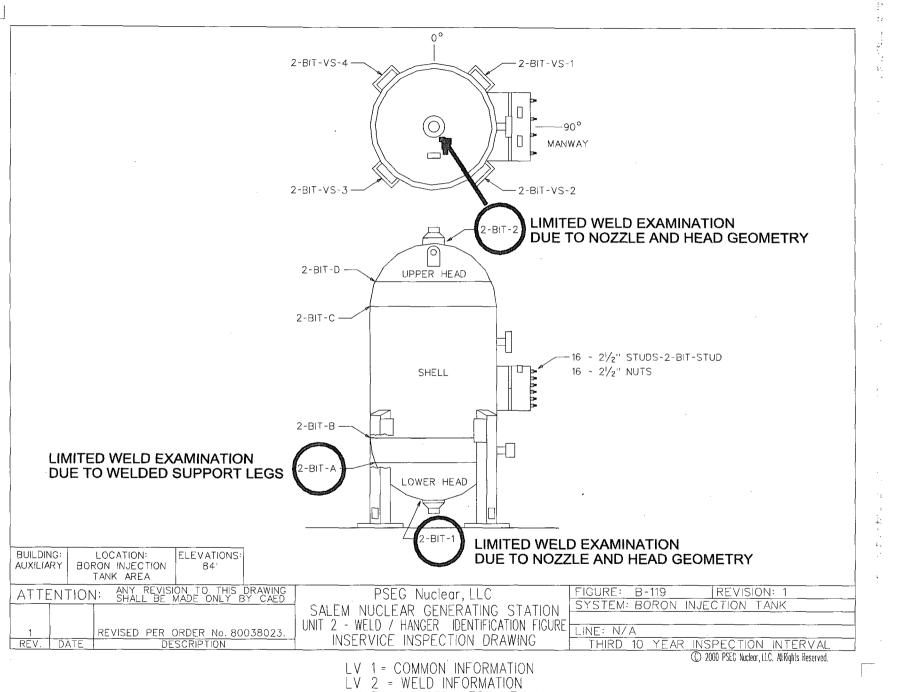
# VESSEL VOLUMETRIC EXAMINATION COVERAGE REPORT

|          | 9.3 PERCI                  | ENT   | VOLUME EX                      | AMIN              | ED                          |       |                                         |             |                        |
|----------|----------------------------|-------|--------------------------------|-------------------|-----------------------------|-------|-----------------------------------------|-------------|------------------------|
| l        | Percent Volun<br>Examined  | ne _  | 100 -                          | Tota<br>w/N       | 1 45° paralle<br>o coverage | i vol | Total 45° pa<br>Exam Vol                | raliel<br>X | 100                    |
|          |                            |       | 100 -                          |                   |                             |       |                                         |             |                        |
| <b>.</b> |                            | 2     | 100 -                          | •                 |                             |       | 25                                      |             | %                      |
| 10.0     | CALCULATE                  | TRA   | NSVERSE 60                     | )° EXA            | M COVERA                    | GE    |                                         |             | _                      |
|          | 10.1 LIMITI                | ED C  | LOCKWISE I                     | EXAM              | VOLUME                      |       |                                         |             |                        |
| n<br>İ   | Height of obstructed volu  | Ime   | Width of obstructed a          | rea               | Length of obstructed        | area  | CW exam<br>volume with<br>exam coverage |             |                        |
| A        | .73                        | X     | 2.0                            | Х                 | 24.1                        | _ =   | 35.19                                   | -           |                        |
| ĺ        | 10.2 LIMITE                | ED CO | DUNTERCLO                      | CKWI!             | SE EXAM V                   | OLUME | CCW exam                                |             |                        |
| ·        | Height of obstructed volu  | me    | Width of obstructed an         | <b>C</b> 2        | Length of obstructed        | area  | volume with l<br>exam coverage          |             | • -                    |
|          | .73                        | X     | 1.0                            | x                 | 24.1                        | _ =   | 17.59                                   | •           | •                      |
|          | Total 60° trans            | verse | exam volume                    | not exa           | mined                       |       | 52.78                                   | *,          | : •                    |
|          | 10.3 PERCEN                |       |                                |                   |                             |       | · <u> </u>                              |             | •                      |
|          | Percent Volume<br>Examined | =     | 100 -                          | Total<br>w/No     | 60° trans vo<br>coverage    | L .   | Total 60° trans<br>Exam Vol             | s<br>X      | 100                    |
|          |                            |       | 100 -<br><i>100 -</i>          | {[ <u>5</u><br>75 | 2.78                        | 1     | <u>70.38</u> ]<br>· 25                  | x           | 100}<br>%              |
| 11.0     | CALCULATE I                |       |                                | •                 | TIME EX                     | MINED | الكربور بالجوائلي ويتعادا الألفان       |             | <b>—</b> <sup>70</sup> |
| -        | Examination<br>Coverage    |       | Sum of Exam<br>(step 5 thru 10 | Volum             | es %                        |       | DAL C                                   | -15-9       | 9                      |
|          | 00/01260                   | =     | 30.5                           | 07.22.9           | %                           |       |                                         |             |                        |
|          | REMARKS:                   | •     |                                |                   | · ·                         |       | - <del>CW-cxam</del>                    |             |                        |
|          | NO ZERO                    | D     | EGREE                          | LAI               | MINATI                      | ON SC | AN CAL                                  | ULA         | TED.                   |
|          |                            |       |                                |                   |                             |       | •                                       |             |                        |
|          |                            |       |                                |                   |                             |       |                                         |             |                        |
| _        |                            |       |                                |                   |                             |       |                                         |             |                        |
|          |                            |       |                                |                   |                             |       |                                         |             |                        |
|          |                            |       |                                |                   |                             |       | •                                       |             |                        |
|          |                            |       |                                |                   |                             |       |                                         | 1           | 67<br>Rev. 2           |
| em/Ho    | pe Creek $C_{om}$          | mon   | Pa                             | age 10 (          | of 10                       | Pr    | 46E 15 OF                               | 18 1        | <br>Rev. 2             |

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Salem/Hope Creek Common



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LV 3 = HANGER INFORMATION

# SECOND INTERVAL, THIRD PERIOD, FIRST OUTAGE

| SUMMAR                  | <b>¥ #:</b> 715160             |      | SAL                          |                | EXAMINATIC<br>EAR GENERATI |             |     |   |            |                                                                                                                                                     |
|-------------------------|--------------------------------|------|------------------------------|----------------|----------------------------|-------------|-----|---|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| LTP FI                  |                                |      |                              |                |                            |             |     |   |            |                                                                                                                                                     |
| NDE<br>METHOD<br>IN LTP |                                | REV. | RESULTS<br>FILE NDE<br>EXAMS | EXAM           | CALIBRATION                | N<br>O<br>R | E   |   | RESOLUTION | REMARKS                                                                                                                                             |
| UT<br>MT                | 54-ISI-130-33<br>54-ISI-130-33 | 33   | UT-OL<br>UT-45S              | DPO42<br>DPO42 | 043<br>044                 | X<br>X      | -   |   |            | 02RF - FTI UNDER W/O#<br>50029032TO PERFORM NDE. UT<br>LIMITED TO 62.5% OF CODE<br>REQUIRED COVERAGE DUR TO NOZZLE<br>AND UPPER HEAD CONFIGURATION. |
|                         |                                |      |                              |                |                            |             |     |   |            | FACTORY MUTUAL<br>INSURANCE COMPANY<br>DE Tilley 5-1-02                                                                                             |
|                         | red by:                        | D.   | Andrege,                     |                |                            | Da          | te: | 0 | 4/29/2002  | Total dose received while<br>performing the required<br>NDE examinations Man Mrem                                                                   |

SUMMARY #: 715160

|                                                   | - 1 A           |                    |                   | a shirin a f         | 그는 것을 수 |
|---------------------------------------------------|-----------------|--------------------|-------------------|----------------------|---------|
|                                                   | - 1 A           | a da ka            | . <sup>1</sup>    | 1998                 | 고 같은 한  |
| FRAMA                                             |                 |                    | E.                | AN                   | P       |
| Street in the second street as the second street. | (Serve March 19 | 化硫酸盐 医马克尔氏管脊髓炎 医血管 | Sec. 16 a. 6, 603 | ممتصح بواغيا ارتجاري |         |

EXAMINATION SUMMARY

| /IMARY 715160                                                                                                                                          | DATA PACKAGE S2R12DP042                                                                                                                    | DATEApr 25 2002                                             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| SALEM 2, RFO-12                                                                                                                                        | EXAMINATION UT, MT                                                                                                                         | ······                                                      |
| TEM /<br>IPONENT ID: 2-BIT-2 (UPPER HD)                                                                                                                | EXAMINATION PROCEDURES:                                                                                                                    |                                                             |
| IPONENT NOZZLE TO UPPER HEAD                                                                                                                           | 54-ISI-130-33                                                                                                                              |                                                             |
| MINATION<br>EGORY: C2.21                                                                                                                               | 54-151-270-37                                                                                                                              |                                                             |
| DRAWING: B-119                                                                                                                                         |                                                                                                                                            |                                                             |
| IBRATION 043, 044<br>ET NO(S):                                                                                                                         |                                                                                                                                            |                                                             |
|                                                                                                                                                        | RESULTS:                                                                                                                                   | able Indications                                            |
|                                                                                                                                                        | Geometric                                                                                                                                  | e Indications                                               |
| ANDMT                                                                                                                                                  | MED ON THE BORON INJECTION TANK N                                                                                                          |                                                             |
| AGGREGATE TOTAL COVERAGE OF<br>COVERAGE. THE LIMITATION WAS<br>THE MT EXAMINATION HAD                                                                  |                                                                                                                                            | INDICATED IT'S RESPECTIVE<br>WELD CONFIGURATION.            |
| THE EXAMINATION WAS PERFORM<br>AGGREGATE TOTAL COVERAGE OF<br>COVERAGE. THE LIMITATION WAS<br>THE MT EXAMINATION HAD<br>THERE WERE NO PREVIOUS EXAMIN  | F 62.5%. EACH INDIVIDUAL SCAN HAS<br>S DUE TO THE NOZZLE TO UPPER HEAD                                                                     | INDICATED IT'S RESPECTIVE<br>WELD CONFIGURATION.<br>PARSION |
| THE EXAMINATION WAS PERFORM<br>AGGREGATE TOTAL COVERAGE OF<br>COVERAGE. THE LIMITATION WAS<br>THE MT EXAMINATION HAD<br>THERE WERE NO PREVIOUS EXAMIN  | F 62.5%. EACH INDIVIDUAL SCAN HAS<br>S DUE TO THE NOZZLE TO UPPER HEAD<br>S NO RESTRICTIONS<br>NATION RESULTS AVAILABLE FOR COM            | INDICATED IT'S RESPECTIVE<br>WELD CONFIGURATION.<br>PARSION |
| THE EXAMINATION WAS PERFORM<br>AGGREGATE TOTAL COVERAGE OF<br>COVERAGE. THE LIMITATION WAS<br>THE MIT EXAMINATION HAD<br>THERE WERE NO PREVIOUS EXAMIN | F 62.5%. EACH INDIVIDUAL SCAN HAS<br>S DUE TO THE NOZZLE TO UPPER HEAD<br>NO RESULTS AVAILABLE FOR COM<br>NATION RESULTS AVAILABLE FOR COM | INDICATED IT'S RESPECTIVE<br>WELD CONFIGURATION.<br>PARSION |

| CUSI | QMER:   | SALEM 2, RFO 12                                         | SYSTEM:          | BORON INJE           | сті       | ÓN TANK              |        |   |        | •<br>3. |
|------|---------|---------------------------------------------------------|------------------|----------------------|-----------|----------------------|--------|---|--------|---------|
| SUMN | IARY NO | <b>7</b> 15160                                          | COMPON           | ENT ID:<br>2-B       | T-2       | UPPER I              | HEAD)  |   |        | *****   |
| 1.0  | CALC    | ULATE REQUIRED EXAM VOLUME FOR                          | STRAIGHT E       | BEAM PLANA           | RF        | LAWS                 |        |   |        |         |
|      | 1,1     | Exam Height X Exam Width X Exam Le                      | ngth = Exam      | 0.73                 | X         | 2.00 X               | 41.50  | = | 60.59  | cu.     |
| .0   | CALC    | ULATE REQUIRED EXAM VOLUME FOR                          | STRAIGHT E       | BEAM LAMIN           | AR        | FLAWS                |        |   |        |         |
|      | 2.1     | Exam Height X Exam Width X Exam Le                      | ngth = Exam      | 0.00                 | X         | 0.00 X               | 0.00   | = | 0.00   | CU.     |
| .0   | CALC    | ULATE REQUIRED PARALLEL EXAM V(                         |                  | 45° AND 60°          |           |                      |        |   |        |         |
|      | 3.1     | Exam Height X Exam Width X Exam Le                      |                  | 0.73                 | x         | 2.00 <b>X</b>        | .83.00 |   | 121.18 | CU      |
| .0   | CALC    | ULATE REQUIRED TRANSVERSE EXAN                          |                  | DR 45° AND 6         | <u>0°</u> |                      |        |   |        |         |
|      | 4.1     | Exam Height X Exam Width X Exam Le                      | ngth = Exam      | 0.73                 | ×         | 2.00 <b>X</b>        | 83.00  |   | 121.18 | cu      |
| .0   | CALC    | ULATE STRAIGHT BEAM PLANAR EXA                          | M COVERAGI       | 20                   |           |                      |        |   |        |         |
|      | 5.1     | Limited above / CW exam volume                          |                  |                      |           |                      |        |   |        |         |
|      |         | Height of Width of Obstructed Volume Obstructed Area    | Length<br>Obstru | n of<br>licted Area  |           | Volume v<br>Exam Co  |        |   |        |         |
|      | 5.2     | D 73 ¥ 1 AA<br>Limited Below / CW exam volume           | ¥ 43             | 160 =                |           | .30.9                | A<br>A |   |        |         |
|      | 5.2     | Limited Below / CW exam volume                          | Lonati           | r of                 | ,         | Volumeu              | ith no |   |        |         |
|      |         | Height of Width of<br>Obstructed Volume Obstructed Area | Length<br>Obstru | n of<br>ucted Area   |           | Volume v<br>Exam Co  |        | 1 |        |         |
|      |         | 0.73 X 0.75                                             | <b>X</b> 41      | .50 =                |           | 22.7                 | 2      |   |        |         |
|      |         | Total straight beam planar exam volume                  | not examined     |                      | =         | 53.0                 | 2      |   |        |         |
|      | 5.3     | Percent Volume Examined                                 |                  |                      |           |                      |        |   |        |         |
|      |         | Total 0 vol Total                                       | 0<br>Volume      |                      |           | Percent \<br>Examine |        |   |        |         |
|      |         | w/No Coverage Exam                                      | 1 Dianio         |                      |           |                      |        |   |        |         |
|      |         |                                                         | 0.59 <b>]</b> )  | < 100} =<br>/ Mutual | =         | 12.50                | %      | I |        |         |

| JALU               | ULATE STRAIGHT BEA                                                                                                                                                                                                                                                                                                                                                               | AM LAMINAR EXAM C                                                                                                                                                                                   | OVERAGE                                                                                                                     |            |                                                                                                                        |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|------------|------------------------------------------------------------------------------------------------------------------------|
| 6.1                | Limited above / CW e>                                                                                                                                                                                                                                                                                                                                                            | am volume                                                                                                                                                                                           |                                                                                                                             |            |                                                                                                                        |
|                    | Height of<br>Obstructed Volume                                                                                                                                                                                                                                                                                                                                                   | Width of<br>Obstructed Area                                                                                                                                                                         | Length of<br>Obstructed Area                                                                                                |            | Volume with no<br>Exam Coverage                                                                                        |
|                    | 0.00 X                                                                                                                                                                                                                                                                                                                                                                           | 0.00 X                                                                                                                                                                                              | 0.00                                                                                                                        | =          | 0.00                                                                                                                   |
| 5.2                | Limited Below / CW ex                                                                                                                                                                                                                                                                                                                                                            | am volume                                                                                                                                                                                           |                                                                                                                             |            |                                                                                                                        |
|                    | Height of<br>Obstructed Volume                                                                                                                                                                                                                                                                                                                                                   | Width of<br>Obstructed Area                                                                                                                                                                         | Length of<br>Obstructed Area                                                                                                |            | Volume with no<br>Exam Coverage                                                                                        |
|                    | 0.00 X                                                                                                                                                                                                                                                                                                                                                                           | 0.00 X                                                                                                                                                                                              | 0.00                                                                                                                        |            | 0.00                                                                                                                   |
|                    | Total straight beam pla                                                                                                                                                                                                                                                                                                                                                          | anar exam volume not                                                                                                                                                                                | examined                                                                                                                    | -          | 0.00                                                                                                                   |
| 6.3                | Percent Volume Exam                                                                                                                                                                                                                                                                                                                                                              | ined                                                                                                                                                                                                |                                                                                                                             |            |                                                                                                                        |
|                    | Total 0° vol<br>w/No Cover                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                     | ume                                                                                                                         |            | Percent Volume<br>Examined                                                                                             |
|                    |                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                     |                                                                                                                             |            |                                                                                                                        |
|                    | <b>100 - {</b> [0.00                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                     | ] x 100}                                                                                                                    |            | 0.00 %                                                                                                                 |
| <u>CALC</u><br>7.1 | CULATE PARALLEL 45°                                                                                                                                                                                                                                                                                                                                                              | EXAM COVERAGE                                                                                                                                                                                       | <b>·</b>                                                                                                                    | <b></b>    |                                                                                                                        |
|                    | CULATE PARALLEL 45°                                                                                                                                                                                                                                                                                                                                                              | EXAM COVERAGE                                                                                                                                                                                       | ] x 100 }<br>Length of<br>Obstructed Area                                                                                   | <b>=</b> . | 0.00 %<br>Volume with no<br>Exam Coverage                                                                              |
|                    | Limited above / CW ex<br>Height of                                                                                                                                                                                                                                                                                                                                               | EXAM COVERAGE<br>xam volume<br>Width of                                                                                                                                                             | Length of                                                                                                                   |            | Volume with no                                                                                                         |
|                    | Limited above / CW ex<br>Height of<br>Obstructed Volume                                                                                                                                                                                                                                                                                                                          | EXAM COVERAGE<br>xam volume<br>Width of<br>Obstructed Area                                                                                                                                          | Length of<br>Obstructed Area                                                                                                | -          | Volume with no<br>Exam Coverage                                                                                        |
|                    | Limited above / CW ex<br>Height of<br>Obstructed Volume<br>0.73 X<br>Height of<br>Obstructed Volume<br>Height of                                                                                                                                                                                                                                                                 | EXAM COVERAGE<br>xam volume<br>Width of<br>Obstructed Area<br>2.00 X<br>Width of<br>Obstructed Area<br>Width of                                                                                     | Length of<br>Obstructed Area<br>41.50<br>Length of<br>Obstructed Area<br>Length of<br>Obstructed Area                       | 2 .<br>2   | Volume with no<br>Exam Coverage<br>60.59<br>Volume with no<br>Exam Coverage<br>Volume with no                          |
|                    | CULATE PARALLEL 45°         Limited above / CW ex         Height of         Obstructed Volume         0.73       X         Height of         Obstructed Volume         Note         0.00       X | EXAM COVERAGE<br>xam volume<br>Width of<br>Obstructed Area<br>2.00 X<br>Width of<br>Obstructed Area<br>Width of<br>Obstructed Area                                                                  | Length of<br>Obstructed Area<br>41.50<br>Length of<br>Obstructed Area<br>Length of<br>Obstructed Area<br>0.00               |            | Volume with no<br>Exam Coverage<br>60.59<br>Volume with no<br>Exam Coverage<br>Volume with no<br>Exam Coverage         |
|                    | CULATE PARALLEL 45°         Limited above / CW ex         Height of         Obstructed Volume         0.73       X         Height of         Obstructed Volume         Note         0.00       X | EXAM COVERAGE<br>xam volume<br>Width of<br>Obstructed Area<br>2.00 X<br>Width of<br>Obstructed Area<br>Width of<br>Obstructed Area<br>0.00 X                                                        | Length of<br>Obstructed Area<br>41.50<br>Length of<br>Obstructed Area<br>Length of<br>Obstructed Area<br>0.00               |            | Volume with no<br>Exam Coverage<br>60.59<br>Volume with no<br>Exam Coverage<br>Volume with no<br>Exam Coverage<br>0.00 |
| 7.1                | CULATE PARALLEL 45°         Limited above / CW ex         Height of         Obstructed Volume         0.73         X         Height of         Obstructed Volume         Height of         Obstructed Volume         Height of         Obstructed Volume         0.00         X         Total 45° parallel exampted                                                              | EXAM COVERAGE<br>xam volume<br>Width of<br>Obstructed Area<br>2.00 X<br>Width of<br>Obstructed Area<br>Width of<br>Obstructed Area<br>0.00 X<br>m volume not examined<br>hined<br>arallel Total 45° | Length of<br>Obstructed Area<br><u>41.50</u><br>Length of<br>Obstructed Area<br>Length of<br>Obstructed Area<br><u>0.00</u> |            | Volume with no<br>Exam Coverage<br>60.59<br>Volume with no<br>Exam Coverage<br>Volume with no<br>Exam Coverage<br>0.00 |

8

**VESSEL VOLUMETRIC EXAMINATION COVERAGE REPORT** MATOME ANP CALCULATE PARALLEL 60° EXAM COVERAGE 8.0 8.1 Limited above / CW exam volume Above / CW exam Length of Width of Volume with no Height of **Obstructed Area Obstructed Volume Obstructed Area** Exam Coverage 2.00 Х 41.50 60.59 0.73 Х Limited Below / CCW exam volume 8.2 Below / CCW exam Volume with no Length of Width of Height of Exam Coverage **Obstructed Area Obstructed Volume Obstructed Area** 0.00 0.00 0.00 X 0.00 Х Total 60° parallel exam volume not examined 60.59 Percent Volume Examined 8.3 Total 60° parallel Total 60° parallel Percent Volume Vol w/No Coverage Exam Volume Examined 121.18 50.00 % 60.59 100 } 100 - {[ X CALCULATE TRANSVERSE 45° EXAM COVERAGE 9.0 9.1 Limited Clockwise exam volume CW Exam Height of Width of Length of Volume with no **Obstructed Volume Obstructed Area Obstructed Area** Exam Coverage 0.00 0.00 X 0.00 Х 0.00 Height of Width of Length of Volume with no **Obstructed Area Obstructed Volume Obstructed Area** Exam Coverage Height of Width of Length of Volume with no **Obstructed Volume Obstructed Area Obstructed Area** Exam Coverage 0.00 Х 0.00 0.00 0.00 Х 0.00 Total 45° transverse exam volume not examined 9.3 Percent Volume Examined Percent Volume Total 45° parallel Total 45° parallel Examined Exam Volume 100.00 % 121.18 1 100 -0.00 x 100} **{**[ FACTORY MUTUAL INSURANCE COMPANY DETillery 5-1-02

| 0.0 |        | ULATE TRANSVERSE                              | 60° EXAM COVERA             | GE       |                              |                |                                        | e e esta des |
|-----|--------|-----------------------------------------------|-----------------------------|----------|------------------------------|----------------|----------------------------------------|--------------|
|     | 10.1   | Limited Clockwise exa                         | am volume                   |          |                              |                | CW exam                                |              |
|     |        | Height of<br>Obstructed Volume                | Width of<br>Obstructed Area |          | Length of<br>Obstructed Area |                | Volume with no<br>Exam Coverage        |              |
|     |        | <u>    0.00                              </u> | 0.00                        | X        | 0.00                         | =              | 0.00                                   |              |
|     | 10.2   | Limited Counterclocky                         |                             | CCW exam |                              |                |                                        |              |
|     |        | Height of<br>Obstructed Volume                | Width of<br>Obstructed Area |          | Length of<br>Obstructed Area |                | Volume with no<br>Exam Coverage        |              |
|     |        | 0.00 <b>X</b>                                 | 0.00                        | X        | 0.00                         | - 40005        | 0.00                                   |              |
|     |        | Total 60 transverse e                         | kam volume not exan         | nine     | d                            | =              | 0.00                                   |              |
|     | 10.3   | Percent Volume Exan<br>Total 60°<br>w/NoCover | Trans Vol Total 6           |          |                              |                | Percent Volume<br>Examined             |              |
|     |        | 100 - {[0.00                                  | / 121                       | .18      | _] x 100}                    | . 🚃            | 100.00 %                               |              |
| .0  | CALC   | ULATE PERCENT OF                              | TOTAL VOLUME EX             | (AM      | INED                         |                |                                        |              |
|     | 11.1   | Sum of Exam Volume                            | es %                        |          |                              |                |                                        |              |
|     |        | Steps 5 Thur 10                               | No. Of Exams (6             | )        |                              | mina<br>'eragi |                                        |              |
|     |        | <u>312.50</u>                                 | 5.00                        |          | <b>1</b>                     | 62.5           | 0 %                                    |              |
|     | •      | limited by nozzle weld                        | design. This is a se        | et-in    | nozzle. No scan f            | from           | the nozzle side nor                    | on           |
|     | or acr | oss the weld.                                 |                             |          |                              |                |                                        | ······       |
|     |        |                                               |                             |          |                              |                |                                        |              |
|     |        |                                               |                             |          | ······                       |                |                                        | in           |
|     |        | <u></u>                                       |                             |          |                              |                |                                        | 19 <u>99</u> |
|     |        | - <u> </u>                                    | <u></u>                     |          |                              |                | ······································ |              |
|     |        |                                               |                             |          |                              |                |                                        |              |

| 1  |                   |               |             |                     |          | Sw           | . R.             | I. ST         | <b>FRA</b> | IGHT       | ГВ   | EAN      | л L       | AN        | INA             |        | V E         | XAN   | /IN/          | ATION                  | RECOR   | D                   |          |
|----|-------------------|---------------|-------------|---------------------|----------|--------------|------------------|---------------|------------|------------|------|----------|-----------|-----------|-----------------|--------|-------------|-------|---------------|------------------------|---------|---------------------|----------|
|    |                   | JECT<br>7-225 |             |                     |          |              |                  | SITE:<br>Sale |            |            |      |          |           |           | DATE:(I         | DAY -  | MON.        | - YR. | ) TIMI<br>SHE | EI (24 - HR. C         | CLOCK)  | SHEET No.<br>1801   | 34       |
| .  | [                 |               |             |                     |          | CO MPO       |                  | LINE          | /SUB       | ASSEN      |      |          |           |           | IDENTI          | FICAT  | OSS<br>ION) |       |               | ET ENDED               | 1139    | W. LOCATION         | •        |
|    | <u>С</u> #<br>ЕХА | MINER         | 5           |                     |          | UTRA         | <u>/</u>         | 3 -<br>SNT    | LEVE       | -12        | -4/  |          | EDUR      |           | CALIBR<br>SHEET | ATION  | TH          | ASURI |               | CROWN HE               |         | JATION WELD TYPE    |          |
| l  | EXA               | MINE          | न् ।        | <u>1120</u><br>)AR3 |          | nk.          |                  | SNT           |            |            | ,    | REV      | 60-<br>62 |           | 250             | ଅବସ    | UP<br>N/A   | .5    | DOWN          | EUS<br>CROWN W<br>9/16 |         | 8 dB WELD LEN       |          |
|    | IND<br>Na         | <b>%</b>      | IND         |                     | POSIT    | ION          | · · · · · ·      |               | POS        | TION       |      |          | POS       | -         | -               |        | POSI        | TION  |               | SEARCH<br>UNIT         | REMARKS | /_//6               |          |
|    |                   | OF<br>BW      | <u>f.S.</u> | <u>L1</u>           | WI       | W 2          | MP               | ╎┶            | W1         | ₩2         | MP   | <u> </u> | WI        | ₩2        | <u>MP</u>       | L2     | ₩ı          | ₩2    | MP            | LOCATION               |         | - <u></u>           |          |
|    |                   |               |             | ,ŅĹ                 | R        | ECON         | anna 1           | BLE_          | TN         | שובו       | 27/0 | ters_    |           | -         |                 |        |             |       |               | ON_                    | ·       |                     | 0        |
|    |                   |               | <u> </u>    | <b>`</b> -          |          |              |                  |               |            |            |      | 7 .47    | 47.14     | 8.4       | <u>_</u>        |        | ┟┯          |       | -             |                        |         |                     |          |
|    |                   |               |             |                     |          | <br> .       |                  |               | F          | -          |      |          |           | ╞┯═       |                 | K      |             | 1/    | 4.115         | SIDA.                  |         | · · · ·             |          |
| •  |                   |               |             |                     |          | $\square$    |                  |               |            |            |      |          |           |           | - £             |        | Ŋ           |       | Lill's        |                        |         | ,                   |          |
| ŀ  |                   | •             |             | .<br>               |          | .<br>        |                  |               |            |            |      |          | <u> </u>  |           |                 |        | ľ ·         |       |               |                        |         | 1.3                 |          |
|    |                   |               |             | .<br>               |          | EL.          | Side             | <u> </u>      |            |            |      | <b> </b> | · ·       |           |                 |        |             |       | FLO           | S                      |         | ·                   |          |
| •  | DEM               | ARKS          |             |                     |          |              |                  | <u> </u>      |            |            |      |          |           |           |                 |        |             |       |               | ANIZAI                 | REFIEM  | O PSEG              | <u></u>  |
|    |                   | ARNJ          | 168         | <u> </u>            |          |              |                  |               |            |            |      |          |           |           |                 |        |             |       |               | INITIAL                | the f   | Department Approved |          |
|    | EXA               | ]<br>MINĀŤ    |             | AREA                | LIMIT    | ATION        | <u>5 : ( 1</u> F | NONE          | , 50 5     | TATE       | ] .  |          |           |           |                 |        |             |       |               |                        |         | N.D.E. SUPERVISOR   | ·        |
| 6- | REV               | IEWED         | NO<br>BY:   | EXA                 | <u> </u> | <u>ATION</u> | W.               | UPS           | TREA       | <u>Avr</u> | 67   | VAL      | IR C      | <u>ne</u> | Frque<br>SHT L  | 04-770 | W_          | CAM   | <u></u>       | DATE                   |         |                     | <u> </u> |
|    |                   |               |             |                     | Je       |              | R                | h             | X          | $\geq$     |      |          |           |           |                 |        | 777         | <br>- |               |                        | 5EP 88  | PAGE O              | F /      |

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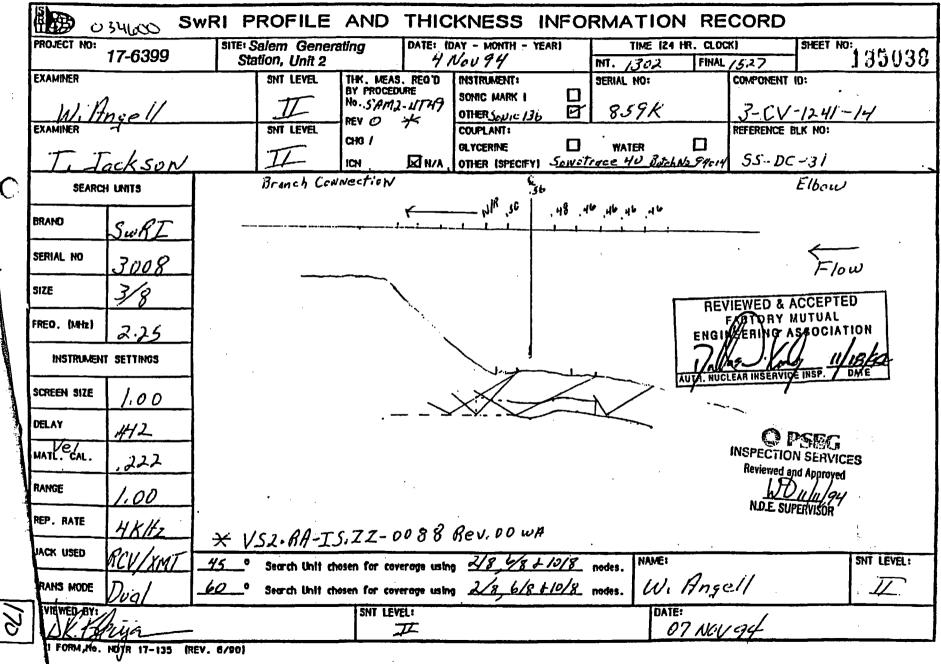
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| CUST | OMER: SALEM 2, RFO 11 CI                                            | ' <b>EM:</b><br>IEMICAL | AN         | D V01      | LUN      | NE CO     | NTI        | ROL SY     | STEM            |          |
|------|---------------------------------------------------------------------|-------------------------|------------|------------|----------|-----------|------------|------------|-----------------|----------|
| SUM  |                                                                     | PONENT<br>CV-1241       |            | <u></u>    |          |           |            |            |                 |          |
|      | VOLUMETRIC PIPING E                                                 | KAMINA                  |            | <u>DNS</u> |          |           |            |            |                 |          |
| 1.0  | AXIAL ULTRASONIC EXAMINATIONS - Upstream (US)                       | and Dov                 | <u>wns</u> | tream      | (DS      | 3)        |            |            |                 |          |
| l    | 1.1 Compute Required Exam Volume (#Angles X Height X Width X Length | =Vi1) <u>1</u>          | X          | 0.15       | x        | 1.15      | ; x        | 8.73       | =1.51           | c        |
|      | 1.2 Volume Not Examined with Ultrasonic Beam Directed US = A        | 0                       | X          | 0.15       | ; x      | 1.15      | ; x        | 8.73       | ≈0.00           | c        |
|      | 1.3 Compute Upstream Limitation Percentage {(A / Vt1) X 100} = Z1   |                         |            |            |          |           |            | 0.00       | %               |          |
|      | 1.4 Volume Not Examined with Ultrasonic Beam Directed DS = B        | 1                       | X          | 0.15       | x        | 1.18      | ; x        | 8.73       | ≈1.51           |          |
|      | 1.5 Compute Downstream Limitation Percentage {(B / Vt1) X 100} = Z2 |                         |            | -          |          | <b></b>   |            | 100.00     | 0%              |          |
| 2.0  | CIRCUMFERENTIAL ULTRASONIC EXAMINATIONS (C                          | lockwise                | an         | d Cou      | nte      | rcioci    | wis        | <u>;e)</u> |                 |          |
|      | 2.1 Compute Required Exam Volume (#Angles X Height X Width X Length | =V12) <u>1</u>          | <u>x</u>   | 0.15       | <b>x</b> | 1.15      | ; x        | 8.73       | =1.51           |          |
|      | 2.2 Compute Volume Not Examined in the Clockwise Direction = C      | 0                       | X          | 0.15       | X        | 1.15      | ; x        | 8.73       | =0.00           |          |
|      | 2.3 Compute Clockwise Limitation Percentage (C / Vt2) X 100 = Z3    |                         |            |            |          | ·         |            | 0.00       | %               |          |
| ;    | 2.4 Compute Volume Not Examined in the Counter CW Direction = D     | 0                       | X          | 0.15       | X        | 1.18      | <u>,</u> x |            | ≈0.00           |          |
|      | 2.5 Compute Counter CW Limitation Percentage (D / Vt2) X 100 = 24   |                         |            | -          |          | . <u></u> |            | 0.00       | *o              |          |
| 3.0  | TOTAL EXAMINATION COVERAGE OBTAINED                                 | <i>ia</i> – 1           |            |            |          |           |            | 05.00      | 201             |          |
|      | 3.1 Compute Total Limitation Percentage Z1+Z2+Z3+Z4                 | /4 = L                  |            |            | -        |           | -          | 25.00      |                 | •        |
|      | 3.2 Compute Total Coverage (100 - L)                                | N/REM                   | ۵RK        | (S         | -        |           |            | 75.00      |                 | •        |
|      |                                                                     |                         |            |            |          |           |            |            |                 |          |
|      | DNE SIDED EXAMINATION FROM ELBOW SIDE ON AXIA                       | L SCAN I                |            | TO C       | ON       | FIGU      | RAT        | ION OF     | VALVE.          | •        |
| _    |                                                                     |                         |            |            |          |           |            | <u> </u>   |                 | •        |
| _    |                                                                     |                         |            |            |          |           |            |            |                 |          |
|      |                                                                     |                         |            |            |          |           |            |            |                 | •        |
| —    |                                                                     |                         | ·          |            |          |           |            |            | <u> </u>        | •        |
|      |                                                                     |                         |            |            |          |           |            |            | <del>-</del> [- | <u> </u> |
|      |                                                                     |                         | <b>-</b> , | <u></u>    |          |           |            |            | <u> </u>        | 9        |
|      |                                                                     |                         |            |            |          |           |            |            |                 |          |
|      | RED BY: DATE: ` REVIE                                               | VER:                    | $\wedge$   | . r        | ΔŤF      | .         |            |            |                 |          |

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| CUS         | IOMER:<br>SALEM 2, RFO 11                                                                                                                                   | SYSTEM:<br>CHEMIC  | CAL        | ANI | o vol      | UN      | IE CO | NT | ROL SY | STEM  |  |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------|-----|------------|---------|-------|----|--------|-------|--|
| SUM         | MARY NO:<br>034600                                                                                                                                          | COMPONE<br>3-CV-12 |            |     | · · · · ·  |         |       |    |        |       |  |
|             | VOLUMETRIC PIPI                                                                                                                                             | NG EXAM            | <u>INA</u> | ΓΙΟ | <u>DNS</u> |         |       |    |        |       |  |
| 1.0         | AXIAL ULTRASONIC EXAMINATIONS - Upstream                                                                                                                    | n (US) and         | Dow        | nst | ream       | (DS     | ទា    |    |        |       |  |
|             | 1.1 Compute Required Exam Volume (#Angles X Height X Width X                                                                                                | Length =Vt1)       | 1          | x   | 0.15       | x       | 1.15  | x  | 8.73   | =1.51 |  |
|             | 1.2 Volume Not Examined with Ultrasonic Beam Directed US = A                                                                                                | _                  | 0          | x   | 0.00       | x       | 0.00  | x  | 0.00   | =0.00 |  |
| I           | 1.3 Compute Upstream Limitation Percentage {(A / Vt1) X 100} = Z                                                                                            | 1 _                |            |     |            |         |       |    | 0.00   | %     |  |
|             | 1.4 Volume Not Examined with Ultrasonic Beam Directed DS = B                                                                                                | _                  | 1          | x   | 0.15       | x       | 1.15  | x  | 8.73   | =1.51 |  |
|             | 1.5 Compute Downstream Limitation Percentage {(B / Vt1) X 100} =                                                                                            | = <u>72</u>        |            |     |            |         |       |    | 100.00 | 0%    |  |
|             |                                                                                                                                                             |                    |            |     |            |         |       |    |        |       |  |
| 2.0         | CIRCUMFERENTIAL ULTRASONIC EXAMINATIO                                                                                                                       |                    | vise a     |     |            |         | _     |    |        |       |  |
|             | 2.1 Compute Required Exam Volume (#Angles X Height X Width X                                                                                                | -                  | 1          |     |            |         | _     |    |        | =1.51 |  |
|             | 2.2 Compute Volume Not Examined in the Clockwise Direction = C                                                                                              | -                  | 0          |     | 0.15       | X       | 1.15  | X  |        | =0.00 |  |
|             | 2.3 Compute Clockwise Limitation Percentage (C / Vt2) X 100 = Z3                                                                                            | _                  |            |     |            |         |       |    | 0.009  |       |  |
| 1           | <ul> <li>2.4 Compute Volume Not Examined in the Counter CW Direction =</li> <li>2.5 Compute Counter CW Limitation Percentage (D / Vt2) X 100 = 3</li> </ul> | -                  | 0          | ×   | 0.15       | ×       | 1.15  |    | 0.009  | =0.00 |  |
|             | ,                                                                                                                                                           |                    |            |     |            |         |       |    |        |       |  |
| 3.0         | TOTAL EXAMINATION COVERAGE OBTAINED                                                                                                                         | •                  |            |     |            |         |       |    |        |       |  |
|             | 3.1 Compute Total Limitation Percentage Z1+Z2+                                                                                                              | Z3+Z4/4 = L        | •          |     |            |         |       |    | 25.00  | )%    |  |
|             | 3.2 Compute Total Coverage (100 - L)                                                                                                                        |                    |            |     |            | _       |       |    | 75.00  | )%    |  |
|             | LIMITATION EXPLAN                                                                                                                                           | NATION / R         | EMA        | RK  | <u>s</u>   | -       |       |    |        |       |  |
|             | ONE SIDED EXAMINATION FROM ELBOW SIDE ON                                                                                                                    | AXIAL SCA          | AN D       | UE  | то со      | DNI     | FIGUR | AT | ION OF |       |  |
|             | BRANCH CONNECTION.                                                                                                                                          |                    |            |     |            |         |       |    |        |       |  |
|             |                                                                                                                                                             |                    |            |     |            |         |       |    |        |       |  |
|             |                                                                                                                                                             |                    |            |     |            | · · · · |       |    |        |       |  |
|             |                                                                                                                                                             |                    |            |     |            |         |       |    |        | ·     |  |
| •           | ······································                                                                                                                      |                    |            |     | <u> </u>   |         |       |    |        |       |  |
|             |                                                                                                                                                             |                    |            |     |            |         |       |    |        |       |  |
| <del></del> |                                                                                                                                                             | <del></del>        |            |     |            |         |       |    |        |       |  |
|             |                                                                                                                                                             |                    |            |     |            |         |       |    |        |       |  |

| SUM          | SALEM 2, RFO 11                                                                      | CHEMIC                                | AL /     | ٩NE | o vo        | LUN     | IE C  | ONT  | ROL S                                 | STEM      |     |
|--------------|--------------------------------------------------------------------------------------|---------------------------------------|----------|-----|-------------|---------|-------|------|---------------------------------------|-----------|-----|
|              | MARY NO:<br>036000                                                                   | COMPONE<br>3-CV-12                    |          |     |             |         |       |      |                                       |           |     |
|              |                                                                                      | G EXAMI                               | NA'      | TIC | <u>NS</u>   |         |       |      |                                       |           |     |
| 1.0          | AXIAL ULTRASONIC EXAMINATIONS - Upstream                                             | (US) and I                            | Dow      | nst | <u>ream</u> | (D:     | 5)    |      |                                       |           |     |
|              | 1.1 Compute Required Exam Volume (#Angles X Height X Width X L                       | ength =Vt1)                           | 1        | x   | 0.15        | j X     | 1.0   | o 'x | 10.99                                 | =1.65     | cu  |
|              | 1.2 Volume Not Examined with Ultrasonic Beam Directed US = A                         | _                                     | 1        | x   | 0.15        | X       | 1.0   | 0 ×  | 10.99                                 | =1.65     | Cu  |
|              | 1.3 Compute Upstream Limitation Percentage {(A / Vt1) X 100} = Z1                    |                                       |          |     |             |         |       |      | 100.0                                 | 0%        |     |
|              | 1.4 Volume Not Examined with Ultrasonic Beam Directed DS = B                         | _                                     | 0        | x   | 0.15        | X       | 1.0   | 0 ×  | 10.99                                 | =0.00     | cu  |
|              | 1.5 Compute Downstream Limitation Percentage {(B / Vt1) X 100} = Z                   | .2                                    |          |     | -           |         |       |      | 0.000                                 | )%        |     |
| 2.0          | CIRCUMFERENTIAL ULTRASONIC EXAMINATION                                               | S (Clockw                             | ise :    | and | Cou         | nte     | rcloc | lovi |                                       |           |     |
|              | 2.1 Compute Required Exam Volume (#Angles X Height X Width X Le                      |                                       | 1        |     |             |         |       |      |                                       | =1.65     | cu  |
|              | 2.2 Compute Volume Not Examined in the Clockwise Direction = C                       | _                                     | 0        |     |             |         | -     |      | · · · · · · · · · · · · · · · · · · · | =0.00     | Cu  |
|              | 2.3 Compute Clockwise Limitation Percentage (C / Vt2) X 100 = Z3                     | _                                     |          |     |             |         |       |      | 0.00                                  |           |     |
|              | 2.4 Compute Volume Not Examined in the Counter CW Direction = D                      |                                       | 0        | x   | 0.15        | x       | 1.0   | 0 ×  | _                                     | =0.00     | cu. |
|              | 2.5 Compute Counter CW Limitation Percentage (D / VI2) X 100 = Z4                    |                                       |          |     |             |         |       |      | 0.00                                  |           |     |
| <u></u>      |                                                                                      |                                       |          |     |             |         |       |      |                                       |           |     |
| 3.0          | TOTAL EXAMINATION COVERAGE OBTAINED 3.1 Compute Total Limitation Percentage Z1+Z2+Z3 | 2+74/4 - 1                            |          |     |             |         |       |      | 25.0                                  | 20/       |     |
|              | 3.2 Compute Total Coverage (100 - L)                                                 | )* <b>2.</b> 4/4 - L                  |          |     |             | -       |       |      | 25.0<br>75.0                          |           | -   |
|              | J.Z. Compute rotal Coverage (100 - L)                                                |                                       |          |     |             | -       |       |      | 75.0                                  | 078       | -   |
|              | LIMITATION EXPLANA                                                                   | TION / RE                             | MA       | RK  | <u>5</u>    |         |       |      |                                       |           |     |
|              | Limitation due to valve 2CV274.                                                      | • • • • • • • • • • • • • • • • • • • | <u> </u> |     |             |         |       |      |                                       | - <u></u> | -   |
|              |                                                                                      |                                       |          |     |             |         |       |      |                                       | ·         | •   |
| <u> </u>     |                                                                                      |                                       |          |     |             |         |       |      |                                       |           | •   |
|              |                                                                                      |                                       |          |     |             |         |       |      |                                       |           | •   |
|              |                                                                                      |                                       |          |     |             |         |       |      |                                       |           |     |
| •            |                                                                                      |                                       |          |     | <del></del> |         |       |      |                                       |           |     |
|              |                                                                                      | <u> </u>                              |          |     |             | <u></u> |       |      |                                       | ·         |     |
|              | ······································                                               | <u></u>                               |          |     |             | 57      | n –   | t    | Ð                                     |           |     |
| ·            |                                                                                      |                                       |          |     |             | CT(     | DRY   | Mu   | TUAL                                  |           | · . |
| <del>.</del> |                                                                                      |                                       |          |     | INSU        | RA      |       | Col  | MPANY                                 |           | j2  |

## REQUEST FOR ADDITIONAL INFORMATION REQUEST FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR IN-SERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

QUESTION

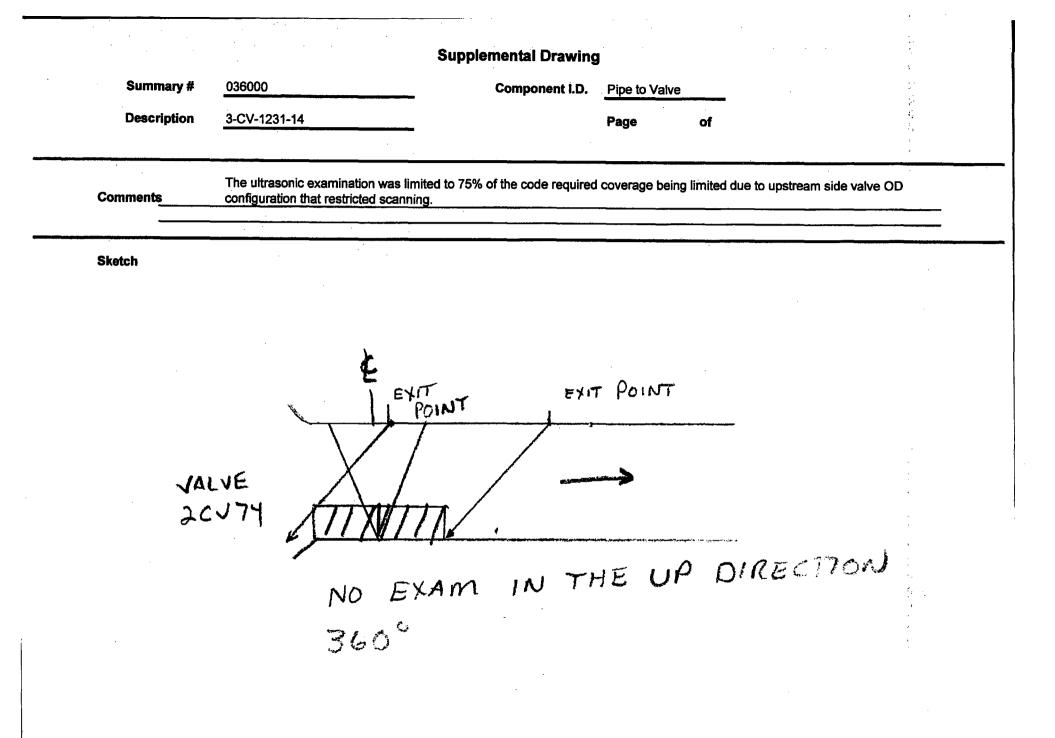
1.3 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

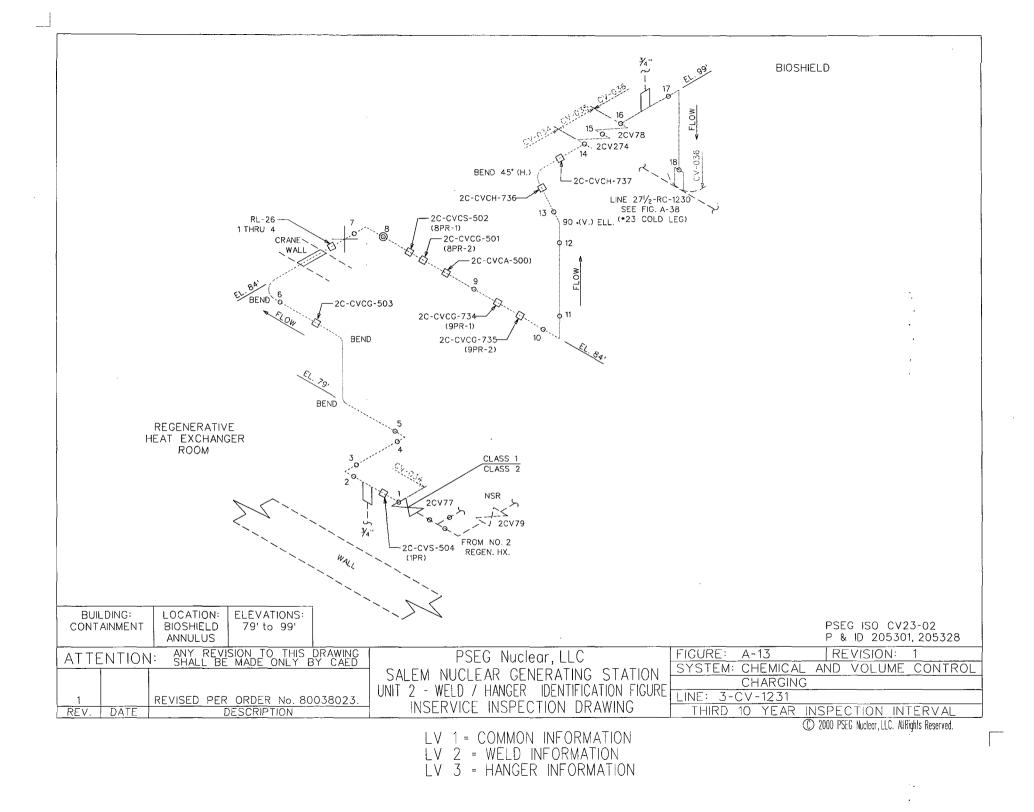
| Summary #      | 036000                           |                          |
|----------------|----------------------------------|--------------------------|
| Component I.D. | 3-CV-1231-14                     |                          |
| Description    | Pipe to Valve 2CV74              |                          |
|                |                                  | Comments                 |
| 1              | Weld X-Section                   | See Attached             |
| 2              | Material                         | Stainless Steel          |
| 3              | Thickness / weld Crown           | Unknown                  |
| 4              | Obstruction                      | OD contour on valve side |
| 5              | Exam Area Highlighted on Drawing | Yes X No                 |
| 6              | Transducer ray exit point        | See Attached             |

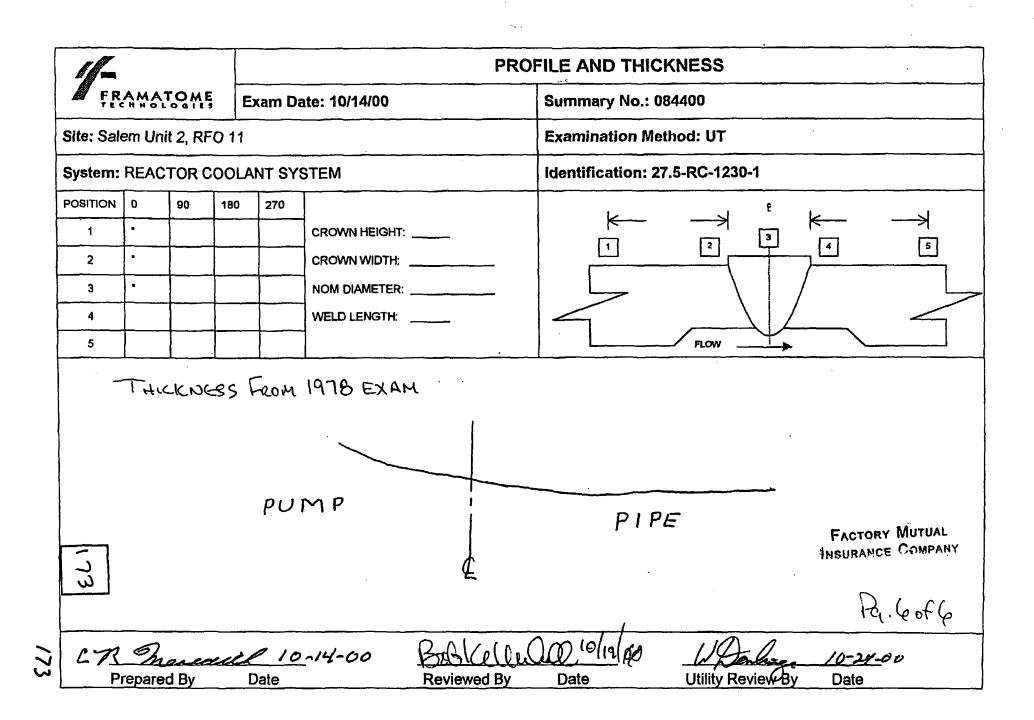
## Comments

UT exam was performed of this component using 45 degree shear wave transducer. The ultrasonic examination was limited to 75% of the code required coverage being limited due to upstream side valve OD configuration that restricted scanning. UT scans were performed on and across the weld in both directions No unacceptable indications were observed. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.

Page of







|      | FRAMATOME VOLUMET                                                | RIC PIPI         | IG E       | X/  | MINA       | ١T  |             | :0  | VERA                                  | ge repo | RT             |
|------|------------------------------------------------------------------|------------------|------------|-----|------------|-----|-------------|-----|---------------------------------------|---------|----------------|
| cus  | TOMER:<br>SALEM 2, RFO 11                                        | SYSTEM:<br>REACT | OR C       | 00  | LANT       | SY  | STEM        |     | · · · · · · · · · · · · · · · · · · · |         | <u>معنيدات</u> |
| SUM  | MARY NO:<br>084400                                               | COMPON<br>27.5-R |            |     | 1          |     |             |     |                                       |         |                |
|      | VOLUMETRIC PIPI                                                  | NG EXAM          | INA        | TIC | <u>DNS</u> |     |             |     |                                       |         |                |
| 1.0  | AXIAL ULTRASONIC EXAMINATIONS - Upstream                         | n (US) and       | Dow        | nst | ream       | (DS | 5)          |     |                                       |         |                |
|      | 1.1 Compute Required Exam Volume (#Angles X Height X Width X     |                  | 1          |     |            |     |             | x   | 86.40                                 | =199.07 | CL             |
|      | 1.2 Volume Not Examined with Ultrasonic Beam Directed US = A     | -                |            | x   |            | x   |             | x   |                                       | =104.14 | CL             |
|      | 1.3 Compute Upstream Limitation Percentage {(A / Vt1) X 100} = Z | -                |            |     |            |     |             |     | 52.31                                 | %       |                |
|      | 1.4 Volume Not Examined with Ultrasonic Beam Directed DS = B     | -                | 1          | x   | 0.80       | x   | 1.44        | x   | 86.40                                 | =99.53  | CL             |
|      | 1.5 Compute Downstream Limitation Percentage {(B / Vt1) X 100} - | = 72             |            |     | ·          |     |             |     | 50.000                                | )%      |                |
| 2.0  | CIRCUMFERENTIAL ULTRASONIC EXAMINATIO                            | NS (Clock        | vise       | and | l Coun     | ter | clock       | NIS | <u>;e)</u>                            |         |                |
|      | 2.1 Compute Required Exam Volume (#Angles X Height X Width X     | Length =V12)     | 1          | x   | 0.80       | x   | 2.88        | x   | 86.40                                 | =199.07 | CL             |
|      | 2.2 Compute Volume Not Examined in the Clockwise Direction = C   | -                | 1          | x   | 0.80       | x   | 1.44        | x   | 86.40                                 | =99.53  | CL             |
|      | 2.3 Compute Clockwise Limitation Percentage (C / Vt2) X 100 = Z3 | -                |            | -   |            |     |             | _   | 50.00                                 | ~%      |                |
|      | 2.4 Compute Volume Not Examined in the Counter CW Direction =    | D -              | 1          | x   | 0.80       | x   | 1.44        | x   | 86.40                                 | =99.53  | cu             |
|      | 2.5 Compute Counter CW Limitation Percentage (D / Vt2) X 100 =   | <b>-</b><br>Z4   |            |     |            |     |             |     | 50.00                                 | %       |                |
| 3.0  | TOTAL EXAMINATION COVERAGE OBTAINED                              |                  |            |     |            |     |             |     |                                       |         |                |
|      | 3.1 Compute Total Limitation Percentage Z1+Z2+                   | Z3+Z4/4 = I      | -          |     |            |     |             |     | 50.58                                 | %       |                |
|      | 3.2 Compute Total Coverage (100 - L)                             |                  |            |     |            | _   |             |     | 49.42                                 | %       |                |
|      | LIMITATION EXPLAN                                                | NATION / R       | <u>EMA</u> | RK  | <u>5</u>   |     |             |     |                                       |         |                |
|      | 1.2: VOLUME LIMITED DUE TO BRANCH CONNEC                         | TION             | <u> </u>   |     | ·          |     |             |     |                                       |         |                |
|      | 1 * 0.8 * 1.44 * 4 = 4.61                                        |                  |            |     |            |     |             |     |                                       |         |                |
|      | VOLUME LIMITED ON FAR SIDE OF WELD                               |                  |            |     |            |     | <del></del> |     | ·····                                 |         |                |
| _    | 1 * 0.8 * 1.44 * 86.4 = 99.53                                    |                  |            |     |            |     |             |     |                                       |         |                |
| _    | · · · · · · · · · · · · · · · · · · ·                            | ·                |            |     |            |     |             |     |                                       |         |                |
|      |                                                                  |                  |            |     |            |     |             |     |                                       |         |                |
| REPA | RED BY: Marte: 10/14/2K                                          | REVIEWER:        | Jer        | Ka  |            | ITE | (D) age     | 1   | j. of                                 | 6 170   | ŧ              |

## REQUEST FOR ADDITIONAL INFORMATION REQUEST FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR IN-SERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

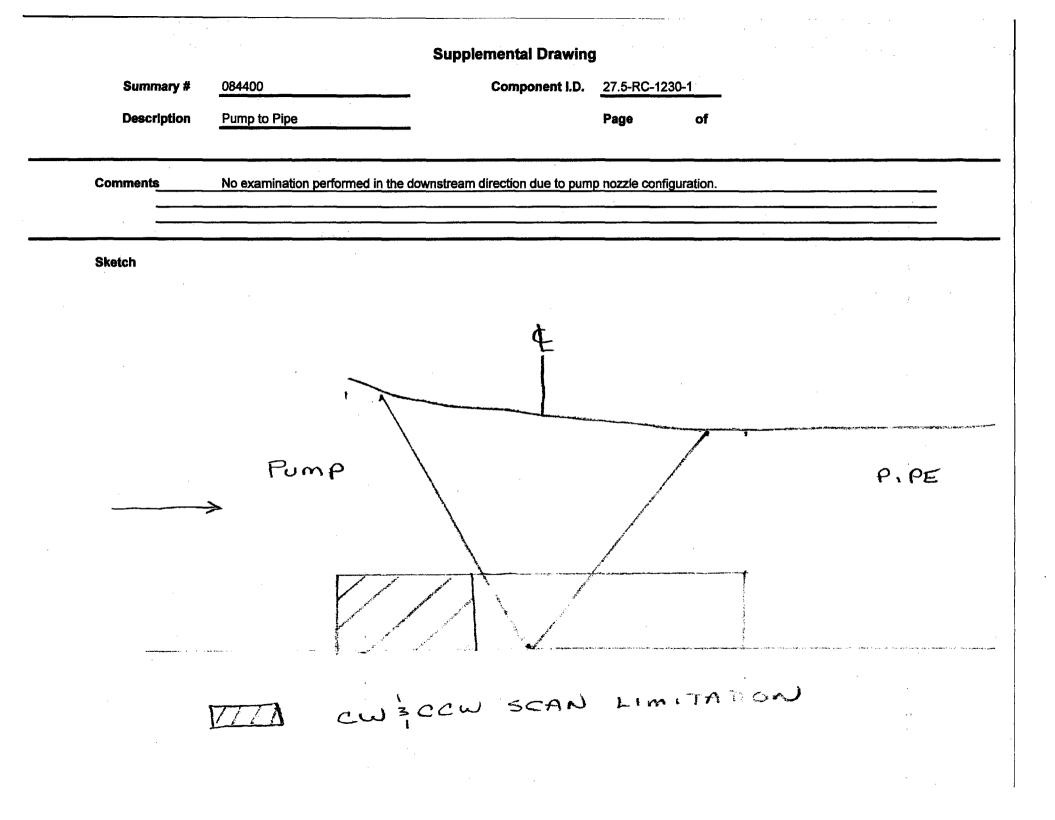
QUESTION 1.3 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

| Summary #      | 084400                           |                                    |
|----------------|----------------------------------|------------------------------------|
| Component I.D. | 27.5-RC-1230-1                   |                                    |
| Description    | Pump to Pipe                     |                                    |
|                |                                  | Comments                           |
| 1              | Weid X-Section                   | See Attached                       |
| 2              | Material                         | Stainless Steel                    |
| 3              | Thickness / weld Crown           | Thickness 2.4" / Weld Crown 2 3/8" |
| 4              | Obstruction                      | Pump OD contour                    |
| 5              | Exam Area Highlighted on Drawing | Yes X No                           |
| 6              | Transducer ray exit point        | Not Available                      |

## Comments

Ut exam was performed of this component using 45 and 60 degree shear wave transducer. The ultrasonic examination completed was limited to 49% of the code required coverage being achieved due to the OD configuration of the pump nozzle and the presence of a branch connection located downstream between 101" to 3" that restricted scanning. There were no unacceptable indications observed. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.

Page of





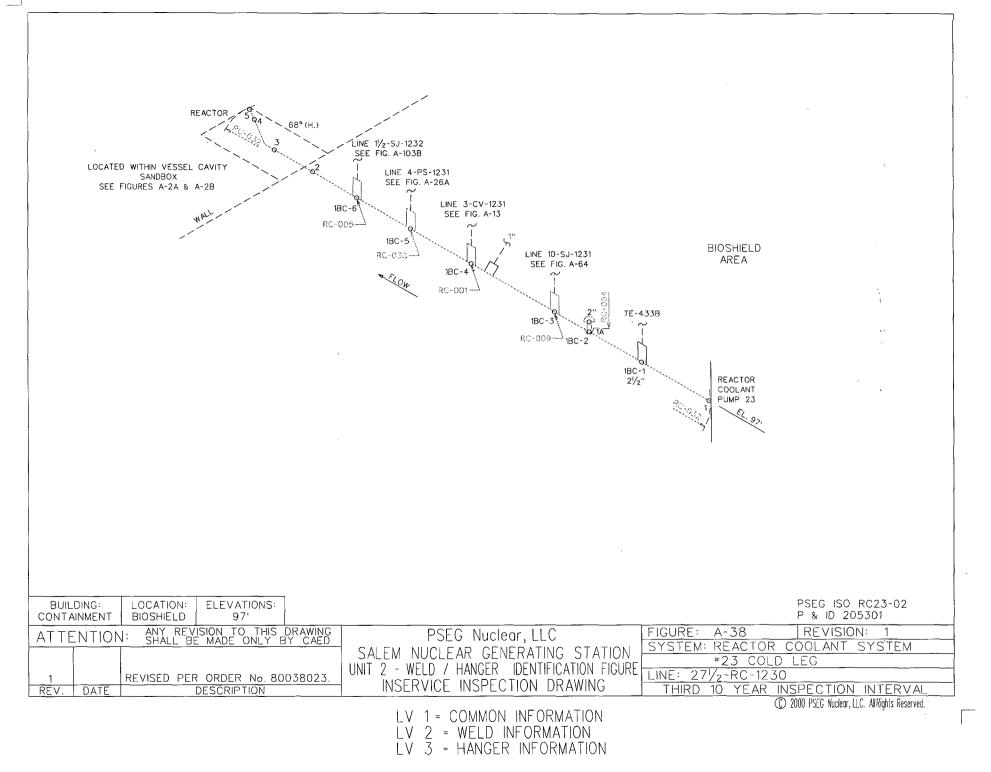


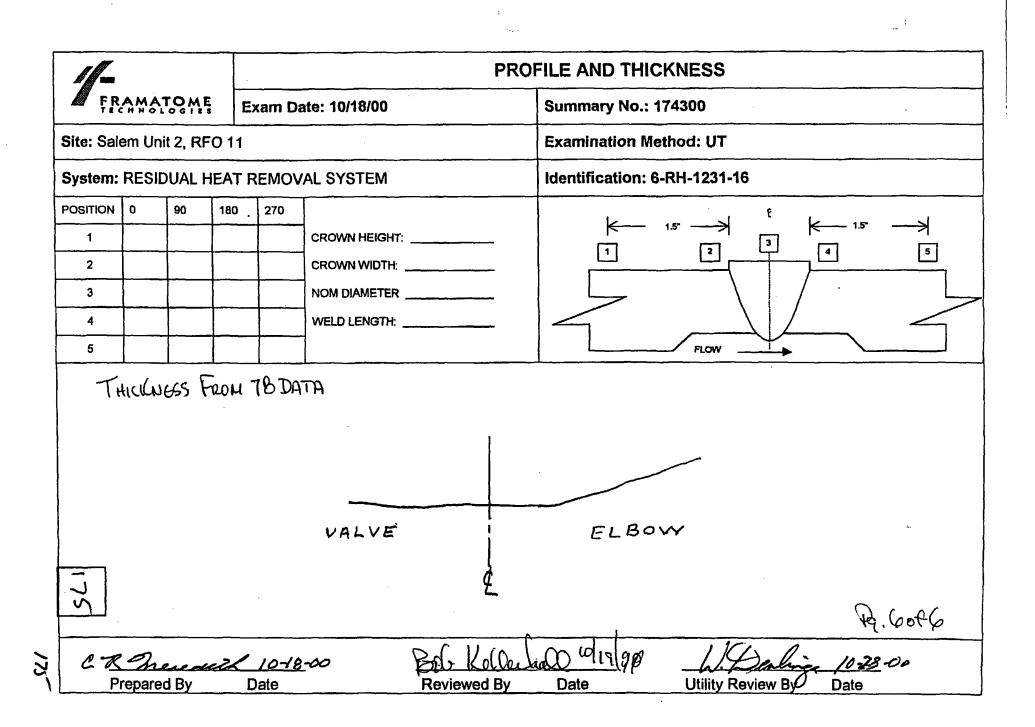
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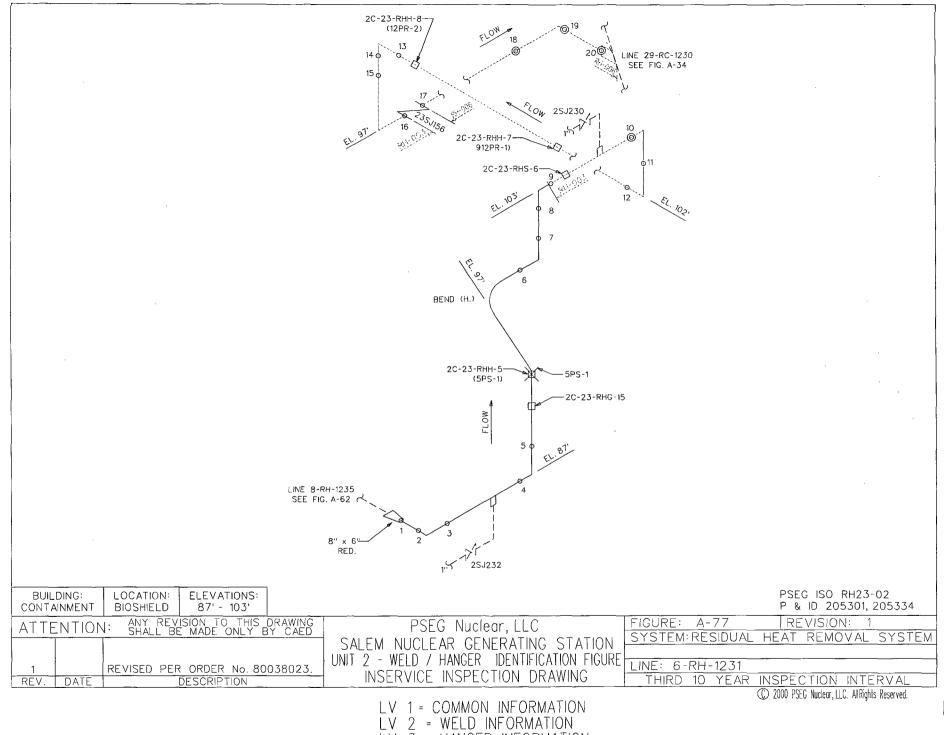


| PRO  | JECT    | No.                |        | 17     | -3052    |                          | SITE    | J01          | em Ger<br>tion, U | neratin<br>nit 2 | 9     |                  | D        |                 | NAY -<br>JUI |       |        | SHEE            | + (24 - HR.<br>T STARTED<br>ET ENDED | 1512             |                | T No.      | 1809     | 9        |
|------|---------|--------------------|--------|--------|----------|--------------------------|---------|--------------|-------------------|------------------|-------|------------------|----------|-----------------|--------------|-------|--------|-----------------|--------------------------------------|------------------|----------------|------------|----------|----------|
| ÊXA  | MINAT   | ION AR             | EA:( s | STEM / | COMPON   | ENT )                    | (LINE   | /SUB         | ASSEM             | BLY)             |       |                  |          | DENTI           | FICATI       | ON)   |        |                 | LOCATION                             |                  | W, L           | OCATION    |          |          |
| Ĺ    | ZA      | TOR                | C      | anth   | NT       |                          | 27.     | 5 -          | ec-               | 12               | .30   |                  |          | - 1             | ,            |       |        |                 | 1                                    |                  | Ę              | OF W       | ELD      |          |
|      |         |                    |        |        | <u> </u> |                          | SNT     | LEVEI        | -                 |                  | PROC  | EDURE            |          | ALIBRA<br>SHEET |              | ME    | ASURE  | D               | CROWN HE                             | IGHT ATTE        | NUATION        | WELD 1     | YPE (-FL | O۷       |
| Þ    | 2.C.    | <br>R:             | AIN    | E5     |          |                          | Ī       | רק<br>       |                   |                  | No. 6 | 00-3             |          | SHEE            | (3)          |       | E I    |                 | 1/8"                                 |                  | DOWN           | Nozz       | LE-PIA   | 'E       |
| EXA  | MINE    | R:                 |        |        |          |                          | SNT     |              |                   |                  |       |                  |          |                 |              | *     |        | 4               | CROWN W                              | NA               | 7dB            | WELD L     | ENGTH    |          |
| J    | .ρ.     | M                  | ELE.   | NDE    | =2       |                          | I       | LT           | ٥                 |                  | REV 2 | 7                | Z        | 2501            | 90           |       | 2.45   |                 | 23/8                                 | 1                |                | 10         | 2″       |          |
| IND  | %       | IND                |        |        | ION      | 1                        |         | POSI         | TION              |                  |       | POSIT            | ION      |                 |              | POSI  | FION 2 | 2               | SEARCH                               | REMARKS          |                |            |          |          |
| Na   | OF      | IND<br>AMP<br>F.S. | LI     | WI     | W2       | MP                       | L       | WI           | W2                | MP               | L     | WI               | W2       | MP              | LZ           | WI    | W2     | MP              | LOCATION                             |                  |                |            |          | ľ        |
|      |         |                    |        |        | No       |                          | RE      | con          | eD A              | BL               | E     | Z                | UD       | ICA             | T10          | NS    |        |                 | d N                                  |                  |                |            | (        | F        |
|      |         |                    |        |        |          |                          |         |              |                   |                  |       |                  |          |                 |              |       |        |                 |                                      |                  |                |            |          | Γ        |
|      |         |                    |        |        |          |                          | 1       |              |                   |                  |       |                  |          |                 |              |       |        |                 |                                      |                  |                |            |          | T        |
|      |         |                    |        |        |          |                          |         |              |                   |                  |       |                  |          |                 |              |       |        |                 |                                      |                  |                | <u> </u>   |          | ╀        |
|      |         |                    |        |        |          | L                        |         |              |                   |                  |       |                  |          |                 |              |       |        |                 |                                      |                  |                | — <u> </u> |          | T        |
|      | <b></b> |                    |        |        |          |                          |         |              |                   |                  |       |                  |          |                 |              |       |        |                 |                                      |                  |                | `\         |          | T        |
|      |         |                    |        |        |          |                          |         |              |                   |                  |       |                  |          |                 |              |       |        |                 |                                      | 40.              |                |            |          | T        |
|      |         |                    |        |        |          |                          |         | · · ·        |                   |                  |       |                  |          |                 |              |       |        |                 |                                      | No. 1            |                | -+-        |          | Ţ        |
| REM/ | ARKS    | *                  | N      | o 7    | hick     | NE                       | 55 /    | MEA          | SUR               | em.              | ENT   | UP               | da       | ie              | to           | No    | 226    | e _(            | F9V                                  | Ť                | 3              | ·          |          | <b>.</b> |
|      |         |                    |        |        |          |                          |         |              |                   |                  |       |                  |          |                 |              |       |        |                 |                                      | a                |                |            |          |          |
| EVA  | UNAT    |                    | DEA    | MIT    | TION     |                          | NONE    | <u> 60 6</u> | TATE              | <u>.</u>         |       |                  |          |                 |              |       | Eh     | <u>الم يحتو</u> | N Ja-                                | -T               |                | Ra         | ANCH COL |          |
|      |         |                    |        |        |          |                          |         | •            |                   |                  |       | A 1 <i>F</i> 1 C | -110     | ATIO            | U. 4         | Limit | EN E   | EXAN            | NATIO                                | N du Fi          | om l           |            |          |          |
| REV  | IEWED   | BY:                |        |        | <u> </u> | $\overline{\mathcal{D}}$ | <u></u> | 1/           | 7                 | 1                |       |                  | <u>s</u> | NT LE           | VEL          |       | - 2 -  |                 | DATE                                 | n dr Ff<br>ac 74 | <del>~~~</del> |            |          |          |
|      |         |                    |        |        |          | $\boldsymbol{\nu}$ .     | 1/1     | / / L        |                   |                  |       |                  |          |                 |              |       |        | 1               | 7 a/ L                               | .711             | 1              |            | 0        |          |





|                                                                                                                | RY NO:<br>174300         VOLUMETRIC PIPIN         AXIAL ULTRASONIC EXAMINATIONS - Upstream         1       Compute Required Exam Volume (#Angles X Height X Width X         2       Volume Not Examined with Ultrasonic Beam Directed US = A         3       Compute Upstream Limitation Percentage {(A / Vt1) X 100} = Z1         4       Volume Not Examined with Ultrasonic Beam Directed DS = B         5       Compute Downstream Limitation Percentage {(B / Vt1) X 100} =         21       Compute Downstream Limitation Percentage {(B / Vt1) X 100} =         21       Compute Required Exam Volume (#Angles X Height X Width X         22       Compute Required Exam Volume (#Angles X Height X Width X         22       Compute Volume Not Examined in the Clockwise Direction = C         33       Compute Clockwise Limitation Percentage (C / Vt2) X 100 = Z3         44       Compute Volume Not Examined in the Counter CW Direction = I         45       Compute Counter CW Limitation Percentage (D / Vt2) X 100 = Z3 | <u>(US) and</u><br>Length =Vt1)<br><br><br><br><br><br><br><br><br><br><br><br><br> | 231- <sup>1</sup><br>INA<br>Dow<br>1<br>1   | 16<br>TIC<br>x<br>x<br>x<br>and<br>x | 0.33<br>0.33<br>0.33<br>0.33   | x<br>x<br>x    | 1.75<br>0.88<br>0.88<br><u>clock</u><br>1.75 | x<br>x<br>wiii | 21.50<br>50.29<br>21.50<br>50.286                          | %<br>=6.24<br>5%<br>=12.42<br>=6.24          |                |
|----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------|--------------------------------------|--------------------------------|----------------|----------------------------------------------|----------------|------------------------------------------------------------|----------------------------------------------|----------------|
|                                                                                                                | AXIAL ULTRASONIC EXAMINATIONS - Upstream<br>1 Compute Required Exam Volume (#Angles X Height X Width X<br>2 Volume Not Examined with Ultrasonic Beam Directed US = A<br>3 Compute Upstream Limitation Percentage {(A / Vt1) X 100} = Z1<br>4 Volume Not Examined with Ultrasonic Beam Directed DS = B<br>5 Compute Downstream Limitation Percentage {(B / Vt1) X 100} =<br>2 CIRCUMFERENTIAL ULTRASONIC EXAMINATION<br>2 Compute Required Exam Volume (#Angles X Height X Width X<br>2 Compute Required Exam Volume (#Angles X Height X Width X<br>2 Compute Volume Not Examined in the Clockwise Direction = C<br>3 Compute Clockwise Limitation Percentage (C / Vt2) X 100 = Z3<br>4 Compute Volume Not Examined in the Counter CW Direction = I                                                                                                                                                                                                                                                                                       | <u>(US) and</u><br>Length =Vt1)<br><br><br><br><br><br><br><br><br><br><br><br><br> | Dow<br>1<br>1<br>1<br>1<br>vise :<br>1<br>1 | x<br>x<br>x<br>and<br>x              | 0.33<br>0.33<br>0.33<br>0.33   | x<br>x<br>x    | 1.75<br>0.88<br>0.88<br><u>clock</u><br>1.75 | x<br>x<br>wiii | 21.50<br>50.29<br>21.50<br>50.286<br>se)<br>21.50<br>21.50 | =6.24<br>%<br>=6.24<br>5%<br>=12.42<br>=6.24 | сі<br>сі<br>сі |
|                                                                                                                | <ul> <li>1 Compute Required Exam Volume (#Angles X Height X Width X</li> <li>2 Volume Not Examined with Ultrasonic Beam Directed US = A</li> <li>3 Compute Upstream Limitation Percentage {(A / Vt1) X 100} = Z1</li> <li>4 Volume Not Examined with Ultrasonic Beam Directed DS = B</li> <li>5 Compute Downstream Limitation Percentage {(B / Vt1) X 100} =</li> <li>2 CIRCUMFERENTIAL ULTRASONIC EXAMINATION</li> <li>2 Compute Required Exam Volume (#Angles X Height X Width X</li> <li>2 Compute Volume Not Examined in the Clockwise Direction = C</li> <li>3 Compute Volume Not Examined in the Counter CW Direction = I</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                               | Length = Vt1)<br>                                                                   | 1<br>1<br>1<br>vise .<br>1<br>1             | x<br>x<br>and<br>x                   | 0.33<br>0.33<br>0.33<br>0.33   | x<br>x<br>x    | 1.75<br>0.88<br>0.88<br><u>clock</u><br>1.75 | x<br>x<br>wiii | 21.50<br>50.29<br>21.50<br>50.286<br>se)<br>21.50<br>21.50 | =6.24<br>%<br>=6.24<br>5%<br>=12.42<br>=6.24 | CI             |
|                                                                                                                | <ul> <li>2 Volume Not Examined with Ultrasonic Beam Directed US = A</li> <li>3 Compute Upstream Limitation Percentage {(A / Vt1) X 100} = Z1</li> <li>4 Volume Not Examined with Ultrasonic Beam Directed DS = B</li> <li>5 Compute Downstream Limitation Percentage {(B / Vt1) X 100} =</li> <li>2 CIRCUMFERENTIAL ULTRASONIC EXAMINATION</li> <li>2 Compute Required Exam Volume (#Angles X Height X Width X</li> <li>2 Compute Volume Not Examined in the Clockwise Direction = C</li> <li>3 Compute Clockwise Limitation Percentage (C / Vt2) X 100 = Z3</li> <li>4 Compute Volume Not Examined in the Counter CW Direction = I</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                     | 1<br>vise<br>1<br>1                         | x<br>x<br>and<br>x                   | 0.33<br>0.33<br>I Coun<br>0.33 | x<br>x<br>nter | 0.88<br>0.88<br><u>rclock</u><br>1.75        | x<br>x<br>wiii | 21.50<br>50.29<br>21.50<br>50.286<br>se)<br>21.50<br>21.50 | =6.24<br>%<br>=6.24<br>5%<br>=12.42<br>=6.24 | сі<br>сі<br>сі |
|                                                                                                                | .3 Compute Upstream Limitation Percentage {(A / Vt1) X 100} = Z1<br>.4 Volume Not Examined with Ultrasonic Beam Directed DS = B<br>.5 Compute Downstream Limitation Percentage {(B / Vt1) X 100} =<br><u>CIRCUMFERENTIAL ULTRASONIC EXAMINATION</u><br>.1 Compute Required Exam Volume (#Angles X Height X Width X<br>.2 Compute Volume Not Examined in the Clockwise Direction = C<br>.3 Compute Clockwise Limitation Percentage (C / Vt2) X 100 = Z3<br>.4 Compute Volume Not Examined in the Counter CW Direction = I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                     | 1<br>vise<br>1<br>1                         | x<br>and<br>x                        | 0.33<br>I Coun<br>0.33         | x<br>nter      | 0.88<br><u>clock</u><br>1.75                 | x<br>wis       | 50.29<br>21.50<br>50.286<br><u>se)</u><br>21.50<br>21.50   | %<br>=6.24<br>5%<br>=12.42<br>=6.24          | CI             |
|                                                                                                                | 4 Volume Not Examined with Ultrasonic Beam Directed DS = B<br>5 Compute Downstream Limitation Percentage {(B / Vt1) X 100} =<br><u>CIRCUMFERENTIAL ULTRASONIC EXAMINATION</u><br>1 Compute Required Exam Volume (#Angles X Height X Width X<br>2 Compute Volume Not Examined in the Clockwise Direction = C<br>3 Compute Clockwise Limitation Percentage (C / Vt2) X 100 = Z3<br>4 Compute Volume Not Examined in the Counter CW Direction = I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                     | <u>vise</u><br>1<br>1                       | and<br>x                             | I Coun<br>0.33                 | nter<br>x      | rclock<br>1.75                               | wi:            | 21.50<br>50.286<br>se)<br>21.50<br>21.50                   | =6.24<br>5%<br>=12.42<br>=6.24               | c              |
| 1<br>0 <u>(</u><br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2 | .5 Compute Downstream Limitation Percentage {(B / Vt1) X 100} =<br><u>CIRCUMFERENTIAL ULTRASONIC EXAMINATION</u><br>21 Compute Required Exam Volume (#Angles X Height X Width X<br>22 Compute Volume Not Examined in the Clockwise Direction = C<br>33 Compute Clockwise Limitation Percentage (C / Vt2) X 100 = Z3<br>44 Compute Volume Not Examined in the Counter CW Direction = I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <u>VS (Clockv</u><br>Length =Vt2)<br>                                               | <u>vise</u><br>1<br>1                       | and<br>x                             | I Coun<br>0.33                 | nter<br>x      | rclock<br>1.75                               | wi:            | 50.286<br>se)<br>21.50<br>21.50                            | =12.42<br>=6.24                              | c              |
| 0 <u>(</u><br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>1                                                             | CIRCUMFERENTIAL ULTRASONIC EXAMINATION<br>2.1 Compute Required Exam Volume (#Angles X Height X Width X<br>2.2 Compute Volume Not Examined in the Clockwise Direction = C<br>3.3 Compute Clockwise Limitation Percentage (C / Vi2) X 100 = Z3<br>4.4 Compute Volume Not Examined in the Counter CW Direction = 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <u>VS (Clockv</u><br>Length =Vt2)<br>                                               | 1                                           | x                                    | 0.33                           | x              | 1.75                                         | x              | <u>se)</u><br>21.50<br>21.50                               | =12.42<br>=6.24                              | ÷              |
| 2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2                    | <ul> <li>2.1 Compute Required Exam Volume (#Angles X Height X Width X</li> <li>2.2 Compute Volume Not Examined in the Clockwise Direction = C</li> <li>3.3 Compute Clockwise Limitation Percentage (C / Vt2) X 100 = Z3</li> <li>4.4 Compute Volume Not Examined in the Counter CW Direction = I</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Length = Vt2)<br><br><br>D<br><br>D                                                 | 1                                           | x                                    | 0.33                           | x              | 1.75                                         | x              | 21.50<br>21.50                                             | =6.24                                        |                |
| 2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2                    | <ul> <li>2.1 Compute Required Exam Volume (#Angles X Height X Width X</li> <li>2.2 Compute Volume Not Examined in the Clockwise Direction = C</li> <li>3.3 Compute Clockwise Limitation Percentage (C / Vt2) X 100 = Z3</li> <li>4.4 Compute Volume Not Examined in the Counter CW Direction = I</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Length = Vt2)<br><br><br>D<br><br>D                                                 | 1                                           | x                                    | 0.33                           | x              | 1.75                                         | x              | 21.50<br>21.50                                             | =6.24                                        | ÷              |
| 2<br>2<br>2<br>2<br>2<br>2<br>0<br><b>]</b>                                                                    | 2.2 Compute Volume Not Examined in the Clockwise Direction = C<br>3.3 Compute Clockwise Limitation Percentage (C / Vi2) X 100 = Z3<br>4.4 Compute Volume Not Examined in the Counter CW Direction = I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                     |                                             |                                      |                                |                |                                              | _              | 21.50                                                      | =6.24                                        | ÷              |
| 2<br>2<br>2<br>) ]                                                                                             | 3 Compute Clockwise Limitation Percentage (C / Vt2) X 100 = Z3<br>4 Compute Volume Not Examined in the Counter CW Direction = I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                     |                                             | X                                    | 0.33                           | x              | 0.88                                         | x              |                                                            |                                              |                |
| 2<br>2<br>) <u>]</u>                                                                                           | 4 Compute Volume Not Examined in the Counter CW Direction = I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                     |                                             |                                      |                                |                |                                              |                | 60 20                                                      | ~/                                           |                |
| 2<br>) ]                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                     | 4                                           |                                      |                                |                |                                              |                | 00.29                                                      | <u>%</u>                                     |                |
| ) ]                                                                                                            | .5 Compute Counter CW Limitation Percentage (D / Vt2) X 100 = Z                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 4                                                                                   | 1                                           | X                                    | 0.33                           | x              | 0.88                                         | x              | 21.50                                                      | =6.24                                        | C              |
| -                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                     |                                             |                                      |                                |                |                                              |                | 50.29                                                      | %                                            |                |
| -                                                                                                              | OTAL EXAMINATION COVERAGE OBTAINED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                     |                                             |                                      |                                |                |                                              |                |                                                            |                                              |                |
| •                                                                                                              | 0.1 Compute Total Limitation Percentage Z1+Z2+Z                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 23+74/4 = 1                                                                         | _                                           |                                      |                                |                |                                              |                | 50.29                                                      |                                              |                |
| 2                                                                                                              | 2.2 Compute Total Coverage (100 - L)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                     | •                                           |                                      |                                | -              |                                              |                | 49.71                                                      |                                              |                |
| Ū                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                     |                                             |                                      |                                | -              |                                              |                | 40.71                                                      | //                                           |                |
| · .                                                                                                            | LIMITATION EXPLAN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ATION / R                                                                           | EMA                                         | RK                                   | <u>s</u>                       |                |                                              |                |                                                            |                                              |                |
| SIN                                                                                                            | GLE SIDED EXAMINATION (ELBOW TO VALVE).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                     |                                             |                                      |                                |                |                                              |                |                                                            |                                              |                |
|                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                     |                                             |                                      |                                |                |                                              |                |                                                            |                                              |                |
|                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                     |                                             |                                      |                                |                |                                              |                |                                                            |                                              |                |
|                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                     |                                             |                                      |                                |                |                                              |                |                                                            |                                              |                |
|                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                     |                                             |                                      |                                | _              |                                              |                |                                                            |                                              |                |
|                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                     |                                             |                                      |                                |                |                                              |                |                                                            |                                              |                |
|                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                     |                                             |                                      |                                |                |                                              |                |                                                            |                                              |                |
|                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                     |                                             |                                      |                                |                |                                              |                |                                                            |                                              |                |
|                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                     |                                             |                                      |                                |                |                                              |                |                                                            |                                              |                |
|                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                     |                                             |                                      |                                |                |                                              |                |                                                            |                                              |                |



LV 3 = HANGER INFORMATION

| <i>[</i> ]_        |                                          |             |           |        | PRO                                                                                                                           | FILE AND THICKNESS                                       |
|--------------------|------------------------------------------|-------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| FR FR              | AMA1                                     | TOME        | Ī         | Exam [ | Date: 10/14/00                                                                                                                | Summary No.: 275210                                      |
| Site: Sal          | em Uni                                   | it 2, RF    | 01        | 1      |                                                                                                                               | Examination Method: UT                                   |
| System:            | LETD                                     | DWN H       | EAT       | EXCH   | ANGER                                                                                                                         | Identification: 2-LHEX-1                                 |
| POSITION 1 2 3 4 5 | 0<br>0.54"<br>0.54"<br>N/A<br>N/A<br>N/A | 90          | 180       | 270    | CROWN HEIGHT: <u>TAPERED</u><br>CROWN WIDTH: <u>1.50°</u><br>NOM DIAMETER: <u>21.0°</u><br>WELD LENGTH: <u>68.1°</u><br>SHELL | $ \begin{array}{c}                                     $ |
|                    |                                          | Setter<br>U | Co<br>200 | MPANY  | Hzan Bob Velle<br>Reviewed By                                                                                                 | Date Utility Review By Date                              |

| JS         | TOMER:                           | SALEM 2, RFO-11                                                                                                                                                                               |                                                                                                                                                           | S                              | SYSTEM:<br>LETD                      | OWN H        | EAT      | EXCHA                                                      | NGERS                                                      |          |         |
|------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------------|--------------|----------|------------------------------------------------------------|------------------------------------------------------------|----------|---------|
| SUM        | MARY N                           | O:<br>275210                                                                                                                                                                                  |                                                                                                                                                           | c                              | OMPONENT                             |              | HEX      | X-1                                                        | <u>-</u>                                                   |          |         |
| 1.0        | CALC                             | ULATE REQUIRED E                                                                                                                                                                              |                                                                                                                                                           | E FOR STR                      | RAIGHT BEAN                          |              |          | LAWS                                                       |                                                            |          |         |
|            | 1.1                              | Exam Height X Exa                                                                                                                                                                             | ım Width X Exa                                                                                                                                            | am Length                      | = Exam                               | 0.54         | <u>х</u> | 1.70 <b>X</b>                                              | 68.10                                                      | = 62.52  | C1      |
| 2.0        | CALC                             | ULATE REQUIRED E                                                                                                                                                                              |                                                                                                                                                           | E FOR STR                      | RAIGHT BEAN                          |              | AR       |                                                            |                                                            |          |         |
|            | 2.1                              | Exam Height X Exa                                                                                                                                                                             | im Width X Exa                                                                                                                                            | am Length                      | = Exam                               | 0.54         | <b>x</b> | 1.70 <b>X</b>                                              | 68.10 :                                                    | = 62.52  | CL      |
| 3.0        | CALC                             | ULATE REQUIRED F                                                                                                                                                                              | ARALLEL EX                                                                                                                                                | <u>AM VOLUN</u>                | ME FOR 45° A                         | <u>ND</u>    |          |                                                            |                                                            |          |         |
|            | 3.1                              | Exam Height X Exa                                                                                                                                                                             | m Width X Exa                                                                                                                                             | am Length                      | = Exam                               | 0.54         | X        | 1.70 <b>X</b>                                              | 136.20 :                                                   | = 125.03 | сu      |
|            |                                  |                                                                                                                                                                                               |                                                                                                                                                           |                                |                                      |              |          |                                                            |                                                            |          |         |
| 1.0        | CALC                             | ULATE REQUIRED 1                                                                                                                                                                              | RANSVERSE                                                                                                                                                 | EXAM VOI                       | LUME FOR 45                          |              |          |                                                            |                                                            |          |         |
| <b>4.0</b> | <u>CALC</u><br>4.1               | ULATE REQUIRED 1<br>Exam Height X Exa                                                                                                                                                         |                                                                                                                                                           |                                |                                      |              |          | 1.70 X                                                     | 136.20 :                                                   | = 125.03 | сı      |
| :          | 4.1                              |                                                                                                                                                                                               | m Width X Exa                                                                                                                                             | am Length :                    | = Exam                               |              |          | 1.70 <b>X</b>                                              | 136.20 =                                                   | = 125.03 | cu      |
| 4.0<br>5.0 | 4.1                              | Exam Height X Exa                                                                                                                                                                             | m Width X Exa<br>EAM PLANAR                                                                                                                               | am Length :                    | = Exam                               |              |          | 1.70 X                                                     | 136.20 :                                                   | = 125.03 | cu      |
| :          | 4.1<br><u>CALC</u>               | Exam Height X Exa                                                                                                                                                                             | m Width X Exa<br>EAM PLANAR                                                                                                                               | em Length :<br>EXAM CO         | = Exam                               | 0.54         | x        | 1.70 X<br>Volumew<br>Exam Co                               | vith no                                                    | = 125.03 | CL      |
| :          | 4.1<br><u>CALC</u>               | Exam Height X Exa<br>ULATE STRAIGHT B<br>Limited above / CW<br>Height of                                                                                                                      | m Width X Exa<br><u>EAM PLANAR</u><br>exam volume<br>Width of<br>Obstructed                                                                               | em Length :<br>EXAM CO         | = Exam<br><u>VERAGE</u><br>Length of | 0.54         | x        | Volume w                                                   | <i>v</i> ith no<br>verage                                  | = 125.03 | CU      |
| :          | 4.1<br><u>CALC</u>               | Exam Height X Exa<br>ULATE STRAIGHT B<br>Limited above / CW<br>Height of<br>Obstructed Volume                                                                                                 | m Width X Exa<br>EAM PLANAR<br>exam volume<br>Width of<br>Obstructed<br>0.85                                                                              | am Length :<br>EXAM CO<br>Area | Exam                                 | 0.54         | x        | Volume w<br>Exam Co                                        | <i>v</i> ith no<br>verage                                  | = 125.03 | cu      |
| :          | 4.1<br><u>CALC</u><br>5.1        | Exam Height X Exa<br>ULATE STRAIGHT B<br>Limited above / CW<br>Height of<br>Obstructed Volume<br>0.54 X                                                                                       | m Width X Exa<br>EAM PLANAR<br>exam volume<br>Width of<br>Obstructed<br>0.85                                                                              | Area                           | Exam                                 | 0.54<br>     | x<br>    | Volume w<br>Exam Co                                        | vith no<br>verage<br>6                                     | = 125.03 | CL      |
| :          | 4.1<br><u>CALC</u><br>5.1        | Exam Height X Exa<br>ULATE STRAIGHT B<br>Limited above / CW<br>Height of<br>Obstructed Volume<br>X<br>Limited Below / CW<br>Height of                                                         | m Width X Exa<br>EAM PLANAR<br>exam volume<br>Width of<br>Obstructed<br>0.85<br>exam volume<br>Width of<br>Obstructed                                     | Area                           | Exam                                 | 0.54<br>     | X        | Volume w<br>Exam Co<br>31.2<br>Volume w                    | vith no<br>verage<br>6<br>vith no<br>verage                | = 125.03 | CL      |
| :          | 4.1<br><u>CALC</u><br>5.1        | Exam Height X Exa<br>ULATE STRAIGHT B<br>Limited above / CW<br>Height of<br>Obstructed Volume<br>X<br>Limited Below / CW<br>Height of<br>Obstructed Volume                                    | m Width X Exa<br>EAM PLANAR<br>exam volume<br>Width of<br>Obstructed<br>0.85<br>exam volume<br>Width of<br>Obstructed<br>0.35                             | Area                           | Exam                                 | O.54<br>Area | X        | Volume w<br>Exam Co<br>31.2<br>Volume w<br>Exam Co         | vith no<br>verage<br>6<br>vith no<br>verage<br>7           | = 125.03 | CL      |
| :          | 4.1<br><u>CALC</u><br>5.1        | Exam Height X Exa<br>ULATE STRAIGHT B<br>Limited above / CW<br>Height of<br>Obstructed Volume<br>X<br>Limited Below / CW<br>Height of<br>Obstructed Volume<br>X                               | m Width X Exa<br>EAM PLANAR<br>exam volume<br>Width of<br>Obstructed<br>0.85<br>exam volume<br>Width of<br>Obstructed<br>0.35                             | Area                           | Exam                                 | O.54<br>Area | X        | Volume w<br>Exam Co<br>31.2<br>Volume w<br>Exam Co<br>12.8 | vith no<br>verage<br>6<br>vith no<br>verage<br>7           | = 125.03 | CL      |
| :          | 4.1<br><u>CALC</u><br>5.1<br>5.2 | Exam Height X Exa<br>ULATE STRAIGHT B<br>Limited above / CW<br>Height of<br>Obstructed Volume<br>X<br>Limited Below / CW<br>Height of<br>Obstructed Volume<br>0.54 X<br>Total straight beam 1 | Im Width X Exa<br>EAM PLANAR<br>exam volume<br>Width of<br>Obstructed<br>0.85<br>exam volume<br>Width of<br>Obstructed<br>0.35<br>olanar exam volume<br>I | Area                           | Exam                                 | O.54<br>Area | X        | Volume w<br>Exam Co<br>31.2<br>Volume w<br>Exam Co<br>12.8 | vith no<br>verage<br>6<br>vith no<br>verage<br>7<br>3<br>2 | = 125.03 | сı<br>— |

| CALC                      | ULATE STRAIGHT BE                                                                                                                                                                         | AM LAMINAR EXAM C                                                                                                                                                                    | OVERAGE                                                                                      |       |                                                                                      |  |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-------|--------------------------------------------------------------------------------------|--|
| 6.1                       | Limited above / CW ex                                                                                                                                                                     | kam volume                                                                                                                                                                           |                                                                                              |       |                                                                                      |  |
|                           | Height of<br>Obstructed Volume                                                                                                                                                            | Width of<br>Obstructed Area                                                                                                                                                          | Length of<br>Obstructed Area                                                                 |       | Volume with no<br>Exam Coverage                                                      |  |
|                           | 0.54 X                                                                                                                                                                                    | <u>    1.70       X</u>                                                                                                                                                              | 68.10                                                                                        | =     | 62.52                                                                                |  |
| 6.2                       | Limited Below / CW ex                                                                                                                                                                     | cam volume                                                                                                                                                                           |                                                                                              |       |                                                                                      |  |
|                           | Height of<br>Obstructed Volume                                                                                                                                                            | Width of<br>Obstructed Area                                                                                                                                                          | Length of<br>Obstructed Area                                                                 |       | Volume with no<br>Exam Coverage                                                      |  |
|                           | 0.00 X                                                                                                                                                                                    | <u>    0.00                              </u>                                                                                                                                        | 0.00                                                                                         | =     | 0.00                                                                                 |  |
|                           | Total straight beam pla                                                                                                                                                                   | anar exam volume not                                                                                                                                                                 | examined                                                                                     | H     | 62.52                                                                                |  |
| 6.3                       | Percent Volume Exam                                                                                                                                                                       | ined                                                                                                                                                                                 |                                                                                              |       |                                                                                      |  |
|                           | Total 0° vol<br>w/No Cover                                                                                                                                                                |                                                                                                                                                                                      | ıme                                                                                          |       | Percent Volume<br>Examined                                                           |  |
|                           |                                                                                                                                                                                           | 4                                                                                                                                                                                    |                                                                                              |       |                                                                                      |  |
|                           | 100 - {[ 62.52                                                                                                                                                                            | /62.52                                                                                                                                                                               | x 100}                                                                                       | =     | 0.00 %                                                                               |  |
| CALC                      | · · · · · · · · · · · · · · · · · · ·                                                                                                                                                     |                                                                                                                                                                                      | ] x 100}                                                                                     | =     | 0.00 %                                                                               |  |
|                           | ULATE PARALLEL 45°                                                                                                                                                                        | EXAM COVERAGE                                                                                                                                                                        | ] x 100}                                                                                     | =     | 0.00 %                                                                               |  |
|                           | · · · · · · · · · · · · · · · · · · ·                                                                                                                                                     | EXAM COVERAGE                                                                                                                                                                        | ] x 100 }<br>Length of<br>Obstructed Area                                                    | =     | 0.00 %<br>Volume with no<br>Exam Coverage                                            |  |
|                           | ULATE PARALLEL 45°<br>Limited above / CW ex<br>Height of                                                                                                                                  | EXAM COVERAGE<br>cam volume<br>Width of                                                                                                                                              | Length of                                                                                    | -     | Volume with no                                                                       |  |
| <u>CALC</u><br>7.1<br>7.2 | EULATE PARALLEL 45°<br>Limited above / CW ex<br>Height of<br>Obstructed Volume                                                                                                            | EXAM COVERAGE<br>cam volume<br>Width of<br>Obstructed Area<br>0.85 <sup>44</sup> X                                                                                                   | Length of<br>Obstructed Area                                                                 | =     | Volume with no<br>Exam Coverage                                                      |  |
| 7.1                       | EULATE PARALLEL 45°<br>Limited above / CW ex<br>Height of<br>Obstructed Volume<br>0.54 X                                                                                                  | EXAM COVERAGE<br>cam volume<br>Width of<br>Obstructed Area<br>0.85 <sup>44</sup> X                                                                                                   | Length of<br>Obstructed Area                                                                 | =     | Volume with no<br>Exam Coverage                                                      |  |
| 7.1                       | EULATE PARALLEL 45°<br>Limited above / CW ex<br>Height of<br>Obstructed Volume<br>0.54 X<br>Limited Below / CCW ex<br>Height of                                                           | EXAM COVERAGE<br>cam volume<br>Width of<br>Obstructed Area<br>0.85 <sup>44</sup> X<br>exam volume<br>Width of                                                                        | Length of<br>Obstructed Area<br>68.10<br>Length of                                           |       | Volume with no<br>Exam Coverage<br>31.26<br>Volume with no                           |  |
| 7.1                       | EULATE PARALLEL 45°<br>Limited above / CW ex<br>Height of<br>Obstructed Volume<br>X<br>Limited Below / CCW ex<br>Height of<br>Obstructed Volume                                           | EXAM COVERAGE<br>cam volume<br>Width of<br>Obstructed Area<br>0.85 <sup></sup>                                                                                                       | Length of<br>Obstructed Area<br>68.10<br>Length of<br>Obstructed Area<br>68.10               | в в в | Volume with no<br>Exam Coverage<br>31.26<br>Volume with no<br>Exam Coverage          |  |
| 7.1                       | EULATE PARALLEL 45°<br>Limited above / CW ex<br>Height of<br>Obstructed Volume<br>X<br>Limited Below / CCW ex<br>Height of<br>Obstructed Volume<br>X                                      | EXAM COVERAGE<br>cam volume<br>Width of<br>Obstructed Area<br>0.85 <sup>47</sup> X<br>exam volume<br>Width of<br>Obstructed Area<br>0.35 X<br>o volume not examined                  | Length of<br>Obstructed Area<br>68.10<br>Length of<br>Obstructed Area<br>68.10               |       | Volume with no<br>Exam Coverage<br>31.26<br>Volume with no<br>Exam Coverage<br>12.87 |  |
| 7.1                       | EULATE PARALLEL 45°<br>Limited above / CW ex<br>Height of<br>Obstructed Volume<br>0.54 X<br>Limited Below / CCW ex<br>Height of<br>Obstructed Volume<br>0.54 X<br>Total 45° parallel exam | EXAM COVERAGE<br>cam volume<br>Width of<br>Obstructed Area<br>0.85 '' X<br>exam volume<br>Width of<br>Obstructed Area<br>0.35 X<br>volume not examined<br>ined<br>rallel Total 45° p | Length of<br>Obstructed Area<br><u>68.10</u><br>Length of<br>Obstructed Area<br><u>68.10</u> |       | Volume with no<br>Exam Coverage<br>31.26<br>Volume with no<br>Exam Coverage<br>12.87 |  |

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|       |      |                                |                                 |                              |     | FTI VESS_VOL.FRP 07/15/00 2                 |    |
|-------|------|--------------------------------|---------------------------------|------------------------------|-----|---------------------------------------------|----|
|       |      | RAMATOM<br>ECHNOLOGIES         | E VESSEL VOL                    |                              | MIN | ATION COVERAGE REPOR                        | ۲: |
| J 8.0 | CALC | ULATE PARALLEL 60° E           | XAM COVERAGE                    |                              |     |                                             |    |
|       | 8.1  | Limited above / CW exa         | m volume                        |                              |     | Above / CW exam                             |    |
|       |      | •                              | Width of<br>Obstructed Area     | Length of<br>Obstructed Area |     | Volume with no<br>Exam Coverage             |    |
|       |      | 0.54 X                         | 0.85 X                          | 68.10                        | =   | 31.26                                       |    |
|       | 8.2  | Limited Below / CCW ex         | am volume                       |                              |     | Below / CCW exam                            |    |
|       |      | -                              | Width of<br>Obstructed Area     | Length of<br>Obstructed Area |     | Volume with no<br>Exam Coverage             |    |
|       |      | X                              | 0.35 X                          | 68.10                        | =   | 12.87                                       |    |
|       |      | Total 60° parallel exam        | volume not examined             |                              | =   | 44.13                                       |    |
|       | 8.3  | Percent Volume Examin          | ed                              |                              |     |                                             |    |
|       |      | Total 60° para<br>Vol w/No Cov |                                 |                              |     | Percent Volume<br>Examined                  |    |
|       |      | 100 - {[ 44.13                 | /125.03                         | _] × 100}                    | =   | <u>64.71</u> %                              |    |
| 9.0   | CALC | ULATE TRANSVERSE 45            | ° EXAM COVERAGE                 |                              |     |                                             |    |
|       | 9.1  | Limited Clockwise exam         | volume                          |                              |     |                                             |    |
|       |      | •                              | Width of Obstructed Area        | Length of<br>Obstructed Area |     | CW Exam<br>Volume with no<br>Exam Coverage  |    |
|       |      | 0.54 X                         | 1.70 X                          | 68.10                        | =   | 62.52                                       |    |
|       | 9.2  | Limited Below Counter cl       | lockwise exam volume            |                              | •   |                                             |    |
|       |      | •                              | Width of<br>Obstructed Area     | Length of<br>Obstructed Area |     | CCW Exam<br>Volume with no<br>Exam Coverage |    |
| ,     |      | X                              | 0.85 X                          | 68.10                        | =   | 31.26                                       |    |
|       |      | Total 45° transverse exa       | m volume not examine            | ed                           | =   | 93.77                                       |    |
|       | 9.3  | Percent Volume Examine         | bd                              |                              |     |                                             |    |
|       |      | Total 45° para                 | llel Total 45° pa<br>Exam Volum |                              |     | Percent Volume<br>Examined                  |    |
|       |      | 100 - {[ 93.77                 | / 125.03                        | _] x 100}                    | =   | <u>25.00 %</u> £80                          |    |
|       |      |                                |                                 |                              |     | 9/10                                        |    |

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2

FRAMATOME VESSEL VOLUMETRIC EXAMINATION COVERAGE REPORT

| 0.0 |       |                                |                                      |               |                              |       |                                             |                                 |
|-----|-------|--------------------------------|--------------------------------------|---------------|------------------------------|-------|---------------------------------------------|---------------------------------|
|     | LALU  | JLATE TRANSVER                 | SE 60° EXAM COVEI                    | RAGE          |                              |       |                                             |                                 |
|     | 10.1  | Limited Clockwise              | exam volume                          |               |                              |       | CW exam                                     |                                 |
|     |       | Height of<br>Obstructed Volume | Width of<br>Obstructed Area          | l             | Length of<br>Obstructed Area |       | Volume with no<br>Exam Coverage             |                                 |
|     |       | 0.54                           | X <u>1.70</u>                        | X             | 68.10                        | =     | 62.52                                       |                                 |
|     | 10.2  | Limited Counterclo             | ckwise exam volume                   |               |                              |       | 00111                                       |                                 |
|     |       | Height of<br>Obstructed Volume | Width of Obstructed Area             |               | Length of<br>Obstructed Area |       | CCW exam<br>Volume with no<br>Exam Coverage |                                 |
|     |       | 0.54                           | X 0.85                               | X             | 68.10                        | =     | 31.26                                       |                                 |
|     |       | Total straight beam            | planar exam volume                   | not ex        | kamined                      | =     | 93.77                                       |                                 |
|     | 10.3  | Percent Volume Ex              | amined                               |               |                              |       |                                             |                                 |
|     |       | Total 60<br>w/NoCov            | ° Trans Vol 🛛 Total<br>verage 🔅 Exam |               |                              |       | Percent Volume<br>Examined                  |                                 |
|     |       | <b>100 - {[</b> 93             | .77 / 12                             | 5.03          | ] x 100}                     | =     | 25.00 %                                     |                                 |
|     |       |                                |                                      |               |                              |       | •                                           |                                 |
| 0   | CALCI | JLATE PERCENT O                | F TOTAL VOLUME                       | EXAM          | INED                         |       |                                             |                                 |
|     | 11.1  | Sum of Exam Volu               | mes %                                |               |                              |       |                                             |                                 |
|     |       | Steps 5 Thur 10                | No. Of Exams (                       | (6)           |                              | mina  |                                             |                                 |
|     |       |                                |                                      |               | Cov                          | erage | •                                           |                                 |
|     |       | 208.82                         | / 5.00                               |               | =                            | 41.7  | 6%                                          | -                               |
| 1   | ۰     | - N DU C                       |                                      |               | 40                           |       |                                             |                                 |
| _   | AW    | ITZD BY FI                     | ANGE & NO                            | <del>EE</del> | EX POLLORIDO                 | _     |                                             |                                 |
|     |       |                                |                                      |               |                              |       |                                             |                                 |
| -   |       |                                |                                      |               | <u></u>                      |       |                                             |                                 |
| -   |       |                                |                                      |               |                              |       |                                             |                                 |
|     |       |                                |                                      |               |                              |       |                                             |                                 |
|     |       |                                |                                      |               |                              |       |                                             |                                 |
| -   |       |                                |                                      |               |                              |       |                                             |                                 |
| -   |       |                                |                                      |               |                              |       | 181                                         | 10/10                           |
|     |       | 191                            | Level: Date:<br>/0 -24-0             |               | Reviewer:                    |       | ( 8 (<br>Level:                             | 10(10)<br>Date:<br>$10 2r_0 01$ |

Ň Jum # 275310 & 275320 REGENERATIVE HEAT EXCHAIT: Componients 2-RHE 2 2 3 2.9" 5"+yp. PLATE HANDER CLAMP CIRCUMFERENCE = 29 1/2" 275320 275310 1.5" -> 1.5" LOJT BACKWAN HEKE 0.5"-≯┝ Hq. yoty ASSUMED WELD is LOCATED ADJACTED TO REGION WHERE 0000 0000 m lula m 5 BACKWALL HERE Prar 1 of 2

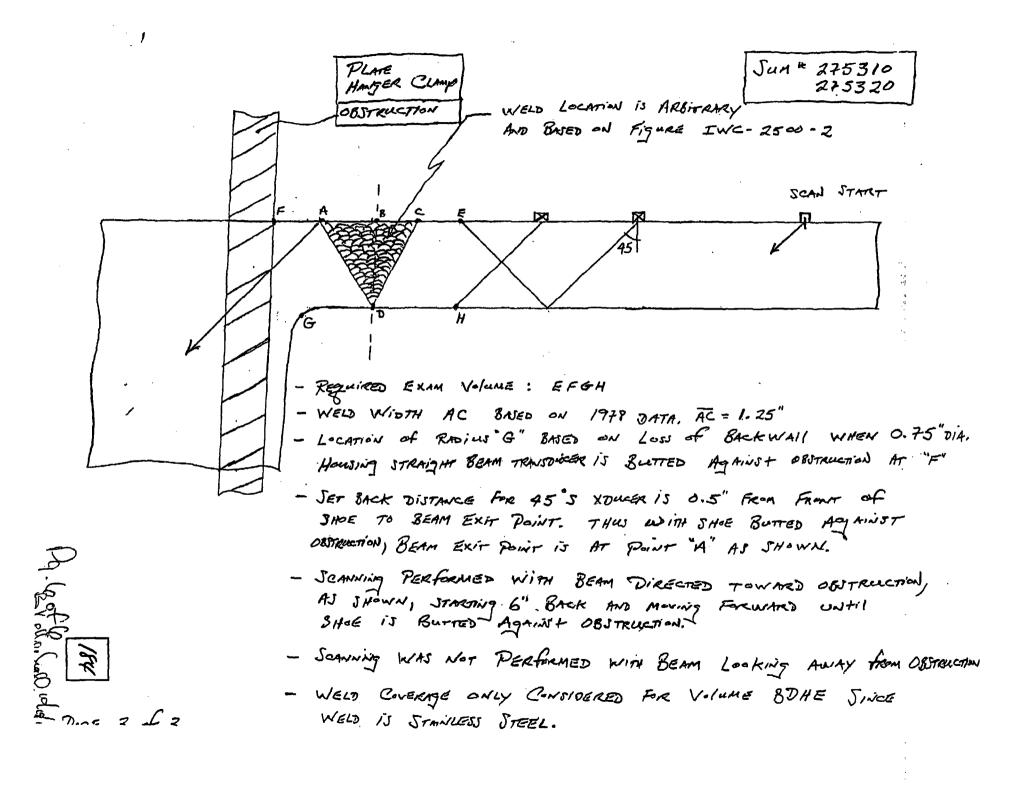
HANGER CLAMP 45 S 455 TUBESHEET REGION. Did Not Schw in THIS REGION SINCE HANGER CLAMP AND PLATE PREVENT HALF-VEE COVERAJE AND TUDESHEET PREVENTS Full-VEE AND 1/2 VEE COVERAGE.

Sum # 275310 & 275320 REGENERATIVE HEAT EXCHANGER Companients R-RHE 2:3

SCANNED ON THE OUTSIDE REGION OF THE HANGER CLAMP AND PLATE IN THE AXIA! AND CIRCUM FORENTIA! DIRECTIONS INDICATED. DID NOT JOAN IN THE 5 WCH REGION ADJACENT TO THE NOEELES, ANIA! OR CIRCUM FERENTIA! DIRECTION.

14 2 % ( m m m

Ques # of ?



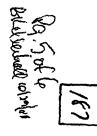
| 'CUS' | TOMER:<br>SALEM 2, RFO 11                               | REGIN                     |             | ГЕХСНА     | NG         | ER        |              |         |
|-------|---------------------------------------------------------|---------------------------|-------------|------------|------------|-----------|--------------|---------|
| SUM   | MARY NO:<br>275310                                      | COMPON<br>2-RHE-          |             | ID:        |            | <u> </u>  | ·····        |         |
|       | VOLUMETR                                                | IC PIPING EXAN            | MINA        | TIONS      |            |           |              |         |
| 1.0   | AXIAL ULTRASONIC EXAMINATIONS - I                       | Upstream (US)_and         | l Dow       | /nstream   | (D)        | <u>5)</u> |              |         |
|       | 1.1 Compute Required Exam Volume (#Angles X Heigh       | nt X Width X Length =Vt1) | 1           | × 0.96     | ; x        | 2.25      | × 29.50      | =63.7   |
|       | 1.2 Volume Not Examined with Ultrasonic Beam Director   | ed US = A                 |             | x          | x          |           | X            | =37.2   |
|       | 1.3 Compute Upstream Limitation Percentage {(A / Vt1)   | ) X 100} = Z1             |             |            |            |           | 58.47        | 7%      |
|       | 1.4 Volume Not Examined with Ultrasonic Beam Directed   | ed DS ≈ B                 | 1           | × 0.96     | X          | 1.13      | × 29.50      | ) =31.( |
|       | 1.5 Compute Downstream Limitation Percentage {(B / V    | /t1) X 100} = Z2          |             | -          |            |           | 50.00        | 0%      |
| 2.0   | CIRCUMFERENTIAL ULTRASONIC EXA                          | MINATIONS (Clock          | <u>wise</u> | and Cou    | <u>nte</u> | rclock    | <u>wise)</u> |         |
|       | 2.1 Compute Required Exam Volume (#Angles X Heigh       | nt X Width X Length =Vt2) | 1           | × 0.96     | ; x        | 2.25      | × 29.50      | =63.7   |
|       | 2.2 Compute Volume Not Examined In the Clockwise D      | irection = C              |             | x          | x          |           | x            | =37.2   |
|       | 2.3 Compute Clockwise Limitation Percentage (C / Vt2)   | X 100 = Z3                |             |            |            |           | 58.47        | 7%      |
|       | 2.4 Compute Volume Not Examined in the Counter CW       | Direction = D             |             | x          | x          |           | x            | =37.2   |
|       | 2.5 Compute Counter CW Limitation Percentage (D / M     | 2) X 100 = Z4             |             | _          |            |           | 58.47        | %       |
| 3.0   | TOTAL EXAMINATION COVERAGE OBT                          | AINED                     |             |            |            |           |              |         |
|       | 3.1 Compute Total Limitation Percentage                 | Z1+Z2+Z3+Z4/4 =           | L           |            |            |           | 56.3         | 6%      |
|       | 3.2 Compute Total Coverage (100 - L)                    |                           |             |            | -          |           | 43.6         | 4%      |
|       | LIMITATION                                              | EXPLANATION / F           | REMA        | <u>RKS</u> |            |           |              |         |
|       | $1.2: (1 \times 0.96 \times 1.125 \times 29.5 = 31.86)$ | + (1 x 0.96 x 1.1         | 25 x        | 5 = 5.4    | ) =        | 37.26     | 6            |         |
|       | 2.2 & 2.4 : ( 1 x 0.96 x 1.125 x 29.5 = 31              | 1.86)+(1×0.96             | x 1.        | 125 x 5    | = [        | 5.4) =    | 37.26        |         |
| _     | N THE ABOVE CALCULATIONS FOR STEPS                      |                           |             |            | -          |           |              |         |
|       | ADDRESSES THE HANGER CLAMP OBSTRU                       | JUTION, AND THE           | SECC        | JND SET    | AD         | DRESS     | ES THE       | NOZZLE  |
| _     | DBSTRUCTION.                                            |                           |             |            |            |           |              |         |
|       |                                                         | <u> </u>                  |             |            |            |           |              |         |
|       |                                                         |                           |             |            |            |           |              |         |

( : Sum # 275310 € 275320 REGENERATIVE HEAT EXCHANGEN CompoNENTS 2-RHE 2 23 2.9" 5 + YP. HANDER CLAMP PLATE CIRCUMFERENCE = 29 1/2" 275320 275310 1.5"-+1/4 LOST BACKWALL HEKE 0.5"-≯ ASSUMED WED is LOCATED ADJACTED TO REGION WHERES BACKWALL is LOST. LATELLAND IN IN 6000 0000 186 BACKWALL HERE Page 1 of 2

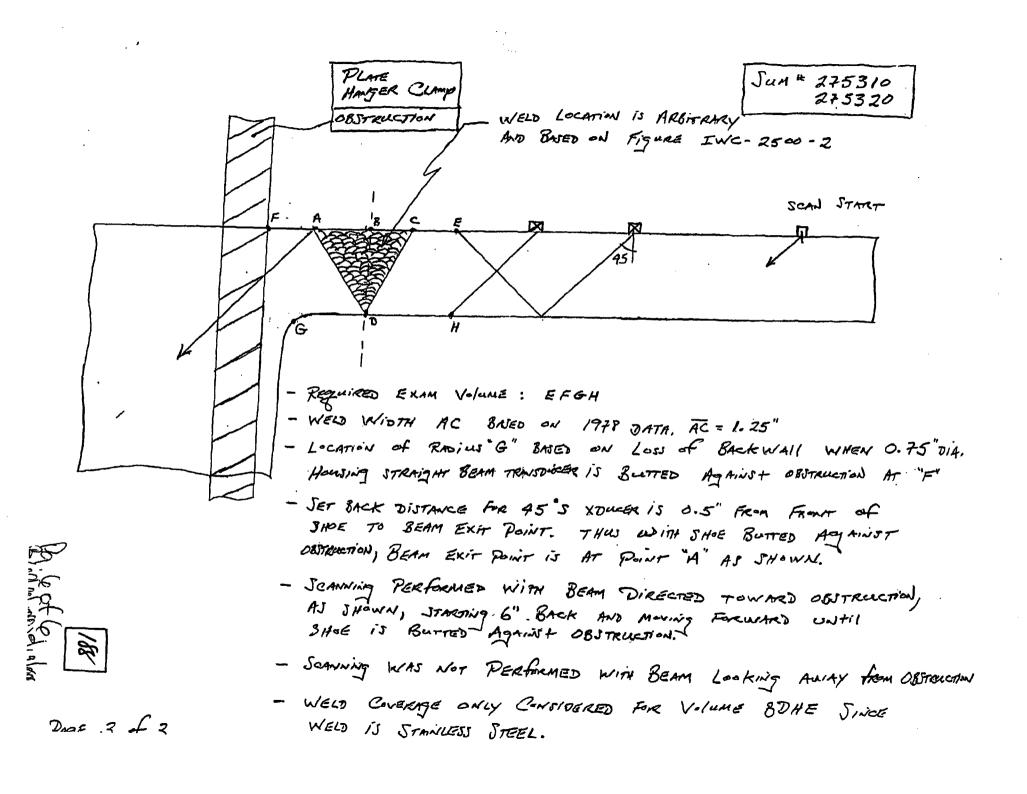
PLATE HANGER CLAMP 45 S 455 TUBESHEET REGION. Did NOT SCAN IN THIS REGION SINCE HANGER CLAMP AND PLATE PREVENT HALF. VEE COVERAJE AND TUBESHEET PREVENTS Full-VEE AND 1/2 VEE COVERAGE.

Jum # 275310 & 275320 REGENERATIVE HEAT EXCHANGER Companients R-RHE 2 = 3

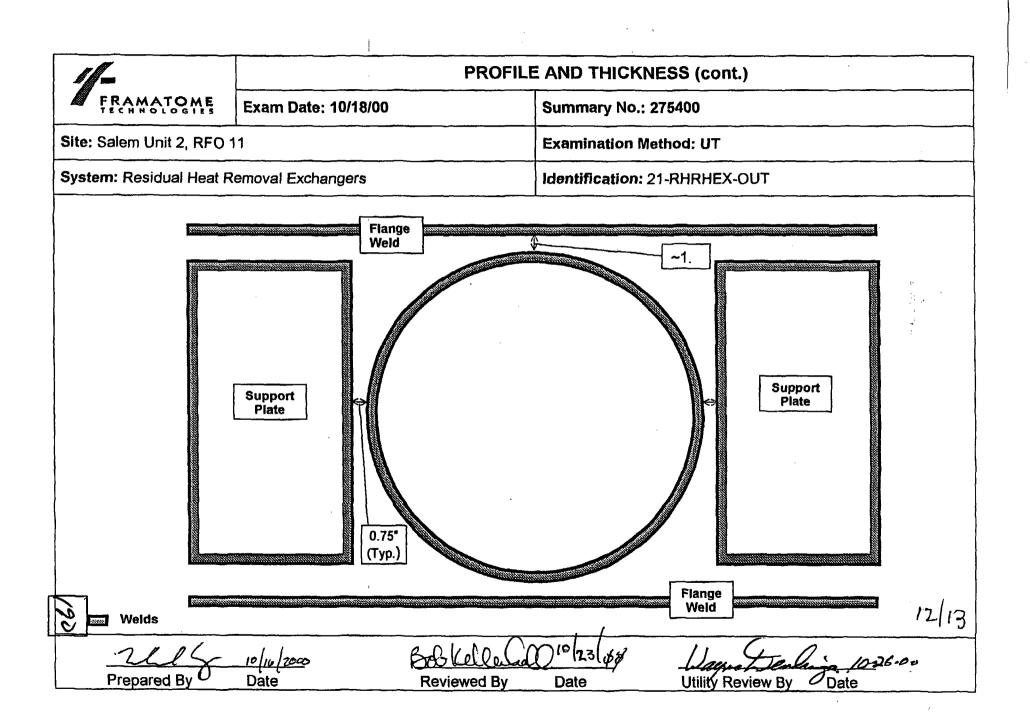
SCANNED ON THE OUTSIDE REGION OF THE HANGER CLAMP AND PLATE IN THE AXIA! AD CIRCUMFERENTIA! DIRECTIONS INDICATED. DID NOT SCAN IN THE 5 WCH REGION ADJACENT TO THE NOZE/ES, AXIA! OR CIRCUMFERENTIA! DIRECTION.

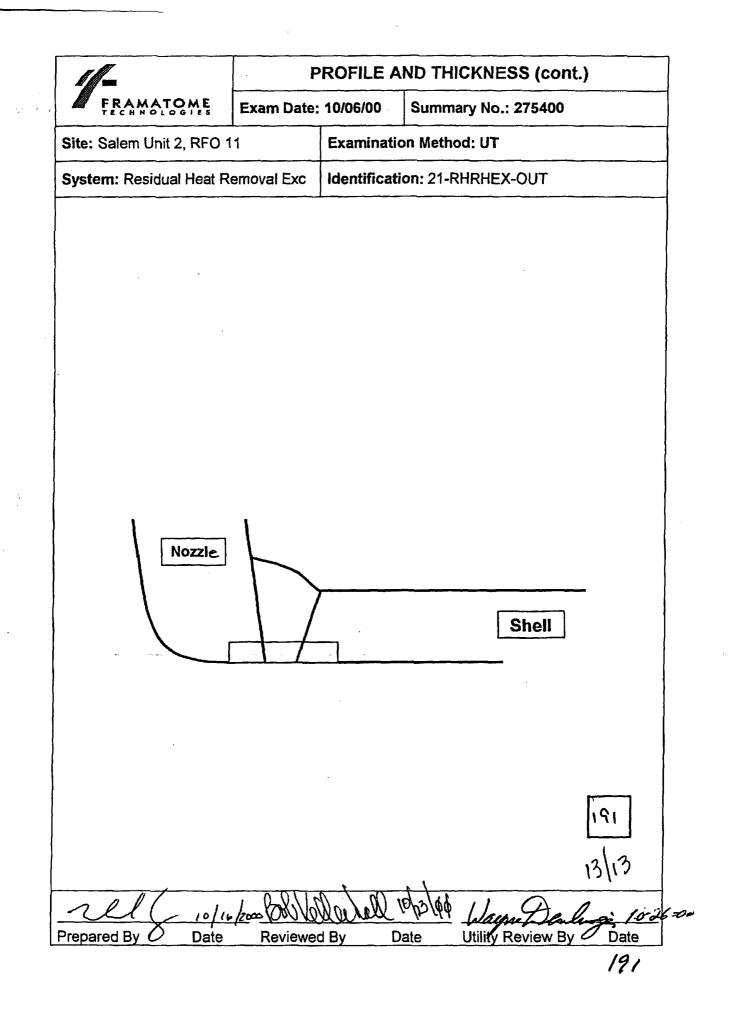


PARE 2 of 3



|            |                                                                  |                  |                 |          | •               |              |                 | 5   |
|------------|------------------------------------------------------------------|------------------|-----------------|----------|-----------------|--------------|-----------------|-----|
| CUS.       |                                                                  | SYSTEM:          |                 |          |                 | JOVERA       |                 | JRT |
| •          | SALEM 2, RFO 11                                                  | REGIN            | HEAT EX         | XCHAN    | IGER            |              |                 |     |
| SUM        | MARY NO:<br>275320                                               | COMPON<br>2-RHE- |                 |          |                 |              |                 |     |
|            |                                                                  | NG EXAN          | INATIO          | DNS      |                 |              |                 |     |
| 1.0        | AXIAL ULTRASONIC EXAMINATIONS - Upstream                         | n (US) and       | Downst          | tream (  | DS)             |              |                 |     |
|            | 1.1 Compute Required Exam Volume (#Angles X Height X Width X     | (Length =Vt1)    | 1 ×             | 0.96     | × 2.25          | × 29.50      | =63.72          | cu  |
| ÷          | 1.2 Volume Not Examined with Ultrasonic Beam Directed US = A     |                  | x               |          | x               | x            | =42.66          | cu  |
|            | 1.3 Compute Upstream Limitation Percentage {(A / Vt1) X 100} = Z | 1                |                 |          |                 | 66.9         | 5%              |     |
|            | 1.4 Volume Not Examined with Ultrasonic Beam Directed DS = B     |                  | X               |          | x               | x            | =42.66          | cu  |
|            | 1.5 Compute Downstream Limitation Percentage {(B / Vt1) X 100) = | = Z2             |                 |          |                 | 66.94        | 9%              |     |
| 2.0        | CIRCUMFERENTIAL ULTRASONIC EXAMINATIO                            | NS (Clock        | <u>wise and</u> | l Coun   | <u>terclock</u> | <u>wise)</u> |                 |     |
|            | 2.1 Compute Required Exam Volume (#Angles X Height X Width X     | Length =Vt2)     | 1 ×             | 0.96     | × 2.25          | × 29.50      | ) =63.72        | cu  |
|            | 2.2 Compute Volume Not Examined in the Clockwise Direction = C   | •                | x               |          | x               | x            | =42.66          | CU  |
|            | 2.3 Compute Clockwise Limitation Percentage (C / VI2) X 100 = Z3 | -                | <u> </u>        |          |                 | 66.9         | 5%              |     |
|            | 2.4 Compute Volume Not Examined in the Counter CW Direction =    | D                | x               |          | x               | x            | =42.66          | cu  |
|            | 2.5 Compute Counter CW Limitation Percentage (D / Vt2) X 100 = 2 | <b>Z</b> 4       |                 |          |                 | 66.9         | 5%              |     |
| <b>.</b> 0 | TOTAL EXAMINATION COVERAGE OBTAINED                              |                  |                 |          |                 |              |                 |     |
| -          | 3.1 Compute Total Limitation Percentage Z1+Z2+                   | Z3+Z4/4 =        | L               |          |                 | 66.9         | 5%              |     |
|            | 3.2 Compute Total Coverage (100 - L)                             |                  |                 |          |                 | 33.0         | 5%              | ·   |
|            |                                                                  |                  |                 | S        |                 |              |                 |     |
|            |                                                                  |                  |                 |          |                 | •            |                 |     |
|            | 1.2 & 1.4 : ( 1 x 0.96 x 1.125 x 29.5 ) + ( 1 x 0.9              | 6 x 1.125 :      | x ( 2 x 5       | )) = 4   | 2.66            |              |                 |     |
|            | 2.2 & 2.4 : ( 1 × 0.96 × 1.125 × 29.5 ) + ( 1 × 0.96             | 6 x 1.125 :      | x ( 2 x 5       | )) = 4   | 2.66            |              | <u> </u>        |     |
|            |                                                                  |                  |                 |          |                 |              |                 |     |
|            | IN THE ABOVE CALCULATIONS FOR STEPS 1.2, 2.                      | 2, AND 2.4       | THE FI          | RST SE   | T OF PA         | RENTHE       | SIS             |     |
|            | ADDRESSES THE HANGER CLAMP OBSTRUCTION,                          | AND THE          | SECOND          | SET A    | DDRES           | SES THE      | NOZZLE          |     |
|            | DBSTRUCTION.                                                     |                  |                 |          |                 |              |                 |     |
|            | ·····                                                            |                  |                 |          |                 |              |                 |     |
|            |                                                                  |                  | <u> </u>        |          |                 |              | <del>r(==</del> | 7   |
|            |                                                                  |                  | <u>-</u>        |          |                 |              | 189             | 1   |
| REPA       | RED BY: DATE:                                                    | REVIEWER:        | lectral         | jo (     | TEL<br>19 Deag  | e0           |                 |     |
|            |                                                                  |                  |                 | <u> </u> |                 |              |                 |     |





| 03       | TOMER:                    | SALEM 2, RE                                                                                                                                                     | -0-11                                                                  |                                                                                                                          |                                   | S                | rstem:                                               | RESIDUA                                 | L HE | AT         | REMOV                                                      | AL EXCHA                                        | NGER   |     |
|----------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|-----------------------------------|------------------|------------------------------------------------------|-----------------------------------------|------|------------|------------------------------------------------------------|-------------------------------------------------|--------|-----|
| SUM      | MARY N                    | 0:<br>275400                                                                                                                                                    |                                                                        |                                                                                                                          |                                   | co               | OMPON                                                | ENT ID:                                 | 21-F | RHR        | HEX-OU                                                     | т                                               |        |     |
| 1.0      | CALC                      | ULATE REQUI                                                                                                                                                     | RED EX                                                                 | AM VOLUI                                                                                                                 |                                   | STR              | AIGHT E                                              | EAM PL                                  | ANA  | <u>R F</u> | LAWS                                                       |                                                 |        |     |
|          | 1.1                       | Exam Height                                                                                                                                                     | X Exam                                                                 | Width X E                                                                                                                | xam Len                           | gth =            | Exam                                                 | 0.                                      | .33  | <b>x</b>   | 1.50 X                                                     | 183.00 =                                        | 90.58  | cu. |
| 2.0      | CALC                      |                                                                                                                                                                 | RED EX/                                                                | AM VOLUI                                                                                                                 |                                   | STR/             | AIGHT B                                              |                                         | MINA | <u>\R</u>  |                                                            |                                                 |        |     |
|          | 2.1                       | Exam Height                                                                                                                                                     | X Exam                                                                 | Width X E                                                                                                                | xam Len                           | gth =            | Exam                                                 | 1.                                      | .00  | <b>X</b>   | 2.00 X                                                     | 102.00 =                                        | 204.00 | cu. |
| 3.0      | <u>CALC</u>               | ULATE REQUI                                                                                                                                                     | RED PAI                                                                | RALLEL E                                                                                                                 | XAM VO                            | LUM              | E FOR 4                                              | <u>5° AND</u> (                         | 50°  |            |                                                            |                                                 |        |     |
|          | 3.1                       | Exam Height                                                                                                                                                     | X Exam                                                                 | Width X E                                                                                                                | xam Len                           | gth =            | Exam                                                 | 0.                                      | 33   | X          | 1.50 X                                                     | 366.00 =                                        | 181.17 | си. |
| 4.0      | CALC                      | ULATE REQUI                                                                                                                                                     | RED TRA                                                                | ANSVERSI                                                                                                                 | E EXAM                            | VOL              | UME FO                                               | R 45° AN                                | D 60 | ٩°         |                                                            |                                                 |        |     |
| ;        |                           |                                                                                                                                                                 |                                                                        |                                                                                                                          |                                   |                  |                                                      |                                         |      | _          |                                                            |                                                 |        |     |
| <i>,</i> | 4.1                       | Exam Height                                                                                                                                                     | X Exam                                                                 | Width X E                                                                                                                | xam Len                           | ath =            | Exam                                                 | 0.                                      | 33   | X          | 1.50 X                                                     | 366.00 =                                        | 181.17 | cu. |
| ,        | 4.1                       | Exam Height                                                                                                                                                     | X Exam                                                                 | Width X E                                                                                                                | xam Leng                          | gth =            | Exam                                                 | 0.<br>                                  | 33   | х<br>      | 1.50 X                                                     | 366.00 =                                        | 181.17 | CU. |
| 5.0      |                           | Exam Height                                                                                                                                                     |                                                                        |                                                                                                                          |                                   | -                |                                                      |                                         | 33   | X          | 1.50 X                                                     | 366.00 =                                        | 181.17 | CU. |
| 5.0      |                           | -                                                                                                                                                               | <u>SHT BE</u>                                                          |                                                                                                                          | REXAM                             | -                |                                                      |                                         | 33   | х<br>      | 1.50 X                                                     | 366.00 =                                        | 181.17 | Cu. |
| 5.0      | CALC                      | ULATE STRAIG                                                                                                                                                    | <u>SHT BEA</u><br>• / CW e>                                            |                                                                                                                          | <u>R EXAM</u><br>e                | -                | /ERAGE<br>Length                                     |                                         |      |            | 1.50 X<br>Volume w<br>Exam Co                              | rith no                                         | 181.17 | Cu. |
| 5.0      | CALC                      | ULATE STRAIC<br>Limited above<br>Height of                                                                                                                      | <u>SHT BEA</u><br>• / CW e>                                            | AM PLANA<br>kam volum<br>Width of                                                                                        | e<br>e<br>ed Area                 | -                | /ERAGE<br>Length                                     | of<br>ted Area                          |      |            | Volume w                                                   | ∕ith no<br>verage                               | 181.17 | cu. |
| 5.0      | CALC                      | ULATE STRAIC<br>Limited above<br>Height of<br>Obstructed Vo                                                                                                     | SHT BEA<br>/ CW ex<br>plume<br>X                                       | AM PLANA<br>cam volum<br>Width of<br>Obstructe<br>1.28                                                                   | e<br>ed Area                      | COV              | Length                                               | of<br>ted Area                          |      |            | Volume w<br>Exam Co                                        | ∕ith no<br>verage                               | 181.17 | cu. |
| 5.0      | <u>CALC</u><br>5.1        | ULATE STRAIC<br>Limited above<br>Height of<br>Obstructed Vo<br>0.33                                                                                             | SHT BEA<br>> / CW ex<br>olume<br>X<br>- X<br>- X<br>- X                | AM PLANA<br>cam volum<br>Width of<br>Obstructe<br>1.28                                                                   | e<br>ed Area<br>5<br>e            | COV              | Length<br>Obstruc<br>183                             | of<br>thed Area                         | =    | ,<br>1     | Volume w<br>Exam Co                                        | rith no<br>verage<br>9<br>vith no               | 181.17 | cu. |
| 5.0      | <u>CALC</u><br>5.1        | ULATE STRAIC<br>Limited above<br>Height of<br>Obstructed Vo<br>0.33<br>Limited Below<br>Height of                                                               | SHT BEA<br>> / CW ex<br>olume<br>X<br>- X<br>- X<br>- X                | AM PLANA<br>cam volum<br>Width of<br>Obstructe<br>1.25<br>cam volume<br>Width of                                         | e<br>ed Area<br>5<br>e<br>ed Area | COV              | Length<br>Obstruc<br>183                             | of<br>ted Area<br>.00<br>of<br>ted Area | =    | ,<br>1     | Volume w<br>Exam Co<br>75.4<br>Volume w                    | verage<br>9<br>Verage<br>With no<br>verage      | 181.17 | cu. |
| 5.0      | <u>CALC</u><br>5.1        | ULATE STRAIG<br>Limited above<br>Height of<br>Obstructed Vo<br>0.33<br>Limited Below<br>Height of<br>Obstructed Vo                                              | SHT BEA<br>-/ CW ex<br>                                                | AM PLANA<br>cam volum<br>Width of<br>Obstructe<br>1.25<br>cam volume<br>Width of<br>Obstructe<br>0.00                    | e<br>ed Area<br>5<br>e<br>ed Area | x                | Length<br>Obstruc<br>183<br>Length<br>Obstruc<br>0.0 | of<br>ted Area<br>.00<br>of<br>ted Area | =    | ,<br>1     | Volume w<br>Exam Co<br>75.4<br>Volume w<br>Exam Co         | rith no<br>verage<br>9<br>ith no<br>verage      | 181.17 | Cu. |
| 5.0      | <u>CALC</u><br>5.1        | ULATE STRAIG<br>Limited above<br>Height of<br>Obstructed Vo<br>0.33<br>Limited Below<br>Height of<br>Obstructed Vo<br>0.00                                      | SHT BEA<br>(CW ex<br>olume<br>(X)<br>(CW ex<br>olume<br>X<br>obeam pla | AM PLANA<br>kam volum<br>Width of<br>Obstructe<br>1.25<br>kam volume<br>Width of<br>Obstructe<br>0.00<br>har exam volume | e<br>ed Area<br>5<br>e<br>ed Area | x                | Length<br>Obstruc<br>183<br>Length<br>Obstruc<br>0.0 | of<br>ted Area<br>.00<br>of<br>ted Area | =    | ,<br>1     | Volume w<br>Exam Co<br>75.4<br>Volume w<br>Exam Co<br>0.00 | rith no<br>verage<br>9<br>ith no<br>verage      | 181.17 | Cu. |
| 5.0      | <u>CALC</u><br>5.1<br>5.2 | ULATE STRAIG<br>Limited above<br>Height of<br>Obstructed Vo<br>0.33<br>Limited Below<br>Height of<br>Obstructed Vo<br>0.00<br>Total straight I<br>Percent Volum | SHT BEA<br>(CW ex<br>olume<br>(X)<br>(CW ex<br>olume<br>X<br>obeam pla | AM PLANA<br>cam volum<br>Width of<br>Obstructe<br>am volume<br>Width of<br>Obstructe<br>0.00<br>onar exam v<br>ined      | e<br>ed Area<br>5<br>e<br>ed Area | X<br>X<br>Not ex | Length<br>Obstruc<br>183<br>Length<br>Obstruc<br>0.0 | of<br>ted Area<br>.00<br>of<br>ted Area | =    | ,<br>1<br> | Volume w<br>Exam Co<br>75.4<br>Volume w<br>Exam Co<br>0.00 | rith no<br>verage<br>g<br>ith no<br>verage<br>g | 181.17 | cu. |

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FRAMAIOME VESSEL VOLUMETRIC EXAMINATION COVERAGE REPORT

|     | UAL                | CULATE STRAIGHT BE                                             | DU LOUINAN EAAI                                                           |                                  | <u>TENAGE</u>                |   |                                        |
|-----|--------------------|----------------------------------------------------------------|---------------------------------------------------------------------------|----------------------------------|------------------------------|---|----------------------------------------|
|     | 6.1                | Limited above / CW e                                           | xam volume                                                                |                                  |                              |   |                                        |
| i   |                    | Height of<br>Obstructed Volume                                 | Width of<br>Obstructed Area                                               |                                  | Length of<br>Obstructed Area |   | Volume with no<br>Exam Coverage        |
| :   |                    | <u>    1     X</u>                                             | 2.00                                                                      | X                                | 74.00                        | = | 148.00                                 |
|     | 6.2                | Limited Below / CW e                                           | xam volume                                                                |                                  |                              |   |                                        |
|     |                    | Height of<br>Obstructed Volume                                 | Width of<br>Obstructed Area                                               |                                  | Length of<br>Obstructed Area |   | Volume with no<br>Exam Coverage        |
|     |                    | 0.00 X                                                         | 0.00                                                                      | <b>X</b>                         | 0.00                         | = | 0.00                                   |
|     |                    | Total straight beam pl                                         | anar exam volume n                                                        | ot e>                            | amined                       | = | 148.00                                 |
|     | 6.3                | Percent Volume Exan                                            | ined                                                                      |                                  |                              |   |                                        |
|     |                    | Total 0° vo<br>w/No Cove                                       |                                                                           |                                  | ne                           |   | Percent Volume<br>Examined             |
| ì   |                    | <b>100 - {[</b> 148.0                                          | 0 / 204                                                                   | .00                              | ] x 100}                     | = | 27.45 <b>%</b>                         |
| 7.0 | <u>CALU</u><br>7.1 | Limited above / CW e                                           | xam volume                                                                |                                  | Longth of                    |   |                                        |
|     |                    | Height of<br>Obstructed Volume                                 | Width of Obstructed Area                                                  |                                  | Length of<br>Obstructed Area |   | Volume with no<br>Exam Coverage        |
|     |                    | 0.33 X                                                         | 1.50                                                                      | X                                | 183.00                       | 2 | 90.58                                  |
|     | 7.2                | Limited Below / CCW                                            | exam volume                                                               |                                  |                              |   |                                        |
|     |                    | Height of<br>Obstructed Volume                                 | Width of<br>Obstructed Area                                               |                                  | Length of<br>Obstructed Area |   | Volume with no<br>Exam Coverage        |
|     |                    |                                                                | 000000007000                                                              |                                  |                              |   |                                        |
|     |                    | 0.33 X                                                         |                                                                           | x                                | 183.00                       | = | 90.58                                  |
|     |                    | 0.33 X<br>Total 45° parallel exam                              | 1.50                                                                      |                                  | 183.00                       | 2 | 90.58                                  |
|     | 7.3                | <del></del>                                                    | 1.50<br>n volume not examin                                               |                                  | 183.00                       |   | ······································ |
|     | 7.3                | Total 45° parallel exan                                        | 1.50<br>n volume not examin<br>ined<br>iraliel Total 45                   | ied<br>° pai                     | allel                        |   | ······································ |
|     | 7.3                | Total 45° parallel exan<br>Percent Volume Exam<br>Total 45° pa | 1.50<br>n volume not examin<br>ined<br>trallel Total 45<br>overage Exam V | ied<br><sup>ie</sup> pai<br>olum | allel                        |   | 181.17<br>Percent Volume               |

÷ .

|                    | CULATE PARALLEL 60°                                                                                                                                    | 'EXAM COVERAG                                                                                                                                                               | θE                       |                                                                                         |   |                                                                                                             |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------|
| 8.1                | Limited above / CW e                                                                                                                                   | xam volume                                                                                                                                                                  |                          |                                                                                         |   | Above / CW exam                                                                                             |
|                    | Height of<br>Obstructed Volume                                                                                                                         | Width of<br>Obstructed Area                                                                                                                                                 |                          | Length of<br>Obstructed Area                                                            |   | Volume with no<br>Exam Coverage                                                                             |
|                    | 0.33 X                                                                                                                                                 | 1.50                                                                                                                                                                        | X                        | 183.00                                                                                  | H | 90.58                                                                                                       |
| 8.2                | Limited Below / CCW                                                                                                                                    | exam volume                                                                                                                                                                 |                          |                                                                                         |   | Below / CCW exam                                                                                            |
|                    | Height of<br>Obstructed Volume                                                                                                                         | Width of<br>Obstructed Area                                                                                                                                                 |                          | Length of<br>Obstructed Area                                                            |   | Volume with no<br>Exam Coverage                                                                             |
|                    | 0.33 X                                                                                                                                                 | 1.50                                                                                                                                                                        | X                        | 183.00                                                                                  | = | 90.58                                                                                                       |
|                    | Total 60° parallel exan                                                                                                                                | n volume not exam                                                                                                                                                           | ined                     |                                                                                         | = | 181.17                                                                                                      |
| 8.3                | Percent Volume Exam                                                                                                                                    | nined                                                                                                                                                                       |                          |                                                                                         |   |                                                                                                             |
|                    | Total 60° pa<br>Vol w/No Co                                                                                                                            |                                                                                                                                                                             |                          | arallel<br>me                                                                           |   | Percent Volume<br>Examined                                                                                  |
|                    | <b>100 - {[</b> 181.1]                                                                                                                                 | 7 / 18                                                                                                                                                                      | 4 47                     | 1 400.1                                                                                 |   | 0.00                                                                                                        |
|                    |                                                                                                                                                        | /                                                                                                                                                                           | 1.17                     | ] x 100}                                                                                | H | 0.00 %                                                                                                      |
| CALC               | THE ATE TRANSVERSE                                                                                                                                     |                                                                                                                                                                             |                          |                                                                                         | Ξ | %                                                                                                           |
|                    | CULATE TRANSVERSE                                                                                                                                      | 45° EXAM COVER                                                                                                                                                              |                          |                                                                                         | 8 | %                                                                                                           |
| <b>CALC</b><br>9.1 | Limited Clockwise exa                                                                                                                                  | 45° EXAM COVER                                                                                                                                                              |                          |                                                                                         | Ξ | CW Exam                                                                                                     |
|                    |                                                                                                                                                        | 45° EXAM COVER                                                                                                                                                              |                          |                                                                                         | Ξ |                                                                                                             |
|                    | Limited Clockwise exa<br>Height of                                                                                                                     | 45° EXAM COVER<br>Im volume<br>Width of                                                                                                                                     |                          | Length of                                                                               | 8 | CW Exam<br>Volume with no                                                                                   |
|                    | Limited Clockwise exa<br>Height of<br>Obstructed Volume                                                                                                | 45° EXAM COVER<br>im volume<br>Width of<br>Obstructed Area<br>1.50                                                                                                          | X                        | Length of<br>Obstructed Area<br>183.00                                                  |   | CW Exam<br>Volume with no<br>Exam Coverage<br>90.58                                                         |
| 9.1                | Limited Clockwise exa<br>Height of<br>Obstructed Volume<br>0.33 X<br>Limited Below Counter<br>Height of                                                | 45° EXAM COVER<br>Im volume<br>Width of<br>Obstructed Area<br><u>1.50</u><br>r clockwise exam v<br>Width of                                                                 | X                        | Length of<br>Obstructed Area<br>183.00<br>Length of                                     |   | CW Exam<br>Volume with no<br>Exam Coverage<br>90.58<br>CCW Exam<br>Volume with no                           |
| 9.1                | Limited Clockwise exa<br>Height of<br>Obstructed Volume<br>0.33 X<br>Limited Below Counter                                                             | 45° EXAM COVER<br>im volume<br>Width of<br>Obstructed Area<br>1.50                                                                                                          | X                        | Length of<br>Obstructed Area<br>183.00                                                  |   | CW Exam<br>Volume with no<br>Exam Coverage<br>90.58<br>CCW Exam                                             |
| 9.1                | Limited Clockwise exa<br>Height of<br>Obstructed Volume<br>0.33 X<br>Limited Below Counter<br>Height of                                                | 45° EXAM COVER<br>Im volume<br>Width of<br>Obstructed Area<br><u>1.50</u><br>r clockwise exam v<br>Width of                                                                 | X                        | Length of<br>Obstructed Area<br>183.00<br>Length of                                     |   | CW Exam<br>Volume with no<br>Exam Coverage<br>90.58<br>CCW Exam<br>Volume with no                           |
| 9.1                | Limited Clockwise exa<br>Height of<br>Obstructed Volume<br>X<br>Limited Below Counter<br>Height of<br>Obstructed Volume                                | 45° EXAM COVER<br>im volume<br>Width of<br>Obstructed Area<br><u>1.50</u><br>r clockwise exam v<br>Width of<br>Obstructed Area<br><u>1.50</u>                               | X<br>olume<br>X          | Length of<br>Obstructed Area<br>183.00<br>Length of<br>Obstructed Area<br>155.00        | = | CW Exam<br>Volume with no<br>Exam Coverage<br>90.58<br>CCW Exam<br>Volume with no<br>Exam Coverage          |
| 9.1                | Limited Clockwise exa<br>Height of<br>Obstructed Volume<br>X<br>Limited Below Counter<br>Height of<br>Obstructed Volume<br>X                           | 45° EXAM COVER<br>Im volume<br>Width of<br>Obstructed Area<br><u>1.50</u><br>r clockwise exam v<br>Width of<br>Obstructed Area<br><u>1.50</u><br>xam volume not ex          | X<br>olume<br>X          | Length of<br>Obstructed Area<br>183.00<br>Length of<br>Obstructed Area<br>155.00        | = | CW Exam<br>Volume with no<br>Exam Coverage<br>90.58<br>CCW Exam<br>Volume with no<br>Exam Coverage<br>76.72 |
| 9.1                | Limited Clockwise exa<br>Height of<br>Obstructed Volume<br>X<br>Limited Below Counter<br>Height of<br>Obstructed Volume<br>X<br>Total 45° transverse e | 45° EXAM COVER<br>im volume<br>Width of<br>Obstructed Area<br><u>1.50</u><br>r clockwise exam v<br>Width of<br>Obstructed Area<br><u>1.50</u><br>exam volume not ex<br>ined | X<br>olume<br>X<br>camin | Length of<br>Obstructed Area<br>183.00<br>Length of<br>Obstructed Area<br>155.00<br>red | = | CW Exam<br>Volume with no<br>Exam Coverage<br>90.58<br>CCW Exam<br>Volume with no<br>Exam Coverage<br>76.72 |

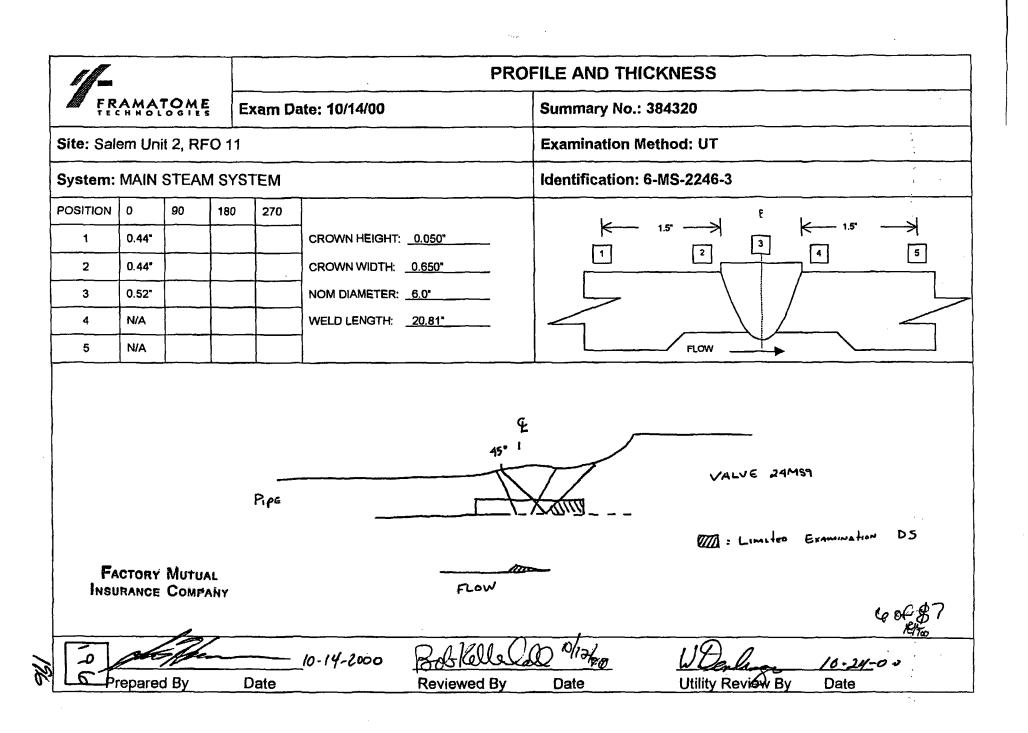
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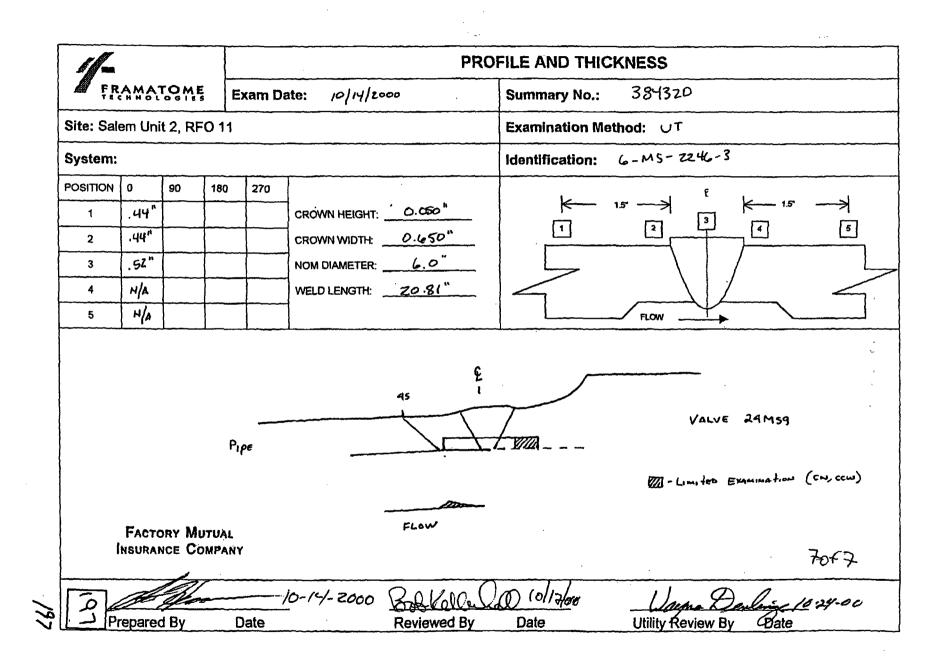
| 10.1                | Limited Clockwise exam                                                                                             |                                                 | AGL           |                                 |            |                                             |  |
|---------------------|--------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|---------------|---------------------------------|------------|---------------------------------------------|--|
| 10.1                | Height of<br>Obstructed Volume                                                                                     | Width of<br>Obstructed Area                     |               | Length of<br>Obstructed Area    |            | CW exam<br>Volume with no<br>Exam Coverage  |  |
|                     | <u>    0.33                               </u>                                                                     | 1.50                                            | x             | 183.00                          | =          | 90.58                                       |  |
| 10.2                | Limited Counterclockw<br>Height of<br>Obstructed Volume                                                            | rise exam volume<br>Width of<br>Obstructed Area |               | Length of<br>Obstructed Area    |            | CCW exam<br>Volume with no<br>Exam Coverage |  |
|                     | 0.33 X                                                                                                             | 1.50                                            | x             | 155.00                          | =          | 76.72                                       |  |
|                     | Total straight beam pla                                                                                            | inar exam volume r                              | not ex        | kamined                         | 5          | 167.31                                      |  |
| 10.3                | Percent Volume Exami<br>Total 60° Ti                                                                               |                                                 | 60° T         |                                 |            | Percent Volume<br>Examined                  |  |
|                     | w/NoCovera                                                                                                         | age Exam '                                      | Volur         | ne                              |            | Examineu                                    |  |
|                     |                                                                                                                    | -                                               | Volur<br>1.17 |                                 |            |                                             |  |
| CALC                | w/NoCovera                                                                                                         | <u> </u>                                        | 1.17          | _] x 100}                       |            |                                             |  |
| <u>CALC</u><br>11.1 | w/NoCovera                                                                                                         | <u> </u>                                        | 1.17          | _] x 100}                       |            |                                             |  |
|                     | w/NoCovera<br><b>100 - {[</b> <u>167.31</u><br><u>ULATE PERCENT OF T</u>                                           | <u> </u>                                        | 1.17<br>XAM   | ] x 100 }<br>INED               |            | <u>7.65</u> %                               |  |
|                     | w/NoCovera<br><b>100 - {[</b> <u>167.31</u><br><u>ULATE PERCENT OF T</u><br>Sum of Exam Volumes                    | <u>1</u> / <u>18</u><br>TOTAL VOLUME E          | 1.17<br>XAM   | ] x 100 }<br>INED               | =<br>minat | <u>7.65</u> %                               |  |
|                     | w/NoCovera<br><b>100 - {[</b> <u>167.31</u><br><u>ULATE PERCENT OF T</u><br>Sum of Exam Volumes<br>Steps 5 Thur 10 | TOTAL VOLUME E<br>5 %<br>No. Of Exams (6        | 1.17<br>XAM   | ] x 100 }<br>INED<br>Exa<br>Cov | =<br>minat | <u>7.65</u> %                               |  |
|                     | w/NoCovera<br><b>100 - {[</b> <u>167.31</u><br><u>ULATE PERCENT OF T</u><br>Sum of Exam Volumes<br>Steps 5 Thur 10 | TOTAL VOLUME E<br>5 %<br>No. Of Exams (6        | 1.17<br>XAM   | ] x 100 }<br>INED<br>Exa<br>Cov | =<br>minat | <u>7.65</u> %                               |  |
|                     | w/NoCovera<br><b>100 - {[</b> <u>167.31</u><br><u>ULATE PERCENT OF T</u><br>Sum of Exam Volumes<br>Steps 5 Thur 10 | TOTAL VOLUME E<br>5 %<br>No. Of Exams (6        | 1.17<br>XAM   | ] x 100 }<br>INED<br>Exa<br>Cov | =<br>minat | <u>7.65</u> %                               |  |
|                     | w/NoCovera<br><b>100 - {[</b> <u>167.31</u><br><u>ULATE PERCENT OF T</u><br>Sum of Exam Volumes<br>Steps 5 Thur 10 | TOTAL VOLUME E<br>5 %<br>No. Of Exams (6        | 1.17<br>XAM   | ] x 100 }<br>INED<br>Exa<br>Cov | =<br>minat | <u>7.65</u> %                               |  |

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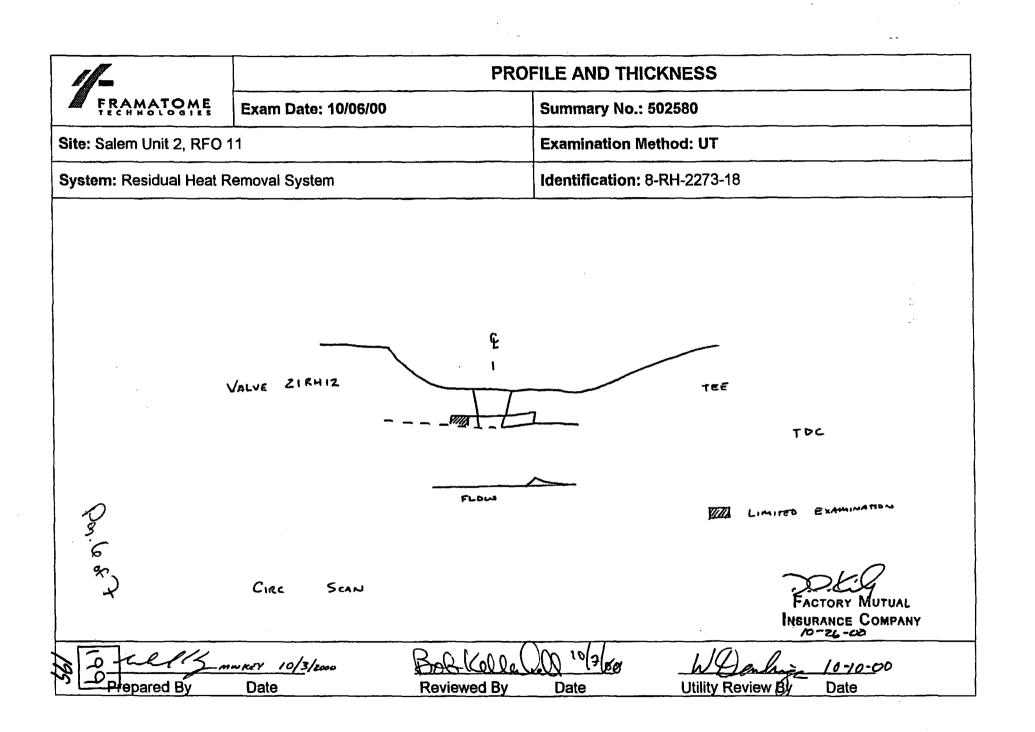
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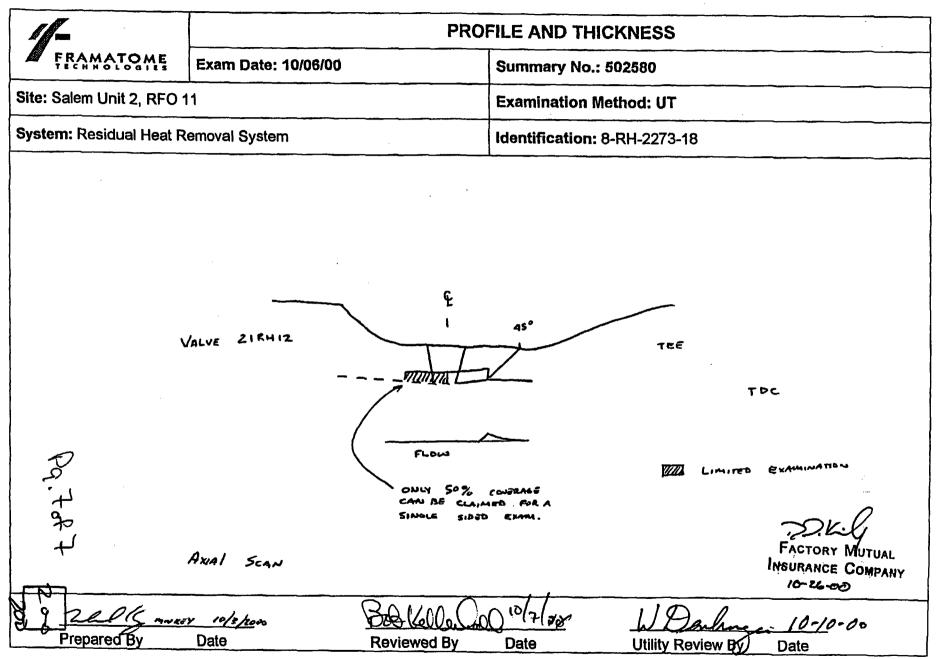
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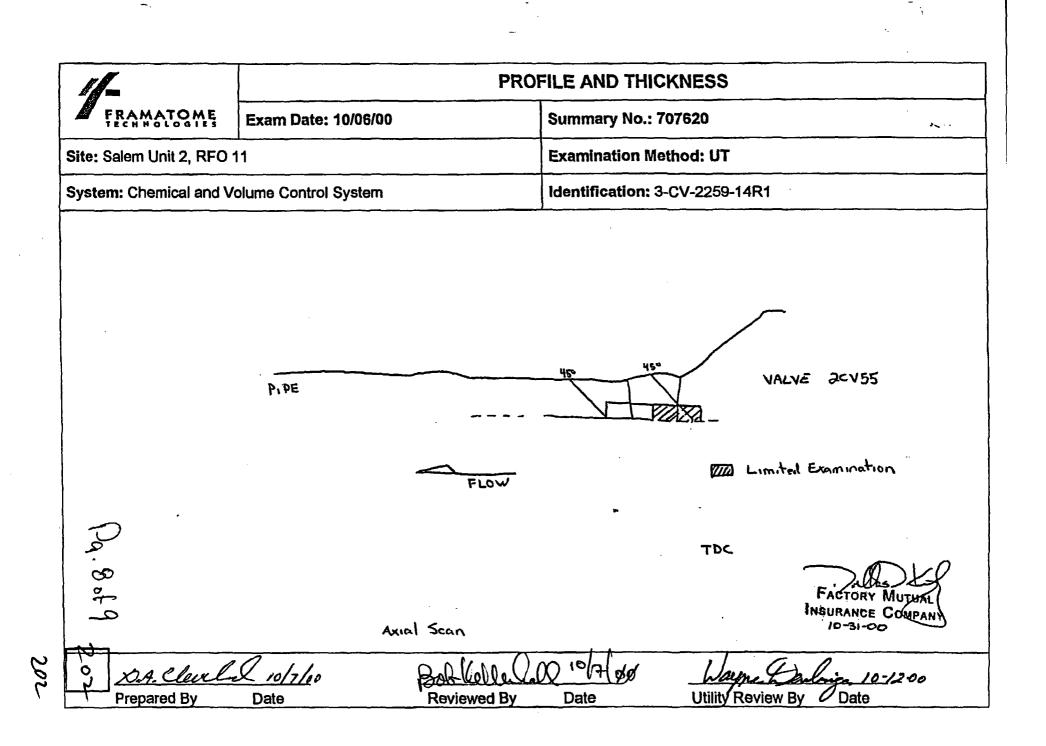


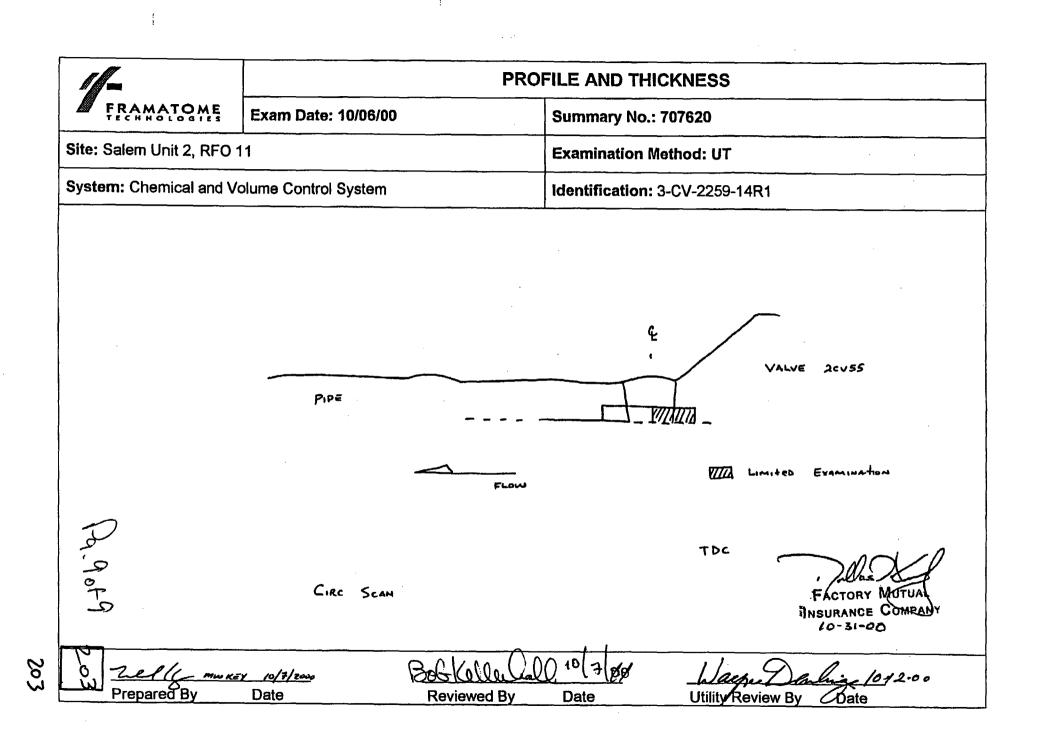
| າບຣາ | SALEM 2, RFO 11                                                    | SYSTEM:<br>MAIN STEAM SYSTEM |                 |     |          |              |          |   |        |           |    |  |
|------|--------------------------------------------------------------------|------------------------------|-----------------|-----|----------|--------------|----------|---|--------|-----------|----|--|
| SUM  | MARY NO:<br>384320                                                 | COMPONENT ID:<br>6-MS-2246-3 |                 |     |          |              |          |   |        |           |    |  |
|      |                                                                    | G EXAMI                      | NA <sup>-</sup> | ГІС | NS       |              |          |   |        |           | ·  |  |
| 1.0  | AXIAL ULTRASONIC EXAMINATIONS - Upstream                           | (US) and                     | Dow             | nst | ream     | (DS          | 5)       |   |        |           |    |  |
|      | 1.1 Compute Required Exam Volume (#Angles X Height X Width X L     | ength =Vt1)                  | 1               | x   | 0.14     | x            | 1.15     | x | 20.81  | =3.35     | C  |  |
|      | 1.2 Volume Not Examined with Ultrasonic Beam Directed US = A       |                              | 0               | x   | 0.14     | x            | 1.15     | X | 20.81  | =0.00     | (  |  |
|      | 1.3 Compute Upstream Limitation Percentage {(A / Vt1) X 100} = Z1  |                              |                 |     |          |              |          |   | 0.009  | 6         |    |  |
|      | 1.4 Volume Not Examined with Ultrasonic Beam Directed DS = B       |                              | 1               | x   | 0.05     | x            | 1.00     | x | 20.81  | =1.04     |    |  |
|      | 1.5 Compute Downstream Limitation Percentage {(B / Vt1) X 100} = 2 | 2                            |                 |     |          |              |          |   | 31.056 | 5%        |    |  |
|      |                                                                    |                              |                 |     |          |              |          |   |        |           |    |  |
| 2.0  | CIRCUMFERENTIAL ULTRASONIC EXAMINATION                             |                              | <u>vise a</u>   |     |          |              | _        |   |        |           |    |  |
|      | 2.1 Compute Required Exam Volume (#Angles X Height X Width X Li    | ength =Vt2)<br>              | 1               |     |          |              |          |   | 20.81  |           |    |  |
|      | 2.2 Compute Volume Not Examined in the Clockwise Direction = C     |                              | 1               | X   | 0.14     | X            | 0.30     | X | 20.81  | =0.87     | (  |  |
|      | 2.3 Compute Clockwise Limitation Percentage (C / V12) X 100 = Z3   | -                            |                 |     |          |              |          |   | 26.09  |           |    |  |
| 1    | 2.4 Compute Volume Not Examined in the Counter CW Direction = D    |                              | 1               | ×   | 0.14     | <u>x</u>     | 0.30     | X | 20.81  |           | (  |  |
|      | 2.5 Compute Counter CW Limitation Percentage (D / Vt2) X 100 = Z4  | ł                            |                 |     | -        |              |          | · | 26.09  | <u>~</u>  |    |  |
| 3.0  | TOTAL EXAMINATION COVERAGE OBTAINED                                |                              |                 |     |          |              |          |   |        |           |    |  |
|      | 3.1 Compute Total Limitation Percentage Z1+Z2+Z3                   | 3+Z4/4 = L                   |                 |     |          |              |          |   | 20.81  | %         |    |  |
|      | 3.2 Compute Total Coverage (100 - L)                               |                              |                 |     |          |              |          |   | 79.19  | %         | -  |  |
|      |                                                                    |                              |                 |     |          | _            |          |   |        |           | -  |  |
|      | LIMITATION EXPLANA                                                 | ATION / RE                   | EMAI            | RK  | <u>6</u> |              |          |   |        |           |    |  |
|      | LIMITATION DUE TO VALVE 24MS9.                                     |                              |                 |     |          |              |          |   |        |           | -  |  |
|      |                                                                    |                              |                 |     |          |              |          |   |        |           | •  |  |
|      | · · · · · · · · · · · · · · · · · · ·                              |                              |                 |     |          |              |          |   |        |           | •  |  |
|      |                                                                    |                              | _               |     |          |              |          |   |        |           |    |  |
|      |                                                                    |                              |                 |     |          |              |          |   |        |           |    |  |
|      |                                                                    |                              |                 |     |          |              |          |   |        |           | -  |  |
|      |                                                                    |                              |                 |     |          |              |          |   |        |           | -  |  |
|      |                                                                    |                              |                 |     |          |              |          |   |        | ·         | -  |  |
|      |                                                                    | <u> </u>                     |                 |     |          |              | <u>.</u> |   |        |           | 50 |  |
|      |                                                                    |                              |                 |     |          |              |          |   |        | Prus 1900 | 10 |  |
| REPA | RED BY DATE: RI<br>10-14-2000 B                                    | EVIEWER:                     | - { `           | `.  | , D/     | <b>ATE</b> : | ).       |   |        |           |    |  |





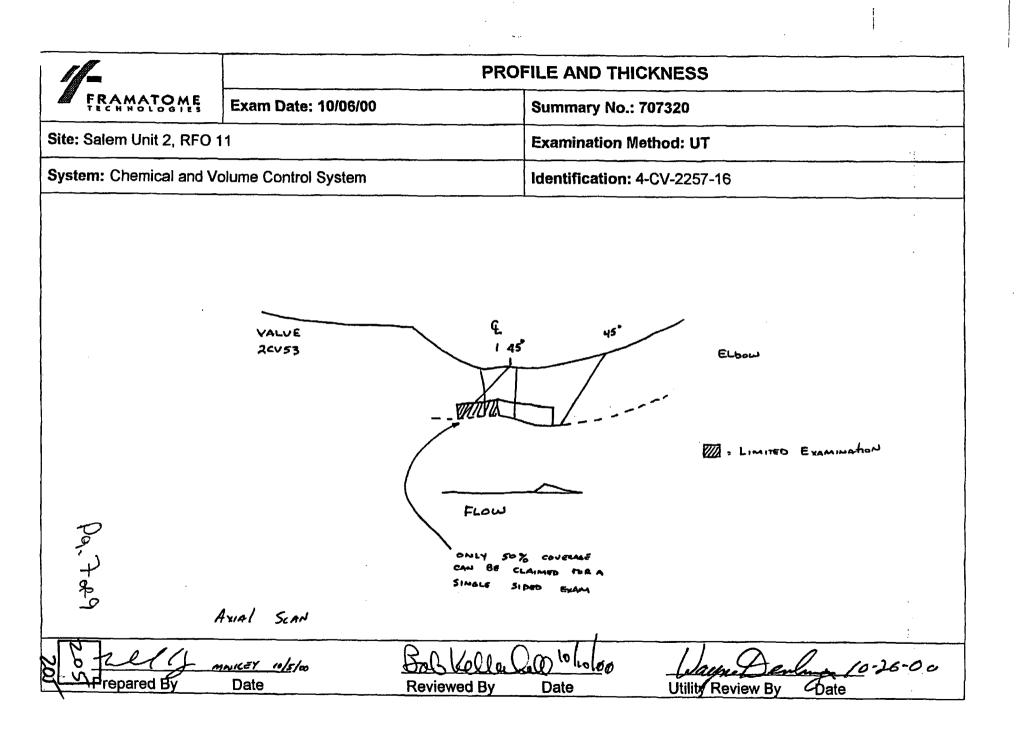
|                           | FRAMATOR VOLUMEN                                                 | RIC PIPIN                                 | IG E | EXA | MIN    | <b>4</b> T |              |          | -         | rp 02/09/00<br>GE REF | PORT        |  |
|---------------------------|------------------------------------------------------------------|-------------------------------------------|------|-----|--------|------------|--------------|----------|-----------|-----------------------|-------------|--|
| <del>ריייין</del><br>געפד | OMER:<br>SALEM 2, RFO-11                                         | SYSTEM:<br>RESIDU                         | AL F | IEA | TREN   | 101        | /AL S        | YST      | ΈM        |                       |             |  |
| SUMN                      | IARY NO:<br>502580                                               | COMPONENT ID:<br>8-RH-2273-18             |      |     |        |            |              |          |           |                       |             |  |
|                           |                                                                  | NG EXAM                                   | INA  | TIC | NS     |            | <u></u>      |          |           |                       |             |  |
| 1.0                       | AXIAL ULTRASONIC EXAMINATIONS - Upstream                         | n (US) and                                | Dow  | nst | ream   | (DS        | 5)           |          |           |                       |             |  |
|                           | 1.1 Compute Required Exam Volume (#Angles X Height X Width )     |                                           | 1    |     |        |            | -            | x        | 25.13     | =2.49                 | cu.         |  |
|                           | 1.2 Volume Not Examined with Ultrasonic Beam Directed US = A     | -                                         | 1    | x   | 0.11   | x          | 0.45         | x        | 25.13     | =1.24                 | <br>cu.     |  |
|                           | 1.3 Compute Upstream Limitation Percentage {(A / Vt1) X 100} = 2 | -                                         |      |     |        |            |              |          | 50.00     | %                     |             |  |
|                           | 1.4 Volume Not Examined with Ultrasonic Beam Directed DS = B     | -                                         | 1    | x   | 0.11   | x          | 0.90         | x        | 25.13     | =2.49                 | cu.         |  |
|                           | 1.5 Compute Downstream Limitation Percentage {(B / Vt1) X 100}   | = Z2                                      | ·    | _   |        |            |              | 1        | 100.00    | 0%                    | <u></u>     |  |
|                           |                                                                  |                                           |      |     |        |            |              |          |           |                       | <del></del> |  |
| 2.0                       | CIRCUMFERENTIAL ULTRASONIC EXAMINATIO                            | NS (Clocky                                | vise | and | Cour   | iter       | <u>clock</u> | wis      | <u>e)</u> |                       |             |  |
|                           | 2.1 Compute Required Exam Volume (#Angles X Height X Width >     | (Length =Vt2)                             | 1    | x   | 0.11   | x          | 0.90         | x        | 25.13     | =2.49                 | CU.         |  |
|                           | 2.2 Compute Volume Not Examined in the Clockwise Direction = C   | -                                         | 1    | X   | 0.11   | x          | 0.20         | x        | 25.13     | =0.55                 | сu.         |  |
|                           | 2.3 Compute Clockwise Limitation Percentage (C / Vt2) X 100 = 23 | 3 -                                       |      | _   |        |            |              | ·        | 22.22     | %                     |             |  |
| 1                         | 2.4 Compute Volume Not Examined in the Counter CW Direction =    | - D                                       | 1    | x   | 0.11   | x          | 0.20         | x        |           | =0.55                 | cu.         |  |
| .*<br>                    | 2.5 Compute Counter CW Limitation Percentage (D / Vi2) X 100 =   |                                           |      |     |        |            |              |          | 22.22     | %                     |             |  |
|                           |                                                                  |                                           |      |     |        |            |              |          |           |                       |             |  |
| 3.0                       | TOTAL EXAMINATION COVERAGE OBTAINED                              |                                           |      |     |        |            |              |          |           |                       |             |  |
|                           | 3.1 Compute Total Limitation Percentage Z1+Z2+                   | Z3+Z4/4 = L                               | -    |     |        |            |              |          | 48.61     | %                     |             |  |
|                           | 3.2 Compute Total Coverage (100 - L)                             |                                           |      |     |        | -          |              |          | 51.39     | %                     | -           |  |
|                           |                                                                  |                                           |      |     |        |            |              |          |           |                       | -           |  |
|                           | LIMITATION EXPLA                                                 | NATION / R                                | EMA  | RK  | 2      |            |              |          |           |                       |             |  |
| L                         | imitation on valve side (upstream). Used 70 degre                | e from tee                                | side | for | cover  | age        | on v         | alve     | side.     |                       |             |  |
|                           |                                                                  |                                           |      |     |        |            |              | <u> </u> |           |                       | -           |  |
|                           |                                                                  |                                           |      |     |        |            |              |          |           |                       | •           |  |
|                           |                                                                  |                                           |      |     |        |            |              |          |           |                       | •           |  |
|                           |                                                                  | <u>ى 1975 يەتبىيە بىلەرنىيە تە</u> تبىرىت |      |     |        |            |              |          |           |                       | •           |  |
|                           |                                                                  |                                           |      |     |        |            |              |          |           |                       | •           |  |
|                           |                                                                  |                                           |      |     |        |            |              |          |           |                       | •           |  |
|                           |                                                                  |                                           |      |     |        | _          | 2            |          |           |                       |             |  |
|                           |                                                                  |                                           | -    | 2   | D.K    | J          | 4            |          |           |                       | · [         |  |
|                           |                                                                  | F                                         | ACT  | OR  | r Mu   | TU         | ÁL           |          |           |                       |             |  |
|                           | · · · · · · · · · · · · · · · · · · ·                            | N                                         | SUR/ | NC  | E CO   | MP         | ANY          |          |           |                       |             |  |
| PREPAR                    | ED BY: DATE:                                                     | REVIEWER:                                 |      | ſ   |        | TE         |              | <br>«    |           | 4                     | 01          |  |
| -                         | 20/s/2000                                                        | Bob Ve                                    | We   | h   | all) I | 0          |              | ע ע<br>e | 5of_      | FE                    |             |  |
|                           | 1                                                                | <u></u>                                   |      |     | ~~~~~  |            |              |          |           |                       | 01          |  |

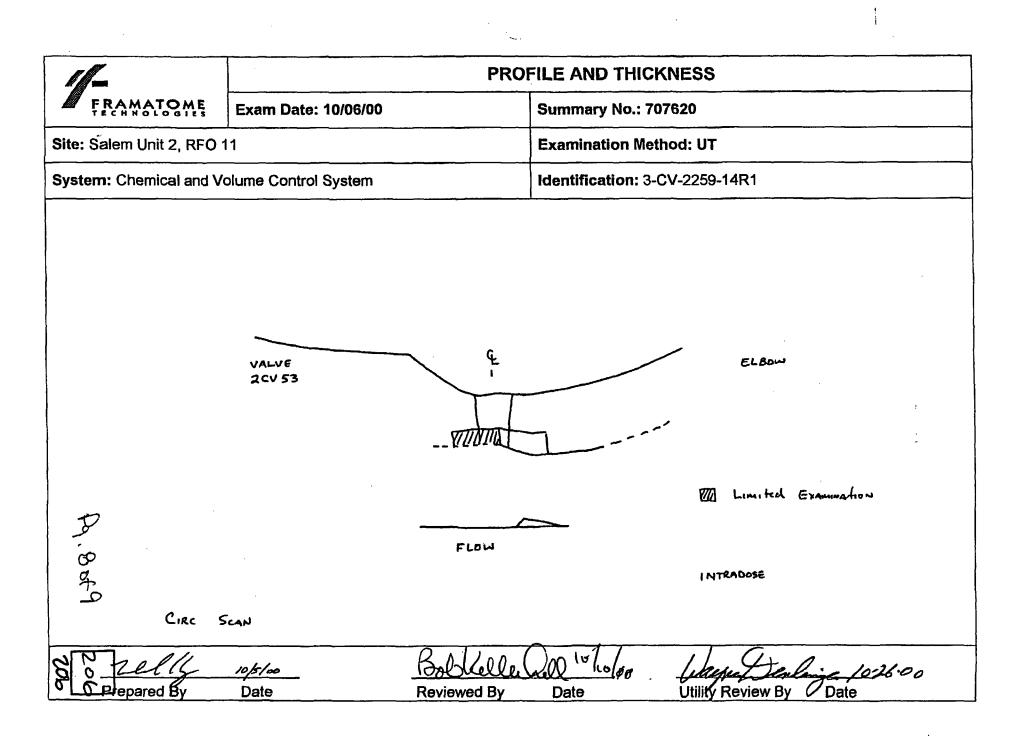


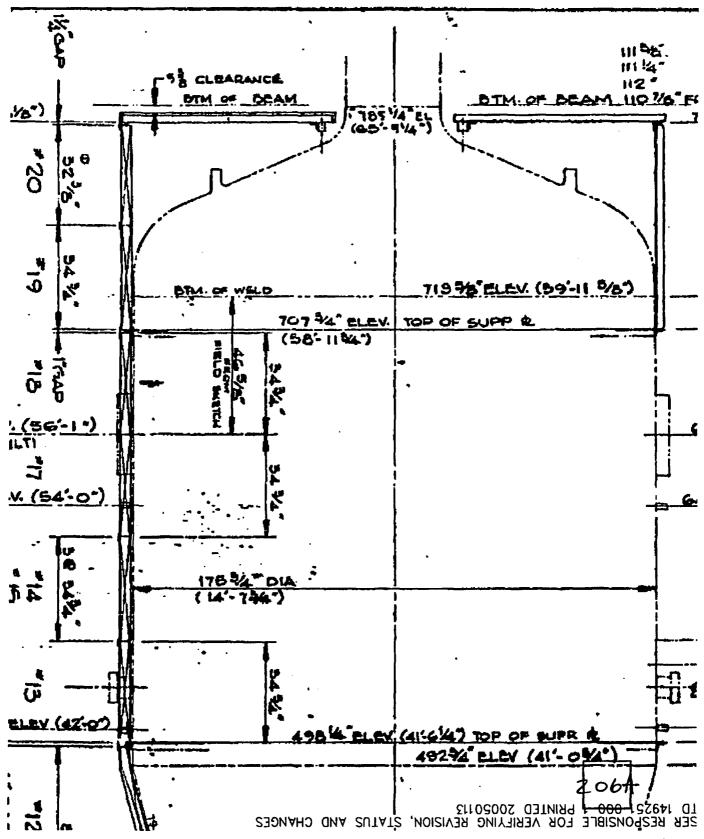


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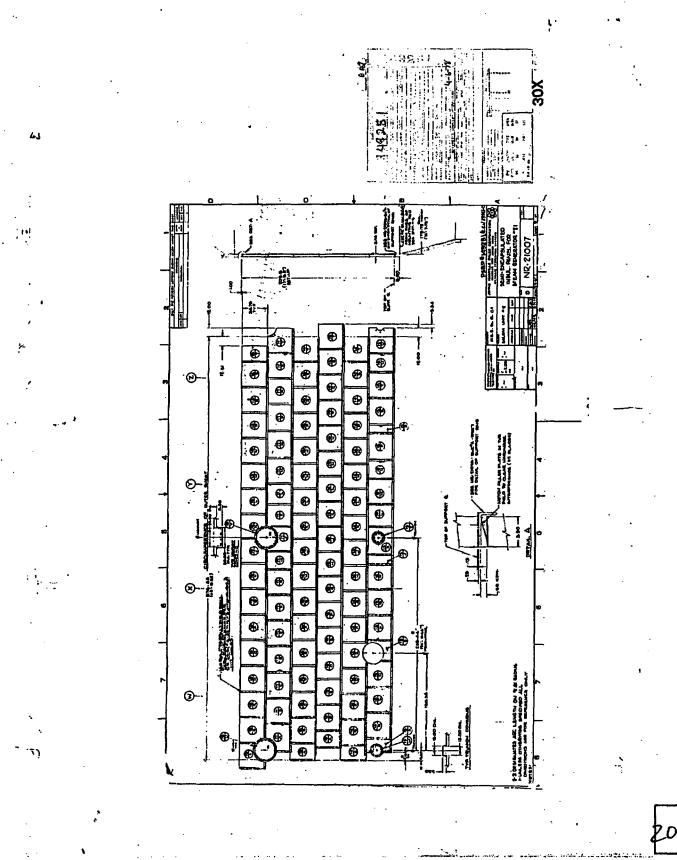
| CUST  |                                                                                                                                                                | SYSTEM:<br>CHEMICAL AND VOLUME CONTROL SYSTEM |          |     |           |      |           |     |                       |  |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|----------|-----|-----------|------|-----------|-----|-----------------------|--|
| SUM   |                                                                                                                                                                | COMPONENT ID:<br>3-CV-2259-14R1               |          |     |           |      |           |     |                       |  |
|       | VOLUMETRIC PIPING                                                                                                                                              | EXAMII                                        | <u>A</u> | Th  | ONS       |      |           |     |                       |  |
| 1.0   | AXIAL ULTRASONIC EXAMINATIONS - Upstream (US                                                                                                                   | i) and D                                      | 00       | vns | trear     | n (D | <u>S)</u> |     |                       |  |
|       | 1.1 Compute Required Exam Volume (#Angles X Height X Width X Lengt                                                                                             | h =Vt1)                                       | 1        | x   | 0.1       | 5 x  | 1.0       | 5 × | 10.90 =1.72           |  |
|       | 1.2 Volume Not Examined with Ultrasonic Beam Directed US = A                                                                                                   |                                               | 1        | X   | 0.1       | 5 ×  | 0.5       | 3 x | 10.90 =0.87           |  |
|       | 1.3 Compute Upstream Limitation Percentage {(A / Vt1) X 100} = Z1                                                                                              | _                                             |          |     |           |      |           |     | 50.48%                |  |
|       | 1.4 Volume Not Examined with Ultrasonic Beam Directed DS = B                                                                                                   |                                               | 1        | X   | 0.1       | 5 ×  | 1.0       | 5 × | 10.90 =1.72           |  |
|       | 1.5 Compute Downstream Limitation Percentage {(B / Vt1) X 100} = Z2                                                                                            |                                               |          |     |           |      |           |     | 100.000%              |  |
|       |                                                                                                                                                                | <b></b>                                       |          |     | • •       |      | <b>.</b>  |     |                       |  |
| 2.0   | CIRCUMFERENTIAL ULTRASONIC EXAMINATIONS (                                                                                                                      |                                               | se       |     |           |      |           |     | · .                   |  |
|       | <ul> <li>2.1 Compute Required Exam Volume (#Angles X Height X Width X Lengt</li> <li>2.2 Compute Volume Not Examined in the Clockwise Direction = C</li> </ul> |                                               | 1        | -   |           |      |           | _   | 10.90 =1.72           |  |
|       | 2.3 Compute Clockwise Limitation Percentage (C / VI2) X 100 = Z3                                                                                               | <del></del>                                   | 1        |     | 0.1       |      | 0.50      |     | 10.90 =0.82<br>47.62% |  |
|       | 2.4 Compute Volume Not Examined in the Counter CW Direction = D                                                                                                |                                               | 1        | x   | 0.1       | 5 X  | 0.50      |     | 10.90 =0.82           |  |
| :     | 2.5 Compute Counter CW Limitation Percentage (D / VI2) X 100 ≈ Z4                                                                                              |                                               |          |     | 0.1       |      | 0.00      |     | 47.62%                |  |
|       |                                                                                                                                                                |                                               |          |     | -         |      |           | _   |                       |  |
| 3.0   | TOTAL EXAMINATION COVERAGE OBTAINED                                                                                                                            |                                               |          |     |           |      |           |     |                       |  |
|       | 3.1 Compute Total Limitation Percentage Z1+Z2+Z3+Z                                                                                                             | 4/4 = L                                       |          |     |           | _    |           |     | 61.43%                |  |
|       | 3.2 Compute Total Coverage (100 - L)                                                                                                                           |                                               |          |     |           | -    |           |     | 38.57%                |  |
|       |                                                                                                                                                                |                                               |          |     |           |      |           |     |                       |  |
|       | LIMITATION EXPLANATION                                                                                                                                         | <u>ON / REI</u>                               | MA       | RK  | <u>(S</u> |      |           |     |                       |  |
|       | · ····                                                                                                                                                         |                                               |          | -   |           |      |           |     | <u></u>               |  |
| ***** |                                                                                                                                                                |                                               |          |     |           |      |           |     |                       |  |
|       | ······································                                                                                                                         |                                               |          |     |           |      |           |     |                       |  |
|       |                                                                                                                                                                |                                               |          |     |           |      |           |     |                       |  |
|       |                                                                                                                                                                |                                               |          |     |           |      |           |     |                       |  |
|       |                                                                                                                                                                |                                               |          | _   |           |      |           |     |                       |  |
|       |                                                                                                                                                                |                                               |          |     |           |      |           |     |                       |  |
|       |                                                                                                                                                                |                                               |          |     |           |      |           |     |                       |  |
|       |                                                                                                                                                                |                                               |          |     |           |      |           |     |                       |  |
|       |                                                                                                                                                                |                                               |          |     |           |      |           |     | _                     |  |



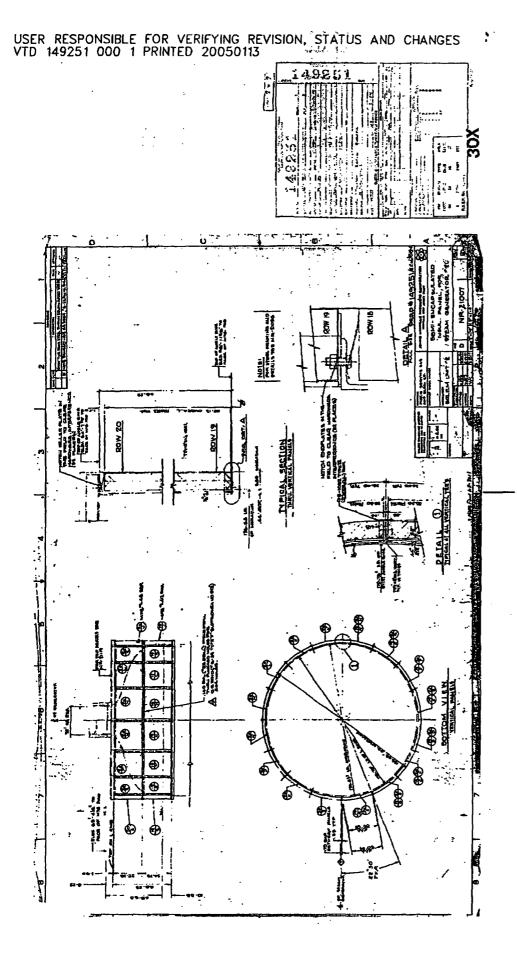




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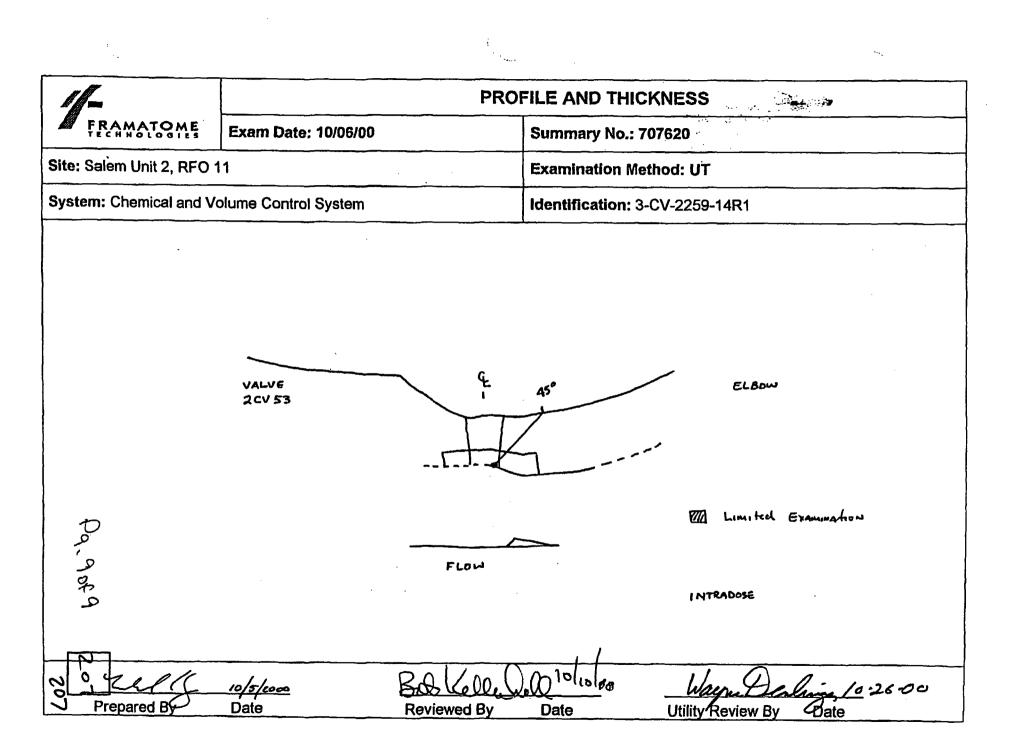


# USER RESPONSIBLE FOR VERIFYING REVISION, STATUS AND CHANGES VTD 149251 000 1 PRINTED 20050113





ŗ.



| JUST | TOMER:<br>SALEM 2, RFO-11                                       | SYSTEM:<br>CHEMIC             | SYSTEM:<br>CHEMICAL AND VOLUME CONTROL SYSTEM |            |          |          |       |            |           |      |   |  |
|------|-----------------------------------------------------------------|-------------------------------|-----------------------------------------------|------------|----------|----------|-------|------------|-----------|------|---|--|
| SUM  | MARY NO:<br>707320                                              | COMPONENT ID:<br>4-CV-2257-16 |                                               |            |          |          |       |            |           |      |   |  |
|      | VOLUMETRIC PIP                                                  | ING EXAM                      |                                               | <u>FIQ</u> | NS       |          |       |            |           |      |   |  |
| 1.0  | AXIAL ULTRASONIC EXAMINATIONS - Upstrei                         | am (US) and                   | Dow                                           | nst        | ream     | (DS      | 1     |            |           |      |   |  |
|      | 1.1 Compute Required Exam Volume (#Angles X Height X Width      | n X Length =Vt1)              | 1                                             | x          | 0.20     | x        | 1.00  | x          | 14.13     | ≈2.8 | 3 |  |
|      | 1.2 Volume Not Examined with Ultrasonic Beam Directed US = /    | <u>-</u>                      | 1                                             | x          | 0.20     | x        | 0.50  | x          | 14.13     | =1.4 | 1 |  |
|      | 1.3 Compute Upstream Limitation Percentage {(A / Vt1) X 100} =  | - Z1                          |                                               |            | _        |          |       |            | 50.00     | %    |   |  |
|      | 1.4 Volume Not Examined with Ultrasonic Beam Directed DS = 8    | 3                             | 1                                             | X          | 0.20     | x        | 1.00  | x          | 14.13     | =2.8 | 3 |  |
|      | 1.5 Compute Downstream Limitation Percentage {(B / VI1) X 100   | -<br>]} = Z2                  |                                               |            |          |          |       |            | 100.00    | 2%   |   |  |
|      |                                                                 |                               |                                               |            |          |          |       |            |           |      |   |  |
| 2.0  | CIRCUMFERENTIAL ULTRASONIC EXAMINATI                            |                               | wise a                                        | and        | Cour     | ter      | clock | <u>wis</u> | <u>e)</u> |      |   |  |
|      | 2.1 Compute Required Exam Volume (#Angles X Height X Width      | -                             | 1                                             | X          | 0.20     | <u>×</u> | 1.00  | <u>×</u>   | 14.13     | =2.8 | 3 |  |
|      | 2.2 Compute Volume Not Examined in the Clockwise Direction =    | -                             | 1                                             | X          | 0.20     | X        | 0.50  | X          | 14.13     | -    | 1 |  |
|      | 2.3 Compute Clockwise Limitation Percentage (C / Vt2) X 100 ≈ 3 | _                             |                                               |            |          |          |       |            | 50.00     | %    |   |  |
|      | 2.4 Compute Volume Not Examined in the Counter CW Direction     | = D                           | 1                                             | x          | 0.20     | x        | 0.50  | x          | 14.13     | =1.4 | 1 |  |
|      | 2.5 Compute Counter CW Limitation Percentage (D / Vt2) X 100    | = Z4                          |                                               |            |          |          |       |            | 50.00     | Ж    |   |  |
| 3.0  | TOTAL EXAMINATION COVERAGE OBTAINED                             |                               |                                               |            |          |          |       |            |           |      |   |  |
|      | 3.1 Compute Total Limitation Percentage 21+22                   |                               | L                                             |            |          |          |       |            | 62.50     | %    |   |  |
|      | 3.2 Compute Total Coverage (100 - L)                            |                               |                                               |            |          | -        |       |            | 37.50     |      |   |  |
|      |                                                                 |                               |                                               |            |          | _        |       |            | <u>-</u>  |      |   |  |
|      | LIMITATION EXPL                                                 | ANATION / R                   | EMA                                           | RKS        | <u>}</u> | -        |       |            |           |      |   |  |
| -    | LIMITATION DUE TO VALVE.                                        |                               | ÷                                             |            |          |          |       |            |           |      |   |  |
| -    | USED 60 DEGREE L FROM ELBOW SIDE FOR COV                        | ERAGE ON V                    | VALV                                          | E S        | IDE.     |          |       |            |           |      |   |  |
|      |                                                                 |                               |                                               |            |          |          |       |            |           |      |   |  |
|      |                                                                 |                               |                                               |            |          |          |       |            |           |      |   |  |
|      |                                                                 |                               |                                               |            |          |          |       |            |           |      |   |  |
|      |                                                                 |                               |                                               |            |          |          |       |            |           |      |   |  |
|      |                                                                 |                               |                                               |            |          |          |       |            |           |      |   |  |
|      |                                                                 |                               |                                               |            |          |          |       |            | _         |      |   |  |
|      |                                                                 |                               |                                               |            |          |          |       |            |           |      |   |  |
|      |                                                                 |                               |                                               | _          |          |          |       |            |           |      |   |  |

| <i># []</i> = |          |                                   |           |           | PROFILE A                 | ND THICKNESS                               |
|---------------|----------|-----------------------------------|-----------|-----------|---------------------------|--------------------------------------------|
|               |          |                                   | E         | xam D     | te: 10/16/00 Summ         | ary No.: 709960                            |
| Site: Sal     | em Un    | it 2, RF                          | 0 11      |           | Exami                     | nation Method: UT                          |
| System:       | CHEN     |                                   |           | OLUME     | CONTROL SYSTEM Identif    | ication: 3-CV-2256-6                       |
| POSITION      | 0        | 90                                | 180       | 270       |                           |                                            |
| 1             | 0.40     | ļ                                 | }         | ļ         |                           |                                            |
| 2             | 0.40     | <u> </u>                          |           | ļ         |                           |                                            |
|               | 0.44     | <del> </del>                      |           |           | NOM DIAMETER: <u>3.0"</u> |                                            |
|               | <u>.</u> | <del> </del>                      |           | +         |                           | FLOW                                       |
|               |          |                                   |           |           |                           |                                            |
|               |          |                                   |           |           | Pipe                      | $\rightarrow \sqrt{42}ve$                  |
| * Valv        | e Body.  | dead cer<br>Thicknes<br>ht approx | ss not ta | 1/10"<br> | s welded condition.       | Pq. 6 orf 6<br>19/00 Warn Darling 10-24.00 |

| cus  | TOMER:<br>SALEM 2, RFO 11                               | SYSTEM:<br>CHEMICAL AND VOLUME CONTROL SYSTEM        |
|------|---------------------------------------------------------|------------------------------------------------------|
| SUM  | MARY NO:<br>709960                                      | COMPONENT ID:<br>3-CV-2256-6                         |
|      | VOLUMETRIC                                              | C PIPING EXAMINATIONS                                |
| 1.0  | AXIAL ULTRASONIC EXAMINATIONS - U                       | ostream (US) and Downstream (DS)                     |
|      | 1.1 Compute Required Exam Volume (#Angles X Height )    | X Width X Length =Vt1) 1 × 0.13 × 1.00 × 11.00 = 1.4 |
|      | 1.2 Volume Not Examined with Ultrasonic Beam Directed   | US=A 1 × 0.13 × 0.50 × 11.00 =0.7                    |
|      | 1.3 Compute Upstream Limitation Percentage {(A / Vt1) > | (100) = 21 50.00%                                    |
|      | 1.4 Volume Not Examined with Ultrasonic Beam Directed   |                                                      |
|      | 1.5 Compute Downstream Limitation Percentage ((B / Vt1  | () X 100} = Z2 50.000%                               |
| 2.0  | CIRCUMFERENTIAL ULTRASONIC EXAM                         | INATIONS (Clockwise and Counterclockwise)            |
|      | 2.1 Compute Required Exam Volume (#Angles X Height )    |                                                      |
|      | 2.2 Compute Volume Not Examined in the Clockwise Dire   |                                                      |
|      | 2.3 Compute Clockwise Limitation Percentage (C / Vt2) X |                                                      |
|      | 2.4 Compute Volume Not Examined in the Counter CW D     | Direction = D 1 × 0.13 × 0.50 × 11.00 =0.7           |
|      | 2.5 Compute Counter CW Limitation Percentage (D / VI2)  | ) X 100 = Z4 50.00%                                  |
| 3.0  | TOTAL EXAMINATION COVERAGE OBTA                         | INED                                                 |
| •••• | 3.1 Compute Total Limitation Percentage 2               |                                                      |
|      | 3.2 Compute Total Coverage (100 - L)                    | 50.00%                                               |
|      |                                                         | *                                                    |
|      | <u>LIMITATION E</u>                                     | EXPLANATION / REMARKS                                |
|      | SINGLE SIDED EXAMINATION.                               |                                                      |
|      |                                                         |                                                      |
|      |                                                         |                                                      |
| _    |                                                         |                                                      |
|      |                                                         |                                                      |
|      |                                                         | · · · · · · · · · · · · · · · · · · ·                |
|      |                                                         |                                                      |
|      |                                                         |                                                      |
|      |                                                         |                                                      |

### REQUEST FOR ADDITIONAL INFORMATION REQUEST FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR IN-SERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

QUESTION

2.1 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

| Summary #      | 709960                           |                                |
|----------------|----------------------------------|--------------------------------|
| Component I.D. | 3-CV-2256-6                      |                                |
| Description    | Pipe to Valve 2CV73              |                                |
|                |                                  | Comments                       |
| 1              | Weld X-Section                   | See Attached                   |
| 2              | Material                         | Stainless Steel                |
| 3              | Thickness / weld Crown           | Thickness .4" / weld Crown .5" |
| 4              | Obstruction                      | Valve OD Contour               |
| 5              | Exam Area Highlighted on Drawing | Yes X No                       |
| 6              | Transducer ray exit point        | See Attached                   |

#### Comments

UT exam was performed of this component using 45, and 70 degree shear wave transducer. The ultrasonic examination was limited to 50% of the code required coverage being limited due to downstream side valve OD configuration that restricted scanning. UT scans were performed on and across the weld in both directions No unacceptable indications were observed. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.

Page of

| Summary #                                | 709960                                               | Supplemental Drawi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -                                                                                                        |                                                                                                                | 44<br>             |
|------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|--------------------|
| Description                              | Pipe to Valve 2CV73                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | D. <u>3-CV-2256-6</u><br>Page                                                                            | of                                                                                                             |                    |
| Comments                                 |                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                          |                                                                                                                |                    |
|                                          | asonic examination was limited t<br>ricted scanning. | to 50% of the code required coverag                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | e being limited due i                                                                                    | o downstream side valv                                                                                         | e OD configuration |
| Sketch                                   |                                                      | ŀ.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                          |                                                                                                                |                    |
|                                          | PIPE                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ******                                                                                                   | VALVE                                                                                                          |                    |
|                                          | ₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩               | The second                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                          | • • • •                                                                                                        |                    |
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|                                          |                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                          |                                                                                                                |                    |

| CUST |                                                                                                                                                                | SYSTEM:<br>CHEMICAL AND VOLUME CONTROL SYSTEM |     |           |            |          |           |     |        |         |   |  |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-----|-----------|------------|----------|-----------|-----|--------|---------|---|--|
| SUM  |                                                                                                                                                                | COMPONENT ID:<br>3-CV-2255-12                 |     |           |            |          |           |     |        |         |   |  |
| •    | VOLUMETRIC PIPING                                                                                                                                              | EXAMI                                         | NA' | TIC       | <u>DNS</u> |          |           |     |        |         |   |  |
| 1.0  | AXIAL ULTRASONIC EXAMINATIONS - Upstream (U                                                                                                                    | S) and I                                      | Dow | nst       | ream       | (DS      | <u>5)</u> |     |        |         |   |  |
|      | 1.1 Compute Required Exam Volume (#Angles X Height X Width X Leng                                                                                              | gth =Vt1)                                     | 1   | x         | 0.14       | x        | 0.90      | ) X | 11.00  | =1.39   |   |  |
|      | 1.2 Volume Not Examined with Ultrasonic Beam Directed US = A                                                                                                   |                                               | 1   | x         | 0.14       | X        | 0.45      | x   | 11.00  | =0.69   |   |  |
|      | 1.3 Compute Upstream Limitation Percentage ((A / Vt1) X 100) = Z1                                                                                              |                                               |     |           |            |          |           |     | 50.00  | %       |   |  |
|      | 1.4 Volume Not Examined with Ultrasonic Beam Directed DS = B                                                                                                   | _                                             | 1   | x         | 0.14       | x        | 0.45      | X   | 11.00  | =0.69   |   |  |
|      | 1.5 Compute Downstream Limitation Percentage {(B / Vt1) X 100} = Z2                                                                                            |                                               |     |           | _          |          |           |     | 50.000 | )%      |   |  |
|      |                                                                                                                                                                |                                               |     |           |            |          |           |     |        |         |   |  |
| 2.0  | CIRCUMFERENTIAL ULTRASONIC EXAMINATIONS                                                                                                                        |                                               | ise |           |            |          |           |     |        |         |   |  |
|      | 2.1 Compute Required Exam Volume (#Angles X Height X Width X Leng                                                                                              | th =Vt2)<br>                                  | 1   |           |            |          |           |     | 11.00  |         |   |  |
|      | 2.2 Compute Volume Not Examined in the Clockwise Direction = C                                                                                                 |                                               | 1   | <u>×</u>  | 0.14       | X        | 0.45      | X   | 11.00  |         |   |  |
|      | 2.3 Compute Clockwise Limitation Percentage (C / Vt2) X 100 = Z3                                                                                               | _                                             |     |           |            |          |           |     | 50.00  |         |   |  |
| ,    | <ul> <li>2.4 Compute Volume Not Examined in the Counter CW Direction = D</li> <li>2.5 Compute Counter CW Limitation Percentage (D / VI2) X 100 = Z4</li> </ul> |                                               | 1   | <u> </u>  | 0.14       | <u>x</u> | 0.45      |     | 11.00  | ·       |   |  |
|      |                                                                                                                                                                |                                               |     |           |            |          |           |     | 50.00  | 70      | _ |  |
| 3.0  | TOTAL EXAMINATION COVERAGE OBTAINED                                                                                                                            |                                               |     |           |            |          |           |     |        |         |   |  |
|      | 3.1 Compute Total Limitation Percentage Z1+Z2+Z3+                                                                                                              | Z4/4 = L                                      |     |           |            |          |           |     | 50.00  | %       |   |  |
|      | 3.2 Compute Total Coverage (100 - L)                                                                                                                           |                                               |     |           |            |          |           |     | 50.00  | 1%      | - |  |
|      | LIMITATION EXPLANAT                                                                                                                                            | ION / RE                                      | MA  | <u>RK</u> | 2          |          |           | _   |        |         | - |  |
| 5    | SINGLE SIDED EXAMINATION.                                                                                                                                      |                                               |     |           |            |          |           |     |        |         | - |  |
|      |                                                                                                                                                                |                                               |     |           |            |          |           |     |        |         | - |  |
|      | ·                                                                                                                                                              |                                               |     |           |            |          |           |     |        | <u></u> | - |  |
|      |                                                                                                                                                                |                                               |     |           |            |          |           |     |        |         | • |  |
|      |                                                                                                                                                                |                                               |     | -         |            |          |           |     |        |         | - |  |
|      |                                                                                                                                                                |                                               |     |           |            |          |           |     |        |         | - |  |
|      |                                                                                                                                                                |                                               |     |           |            |          |           |     |        |         |   |  |

| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        |          |          |                  |           | PI                       | ROFILE AND THICKNESS         |  |  |  |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------|----------|------------------|-----------|--------------------------|------------------------------|--|--|--|--|--|--|
| System: CHEMICAL AND VOLUME CONTROL SYSTEM     Identification: 3-CV-2255-12       POSITION     0     90     180     270       1     0.42     0     0     0.42       2     0.40     0     0.42     0.42       3     0.48     0     NOM DIAMETER: 30*     1       4     •     0     WELD LENGTH: 11.0*     FLOW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | RAA    | RAM      | ATO      | ME               | Exam      | Date: 10/16/00           | Summary No.: 710190          |  |  |  |  |  |  |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | alem   | alem L   | Jnit 2,  | RFO <sup>·</sup> | 11        |                          | Examination Method: UT       |  |  |  |  |  |  |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | n: CH  | n: CHE   | EMIC     |                  | VOLUN     | IE CONTROL SYSTEM        | Identification: 3-CV-2255-12 |  |  |  |  |  |  |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | N O    | N O      | 90       | 18               | 30 270    |                          |                              |  |  |  |  |  |  |
| $\frac{2}{3}  0.46$ $\frac{3}{4}  0.46$ $\frac{1}{5}  0.46$ $\frac{1}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.4    | 0.42     | 2        |                  |           |                          |                              |  |  |  |  |  |  |
| $\frac{4}{5} \cdot \frac{10}{Flow} \rightarrow Va$ $\frac{10}{Flow} \rightarrow Va$ $\frac{110}{Flow} \rightarrow Va$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.4    | 0.40     | )        |                  |           | CROWN WIDTH: _0.4"       |                              |  |  |  |  |  |  |
| $\frac{1}{5} \cdot \frac{110}{\text{FLOW}} \xrightarrow{\text{FLOW}} \text{F$ | 0.4    | 0.46     | 3        |                  |           | NOM DIAMETER: _3.0"      |                              |  |  |  |  |  |  |
| $\frac{PipE}{E} \rightarrow VA$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | •      | •        |          |                  |           | WELD LENGTH: _11.0"      |                              |  |  |  |  |  |  |
| EI E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | •      | •        |          |                  |           |                          | FLOW                         |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2      | 2        |          |                  |           | 7                        |                              |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1      | J        |          |                  |           |                          |                              |  |  |  |  |  |  |
| 0 degree Top dead center<br>* Valve Body. Thickness not taken.<br>** Weld crown tapers from pipe to valve as shown by profile.<br>Pq. Q                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ive Bo | alve Bod | ly. Thic | kness n          | ot taken. | lve as shown by profile. | Pa. 60Ple                    |  |  |  |  |  |  |
| 2 CENAD 10/16/2K BobKellechall 10/19/00 Warm Denhing 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |        |          |          | $\Lambda$        |           |                          | <u> </u>                     |  |  |  |  |  |  |

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### REQUEST FOR ADDITIONAL INFORMATION REQUEST FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR IN-SERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

QUESTION

2.1 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

| Summary #      | 710190                           |                                   |
|----------------|----------------------------------|-----------------------------------|
| Component I.D. | 3-CV-2255-12                     |                                   |
| Description    | Pipe to Valve 2CV72              |                                   |
|                |                                  | Comments                          |
| 1              | Weld X-Section                   | See Attached                      |
| 2              | Material                         | Stainless Steel                   |
| 3              | Thickness / weld Crown           | Thickness .35" / weld Crown .600" |
| 4              | Obstruction                      | Valve OD Contour                  |
| 5              | Exam Area Highlighted on Drawing | Yes X No                          |
| 6              | Transducer ray exit point        | See Attached                      |

#### Comments

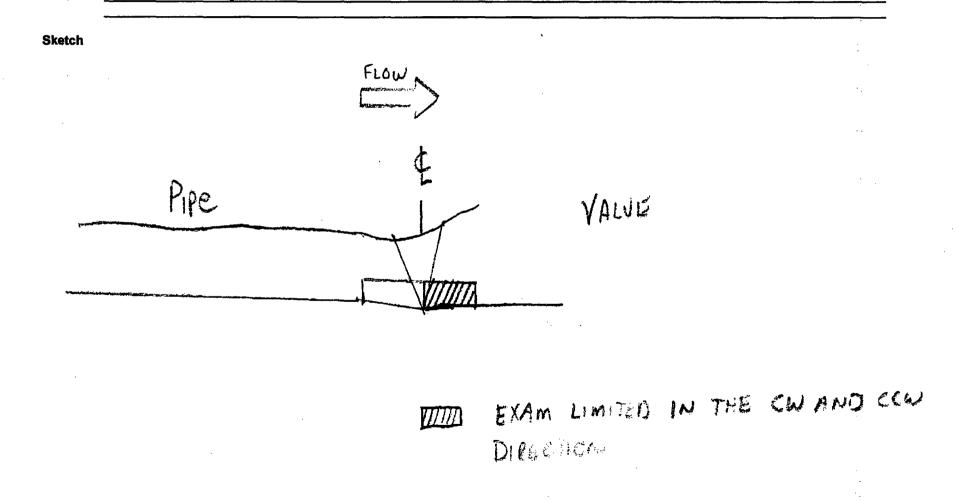
UT exam was performed of this component using 45, and 70 degree shear wave transducer. The ultrasonic examination was limited to 50% of the code required coverage being limited due to downstream side valve OD configuration that restricted scanning. UT scans were performed on and across the weld in both directions No unacceptable indications were observed. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.

Page of

|             | •                   | Supplemental Drawing | l <sup>*</sup> |    |  |
|-------------|---------------------|----------------------|----------------|----|--|
| Summary #   | 710190              | Component I.D.       | 3-CV-2255-12   |    |  |
| Description | Pipe to Valve 2CV72 |                      | Page           | of |  |

Comments

The ultrasonic examination was limited to 50% of the code required coverage being limited due to downstream side valve OD configuration that restricted scanning.



PUBLIC SERVICE ELECTRIC & GAS CUSTOMER ..... SITE ..... SALEM - UNIT 2 2R12 OUTAGE ..... VESSEL TYPE ..... PWR - WESTINGHOUSE FOUR LOOP

WELD IDENTIFICATION - 2-RPV-3442A

Weld and Scan Type = SHELL LONGITUDINAL WELD SCANNED IN THE Scan Data File Name = W12-PRP-242-321

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA DE | FINITION | AZIMUTH<br>(DEGREES) | ELEVATION<br>(IN) |
|--------------------|----------|----------------------|-------------------|
| TOP LEFT           | :        | 53.50                | 242.00            |
| TOP RIGHT          | :        | 66.50                | 242.00            |
| BOTTOM LEFT        | :        | 53.50                | 321.48            |
| BOTTOM RIGHT       | :        | 66.50                | 321.48            |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

21:29:42

| TOP LEFT     | : | 242.00                                | 53.50 |
|--------------|---|---------------------------------------|-------|
| TOP RIGHT    | : | 320.50                                | 53.50 |
| BOTTOM LEFT  | : | 242.00                                | 66.50 |
| BOTTOM RIGHT | : | 320.50                                | 66.50 |
|              |   | · · · · · · · · · · · · · · · · · · · |       |

| Increment  | Size (in)                     | = | 0.50   |
|------------|-------------------------------|---|--------|
| Number of  | Indexes Specified             | = | 160    |
| Number of  | Indexes Completed             | = | 158    |
| Scan Area  | - Original Techniques (sq in) | = | 1570.4 |
| Scan Area  | - This Scan (sq in)           | = | 1570.4 |
| Scan Area  | - Completed (sq in)           | = | 1550.8 |
|            | Time                          |   | Date   |
| Scan Start | ted                           |   |        |

Scan Completed

22:03:20 04/17/02 Jour l Robot Operator Signature DATE DATE

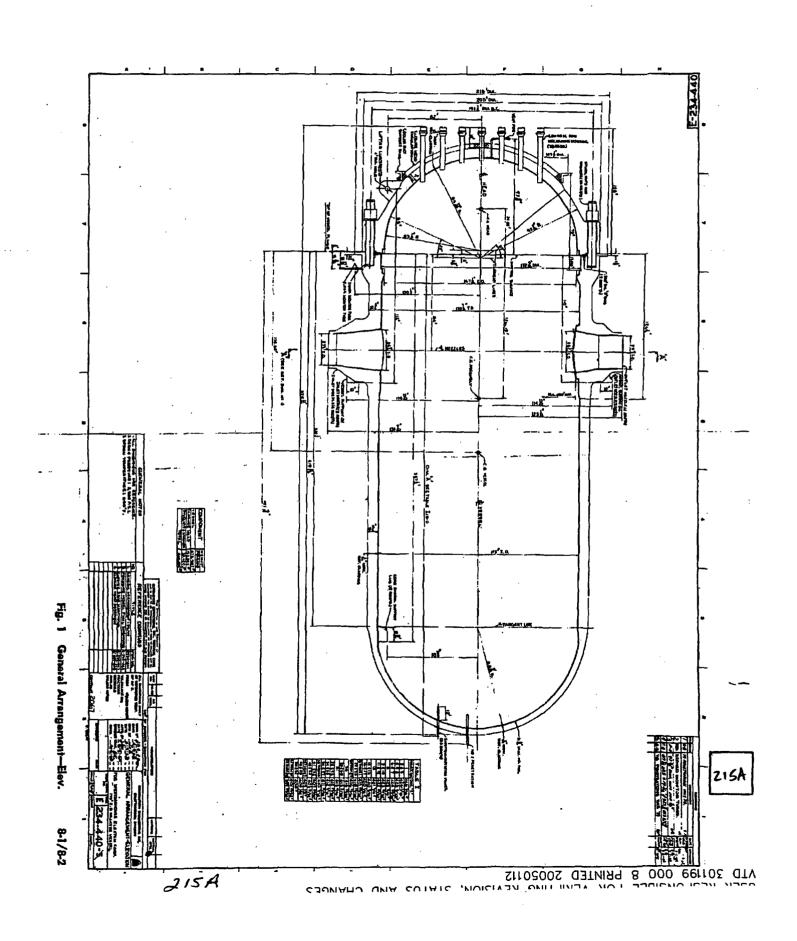
04/17/02

UT Operator Signature

Comments



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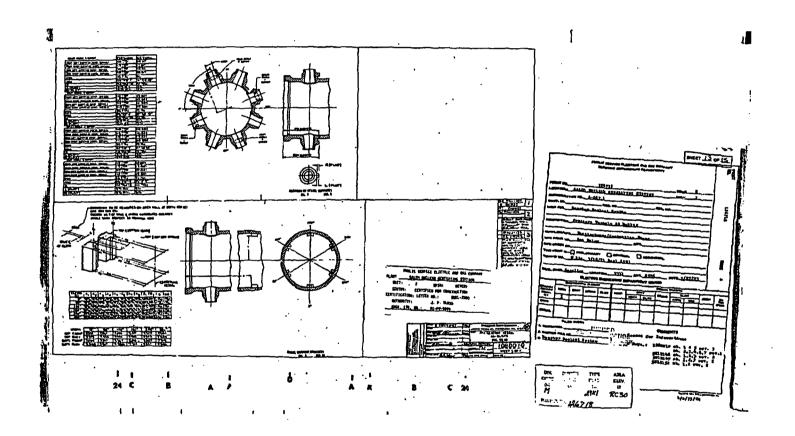
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# USER RESPONSIBLE FOR VERIFYING REVISION, STATUS AND CHANGES VTD 126718 000 2 PRINTED 20050112



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CUSTOMER ..... PUBLIC SERVICE ELECTRIC & GAS SALEM - UNIT 2 SITE ..... 2R12 OUTAGE ..... VESSEL TYPE ..... PWR - WESTINGHOUSE FOUR LOOP WELD IDENTIFICATION - 2-RPV-3442A Weld and Scan Type = SHELL LONGITUDINAL - PARALLEL SCAN Scan Data File Name = W12-PAR-260-320a SCAN AREA PER THE ORIGINAL TECHNIQUES 2 UDRPS SCAN AREA DEFINITION AZIMUTH ELEVATION DECDEEC! / TAT

|              |   | (DEGREES) | (IN)   |
|--------------|---|-----------|--------|
| TOP LEFT     | : | 55.50     | 260.00 |
| TOP RIGHT    | : | 64.50     | 260.00 |
| BOTTOM LEFT  | : | 55.50     | 318.25 |
| BOTTOM RIGHT | : | 64.50     | 318.25 |
|              |   |           |        |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

| TOP LEFT     | : | 55.50 | 260.00 |
|--------------|---|-------|--------|
| TOP RIGHT    | : | 64.50 | 318.25 |
| BOTTOM LEFT  | : | 55.50 | 318.25 |
| BOTTOM RIGHT | : | 64.50 | 260.00 |

| Increment Size (in)        | _              | = | 0.50         |   |
|----------------------------|----------------|---|--------------|---|
| Number of Indexes Specific |                | Ξ | 29           |   |
| Number of Indexes Complete |                | = | 29           |   |
| Scan Area - Original Tech  | niques (sq in) | = | 844.6        |   |
| Scan Area - This Scan (sq  | in)            |   | 844.6        |   |
| Scan Area - Completed (sq  |                | = | 844.6        |   |
|                            | Time           |   | Date         |   |
| Scan Started               |                |   |              |   |
|                            | 21:15:56       | ( | 04/17/02     |   |
| Scan Completed             |                |   |              |   |
| <b>_</b>                   | 21:23:25       | 1 | 04/17/02     |   |
|                            |                |   |              |   |
|                            | $\mathcal{P}$  |   |              |   |
| Robot Operator Signature   | Jaul Boon      | 1 | DATE 417/02  |   |
| _                          | 1110 110       | > |              |   |
| UT Operator Signature      | fre pre-       |   | DATE 4/17/02 | E |
| •                          | •              |   |              | 2 |
| Comments                   |                |   |              | Ľ |
|                            |                |   |              |   |
|                            |                |   |              |   |

PUBLIC SERVICE ELECTRIC & GAS CUSTOMER ..... SALEM - UNIT 2 SITE ..... 2R12 OUTAGE ..... PWR - WESTINGHOUSE FOUR LOOP VESSEL TYPE .....

WELD IDENTIFICATION - 2-RPV-3442A SHELL LONGITUDINAL - PARALLEL SCAN Weld and Scan Type = W12-PAR-246-260 Scan Data File Name

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA | DEFINITION | AZIMUTH<br>(DEGREES) | ELEVATION<br>(IN) |
|-----------------|------------|----------------------|-------------------|
| TOP LEFT        | :          | 55.50                | 246.00            |
| TOP RIGHT       | :          | 64.50                | 246.00            |
| BOTTOM LEFT     |            | 55.50                | 260.00            |
| BOTTOM RIGH     | T :        | 64.50                | 260.00            |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

Time

21:09:05

| TOP LEFT     | : | 55.50 | 246.00 |
|--------------|---|-------|--------|
| TOP RIGHT    | : | 64.50 | 260.00 |
| BOTTOM LEFT  | : | 55.50 | 260.00 |
| BOTTOM RIGHT | : | 64.50 | 246.00 |

Increment Size (in) = Number of Indexes Specified = Number of Indexes Completed = Scan Area - Original Techniques (sq in) = 203.0 Scan Area - This Scan (sq in) = 203.0 Scan Area - Completed (sq in) =

Scan Started

UT Operator Signature

Scan Completed

04/17/02 21:11:46 Robot Operator Signature DATE 4/17/

0.50

203.0

Date

04/17/02

29

29

Comments

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|       |                | R.V. C( | OVERAG | EESTI  | MATE B  | REAKD | OWNS   |         |        |
|-------|----------------|---------|--------|--------|---------|-------|--------|---------|--------|
| PLANT |                | Salerr  | n #2   |        |         |       |        |         |        |
| •     |                |         |        |        |         | We    | sDy    | ne      |        |
| СОМРС |                |         |        |        |         |       |        |         |        |
|       |                |         |        |        |         | nter  | nati   | ona     | I      |
| WELD  | NO             | 2-RPV-3 | 3442-A |        |         |       |        |         |        |
|       |                |         | BEAM   | ANGLE  | BREAK [ | OOWN  |        | <u></u> |        |
| •     | BEAM DIRECTION | 45 S    | hear   | 45 L S | Single  | 45 L  | Dual   |         |        |
|       |                | WELD    | VOLUME | WELD   | VOLUME  | WELD  | VOLUME | WELD    | VOLUME |
|       | Perpindicular  | 79.33   | 79.33  | 79.33  | 79.33   | 81.69 | 81.69  |         |        |
| 1     | Derallal       | 80.74   | 80.81  | 81.13  | 81.20   | 00.00 |        |         |        |
|       | Parallel       |         |        |        | 01.20   | 80.66 | 80.73  | ·       |        |

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| 'LAN I |                 | Salen                                 | n #2                                  | <b>-</b> |        |           |        |      |        |
|--------|-----------------|---------------------------------------|---------------------------------------|----------|--------|-----------|--------|------|--------|
|        |                 | ``                                    |                                       |          |        | We        | esDy   | ne   |        |
| OMP    |                 | WER LC                                | NGSEAN                                | 1        |        |           |        |      |        |
|        |                 |                                       |                                       |          | l      | nter      | rnati  | ona  | 1      |
| VELD   | NO              | 2-RPV-3                               | 3442-B                                |          |        |           |        |      |        |
|        |                 |                                       | BEAM                                  | ANGLE    | BREAK  | DOWN      |        |      |        |
|        | BEAM DIRECTION  | 45 8                                  | hear                                  | 45 L 1   | Single | 45 L Dual |        |      |        |
|        |                 | WELD                                  | VOLUME                                |          | VOLUME | WELD      | VOLUME | WELD | VOLUME |
|        | Perpindicular   | 79.33                                 | 79.33                                 | 79.33    | 79.33  | 81.69     | 81.69  |      |        |
|        | Parallel        | 80.74                                 | 80.81                                 | 81.13    | 81.20  | 80.66     | 80.73  |      |        |
|        | AVERAGE         | 80                                    | .05                                   | 80       | .25    | 81        | .20    |      | l      |
| Commo  | ents:           | · · · · · · · · · · · · · · · · · · · | · · · · · · · · · · · · · · · · · · · |          | 1      |           |        |      |        |
| C      | OMBINED AVERAGE | 80                                    | .50                                   | Analyst  | ique   | 1p        |        | Date | 4/18   |

<u>,</u>\* .

CUSTOMERPUBLIC SERVICE ELECTRIC & GASSITESALEM - UNIT 2OUTAGE2R12VESSEL TYPEPWR - WESTINGHOUSE FOUR LOOP

WELD IDENTIFICATION - 2-RPV-3442B

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Weld and Scan Type = SHELL LONGITUDINAL - PARALLEL SCAN

Scan Data File Name = W13-PAR-246-260

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA DE | FINITION | AZIMUTH<br>(DEGREES) | ELEVATION<br>(IN) |
|--------------------|----------|----------------------|-------------------|
| TOP LEFT           | :        | 175.50               | 246.00            |
| TOP RIGHT          | :        | 184.50               | 246.00            |
| BOTTOM LEFT        | :        | 175.50               | 260.00            |
| BOTTOM RIGHT       | :        | 184.50               | 260.00            |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

| TOP LEFT     | : | 175.50 | 246.00 |
|--------------|---|--------|--------|
| TOP RIGHT    | : | 184.50 | 260.00 |
| BOTTOM LEFT  | : | 175.50 | 260.00 |
| BOTTOM RIGHT | : | 184.50 | 246.00 |

Increment Size (in)=0.50Number of Indexes Specified=29Number of Indexes Completed=29Scan Area - Original Techniques (sq in)=203.0Scan Area - This Scan (sq in)=203.0Scan Area - Completed (sq in)=203.0

Time

20:36:57

Scan Started

Scan Completed

Comments

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04/17

04/17/02

Date

20:40:05 04/17/02 du DATE DATE 4 h

Robot Operator Signature UT Operator Signature

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|-----|--|
|     |  |

CUSTOMERPUBLIC SERVICE ELECTRIC & GASSITESALEM - UNIT 2OUTAGE2R12VESSEL TYPEPWR - WESTINGHOUSE FOUR LOOP

WELD IDENTIFICATION - 2-RPV-3442B

Weld and Scan Type = SHELL LONGITUDINAL - PARALLEL SCAN

Scan Data File Name = W13-PAR-260-320a

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA DE | FINITION | AZIMUTH<br>(DEGREES) | ELEVATION<br>(IN) |
|--------------------|----------|----------------------|-------------------|
| TOP LEFT           | :        | 175.50               | 260.00            |
| TOP RIGHT          | :        | 184.50               | 260.00            |
| BOTTOM LEFT        | :        | 175.50               | 318.25            |
| BOTTOM RIGHT       | :        | 184.50               | 318.25            |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

| TOP LEFT  | : | 175.50           | 260.00           |
|-----------|---|------------------|------------------|
| TOP RIGHT |   | 184.50           | 318.25           |
|           | : | 175.50<br>184.50 | 318.25<br>260.00 |

Increment Size (in)=0.50Number of Indexes Specified=29Number of Indexes Completed=29Scan Area - Original Techniques (sq in)=844.6Scan Area - This Scan (sq in)=844.6Scan Area - Completed (sq in)=844.6

Time 20:50:55

20:59:20

Date

04/17/02

04/17/02

Scan Started

Scan Completed

Robot Operator Signature

UT Operator Signature

0 au DATE 🚧

Comments

PUBLIC SERVICE ELECTRIC & GAS CUSTOMER ..... SALEM - UNIT 2 SITE ..... 2R12 OUTAGE ..... PWR - WESTINGHOUSE FOUR LOOP VESSEL TYPE .....

WELD IDENTIFICATION - 2-RPV-3442B

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SHELL LONGITUDINAL WELD SCANNED IN THE Weld and Scan Type Scan Data File Name W13-PRP-242-321

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA DEFINITION | AZIMUTH<br>(DEGREES) | ELEVATION<br>(IN) |
|----------------------------|----------------------|-------------------|
| TOP LEFT :                 | 173.50               | 242.00            |
| TOP RIGHT :                | 186.50               | 242.00            |
| BOTTOM LEFT :              | 173.50               | 321.48            |
| BOTTOM RIGHT :             | 186.50               | 321.48            |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

Time

| TOP LEFT     | : | 242.00 | 173.50 |
|--------------|---|--------|--------|
| TOP RIGHT    | : | 321.48 | 173.50 |
| BOTTOM LEFT  | : | 242.00 | 186.50 |
| BOTTOM RIGHT | : | 321.48 | 186.50 |

Increment Size (in) = 0.50 Number of Indexes Specified Number of Indexes Completed 160 = 158 Scan Area - Original Techniques (sq in) 1570.4 E Scan Area - This Scan (sq in) 1570.4 = Scan Area - Completed (sq in) 1550.8 =

Scan Started

Date

Scan Completed

20:02:27 04/17/02 04/17/02

20:26:24 DATE

Robot Operator Signature

UT Operator Signature

Comments

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PUBLIC SERVICE ELECTRIC & GAS CUSTOMER ..... SALEM - UNIT 2 SITE ..... 2R12 OUTAGE VESSEL TYPE ..... PWR - WESTINGHOUSE FOUR LOOP

WELD IDENTIFICATION - 2-RPV-3442C SHELL LONGITUDINAL - PARALLEL SCAN Weld and Scan Type = Scan Data File Name W14-PAR-260-320a

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA DE | EFINITION | AZIMUTH<br>(DEGREES) | ELEVATION<br>(IN) |
|--------------------|-----------|----------------------|-------------------|
| TOP LEFT           | :         | 295.50               | 260.00            |
| TOP RIGHT          | :         | 304.50               | 260.00            |
| BOTTOM LEFT        | :         | 295.50               | 318.25            |
| BOTTOM RIGHT       | :         | 304.50               | 318.25            |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

| TOP LEFT     | : | 295.50 | 260.00 |
|--------------|---|--------|--------|
| TOP RIGHT    | : | 304.50 | 318.25 |
| BOTTOM LEFT  | : | 295.50 | 318.25 |
| BOTTOM RIGHT | : | 304.50 | 260.00 |

Increment Size (in) 0.50 Number of Indexes Specified 29 Number of Indexes Completed 29 = Scan Area - Original Techniques (sq in) Scan Area - This Scan (sq in) 844.6 = 844.6 = Scan Area - Completed (sq in) 844.6 Time Date Scan Started

23:00:56

Scan Completed

UT Operator Signature

23:10:46 04/17/02 Robot Operator Signature רעת DATE 5/

04/17/02

Comments

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CUSTOMER ..... PUBLIC SERVICE ELECTRIC & GAS SITE ..... SALEM - UNIT 2 2R12 OUTAGE ..... PWR - WESTINGHOUSE FOUR LOOP VESSEL TYPE ..... WELD IDENTIFICATION - 2-RPV-3442C = SHELL LONGITUDINAL - PARALLEL SCAN Weld and Scan Type = W14-PAR-246-260 Scan Data File Name SCAN AREA PER THE ORIGINAL TECHNIQUES UDRPS SCAN AREA DEFINITION AZIMUTH ELEVATION (DEGREES) (IN) 246.00 TOP LEFT 295.50 : TOP RIGHT 304.50 246.00 : 295.50 BOTTOM LEFT 260.00 : BOTTOM RIGHT : 304.50 260.00 SCAN AREA/AREAS OBTAINED DURING THE SCAN TOP LEFT 295.50 246.00 : TOP RIGHT 304.50 260.00 : BOTTOM LEFT 295.50 260.00 : 246.00 BOTTOM RIGHT : 304.50 Increment Size (in) = 0.50Number of Indexes Specified = 29 Number of Indexes Completed = 29 Scan Area - Original Techniques (sq in) = 203.0 Scan Area - This Scan (sq in) = 203.0 Scan Area - Completed (sq in) = 203.0Time Date Scan Started 22:50:51 04/17/02 Scan Completed 22:53:52 04/17/02 Robot Operator Signature UT Operator Signature Comments 224

PUBLIC SERVICE ELECTRIC & GAS CUSTOMER ..... SITE ..... SALEM - UNIT 2 VESSEL TYPE ..... PWR - WESTINGHOUSE FOUR LOOP

#### WELD IDENTIFICATION - 2-RPV-3442C

= SHELL LONGITUDINAL WELD SCANNED IN THE Weld and Scan Type Scan Data File Name = W14-PRP-242-321

#### SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA DE | FINITION | AZIMUTH<br>(DEGREES) | ELEVATION<br>(IN) |
|--------------------|----------|----------------------|-------------------|
| TOP LEFT           | :        | 293.50               | 242.00            |
| TOP RIGHT          | :        | 306.50               | 242.00            |
| BOTTOM LEFT        | :        | 293.50               | 321.48            |
| BOTTOM RIGHT       | :        | 306.50               | 321.48            |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

| TOP LEFT     | : | 246.00 | 293.50 |
|--------------|---|--------|--------|
| TOP RIGHT    | : | 321.00 | 306.50 |
| BOTTOM LEFT  | : | 246.00 | 306.50 |
| BOTTOM RIGHT | : | 321.00 | 293.50 |

| Number of<br>Scan Area<br>Scan Area | Indexes Specified<br>Indexes Completed | 4 H H | 0.50<br>160<br>159<br>1570.4<br>1570.4<br>1560.6 |  |
|-------------------------------------|----------------------------------------|-------|--------------------------------------------------|--|
|                                     | Time                                   |       | Date                                             |  |

Scan Started

. . .

Scan Completed

|       |          |           | 22:42:09  | 04/17/02       |  |
|-------|----------|-----------|-----------|----------------|--|
|       |          |           | POD       | - DATE 4/17/02 |  |
| Robot | Operator | Signature | Jack Boar | - DATE 4/17/02 |  |
|       | _        | -         | hit with  |                |  |

22:13:12

UT Operator Signature

and the DATE 1/17/02

04/17/02

| Comments |  |
|----------|--|
|          |  |
|          |  |

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|       | ·               |         |             |         | IMATE B  | ▝᠈╰╘┛▔╲┇╲┠ |          |          |        |
|-------|-----------------|---------|-------------|---------|----------|------------|----------|----------|--------|
| PLANT |                 | Salen   | <u>1 #2</u> |         |          |            |          |          |        |
|       |                 |         |             |         |          | We         | esDy     | ne       |        |
| СОМРО |                 | OWER LO | NGSEAN      | 1       |          |            |          |          |        |
|       |                 |         |             |         |          | ntei       | nati     | ona      |        |
| WELD  | NO              | 2-RPV-3 | 442-C       |         |          |            |          |          |        |
|       |                 |         | BEAM        | ANGLE   | BREAK    | DOWN       |          | <u> </u> |        |
|       | BEAM DIRECTION  | 45 S    | hear        | 45 L    | Single   | 45 L       | Dual     |          |        |
|       |                 | WELD    | VOLUME      | WELD    | VOLUME   | WELD       | VOLUME   | WELD     | VOLUME |
|       | Perpindicular   | 79.33   | 79.33       | 79.33   | 79.33    | 81.69      | 81.69    |          |        |
|       | Paraliel        | 80.74   | 80.81       | 81.13   | 81.20    | 80.66      | 80.73    |          |        |
|       | AVERAGE         | 80.     | 05          | 80      | 0.25     | 81         | .20      |          |        |
| Comme | ents:           |         |             |         |          |            |          |          |        |
|       |                 |         |             |         |          |            |          |          |        |
|       |                 |         |             |         | <u> </u> |            | <u> </u> |          |        |
| Ċ     | OMBINED AVERAGE | 80.     | 50          | Analyst | 1 am     | 4/2-       | ·        | Date     | 4/18/0 |

226

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CUSTOMERPUBLIC SERVICE ELECTRIC & GASSITESALEM - UNIT 2OUTAGE2R12VESSEL TYPEPWR - WESTINGHOUSE FOUR LOOP

WELD IDENTIFICATION - 2-RPV-1443A

Weld and Scan Type = HEAD MERIDINAL PERPENDICULAR SCAN

Scan Data File Name = W19-MER-PRP-270

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA | DEFINITION | MERIDINAL<br>(DEGREES) | AZIMUTH<br>(DEGREES) |
|-----------------|------------|------------------------|----------------------|
| TOP LEFT        | •          | 48.20                  | 266.42               |
| TOP RIGHT       | :          | 48.20                  | 273.58               |
| BOTTOM LEFT     | : 1        | 76.00                  | 266.42               |
| BOTTOM RIGH     | IT :       | 76.00                  | 273.58               |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

| TOP LEFT     | : | 76.00 | 266.29 |
|--------------|---|-------|--------|
| TOP RIGHT    | : | 48.20 | 274.84 |
| BOTTOM LEFT  | : | 76.00 | 273.72 |
| BOTTOM RIGHT | : | 48.20 | 265.17 |

Increment Size (in)=0.50Number of Indexes Specified=87Number of Indexes Completed=87Scan Area - Original Techniques (sq in)=483.3Scan Area - This Scan (sq in)=483.3Scan Area - Completed (sq in)=483.3

Scan Started

Scan Completed

4

Comments

04/17/02 04/17/02

Date

04:22:53

Time

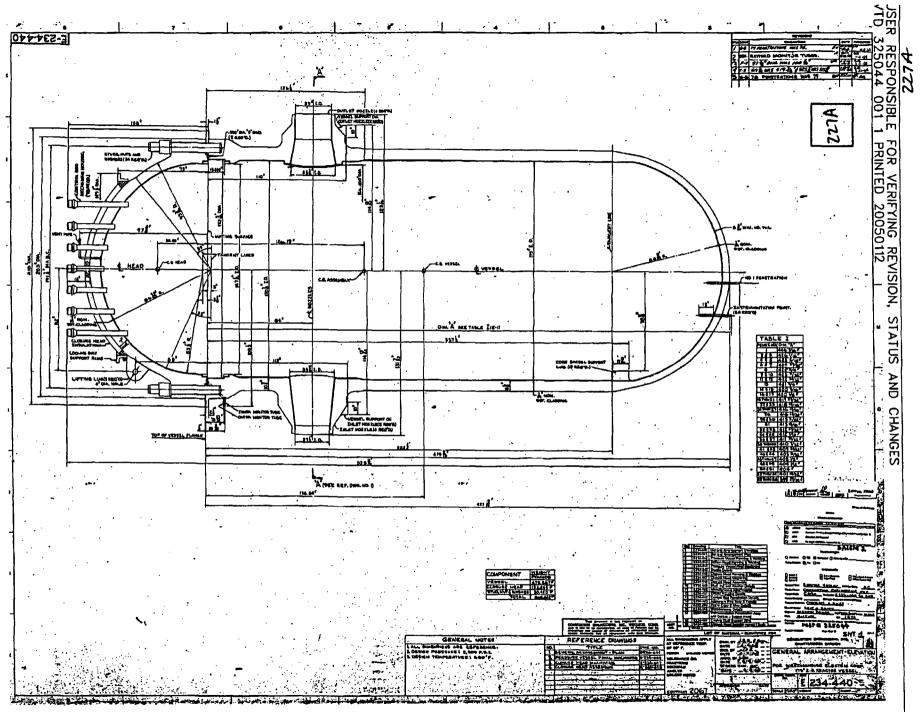
04:15:34

Robot Operator Signature

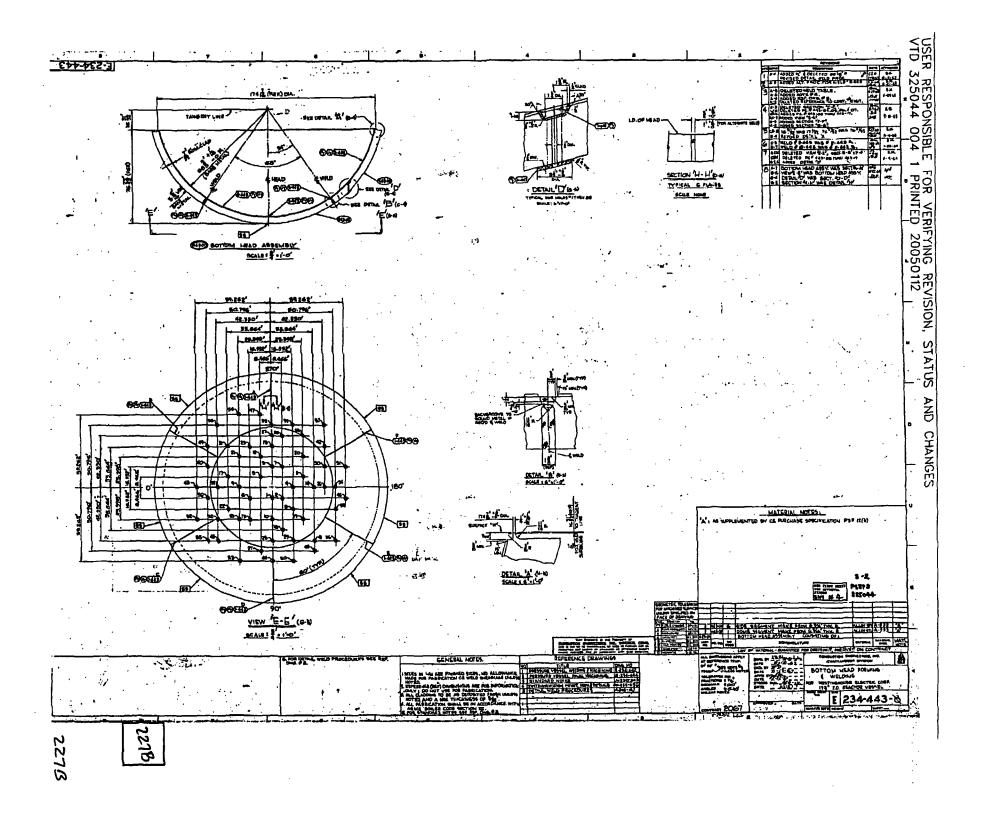
UT Operator Signature

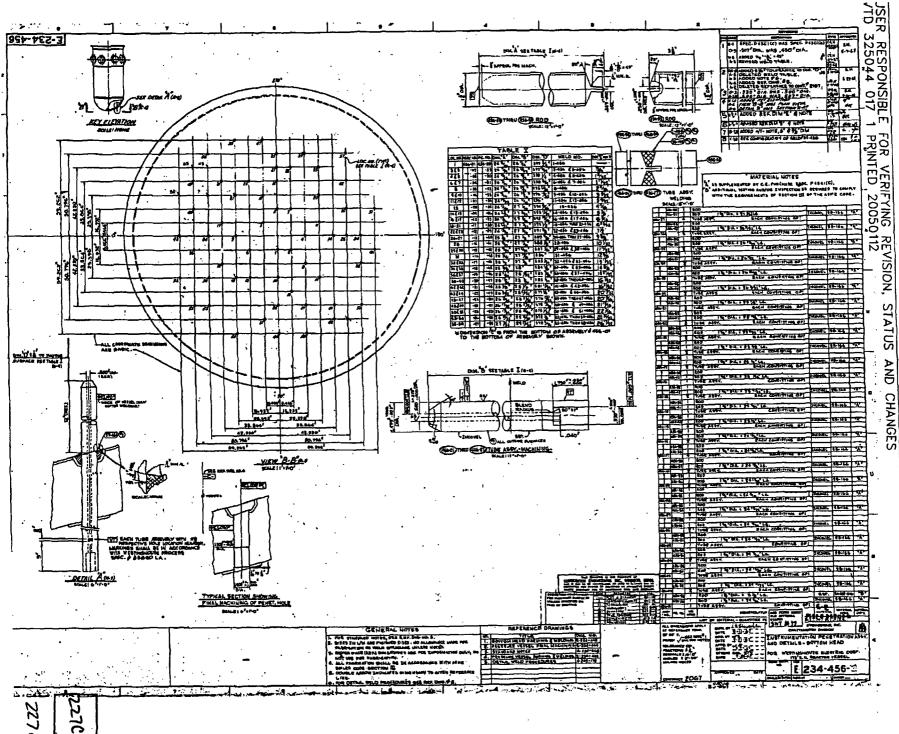
DATE 07

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CUSTOMERPUBLIC SERVICE ELECTRIC & GASSITESALEM - UNIT 2OUTAGE2R12VESSEL TYPEPWR - WESTINGHOUSE FOUR LOOP

| WELD | IDENTIFICATION - 2 | 2-RI | LPV-1443A                         |
|------|--------------------|------|-----------------------------------|
| Weld | and Scan Type      | =    | HEAD MERIDINAL PERPENDICULAR SCAN |
| Scan | Data File Name     | =    | W19-MER-PRP-270A                  |

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA DE | FINITION | MERIDINAL<br>(DEGREES) | AZIMUTH<br>(DEGREES) |
|--------------------|----------|------------------------|----------------------|
| TOP LEFT           | :        | 40.60                  | 266.42               |
| TOP RIGHT          | :        | 40.60                  | 270.39               |
| BOTTOM LEFT        | :        | 48.00                  | 266.42               |
| BOTTOM RIGHT       | :        | 48.00                  | 270.39               |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

| TOP LEFT     | : | 48.00 | 265.15 |
|--------------|---|-------|--------|
| TOP RIGHT    | : | 40.60 | 264.46 |
| BOTTOM LEFT  | : | 48.00 | 270.64 |
| BOTTOM RIGHT | : | 40.60 | 270.73 |

= 0.50 Increment Size (in) Number of Indexes Specified = 24 Number of Indexes Completed = 24 Scan Area - Original Techniques (sq in) = 75.4 Scan Area - This Scan (sq in) Scan Area - Completed (sq in) = 75.4 = 75.4 Time Date Scan Started 04/17/02 04:23:00 Scan Completed 04/17/02 04:27:32

| Robot Operator Signature | Je Killer     | DATE or/17/02 | 128 |
|--------------------------|---------------|---------------|-----|
| Robot operator signature | Auto          |               |     |
| UT Operator Signature    | ANONE         | DATE 4/1702   |     |
|                          |               |               |     |
| <b>a</b> .               | $\mathcal{L}$ |               |     |
| Comments                 |               |               |     |



CUSTOMERPUBLIC SERVICE ELECTRIC & GASSITESALEM - UNIT 2OUTAGE2R12VESSEL TYPEPWR - WESTINGHOUSE FOUR LOOP

WELD IDENTIFICATION - 2-RPV-1443A

Increment Size (in)

Weld and Scan Type = HEAD MERIDINAL PARALLEL SCAN

Scan Data File Name = W19-MER-PAR-270

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA DEFIN | ITION AZIMUTH<br>(DEGREES) | MERIDINAL<br>(DEGREES) |
|-----------------------|----------------------------|------------------------|
| TOP LEFT :            | 266.38                     | 75.23                  |
| TOP RIGHT :           | 273.62                     | 75.23                  |
| BOTTOM LEFT :         | 265.36                     | 49.20                  |
| BOTTOM RIGHT :        | 274.64                     | 49.20                  |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

0.50

| TOP LEFT     | : | 266.38 | 75.23 |
|--------------|---|--------|-------|
| TOP RIGHT    | : | 273.62 | 49.20 |
| BOTTOM LEFT  | : | 266.38 | 49.20 |
| BOTTOM RIGHT | : | 273.62 | 75.23 |

Number of Indexes Specified 23 Number of Indexes Completed = 23 Scan Area - Original Techniques (sq in) Scan Area - This Scan (sq in) Scan Area - Completed (sq in) = 461.2 = 461.2 461.2 = Time Date Scan Started 04/17/02 04:32:34 Scan Completed 04:40:08 04/17/02

DATE 09 Robot Operator Signature UT Operator Signature עדעת Comments

72

CUSTOMER ..... PUBLIC SERVICE ELECTRIC & GAS SALEM - UNIT 2 SITE ..... OUTAGE ..... 2R12 PWR - WESTINGHOUSE FOUR LOOP VESSEL TYPE ..... WELD IDENTIFICATION - 2-RPV-1443A Weld and Scan Type = HEAD MERIDINAL PARALLEL SCAN W19-MER-PAR-270A Scan Data File Name = SCAN AREA PER THE ORIGINAL TECHNIQUES UDRPS SCAN AREA DEFINITION AZIMUTH MERIDINAL (DEGREES) (DEGREES) TOP LEFT 49.20 265.38 : TOP RIGHT 273.53 49.20 : BOTTOM LEFT : 264.71 41.60 BOTTOM RIGHT : 274.04 41.60 SCAN AREA/AREAS OBTAINED DURING THE SCAN TOP LEFT 265.38 49.20 : TOP RIGHT 41.60 : 273.08 BOTTOM LEFT : 265.38 41.60 BOTTOM RIGHT : 273.08 49.20 TOP LEFT 272.22 49.20 : TOP RIGHT 273.08 41.60 : 272.22 BOTTOM LEFT 41.60 : BOTTOM RIGHT : 273.08 49.20 Increment Size (in) = 0.50 Number of Indexes Specified = 21 Number of Indexes Completed = 19 Scan Area - Original Techniques (sq in) = 122.8 Scan Area - This Scan (sq in) = 122.8 Scan Area - Completed (sq in) = 111.1 Time Date Scan Started 04:49:20 04/17/02 Scan Completed 04:52:29 04/17/02 Robot Operator Signature DATE 0 2

IT Operator Signature

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230

DATE 4

|         |                |         |         |       | IMATE B | ſĸ∖₽₽₽ĴſŢĬĬ <u>Ĭ</u> |        |      |        |
|---------|----------------|---------|---------|-------|---------|----------------------|--------|------|--------|
| PLANT N | NAME           | SALEM   | UNIT 2  |       |         |                      |        |      |        |
|         | ·              |         |         |       |         | We                   | esDy   | ne   |        |
| COMPO   |                | ERIDON  | AL WELD |       |         |                      |        |      |        |
|         | •              |         |         |       |         | Inter                | rnati  | ona  |        |
| WELD N  | 0              | 2-RPV-  | 1443A   |       |         |                      |        |      |        |
|         |                | <u></u> | BEAM    | ANGLE | BREAK   | NWOC                 |        |      |        |
| ſ       | BEAM DIRECTION | 45 8    | Shear   |       | Single  |                      | Dual   |      |        |
| ŀ       |                | WELD    | VOLUME  | WELD  | VOLUME  | WELD                 | VOLUME | WELD | VOLUME |
| þ       | Perpindicular  | 89.10   | 89.10   | 89.10 | 89.10   | 89.10                | 85.44  |      |        |
| ŀ       | Parallel       | 87.02   | 87.02   | 87.02 | 87.02   | 87.02                | 87.02  |      |        |
| E       | AVERAGE        | 88      | .06     | 88    | 3.06    | 87                   | .15    |      | L      |
| Commer  | nts:           |         |         |       |         |                      |        |      |        |

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|                      | R.V. C   | OVERAC | GE EST | IMATE E | REAK  | DOWNS  |      |          |   |
|----------------------|----------|--------|--------|---------|-------|--------|------|----------|---|
|                      | SALEM    | UNIT 2 |        |         |       |        |      |          |   |
|                      |          |        |        |         | We    | esDy   | ne   |          |   |
| OMPONENT             | MERIDON  |        |        |         |       |        |      |          |   |
| ·                    | INERIDUN |        |        |         | Into  | rnati  | ona  | 1        |   |
|                      |          |        |        | 1       |       | Haur   | Ulla |          |   |
| ELD NO               | 2-RPV-   | 1443C  |        |         |       |        |      | · .      |   |
|                      |          | BEAM   | ANGLE  | BREAK I | DOWN  |        |      |          | { |
| <b>BEAM DIRECTIO</b> | N 45 9   | Shear  | 45 L   | Single  | 45 L  | Dual   |      |          | 1 |
|                      | WELD     | VOLUME | WELD   | VOLUME  | WELD  | VOLUME | WELD | VOLUME   |   |
| Perpindicular        | 91.00    | 85.50  | 91.00  | 89.06   | 91.00 | 85.25  |      |          |   |
| Parallel             | 88.20    | 86.30  | 88.20  | 87.20   | 88.20 | 87.20  |      |          |   |
| AVERAGE              | 87       | 7.75   | 88     | B.87    | 87    | 7.91   |      | <u> </u> |   |
| omments:             |          |        |        |         |       |        |      |          |   |
|                      | ·        |        |        |         |       |        |      |          |   |

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CUSTOMERPUBLIC SERVICE ELECTRIC & GASSITESALEM - UNIT 2OUTAGE2R12VESSEL TYPEPWR - WESTINGHOUSE FOUR LOOP

WELD IDENTIFICATION - 2-RPV-1443C
Weld and Scan Type = HEAD MERIDINAL PARALLEL SCAN
Scan Data File Name = W15-MER-PAR-30A

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA DEFINIT | ION AZIMUTH<br>(DEGREES) | MERIDINAL<br>(DEGREES) |
|-------------------------|--------------------------|------------------------|
| TOP LEFT :              | 27.63                    | 55.00                  |
| TOP RIGHT :             | 34.27                    | 55.00                  |
| BOTTOM LEFT :           | 27.00                    | 40.50                  |
| BOTTOM RIGHT :          | 35.41                    | 40.50                  |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

| TOP LEFT     | : | 27.63 | 55.00 |
|--------------|---|-------|-------|
| TOP RIGHT    | : | 35.41 | 55.00 |
| BOTTOM LEFT  | : | 27.63 | 40.50 |
| BOTTOM RIGHT | : | 35.41 | 40.50 |

Increment Size (in)=0.50Number of Indexes Specified=18Number of Indexes Completed=18Scan Area - Original Techniques (sq in)=201.6Scan Area - This Scan (sq in)=201.6Scan Area - Completed (sq in)=201.6

Time 06:37:11

Scan Completed

Scan Started

06:41;19

Date

04/17/02

04/17/02

Robot Operator Signature UT Operator Signature Comments

CUSTOMERPUBLIC SERVICE ELECTRIC & GASSITESALEM - UNIT 2OUTAGE2R12VESSEL TYPEPWR - WESTINGHOUSE FOUR LOOP

WELD IDENTIFICATION - 2-RPV-1443C

Weld and Scan Type = HEAD MERIDINAL PARALLEL SCAN

Scan Data File Name = W15-MER-PAR-30

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA DEFINIT | ION AZIMUTH<br>(DEGREES) | MERIDINAL<br>(DEGREES) |
|-------------------------|--------------------------|------------------------|
| TOP LEFT :              | 26.38                    | 75.23                  |
| TOP RIGHT :             | 33.62                    | 75.23                  |
| BOTTOM LEFT :           | 25.72                    | 55.00                  |
| BOTTOM RIGHT :          | 34.28                    | 55.00                  |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

| TOP LEFT     | : | 26.38 | 75.23 |
|--------------|---|-------|-------|
| TOP RIGHT    | : | 33.62 | 55.00 |
| BOTTOM LEFT  | : | 26.38 | 55.00 |
| BOTTOM RIGHT | : | 33.62 | 75.23 |

Increment Size (in)= 0.50Number of Indexes Specified= 23Number of Indexes Completed= 23Scan Area - Original Techniques (sq in)= 358.8Scan Area - This Scan (sq in)= 358.8Scan Area - Completed (sq in)= 358.8

Time

06:27:43

Date

Scan Completed

Scan Started

04/17/02

04/17/02 06:34; Robot Operator Signature UT Operator Signature



CUSTOMER ..... PUBLIC SERVICE ELECTRIC & GAS SITE ..... SALEM - UNIT 2 OUTAGE ..... 2R12 PWR - WESTINGHOUSE FOUR LOOP VESSEL TYPE ..... WELD IDENTIFICATION - 2-RPV-1443C

HEAD MERIDINAL PERPENDICULAR SCAN Weld and Scan Type = Scan Data File Name W15-MER-PRP-30A

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA DEI | INITION | MERIDINAL | AZIMUTH   |
|---------------------|---------|-----------|-----------|
|                     |         | (DEGREES) | (DEGREES) |
| TOP LEFT            | :       | 39.50     | 29.08     |
| TOP RIGHT           | :       | 39.50     | 32.65     |
| BOTTOM LEFT         | :       | 54.00     | 29.08     |
| BOTTOM RIGHT        | :       | 54.00     | 32.65     |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

| TOP LEFT     | : | 54.00 | 28.77 |
|--------------|---|-------|-------|
| TOP RIGHT    | : | 39.50 | 28.44 |
| BOTTOM LEFT  | : | 54.00 | 33.33 |
| BOTTOM RIGHT | : | 39.50 | 34.23 |

Increment Size (in) 0.50 Number of Indexes Specified 46 Number of Indexes Completed 46 = Scan Area - Original Techniques (sq in) = 130.6 Scan Area - This Scan (sq in) = 130.6 Scan Area - Completed (sq in) = 130.6

> Time 06:18:30

Scan Completed

Comments

Scan Started

06:22:16 04/17/02 Robot Operator Signature UT Operator Signature

Date

04/17/02

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA DE | FINITION | MERIDINAL<br>(DEGREES) | AZIMUTH<br>(DEGREES) |
|--------------------|----------|------------------------|----------------------|
| TOP LEFT           | :        | 54.00                  | 26.42                |
| TOP RIGHT          | :        | 54.00                  | 33.58                |
| BOTTOM LEFT        | :        | 76.00                  | 26.42                |
| BOTTOM RIGHT       | :        | 76.00                  | 33.58                |

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SCAN AREA/AREAS OBTAINED DURING THE SCAN

| TOP LEFT     | : | 76.00 | 26.29 |
|--------------|---|-------|-------|
| TOP RIGHT    | : | 54.00 | 34.46 |
| BOTTOM LEFT  | : | 76.00 | 33.72 |
| BOTTOM RIGHT | : | 54.00 | 25.55 |

Increment Size (in) = 0.50 Number of Indexes Specified = 69 Number of Indexes Completed = 69 Scan Area - Original Techniques (sq in)=383.3Scan Area - This Scan (sq in)=383.3Scan Area - Completed (sq in)=383.3 Time Date Scan Started 06:08:55 04/17/02 Scan Completed 06:16:58 04/17/02 DATE OS Robot Operator Signature UT Operator Signature DATE Comments .

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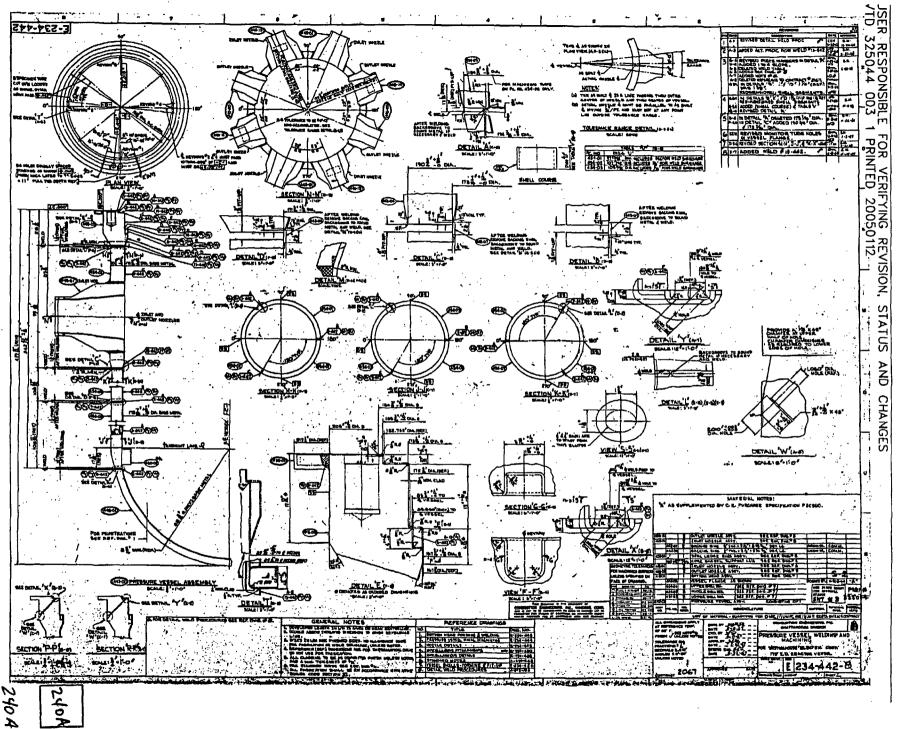
|              | IX, V, U                              | OVERAG                                | ····································· |                  |       |                |      |        |    |
|--------------|---------------------------------------|---------------------------------------|---------------------------------------|------------------|-------|----------------|------|--------|----|
| NT NAME      | SALEM                                 | UNIT 2                                |                                       |                  |       |                |      |        |    |
|              |                                       |                                       |                                       |                  | We    | esDy           | ne   |        |    |
|              | MERIDON                               | AL WELD                               |                                       | I                | Inter | rnati          | ona  | I.     |    |
|              | 2-RPV-                                | 1443D                                 |                                       |                  |       |                |      |        |    |
|              |                                       | BEAM                                  | ANGLE                                 | BREAK I          | DOWN  |                |      |        |    |
| BEAM DIRECT  | ON 45                                 | Shear<br>VOLUME                       |                                       | Single<br>VOLUME |       | Dual<br>VOLUME | WELD | VOLUME |    |
|              |                                       |                                       |                                       |                  |       |                |      |        |    |
| Perpindicula | ar 75.00                              | 75.00                                 | 75.00                                 | 75.00            | 75.00 | 75.00          |      |        | -{ |
| Parallel     | 70.00                                 | 70.00                                 | 70.00                                 | 70.00            | 70.00 | 70.00          |      |        |    |
| AVERAGE      | 72                                    | 2.50                                  | 72                                    | 2.50             | 72    | 2.50           |      |        | -] |
| nments:      | · · · · · · · · · · · · · · · · · · · | · · · · · · · · · · · · · · · · · · · |                                       |                  |       |                |      |        |    |

CUSTOMER ..... PUBLIC SERVICE ELECTRIC & GAS SITE ..... SALEM - UNIT 2 OUTAGE ..... 2R12 PWR - WESTINGHOUSE FOUR LOOP VESSEL TYPE ..... WELD IDENTIFICATION - 2-RPV-1443D = HEAD MERIDINAL PERPENDICULAR SCAN Weld and Scan Type Scan Data File Name = W16-MER-PRP-90 SCAN AREA PER THE ORIGINAL TECHNIQUES UDRPS SCAN AREA DEFINITION MERIDINAL AZIMUTH (DEGREES) (DEGREES) TOP LEFT 48.00 86.42 : TOP RIGHT 48.00 93.58 : 86.42 BOTTOM LEFT : 76.00 BOTTOM RIGHT : 76.00 93.58 SCAN AREA/AREAS OBTAINED DURING THE SCAN TOP LEFT 76.00 86.29 : TOP RIGHT 48.75 94.80 : 76.00 93.72 BOTTOM LEFT : BOTTOM RIGHT : 48.75 85.21 Increment Size (in) = 0.50Number of Indexes Specified = 88 Number of Indexes Completed = 85 Scan Area - Original Techniques (sq in) = 488.8 Scan Area - This Scan (sq in) = 488.8 Scan Area - Completed (sq in) = 472.2 Time Date Scan Started 04/17/02 06:55:36 Scan Completed 04/17/02 07:06: > DATE OY Robot Operator Signature UT Operator Signature Comments 138

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CUSTOMER ..... PUBLIC SERVICE ELECTRIC & GAS SALEM - UNIT 2 SITE ..... 2R12 OUTAGE ..... PWR - WESTINGHOUSE FOUR LOOP VESSEL TYPE WELD IDENTIFICATION - 2-RPV-1443D = HEAD MERIDINAL PARALLEL SCAN Weld and Scan Type = W16-MER-PAR-90 Scan Data File Name SCAN AREA PER THE ORIGINAL TECHNIQUES MERIDINAL UDRPS SCAN AREA DEFINITION AZIMUTH (DEGREES) (DEGREES) 75.23 TOP LEFT 86.38 : 75.23 TOP RIGHT 93.62 : BOTTOM LEFT 85.46 50.60 : 94.54 50.60 BOTTOM RIGHT : SCAN AREA/AREAS OBTAINED DURING THE SCAN 86.38 75.23 TOP LEFT : TOP RIGHT 93.62 50.60 : BOTTOM LEFT 86.38 50.60 : BOTTOM RIGHT : 93.62 75.23 = 0.50 Increment Size (in) Number of Indexes Specified = 23 Number of Indexes Completed = 23 Scan Area - Original Techniques (sq in) = 437.0 = 437.0 Scan Area - This Scan (sq in) = 437.0 Scan Area - Completed (sq in) Date Time Scan Started 06:46:19 04/17/02 Scan Completed 06:52:37 04/17/02 > DATE O Robot Operator Signature UT Operator Signature Comments

|                 | R.V. COVERA    | GE ESTI | MATE B   | REAKD                                                                                                          | OWNS   |      |         |
|-----------------|----------------|---------|----------|----------------------------------------------------------------------------------------------------------------|--------|------|---------|
|                 | SALEM UNIT 2   |         |          |                                                                                                                |        |      |         |
|                 |                |         |          | We                                                                                                             | esDy   | ne   |         |
|                 | LL TO FLANGE W |         |          |                                                                                                                | -      |      |         |
|                 |                |         |          | nter                                                                                                           | nati   | ona  | 1       |
| WELD NO         | 2-RPV-7442     |         | <i>.</i> |                                                                                                                |        |      |         |
|                 | BEAN           | ANGLE   | BREAK    | DOWN                                                                                                           |        |      |         |
| BEAM DIRECTION  |                |         | Single   | the second second second second second second second second second second second second second second second s | Dual   |      |         |
|                 | WELD VOLUME    | WELD    | VOLUME   | WELD                                                                                                           | VOLUME | WELD | VOLUME  |
| Perpindicular   | 81.00 81.00    | 81.00   | 81.00    | 81.00                                                                                                          | 81.00  |      |         |
| Parallel        | 82.20 82.20    | 82.20   | 82.20    | 82.20                                                                                                          | 82.20  |      |         |
| AVERAGE         | 81.60          | 81      | .60      | 81                                                                                                             | .60    |      |         |
| Comments:       |                |         |          |                                                                                                                |        |      |         |
|                 |                |         |          |                                                                                                                |        |      |         |
|                 | E 81.60        | Analyst | 'and     | 12                                                                                                             | ·····  | Date | 4/19/00 |
| COMBINED AVERAG | E01.00         | Analyst | - que    |                                                                                                                |        | Date |         |



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CUSTOMERPUBLIC SERVICE ELECTRIC & GASSITESALEM - UNIT 2OUTAGE2R12VESSEL TYPEPWR-WESTINGHOUSE 4 LOOP

WELD IDENTIFICATION - 2-RPV-7442 Weld and Scan Type = FLANGE CIRCUMFERENTIAL PARALLEL SCAN Scan Data File Name = W1-PAR-270-315

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA DE | FINITION | ELEVATION<br>(IN) | AZIMUTH<br>(DEGREES) |
|--------------------|----------|-------------------|----------------------|
| TOP LEFT           | :        | 22.36             | 270.00               |
| TOP RIGHT          | :        | 22.36             | 315.25               |
| BOTTOM LEFT        | :        | 36.05             | 270.00               |
| BOTTOM RIGHT       | :        | 36.05             | 315.25               |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

| TOP LEFT     | • | 22.36 | 270.00 |
|--------------|---|-------|--------|
| TOP RIGHT    |   | 36.05 | 315.25 |
| BOTTOM LEFT  | : | 22.36 | 315.25 |
| BOTTOM RIGHT |   | 36.05 | 270.00 |

Increment Size (in)=0.50Number of Indexes Specified=29Number of Indexes Completed=29Scan Area - Original Techniques (sq in)=973.6Scan Area - This Scan (sq in)=973.6Scan Area - Completed (sq in)=973.6

Time 19:05:13

19:13:36

Date

04/18/02

04/18/02

Scan Completed

Scan Started

Robot Operator Signature and UT Operator Signature

Comments

CUSTOMERPUBLIC SERVICE ELECTRIC & GASSITESALEM - UNIT 2OUTAGE2R12VESSEL TYPEPWR-WESTINGHOUSE 4 LOOP

WELD IDENTIFICATION - 2-RPV-7442 Weld and Scan Type = FLANGE CIRCUMFERENTIAL PARALLEL SCAN Scan Data File Name = W1-PAR-324-351

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA DE | FINITION | ELEVATION<br>(IN) | AZIMUTH<br>(DEGREES) |
|--------------------|----------|-------------------|----------------------|
| TOP LEFT           | :        | 22.36             | 324.00               |
| TOP RIGHT          | :        | 22.36             | 351.00               |
| BOTTOM LEFT        | :        | 36.05             | 324.00               |
| BOTTOM RIGHT       | :        | 36.05             | 351.00               |
|                    |          |                   |                      |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

| TOP LEFT     | • | 22.36 | 324.00 |
|--------------|---|-------|--------|
| TOP RIGHT    |   | 36.05 | 351.00 |
| BOTTOM LEFT  |   | 22.36 | 351.00 |
| BOTTOM RIGHT | : | 36.05 | 324.00 |

Increment Size (in) = 0.50 Number of Indexes Specified 29 = Number of Indexes Completed 29 = Scan Area - Original Techniques (sq in) = 580.9 Scan Area - This Scan (sq in) = 580.9Scan Area - Completed (sq in) = 580.9Time Date Scan Started 19:35:21 04/18/02 Scan Completed 19:40:10 04/18/02 DATE Robot Operator Signature UT Operator Signature Comments

CUSTOMERPUBLIC SERVICE ELECTRIC & GASSITESALEM - UNIT 2OUTAGE2R12VESSEL TYPEPWR-WESTINGHOUSE 4 LOOP

WELD IDENTIFICATION - 2-RPV-7442

Comments

Weld and Scan Type = FLANGE CIRCUMFERENTIAL PARALLEL SCAN

Scan Data File Name = W1-PAR-6-34

## SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA DE | FINITION | ELEVATION<br>(IN) | AZIMUTH<br>(DEGREES) |
|--------------------|----------|-------------------|----------------------|
| TOP LEFT           | :        | 22.36             | 6.00                 |
| TOP RIGHT          | :        | 22.36             | 34.00                |
| BOTTOM LEFT        | :        | 36.05             | 6.00                 |
| BOTTOM RIGHT       | :        | 36.05             | 34.00                |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

| TOP LEFT     | : | 22.36 | 6.00  |
|--------------|---|-------|-------|
| TOP RIGHT    | : | 36.05 | 34.00 |
| BOTTOM LEFT  | : | 22.36 | 34.00 |
| BOTTOM RIGHT | : | 36.05 | 6.00  |

Increment Size (in) 0.50 = Number of Indexes Specified Number of Indexes Completed 29 = 29 -Scan Area - Original Techniques (sq in) = 602.4 Scan Area - This Scan (sq in) = 602.4 Scan Area - Completed (sq in) = 602.4 Time Date Scan Started 19:47:43 04/18/02 Scan Completed 19:52:41 04/18/02 Robot Operator Signature UT Operator Signature

2.43

CUSTOMERPUBLIC SERVICE ELECTRIC & GASSITESALEM - UNIT 2OUTAGE2R12VESSEL TYPEPWR-WESTINGHOUSE 4 LOOP

WELD IDENTIFICATION - 2-RPV-7442 Weld and Scan Type = FLANGE CIRCUMFERENTIAL PARALLEL SCAN Scan Data File Name = W1-PAR-43-90

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA DE | FINITION | ELEVATION<br>(IN) | AZIMUTH<br>(DEGREES) |
|--------------------|----------|-------------------|----------------------|
| TOP LEFT           | :        | 22.36             | 43.50                |
| TOP RIGHT          | :        | 22.36             | 90.00                |
| BOTTOM LEFT        | :        | 36.05             | 43.50                |
| BOTTOM RIGHT       | :        | 36.05             | 90.00                |
|                    |          |                   |                      |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

|              | : | 22.36<br>36.05<br>22.36 | 43.50<br>90.00<br>90.00<br>43.50 |
|--------------|---|-------------------------|----------------------------------|
| BOTTOM RIGHT | : | 36.05                   | 43.50                            |

Increment Size (in)=0.50Number of Indexes Specified=29Number of Indexes Completed=29Scan Area - Original Techniques (sq in)=1000.4Scan Area - This Scan (sq in)=1000.4Scan Area - Completed (sq in)=1000.4

Time Date 21:06:08 04/18/02

Scan Completed

Scan Started

21:14:13 04/18/02

Robot Operator Signature UT Operator Signature

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CUSTOMERPUBLIC SERVICE ELECTRIC & GASSITESALEM - UNIT 2OUTAGE2R12VESSEL TYPEPWR-WESTINGHOUSE 4 LOOP

WELD IDENTIFICATION - 2-RPV-7442

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Weld and Scan Type = FLANGE CIRCUMFERENTIAL PARALLEL SCAN Scan Data File Name = W1-PAR-90-135

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA DEFINITION | ELEVATION<br>(IN) | AZIMUTH<br>(DEGREES) |
|----------------------------|-------------------|----------------------|
| TOP LEFT :                 | 22.36             | 90.00                |
| TOP RIGHT :                | 22.36             | 135.00               |
| BOTTOM LEFT :              | 36.05             | 90.00                |
| BOTTOM RIGHT :             | 36.05             | 135.00               |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

| TOP LEFT     | : | 22.36 | 90.00  |
|--------------|---|-------|--------|
| TOP RIGHT    | : | 36.05 | 135.00 |
| BOTTOM LEFT  | : | 22.36 | 135.00 |
| BOTTOM RIGHT | : | 36.05 | 90.00  |

Increment Size (in)=0.50Number of Indexes Specified=29Number of Indexes Completed=29Scan Area - Original Techniques (sq in)=968.1Scan Area - This Scan (sq in)=968.1Scan Area - Completed (sq in)=968.1

Time Date 21:20:53 04/18/02

Scan Completed

Scan Started

21:28:46

Robot Operator Signature

UT Operator Signature

DATE O

04/18/02

CUSTOMER ..... PUBLIC SERVICE ELECTRIC & GAS SALEM - UNIT 2 SITE ..... 2R12 OUTAGE ..... VESSEL TYPE ..... PWR-WESTINGHOUSE 4 LOOP

WELD IDENTIFICATION - 2-RPV-7442 Weld and Scan Type = FLANGE CIRCUMFERENTIAL PARALLEL SCAN Scan Data File Name  $\approx$  W1-PAR-142-171

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA DE | FINITION | ELEVATION<br>(IN) | AZIMUTH<br>(DEGREES) |
|--------------------|----------|-------------------|----------------------|
| TOP LEFT           | :        | 22.36             | 143.00               |
| TOP RIGHT          | :        | 22.36             | 171.00               |
| BOTTOM LEFT        | :        | 36.05             | 143.00               |
| BOTTOM RIGHT       | :        | 36.05             | 171.00               |
|                    |          |                   |                      |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

Time

| TOP LEFT     | : | 22.36 | 143.00 |
|--------------|---|-------|--------|
| TOP RIGHT    | : | 36.05 | 171.00 |
| BOTTOM LEFT  | : | 22.36 | 171.00 |
| BOTTOM RIGHT | : | 36.05 | 143.00 |

| Increment | Size (in)                     | * | 0.50  |
|-----------|-------------------------------|---|-------|
| Number of | Indexes Specified             | × | 29    |
| Number of | Indexes Completed             | = | 29    |
| Scan Area | - Original Techniques (sq in) | = | 602.4 |
|           | - This Scan (sq in)           | = | 602.4 |
| Scan Area | - Completed (sq in)           | = | 602.4 |

Scan Started

Date

21:34:30 04/18/02

Scan Completed

21:39:45 04/18/02

Robot Operator Signature

UT Operator Signature

DATE DATE



CUSTOMERPUBLIC SERVICE ELECTRIC & GASSITESALEM - UNIT 2OUTAGE2R12VESSEL TYPEPWR-WESTINGHOUSE 4 LOOP

WELD IDENTIFICATION - 2-RPV-7442 Weld and Scan Type = FLANGE CIRCUMFERENTIAL PARALLEL SCAN Scan Data File Name = W1-PAR-186-215

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA DE | FINITION | ELEVATION<br>(IN) | AZIMUTH<br>(DEGREES) |
|--------------------|----------|-------------------|----------------------|
| TOP LEFT           | :        | 22.36             | 186.50               |
| TOP RIGHT          | :        | 22.36             | 215.50               |
| BOTTOM LEFT        | :        | 36.05             | 186.50               |
| BOTTOM RIGHT       | :        | 36.05             | 215.50               |
|                    |          |                   |                      |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

| TOP LEFT     | : | 22.36 | 186.50 |
|--------------|---|-------|--------|
| TOP RIGHT    | : | 36.05 | 215.50 |
| BOTTOM LEFT  | : | 22.36 | 215.50 |
| BOTTOM RIGHT | : | 36.05 | 186.50 |

| Number of<br>Scan Area<br>Scan Area | Size (in)<br>Indexes Specified<br>Indexes Completed<br>- Original Techniques (sq<br>- This Scan (sq in)<br>- Completed (sq in) | =<br>=<br>in) =<br>= | 0.50<br>29<br>29<br>624.0<br>624.0<br>624.0 |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------------------------------|
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------------------------------|

Scan Started

A ANY INC.

Date

23:16:50

Time

Scan Completed

23:22:14 04/18/02 DATE 04

04/18/02

Robot Operator Signature

UT Operator Signature



CUSTOMERPUBLIC SERVICE ELECTRIC & GASSITESALEM - UNIT 2OUTAGE2R12VESSEL TYPEPWR-WESTINGHOUSE 4 LOOP

WELD IDENTIFICATION - 2-RPV-7442 Weld and Scan Type = FLANGE CIRCUMFERENTIAL PARALLEL SCAN Scan Data File Name = W1-PAR-223-270

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA DEFINITIO | ON ELEVATION<br>(IN) | AZIMUTH<br>(DEGREES) |
|---------------------------|----------------------|----------------------|
| TOP LEFT :                | 22.36                | 223.00               |
| TOP RIGHT :               | 22.36                | 270.00               |
| BOTTOM LEFT :             | 36.05                | 223.00               |
| BOTTOM RIGHT :            | 36.05                | 270.00               |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

| TOP LEFT     | : | 22.36 | 223.00 |
|--------------|---|-------|--------|
| TOP RIGHT    | : | 36.05 | 270.00 |
| BOTTOM LEFT  | : | 22.36 | 270.00 |
| BOTTOM RIGHT | : | 36.05 | 223.00 |

| Number of | Indexes Specified<br>Indexes Completed     | =<br>= | 0.50<br>29<br>29<br>1011.2 |
|-----------|--------------------------------------------|--------|----------------------------|
| Scan Area | - This Scan (sq in)<br>- Completed (sq in) |        | 1011.2<br>1011.2           |

|              | Time     | Date     |
|--------------|----------|----------|
| Scan Started |          |          |
|              | 23:30:10 | 04/18/02 |

Scan Completed

23:38:20 04/18/02 DATE 🖉

DATE

Robot Operator Signature

UT Operator Signature



PUBLIC SERVICE ELECTRIC & GAS CUSTOMER .... SALEM - UNIT 2 SITE ..... OUTAGE ..... 2R12 PWR-WESTINGHOUSE 4 LOOP VESSEL TYPE .....

WELD IDENFICATION - 2-RPV-7442 Weld and Scan Type = FLANGE CIRCUMFERENTIAL PERPENDICULAR SCAN Scan Data File Name = W1-PRP-6-34

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA DE | FINITION | AZIMUTH<br>(DEGREES) | ELEVATION<br>(IN) |
|--------------------|----------|----------------------|-------------------|
| TOP LEFT           | :        | 5.75                 | 22.36             |
| TOP RIGHT          | :        | 34.75                | 22.36             |
| BOTTOM LEFT        | :        | 5.75                 | 42.08             |
| BOTTOM RIGHT       | :        | 34.75                | 42.08             |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

20:02:36

| TOP LEFT     | : | 5.75  | 22.36 |
|--------------|---|-------|-------|
| TOP RIGHT    | : | 34.75 | 22.36 |
| BOTTOM LEFT  | : | 5.75  | 42.08 |
| BOTTOM RIGHT | : | 34.75 | 42.08 |

|      | Time |
|------|------|
| rteđ |      |

Scan Started

Scan Completed

04/18/02 20:13:42 04/18/02

Date

Robot Operator Signature

UT Operator Signature

lar DATE



CUSTOMERPUBLIC SERVICE ELECTRIC & GASSITESALEM - UNIT 2OUTAGE2R12VESSEL TYPEPWR-WESTINGHOUSE 4 LOOP

WELD IDENFICATION - 2-RPV-7442 Weld and Scan Type = FLANGE CIRCUMFERENTIAL PERPENDICULAR SCAN Scan Data File Name = W1-PRP-43-90

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA DEF | INITION AZIMUTH<br>(DEGREES) | ELEVATION<br>(IN) |
|---------------------|------------------------------|-------------------|
| TOP LEFT            | : 43.00                      | 22.36             |
| TOP RIGHT           | : 90.00                      | 22.36             |
| BOTTOM LEFT         | : 43.00                      | 42.08             |
| BOTTOM RIGHT        | : 90.00                      | 42.08             |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

Time

20:19:56

| TOP LEFT     | : | 43.00 | 22.36 |
|--------------|---|-------|-------|
| TOP RIGHT    | : | 90.00 | 22.36 |
| BOTTOM LEFT  | : | 43.00 | 42.08 |
| BOTTOM RIGHT | : | 90.00 | 42.08 |

|                               | =                                                                                                                                  | 0.50                                                                                                   |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Indexes Specified             | Ħ                                                                                                                                  | 142                                                                                                    |
|                               | =                                                                                                                                  | 142                                                                                                    |
| - Original Techniques (sq in) | =                                                                                                                                  | 1422.                                                                                                  |
| - This Scan (sq in)           | =                                                                                                                                  | 1422.                                                                                                  |
| - Completed (sq in)           | =                                                                                                                                  | 1422.                                                                                                  |
|                               | Size (in)<br>Indexes Specified<br>Indexes Completed<br>- Original Techniques (sq in)<br>- This Scan (sq in)<br>- Completed (sq in) | Indexes Specified =<br>Indexes Completed =<br>- Original Techniques (sq in) =<br>- This Scan (sq in) = |

Scan Started

Scan Completed

mpreted

20:56:56 04/18/02 DATE

.1 .1 .1

Date

04/18/02

Robot Operator Signature

UT Operator Signature



CUSTOMERPUBLIC SERVICE ELECTRIC & GASSITESALEM - UNIT 2OUTAGE2R12VESSEL TYPEPWR-WESTINGHOUSE 4 LOOP

WELD IDENFICATION - 2-RPV-7442 Weld and Scan Type = FLANGE CIRCUMFERENTIAL PERPENDICULAR SCAN Scan Data File Name = W1-PRP-90-136

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA DE | FINITION | AZIMUTH<br>(DEGREES) | ELEVATION<br>(IN) |
|--------------------|----------|----------------------|-------------------|
| TOP LEFT           | :        | 90.00                | 22.36             |
| TOP RIGHT          | :        | 136.50               | 22.36             |
| BOTTOM LEFT        | :        | 90.00                | 42.08             |
| BOTTOM RIGHT       | :        | 136.50               | 42.08             |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

| TOP LEFT     | : | 90.00  | 22.36 |
|--------------|---|--------|-------|
| TOP RIGHT    | : | 136.50 | 22.36 |
| BOTTOM LEFT  | : | 90.00  | 42.08 |
| BOTTOM RIGHT | : | 136.50 | 42.08 |

Increment Size (in)= 0.50Number of Indexes Specified= 140Number of Indexes Completed= 140Scan Area - Original Techniques (sq in)= 1402.1Scan Area - This Scan (sq in)= 1402.1Scan Area - Completed (sq in)= 1402.1

Scan Started

Date

21:48:30

Time

Scan Completed

22:04:43 , 04/18/02

04/18/02

Robot Operator Signature

UT Operator Signature

DATE



CUSTOMERPUBLIC SERVICE ELECTRIC & GASSITESALEM - UNIT 2OUTAGE2R12VESSEL TYPEPWR-WESTINGHOUSE 4 LOOP

| WELD | IDENFICATION - 2-1 | RPV        | -7442   |                 |               |      |
|------|--------------------|------------|---------|-----------------|---------------|------|
| Weld | and Scan Type      | =          | FLANGE  | CIRCUMFERENTIAL | PERPENDICULAR | SCAN |
| Scan | Data File Name     | <b>=</b> · | W1-PRP- | -141-172        |               |      |

## SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA DE | FINITION | AZIMUTH   | ELEVATION |
|--------------------|----------|-----------|-----------|
|                    |          | (DEGREES) | (IN)      |
| TOP LEFT           | :        | 141.50    | 22.36     |
| TOP RIGHT          | :        | 172.50    | 22.36     |
| BOTTOM LEFT        | :        | 141.50    | 42.08     |
| BOTTOM RIGHT       | :        | 172.50    | 42.08     |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

| TOP LEFT     | : | 141.50 | 22.36 |
|--------------|---|--------|-------|
| TOP RIGHT    | : | 172.50 | 22.36 |
| BOTTOM LEFT  | : | 141.50 | 42.08 |
| BOTTOM RIGHT | : | 172.50 | 42.08 |

Increment Size (in) = 0.50 Number of Indexes Specified = 94 Number of Indexes Completed = 94 Scan Area - Original Techniques (sq in) = 941.4 Scan Area - This Scan (sq in) = 941.4 Scan Area - Completed (sq in) = 941.4

> Time Date 22:11:05 04/18/02

Scan Completed

Scan Started

22:21:55

04/18/02

Robot Operator Signature

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UT Operator Signature

Comments



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CUSTOMER ..... PUBLIC SERVICE ELECTRIC & GAS SALEM - UNIT 2 SITE ..... 2R12 OUTAGE ..... PWR-WESTINGHOUSE 4 LOOP VESSEL TYPE .....

WELD IDENFICATION - 2-RPV-7442 FLANGE CIRCUMFERENTIAL PERPENDICULAR SCAN Weld and Scan Type = Scan Data File Name W1-PRP-185-214 =

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA DE | <b>FINITION</b> | AZIMUTH<br>(DEGREES) | ELEVATION<br>(IN) |
|--------------------|-----------------|----------------------|-------------------|
| TOP LEFT           | :               | 185.50               | 22.36             |
| TOP RIGHT          | :               | 214.50               | 22.36             |
| BOTTOM LEFT        | :               | 185.50               | 42.08             |
| BOTTOM RIGHT       | :               | 214.50               | 42.08             |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

| TOP LEFT     | : | 185.50 | 22.36 |
|--------------|---|--------|-------|
| TOP RIGHT    | : | 214.50 | 22.36 |
| BOTTOM LEFT  | : | 185.50 | 42.08 |
| BOTTOM RIGHT | : | 214.50 | 42.08 |

| Increment Size (in)            |           | 2 | 0.50  |
|--------------------------------|-----------|---|-------|
| Number of Indexes Specified    |           | = | 88    |
| Number of Indexes Completed    |           |   | 88    |
| Scan Area - Original Technique | s (sq in) | = | 881.3 |
| Scan Area - This Scan (sq in)  | -         | = | 881.3 |
| Scan Area - Completed (sq in)  |           | = | 881.3 |

|              | Time     | Date     |
|--------------|----------|----------|
| Scan Started |          |          |
|              | 22:33:54 | 04/18/02 |

22:44:03

Scan Completed

04/18/02

Robot Operator Signature

UT Operator Signature





CUSTOMERPUBLIC SERVICE ELECTRIC & GASSITESALEM - UNIT 2OUTAGE2R12VESSEL TYPEPWR-WESTINGHOUSE 4 LOOP

| WELD | IDENFICATION - 2-1 | RPV- | -7442   |                 |               |      |
|------|--------------------|------|---------|-----------------|---------------|------|
| Weld | and Scan Type      | =    | FLANGE  | CIRCUMFERENTIAL | PERPENDICULAR | SCAN |
| Scan | Data File Name     | 2    | W1-PRP- | -221-270        |               |      |

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA DE | FINITION | AZIMUTH<br>(DEGREES) | ELEVATION<br>(IN) |
|--------------------|----------|----------------------|-------------------|
| TOP LEFT           | :        | 221.00               | 22.36             |
| TOP RIGHT          | :        | 270.00               | 22.36             |
| BOTTOM LEFT        | :        | 221.00               | 42.08             |
| BOTTOM RIGHT       | :        | 270.00               | 42.08             |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

| TOP LEFT     | : | 221.00 | 22.36 |
|--------------|---|--------|-------|
| TOP RIGHT    |   | 270.00 | 22.36 |
| BOTTOM LEFT  | : | 221.00 | 42.08 |
| BOTTOM RIGHT |   | 270.00 | 42.08 |

| Increment | Size (in)                     | *          | 0.50   |
|-----------|-------------------------------|------------|--------|
| Number of | Indexes Specified             | =          | 148    |
| Number of | Indexes Completed             | -          | 148    |
| Scan Area | - Original Techniques (sq in) | <b>#</b> = | 1482.2 |
| Scan Area | - This Scan (sq in)           | æ          | 1482.2 |
| Scan Area | - Completed (sq in)           | =          | 1482.2 |

| Time     | Date     |
|----------|----------|
| 22:52:20 | 04/18/02 |

Scan Completed

Comments

Scan Started

and the second second second second second second second second second second second second second second second

23:09:28 04/18/02

Robot Operator Signature

UT Operator Signature

DATE OS

CUSTOMERPUBLIC SERVICE ELECTRIC & GASSITESALEM - UNIT 2OUTAGE2R12VESSEL TYPEPWR-WESTINGHOUSE 4 LOOP

WELD IDENFICATION - 2-RPV-7442 Weld and Scan Type = FLANGE CIRCUMFERENTIAL PERPENDICULAR SCAN Scan Data File Name = W1-PRP-270-317

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA DE | FINITION | AZIMUTH<br>(DEGREES) | ELEVATION<br>(IN) |
|--------------------|----------|----------------------|-------------------|
| TOP LEFT           | :        | 270.00               | 22.36             |
| TOP RIGHT          | :        | 317.50               | 22.36             |
| BOTTOM LEFT        | :        | 270.00               | 42.08             |
| BOTTOM RIGHT       | :        | 317.50               | 42.08             |
|                    |          |                      |                   |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

| TOP LEFT     | : | 270.00 | 22.36 |
|--------------|---|--------|-------|
| TOP RIGHT    | : | 317.50 | 42.08 |
| BOTTOM LEFT  | : | 270.00 | 42.08 |
| BOTTOM RIGHT | : | 317.50 | 22.36 |

| Number of<br>Scan Area<br>Scan Area | Indexes Specified<br>Indexes Completed<br>- Original Techniques (sq in)<br>- This Scan (sq in) | N N N | 0.50<br>143<br>143<br>1432.1<br>1432.1 |
|-------------------------------------|------------------------------------------------------------------------------------------------|-------|----------------------------------------|
| Scan Area                           | - This Scan (sq in)                                                                            | =     | 1432.1                                 |
| Scan Area                           | - Completed (sq in)                                                                            | 8     | 1432.1                                 |

Time

Scan Started 23:42:53

Scan Completed

Comments

23:59:27 04/18/02 Robot Operator Signature DATE 0 UT Operator Signature DAT

Date

04/18/02

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CUSTOMERPUBLIC SERVICE ELECTRIC & GASSITESALEM - UNIT 2OUTAGE2R12VESSEL TYPEPWR-WESTINGHOUSE 4 LOOP

WELD IDENFICATION - 2-RPV-7442

Weld and Scan Type = FLANGE CIRCUMFERENTIAL PERPENDICULAR SCAN

Scan Data File Name = W1-PRP-321-353

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA DE | FINITION | AZIMUTH<br>(DEGREES) | ELEVATION<br>(IN) |
|--------------------|----------|----------------------|-------------------|
| TOP LEFT           | •        | 321.50               | 22.36             |
| TOP RIGHT          | :        | 353.00               | 22.36             |
| BOTTOM LEFT        | :        | 321.50               | 42.08             |
| BOTTOM RIGHT       | :        | 353.00               | 42.08             |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

Time

00:05:40

| TOP LEFT     | : | 321.50 | 22.36 |
|--------------|---|--------|-------|
| TOP RIGHT    | : | 353.00 | 42.08 |
| BOTTOM LEFT  | : | 321.50 | 42.08 |
| BOTTOM RIGHT | : | 353.00 | 22.36 |

| Increment Si | ze (in)                     | = | 0.50  |
|--------------|-----------------------------|---|-------|
| Number of In | dexes Specified             | = | 95    |
|              | dexes Completed             | = | 95    |
| Scan Area -  | Original Techniques (sq in) | = | 951.4 |
| Scan Area -  | This Scan (sq in)           | = | 951.4 |
| Scan Area -  | Completed (sq in)           | = | 951.4 |

Scan Started

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Date

04/19/02

DATE 04

דבת

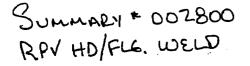
Scan Completed

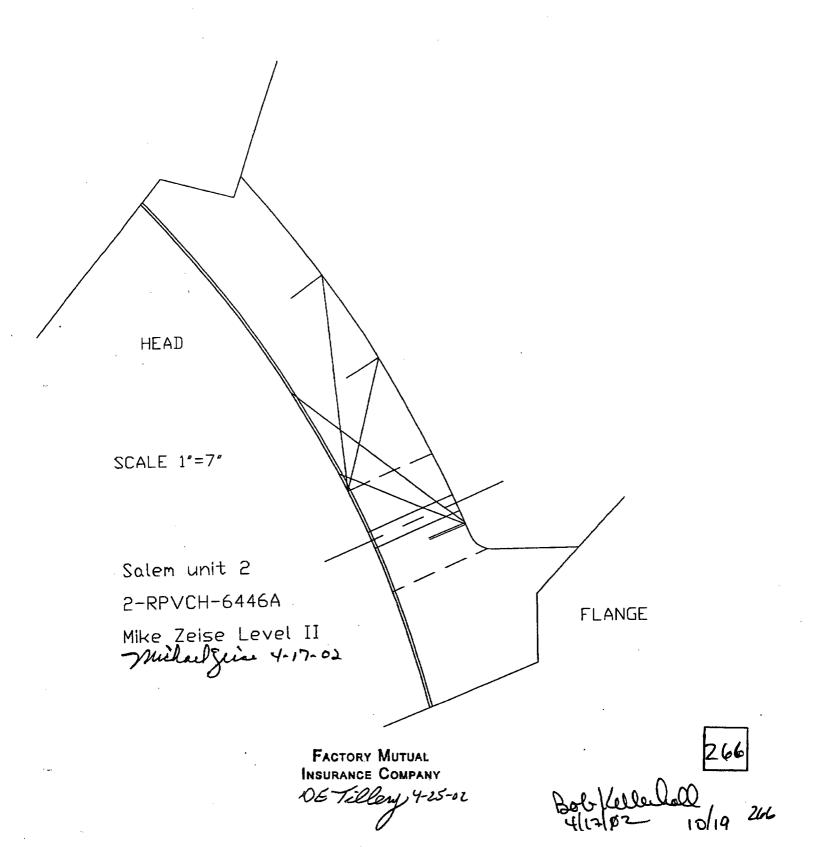
00:16:38 04/19/02

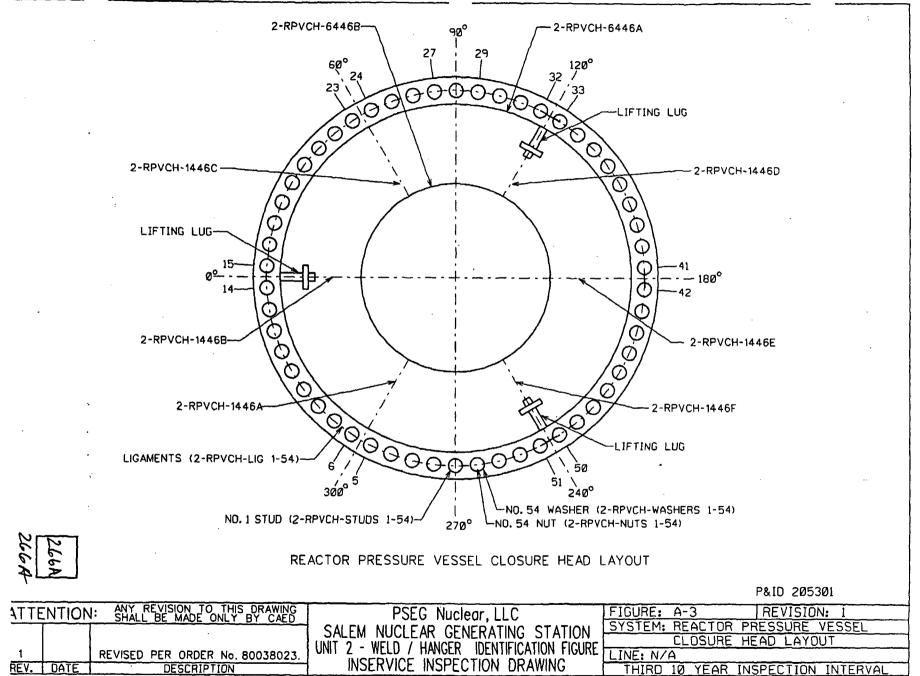
Robot Operator Signature

UT Operator Signature

Comments \_

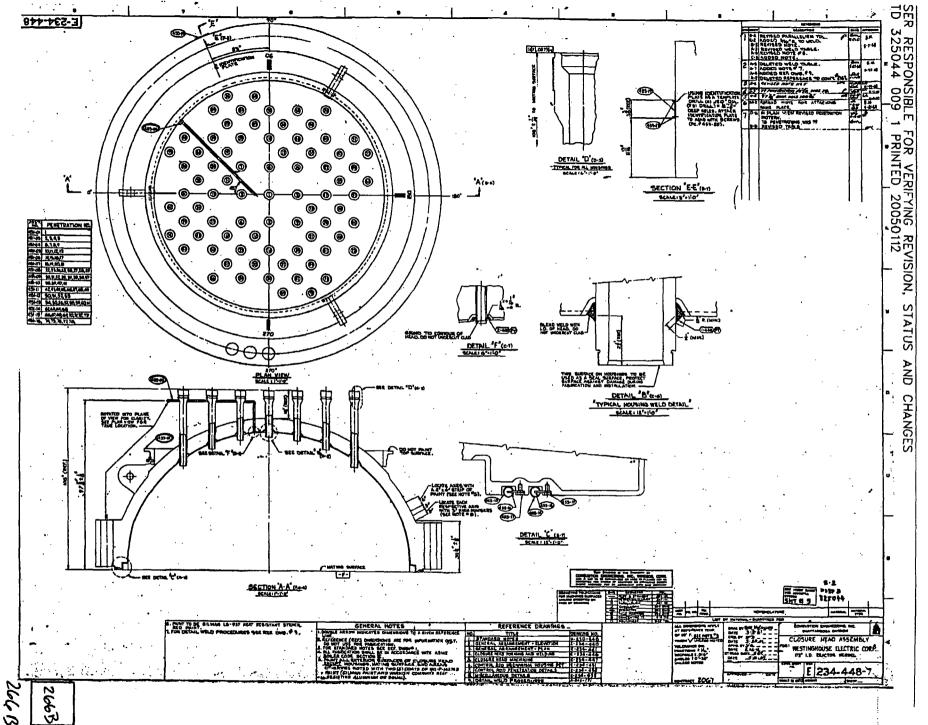


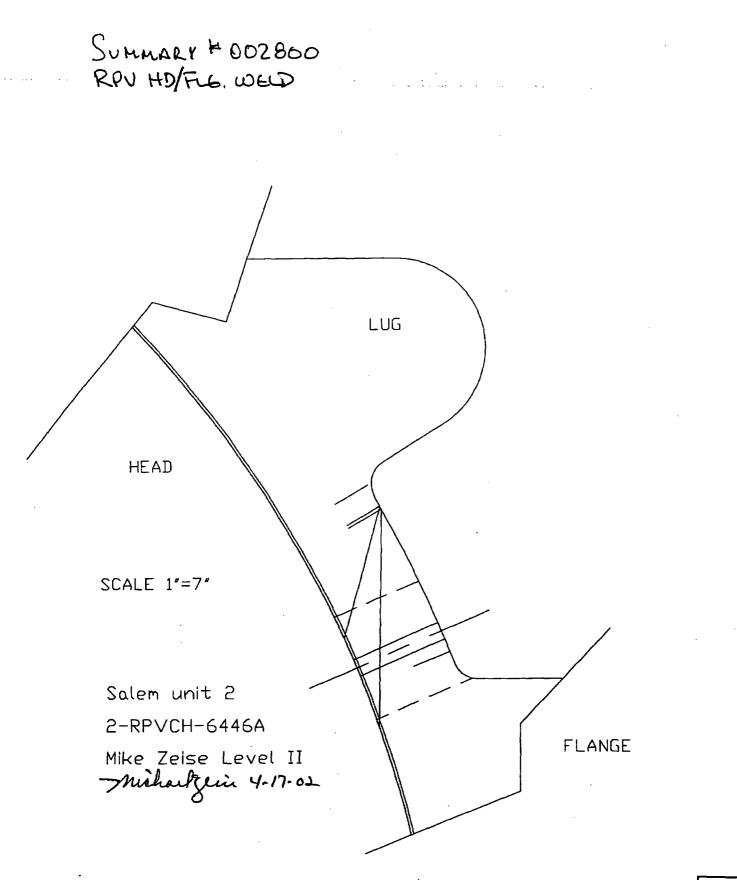




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FACTORY MUTUAL INSURANCE COMPANY OETIEloy 4-25-02

267 267

FTI VESS\_VOLFRP 07/15/00

4

FRAMATOME ANP VESSEL VOLUMETRIC EXAMINATION COVERAGE REPORT 6.0 CALCULATE STRAIGHT BEAM LAMINAR EXAM COVERAGE 6.1 Limited above / CW exam volume Height of Width of Length of Volume with no **Obstructed Volume Obstructed Area** Obstructed Area Exam Coverage 0.00 Х 0.00 Х 0.00 0.00 6.2 Limited Below / CW exam volume Height of Width of Length of Volume with no **Obstructed Volume Obstructed Area Obstructed Area** Exam Coverage 0.00 Х 0.00 χ 0.00 0.00 -Total straight beam planar exam volume not examined 0.00 = 6.3 Percent Volume Examined Total 0° vol Total 0° Percent Volume w/No Coverage Exam Volume Examined 0.00 100 - {[ 1 0.00 0.00 100 3 % 7.0 CALCULATE PARALLEL 45° EXAM COVERAGE 7.1 Limited above / CW exam volume Height of Width of Length of Volume with no Obstructed Volume **Obstructed Area Obstructed Area** Exam Coverage 1.10 X 1.10 Х 10.00 12.10 Limited Below / CCW exam volume 7.2 Height of Width of Length of Volume with no **Obstructed Volume Obstructed Area Obstructed Area** Exam Coverage 4.90 Х 9.28 X 185.00 8,412.32 = Total 45° parallel exam volume not examined 8,424.42 -7.3 Percent Volume Examined Total 45° parallel Total 45° parallel Percent Volume vol w/No Coverage Exam Volume Examined 100 -8,424.42 27,824.00 ] x 100 } = 1 69.72 % FACTORY MUTUAL 768 INSURANCE COMPANY OE Tilley 4-25-02

FTI VESS\_VOL.FRP 07/15/00

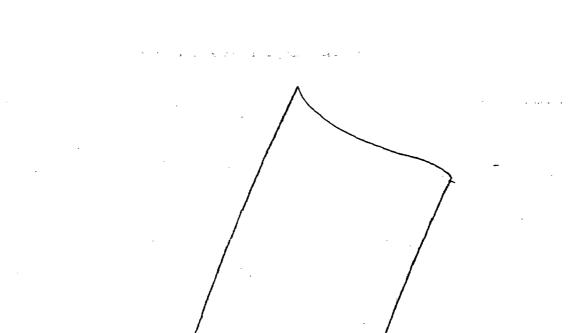
FRAMATOME ANP VESSEL VOLUMETRIC EXAMINATION COVERAGE REPORT CALCULATE PARALLEL 60° EXAM COVERAGE 0.8 Limited above / CW exam volume 8.1 Above / CW exam Length of Width of Volume with no Height of **Obstructed Area Obstructed Area Obstructed Volume** Exam Coverage X 10.00 159.80 9.40 1.70 X 8.2 Limited Below / CCW exam volume Below / CCW exam Volume with no Height of Width of Length of Exam Coverage **Obstructed Volume Obstructed Area Obstructed Area** X 185.00 9,947.08 5.72 X 9.40 Total 60° parallel exam volume not examined 10,106.88 8.3 Percent Volume Examined Total 60° parallel Total 60° parallel Percent Volume Vol w/No Coverage Exam Volume Examined 100 - ([ 10,106.88 27,824.00 ] 63.68 % x 100 } 9.0 **CALCULATE TRANSVERSE 45° EXAM COVERAGE** Limited Clockwise exam volume 9.1 CW Exam Height of Width of Length of Volume with no **Obstructed Volume Obstructed Area Obstructed Area** Exam Coverage X 1.25 X 185.00 8.00 1,850.00 9.2 Limited Below Counter clockwise exam volume **CCW Exam** Height of Width of Length of Volume with no **Obstructed Volume Obstructed Area Obstructed Area** Exam Coverage 8.00 Х 1.25 Х 185.00 1,850.00 Total 45° transverse exam volume not examined 3,700.00 9.3 Percent Volume Examined Total 45° parallel Total 45° parallel Percent Volume Exam Volume Examined 27,824.00 ] x 100 } = 100 - {[ 3,700.00 86.70 % FACTORY MUTUAL

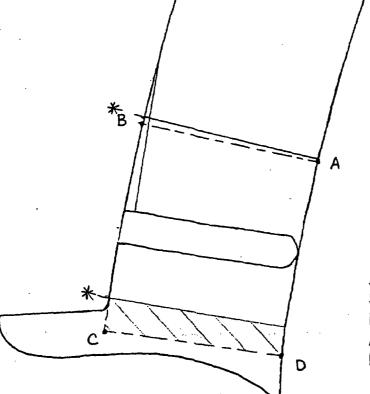
INSURANCE COMPANY

DETilley 4-15-02

17/15/00

|              |      |                                |                                                 |                                           |                 | FTI VESS_VOLFRI                 | P 07/15/00        | 4   |
|--------------|------|--------------------------------|-------------------------------------------------|-------------------------------------------|-----------------|---------------------------------|-------------------|-----|
| FR           | A    |                                | NP VESSEL VOI                                   | LUMETRIC EXAI                             | MINA            | TION COVERA                     | GE REP            | ORI |
| .0 <u>C/</u> | ALCL | LATE TRANSVERSE                | 60° EXAM COVERAGI                               | E .                                       |                 |                                 |                   |     |
| 10           | ).1  | Limited Clockwise exa          | m volume                                        |                                           |                 | CW exam                         |                   |     |
|              |      | Height of<br>Obstructed Volume | Width of<br>Obstructed Area                     | Length of<br>Obstructed Area              |                 | Volume with no<br>Exam Coverage |                   |     |
|              |      | 8.00 X                         | <u>    1.25                                </u> | 185.00                                    | =               | 1,850.00                        |                   |     |
| 10           | ).2  | Limited Counterclockw          | ise exam volume                                 |                                           |                 | CCW exam                        |                   |     |
|              |      | Height of<br>Obstructed Volume | Width of<br>Obstructed Area                     | Length of<br>Obstructed Area              |                 | Volume with no<br>Exam Coverage |                   |     |
|              |      | <u>8.00</u> X                  | <u>    1.25                                </u> | 185.00                                    | =               | 1,850.00                        |                   |     |
|              |      | Total 60 transverse ex         | am volume not examin                            | ed                                        | =               | 3,700.00                        |                   |     |
| 10           | ).3  | Percent Volume Exam            |                                                 |                                           |                 |                                 |                   |     |
|              |      | Total 60° T<br>w/NoCovera      |                                                 |                                           |                 | Percent Volume<br>Examined      |                   |     |
|              | `    | <b>100 - {[</b> 3,700.0        | 00 / 27,824.0                                   | 00 ] x 100 }                              | £               | 86.70 <b>%</b>                  |                   |     |
| ) <u>C</u> 4 | ALCU | LATE PERCENT OF T              | OTAL VOLUME EXAN                                | MINED                                     |                 |                                 | ·                 |     |
| . 11         | .1   | Sum of Exam Volumes            | s %                                             |                                           |                 |                                 |                   |     |
|              |      | Steps 5 Thur 10                | No. Of Exams (6)                                |                                           | minati<br>erage |                                 |                   |     |
|              |      | [ 393.50 /                     | 5.00 J                                          | . 2                                       | 78.70           | ) %                             | •                 |     |
|              |      |                                |                                                 |                                           |                 |                                 |                   |     |
| Ex           | amin | ation limited on upper         | side of weld by lifting                         | lug, Examination                          | limite          | d on lower side of              |                   |     |
|              |      |                                | side of weld by lifting<br>See attached covera  |                                           | limite          | d on lower side of              |                   |     |
|              |      |                                | side of weld by lifting<br>See attached covera  |                                           |                 | d on lower side of              |                   |     |
|              |      |                                |                                                 |                                           |                 | d on lower side of              |                   |     |
|              |      |                                |                                                 |                                           |                 | d on lower side of              |                   |     |
|              |      |                                | See attached covera                             | ige plots.<br>Tory Mutual                 |                 | d on lower side of              |                   |     |
|              |      |                                | See attached covera<br>Fac<br>โหรนสง            | ige plots.<br>Tory Mutual<br>Ance Company |                 |                                 |                   |     |
|              |      |                                | See attached covera<br>Fac<br>โหรนสง            | ige plots.<br>Tory Mutual                 |                 |                                 |                   |     |
|              |      | / flange configuration.        | See attached covera<br>Fac<br>INSUR<br>OE       | ige plots.<br>Tory Mutual<br>Ance Company | 5-02            |                                 | Date:<br>04/17/02 | 2   |

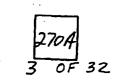




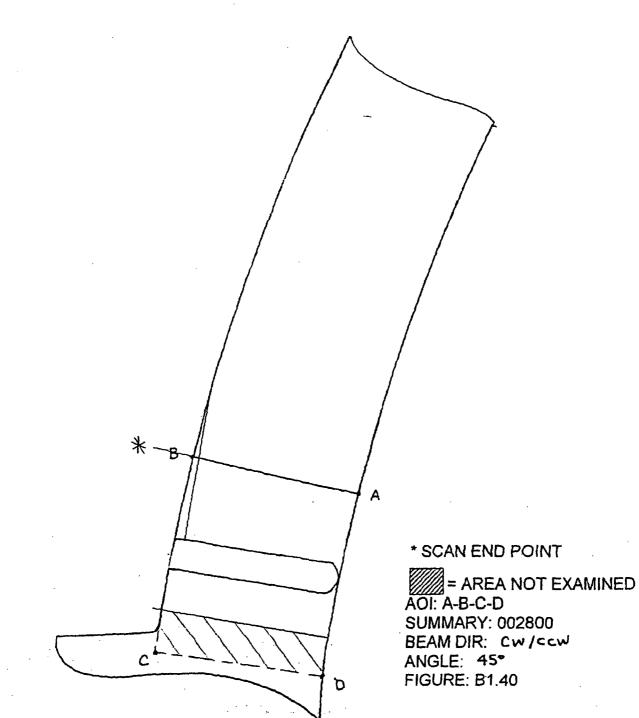
\* SCAN END POINT

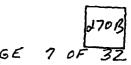
= AREA NOT EXAMINED AOI: A-B-C-D SUMMARY: 002800 BEAM DIR: O to MAT'L ANGLE: O° FIGURE: B1.40

# HEAD TO FLANGE WELD

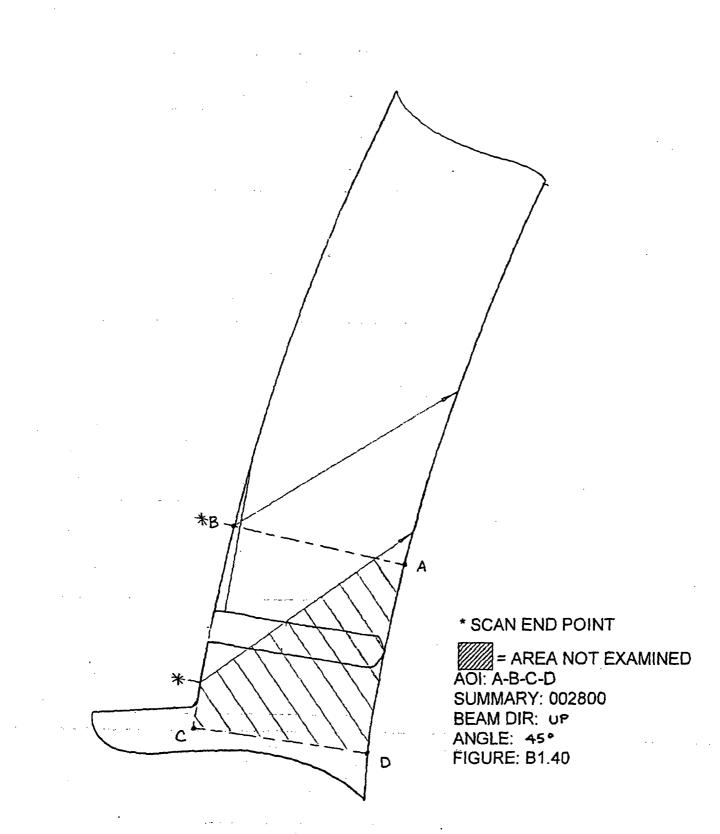


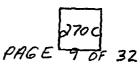
PAGE

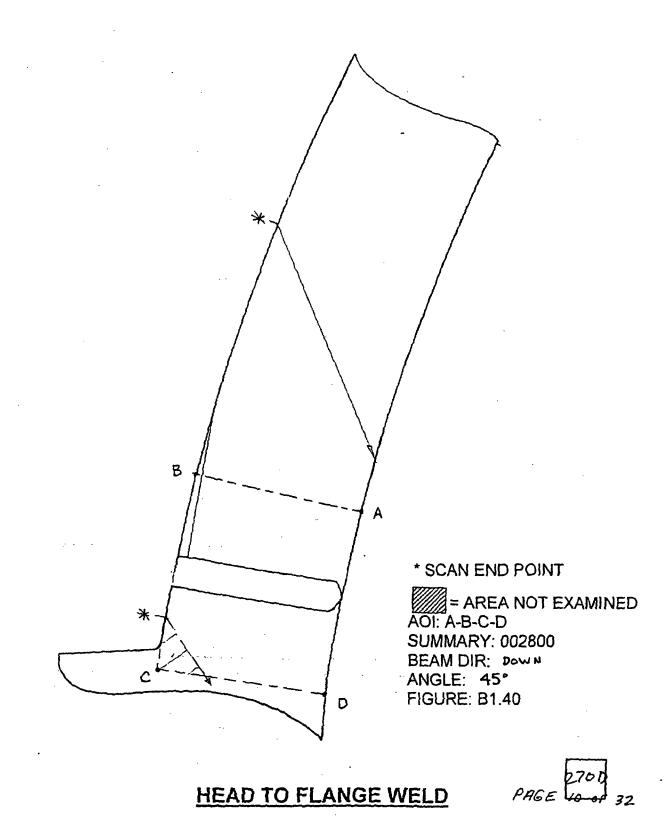


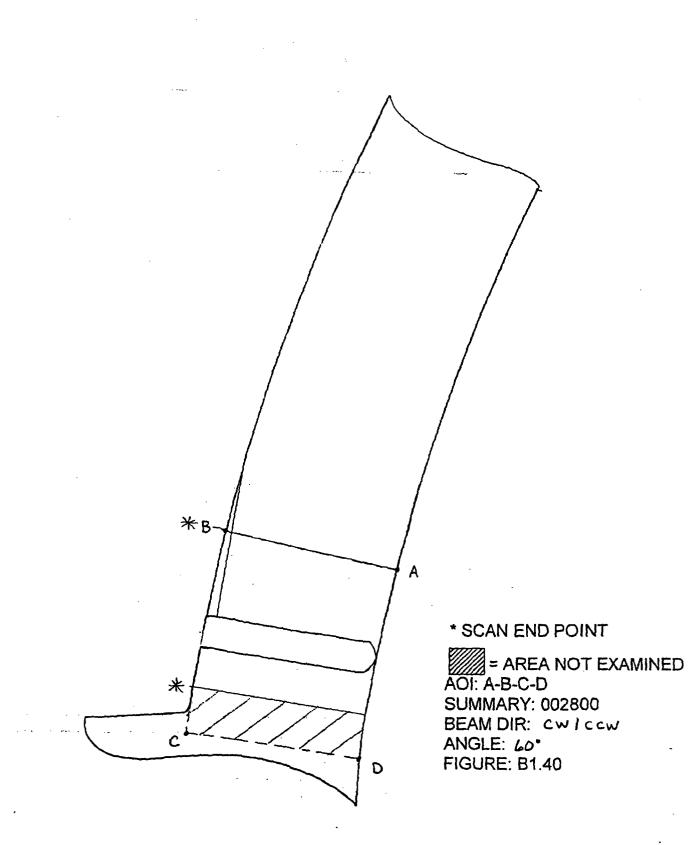


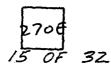
PAGE 7 OF



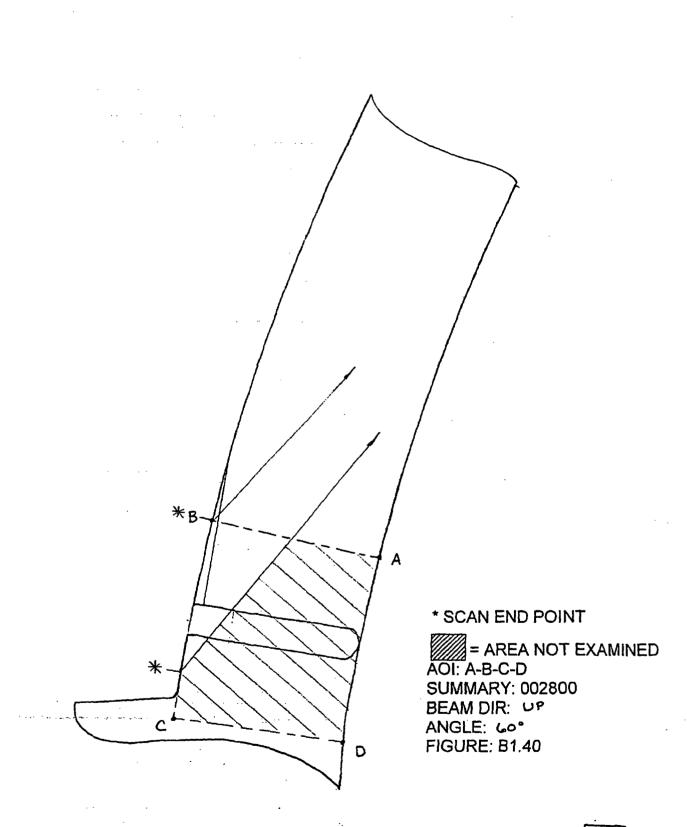


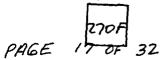


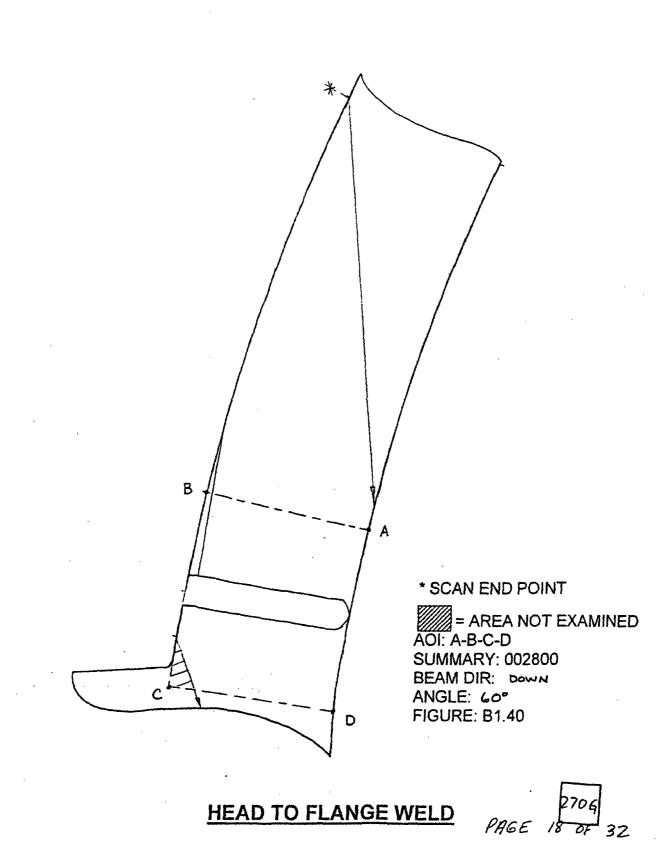




PAGE

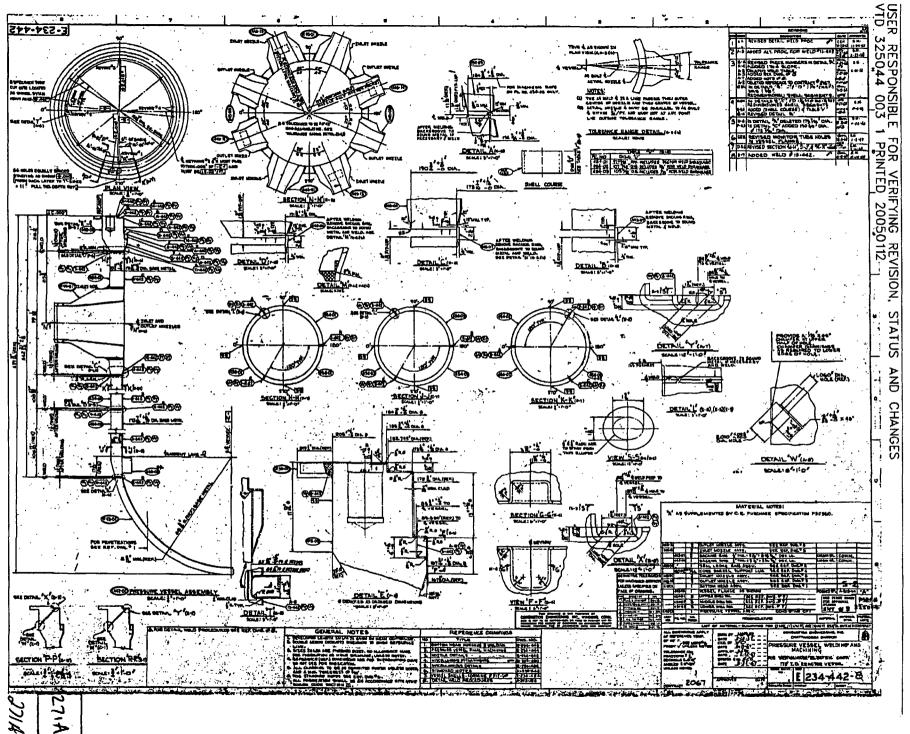


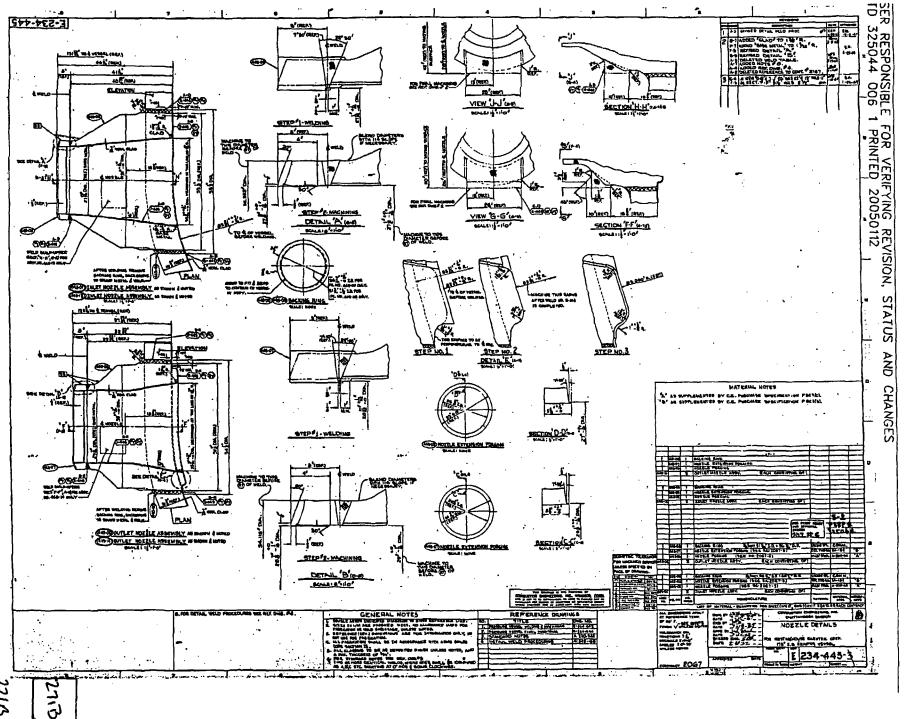




|          |                           | R.V. C0                                                                                                        | OVERAG  | E EST   | MATE B                     | REAK  | DOWNS  |      | · · ·    |   |
|----------|---------------------------|----------------------------------------------------------------------------------------------------------------|---------|---------|----------------------------|-------|--------|------|----------|---|
| PLANT    |                           | SALEM                                                                                                          | UNIT 2  |         |                            |       |        |      |          |   |
|          |                           |                                                                                                                |         |         |                            | We    | esDy   | ne   |          |   |
| COMPC    |                           | LE TO S                                                                                                        | HELL WE | LD      |                            |       |        |      |          |   |
|          |                           |                                                                                                                |         |         | l                          | Inte  | rnati  | ona  | I        |   |
| WELD     | NO                        | 29-RCN                                                                                                         | I-1230  |         |                            |       |        |      |          |   |
|          |                           |                                                                                                                | BEAM    | ANGLE   | BREAK                      | DOWN  |        |      |          |   |
|          | BEAM DIRECTION            | A DESCRIPTION OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OWNER | 0 DEG.  |         | Shear                      |       | Single |      | L Dual   |   |
|          |                           | WELD                                                                                                           | VOLUME  | WELD    | VOLUME                     | WELD  | VOLUME | WELD | VOLUME   |   |
|          | PARALLEL                  |                                                                                                                |         | 55.50   | 71.00                      | 55.50 | 71.00  | 55.5 | 71.00    |   |
|          | BORE AXIAL                | 100.00                                                                                                         | 100.00  |         |                            |       |        |      |          |   |
|          | (10 & 50 DEG.)<br>AVERAGE | 100                                                                                                            | 0.00    | 67      | <br>3.25                   | 6     | 3.25   | 6    | 3.25     |   |
| 2        |                           |                                                                                                                |         | 0       |                            |       |        |      | 0.20     | 1 |
| Comme    |                           | ·                                                                                                              |         |         |                            |       |        |      |          |   |
|          |                           |                                                                                                                |         |         |                            |       |        |      |          |   |
| CC       | OMBINED AVERAGE           | 72                                                                                                             |         | Analyst | am                         | 42    |        | Date | 12/19/02 | 2 |
| 271      |                           |                                                                                                                |         |         | $\mathcal{O}_{\mathbb{R}}$ |       |        |      |          |   |
| <u> </u> |                           |                                                                                                                |         |         |                            |       |        |      |          |   |

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## WesDyne International Reactor Vessel Inservice Examination Scan Parameter Execution

CUSTOMERPUBLIC SERVICE ELECTRIC & GASSITESALEM - UNIT 2OUTAGE2R12VESSEL TYPEPWR-WESTINGHOUSE 4 LOOP

WELD IDENTIFICATION - 29-RCN-1230

Weld and Scan Type = NOZZLE TO SHELL (TAN) PARALLEL SCAN Scan Data File Name = WN22-TAN-ONaaa

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA | DEFINITION | RADIUS<br>(IN) | AZIMUTH<br>(DEGREES) |
|-----------------|------------|----------------|----------------------|
| START CW        | :          | 85.44          | 179.90               |
| END CCW         | :          | 85.44          | -179.90              |
| START CW        | :          | 85.44          | 179.90               |
| END CCW         | :          | 85.44          | -179.90              |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

| TOP LEFT     | : | 26.75 | 179.90  |
|--------------|---|-------|---------|
| TOP RIGHT    | : | 32.10 | 179.90  |
| BOTTOM LEFT  | : | 26.75 | -179.90 |
| BOTTOM RIGHT | : | 32.10 | -179.90 |

Increment Size (in)=0.50Number of Indexes Specified=12Number of Indexes Completed=12Scan Area - Original Techniques (sq in)=1118.7Scan Area - This Scan (sq in)=1118.7Scan Area - Completed (sq in)=1118.7

Scan Started Scan Completed Date 16:14:04 Date Date 16:14:04 Date 04/18/02 Date 16:23:52 Date 04/18/02

Robot Operator Signature

UT Operator Signature

DATE 4 DATE Y/18/

Comments \_\_\_\_\_\_

## WesDyne International Reactor Vessel Inservice Examination Scan Parameter Execution

CUSTOMERPUBLIC SERVICE ELECTRIC & GASSITESALEM - UNIT 2OUTAGE2R12VESSEL TYPEPWR-WESTINGHOUSE 4 LOOP

WELD IDENTIFICATION - 29-RCN-1230

Weld and Scan Type = NOZZLE TO SHELL (TAN) PARALLEL SCAN Scan Data File Name = WN22-TAN-ONaaaa

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA | DEFINITION | RADIUS<br>(IN) | AZIMUTH<br>(DEGREES) |
|-----------------|------------|----------------|----------------------|
| START CW        | :          | 85.44          | 179.90               |
| END CCW         | :          | 85.44          | -179.90              |
| START CW        | :          | 85.44          | 179.90               |
| END CCW         | :          | 85.44          | -179.90              |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

| TOP LEFT     | : | 26.75 | 179.90  |
|--------------|---|-------|---------|
| TOP RIGHT    | : | 29.25 | 179.90  |
| BOTTOM LEFT  | : | 26.75 | -179.90 |
| BOTTOM RIGHT | : | 29.25 | -179.90 |

Increment Size (in) = Number of Indexes Specified = Number of Indexes Completed = Scan Area - Original Techniques (sq in) = Scan Area - This Scan (sq in) = Scan Area - Completed (sq in) =

Date

16:28:14

Scan Completed

Scan Started

04/18/02

0.50

1118.7

1118.7

04/18/02

530.7

12

6

Robot Operator Signature

UT Operator Signature

DATE

| Comments |  |
|----------|--|
|          |  |
|          |  |

Time

16:32:33



|            |                    | R.V. C   | OVERAG  | E EST | IMATE B | REAK  | OWNS   |      |        |   |
|------------|--------------------|----------|---------|-------|---------|-------|--------|------|--------|---|
| PLANT NAME | Ξ                  | SALEM    | UNIT 2  |       |         |       |        |      |        |   |
|            |                    |          |         |       |         | We    | esDy   | ne   |        |   |
| COMPONEN   |                    | ZLE TO S | HELL WE | LD    |         |       |        |      |        |   |
|            |                    |          |         |       | l       | Inter | rnati  | ona  |        |   |
| WELD NO    |                    | 29-RCN   | 1-1240  |       |         |       |        |      |        |   |
|            |                    |          | BEAM    | ANGLE | BREAK   | DOWN  |        |      |        |   |
| BEAN       | <b>M DIRECTION</b> |          | 0 DEG.  |       | Shear   |       | Single |      | Dual   |   |
|            |                    | WELD     | VOLUME  | WELD  | VOLUME  | WELD  | VOLUME | WELD | VOLUME |   |
| P/         | ARALLEL            |          |         | 55.50 | 71.00   | 55.50 | 71.00  | 55.5 | 71.00  |   |
| BO         | RE AXIAL           | 100.00   | 100.00  |       |         |       |        |      |        |   |
|            | & 50 DEG.)         |          |         |       |         |       |        |      |        | : |
| A          | VERAGE             | 100      | 0.00    | 63    | 3.25    | 63    | 3.25   | 63   | 3.25   |   |

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## WesDyne International Reactor Vessel Inservice Examination Scan Parameter Execution

CUSTOMERPUBLIC SERVICE ELECTRIC & GASSITESALEM - UNIT 2OUTAGE2R12VESSEL TYPEPWR-WESTINGHOUSE 4 LOOP

WELD IDENTIFICATION - 29-RCN-1240

Weld and Scan Type = NOZZLE TO SHELL (TAN) PARALLEL SCAN Scan Data File Name = WN158-TAN-ONa

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA | DEFINITION | RADIUS<br>(IN) | AZIMUTH<br>(DEGREES) |
|-----------------|------------|----------------|----------------------|
| START CW        | :          | 85.44          | 179.90               |
| END CCW         | :          | 85.44          | -179.90              |
| START CW        | :          | 85.44          | 179.90               |
| END CCW         | :          | 85.44          | -179.90              |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

| TOP LEFT     | : | 26.75 | 179.90  |
|--------------|---|-------|---------|
| TOP RIGHT    | : | 32.10 | 179.90  |
| BOTTOM LEFT  | : | 26.75 | -179.90 |
| BOTTOM RIGHT | : | 32.10 | -179.90 |

Increment Size (in)=0.50Number of Indexes Specified=12Number of Indexes Completed=12Scan Area - Original Techniques (sq in)=1118.7Scan Area - This Scan (sq in)=1118.7Scan Area - Completed (sq in)=1118.7

Scan Started 17:36:11

Scan Completed

17:46:00 04/18/02 Peul Boore DATE 4/10/0

Date

04/18/02

DATE 9/4

Robot Operator Signature

UT Operator Signature

Comments \_\_\_\_\_



## WesDyne International Reactor Vessel Inservice Examination Scan Parameter Execution

PUBLIC SERVICE ELECTRIC & GAS CUSTOMER ..... SALEM - UNIT 2 SITE ..... 2R12 OUTAGE ..... **PWR-WESTINGHOUSE 4 LOOP** VESSEL TYPE .....

WELD IDENTIFICATION - 29-RCN-1240

NOZZLE TO SHELL (TAN) PARALLEL SCAN Weld and Scan Type WN158-TAN-ONaa Scan Data File Name =

## SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA | DEFINITION | RADIUS<br>(IN) | AZIMUTH<br>(DEGREES) |
|-----------------|------------|----------------|----------------------|
| START CW        | <b>:</b>   | 85.44          | 179.90               |
| END CCW         | :          | 85.44          | -179.90              |
| START CW        | :          | 85.44          | 179.90               |
| END CCW         | :          | 85.44          | -179.90              |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

| TOP LEFT     | : | 26.75 | 179.90  |
|--------------|---|-------|---------|
| TOP RIGHT    | : | 29.75 | -179.90 |
| BOTTOM LEFT  | : | 26.75 | -179.90 |
| BOTTOM RIGHT | : | 29.75 | 179.90  |

Increment Size (in) Number of Indexes Specified Number of Indexes Completed = 0.50 = 12 7 = Scan Area - Original Techniques (sq in) = 1118.7 Scan Area - This Scan (sq in) = 1118.7 Scan Area - Completed (sq in) = 624.7

17:49:34

Time

Scan Completed

Scan Started

04/18/02 17:54:53 04/18/02 CYAN DATE 4/18

Date

Robot Operator Signature

UT Operator Signature

Comments \_



|         |                                       |         | OVERAG   |                       |                                        | ,        |        |      |                                       |       |
|---------|---------------------------------------|---------|----------|-----------------------|----------------------------------------|----------|--------|------|---------------------------------------|-------|
| PLANT N | IAME                                  | SALEM   | UNIT 2   | • · • • • · · · · • • |                                        |          | · .    |      |                                       |       |
|         |                                       |         |          |                       |                                        | We       | esDy   | ne   |                                       |       |
| COMPO   | NENT NOZZ                             | LE TO S | SHELL WE | LD                    |                                        |          |        |      |                                       |       |
|         |                                       |         |          |                       |                                        | nte      | rnati  | ona  | I                                     |       |
| NELD N  | 0                                     | 29-RC   | N-1220   | •                     |                                        |          |        |      |                                       |       |
|         | · · · · · · · · · · · · · · · · · · · |         | BEAM     | ANGLE                 | BREAK                                  | OOWN     |        |      |                                       |       |
| Γ       | BEAM DIRECTION                        | 10 & 5  | 0 DEG.   | 45 \$                 | Shear                                  | 45 L     | Single | 45   | L Dual                                |       |
|         |                                       | WELD    | VOLUME   | WELD                  | VOLUME                                 | WELD     | VOLUME | WELD | VOLUME                                |       |
| F       | PARALLEL                              |         |          | 55.50                 | 71.00                                  | 55.50    | 71.00  | 55.5 | 71.00                                 |       |
| -       | BORE AXIAL                            | 100.00  | 100.00   |                       |                                        | · .<br>• |        |      | · · · · · · · · · · · · · · · · · · · |       |
| Γ       | (10 & 50 DEG.)                        |         |          |                       |                                        |          |        |      |                                       |       |
|         | AVERAGE                               | 10      | 0.00     | 63                    | 3.25                                   | 63       | 3.25   | 6    | 3.25                                  |       |
| ommen   | ts:                                   |         |          |                       |                                        |          |        |      |                                       |       |
|         | ·                                     |         |          |                       | ······································ |          |        | ·    |                                       | <br>; |

and the trace

## WesDyne International Reactor Vessel Inservice Examination Scan Parameter Execution

| CUSTOMER<br>SITE<br>OUTAGE<br>VESSEL TYPE                                                                                                                            |                              | PUBLIC SERVICE ELECTR:<br>SALEM - UNIT 2<br>2R12<br>PWR-WESTINGHOUSE 4 LOO                                      |         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----------------------------------------------------------------------------------------------------------------|---------|
| WELD IDENTIFICATION - 29-                                                                                                                                            | -RCN-1220                    |                                                                                                                 |         |
| Weld and Scan Type =<br>Scan Data File Name =                                                                                                                        | NOZZLE TO S<br>WN202-TAN-O   | HELL (TAN) PARALLEL SCI<br>Na                                                                                   | AN      |
| SCAN AREA PER                                                                                                                                                        | THE ORIGINAL                 | TECHNIQUES                                                                                                      |         |
| UDRPS SCAN AREA DEFINITION                                                                                                                                           | I RADIUS                     | AZIMUTH                                                                                                         |         |
|                                                                                                                                                                      | (IN)                         | (DEGREES)                                                                                                       |         |
| START CW :                                                                                                                                                           | 85.44                        | 179.90                                                                                                          |         |
| END CCW :<br>START CW :                                                                                                                                              | 85.44                        | -179.90                                                                                                         |         |
| START CW :                                                                                                                                                           | 85.44                        | 179.90                                                                                                          |         |
| END CCW :                                                                                                                                                            | 85.44                        | -179.90                                                                                                         |         |
| SCAN AREA/AREA                                                                                                                                                       | AS OBTAINED D                | URING THE SCAN                                                                                                  |         |
| TOP LEFT :                                                                                                                                                           | 26.75                        | 179.90                                                                                                          |         |
| TOP RIGHT :                                                                                                                                                          | 32.10                        | 179.90                                                                                                          |         |
| BOTTOM LEFT :                                                                                                                                                        | 26.75                        | -179.90                                                                                                         |         |
| TOP LEFT :<br>TOP RIGHT :<br>BOTTOM LEFT :<br>BOTTOM RIGHT :                                                                                                         | 32.10                        | -179.90                                                                                                         |         |
| Increment Size (in)<br>Number of Indexes Specifi<br>Number of Indexes Complet<br>Scan Area - Original Tech<br>Scan Area - This Scan (so<br>Scan Area - Completed (so | ed<br>miques (sq in<br>1 in) | $ \begin{array}{rcrr} = & 0.50 \\ = & 12 \\ = & 12 \\ n) & = & 1118.7 \\ = & 1118.7 \\ = & 1118.7 \end{array} $ | <u></u> |
| Scan Started                                                                                                                                                         | Time                         | Date                                                                                                            |         |
|                                                                                                                                                                      | 15:07:10                     | 04/18/02                                                                                                        |         |
| Scan Completed                                                                                                                                                       | 15:21:42                     | 04/18/02                                                                                                        |         |
| Robot Operator Signature                                                                                                                                             | Paul Bo                      | one DATE \$/15/02                                                                                               |         |
| UT Operator Signature                                                                                                                                                | IM All                       | DATE 4/10/02                                                                                                    |         |
|                                                                                                                                                                      |                              |                                                                                                                 |         |

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Comments



## WesDyne International Reactor Vessel Inservice Examination Scan Parameter Execution

CUSTOMERPUBLIC SERVICE ELECTRIC & GASSITESALEM - UNIT 2OUTAGE2R12VESSEL TYPEPWR-WESTINGHOUSE 4 LOOP

## WELD IDENTIFICATION - 29-RCN-1220

Weld and Scan Type = NOZZLE TO SHELL (TAN) PARALLEL SCAN Scan Data File Name = WN202-TAN-ON-180

#### SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA | DEFINITION | RADIUS | AZIMUTH   |
|-----------------|------------|--------|-----------|
|                 |            | (IN)   | (DEGREES) |
| START CW        | :          | 85.44  | 179.90    |
| END CCW         | :          | 85.44  | -179.90   |
| START CW        | :          | 85.44  | 179.90    |
| END CCW         | :          | 85.44  | -179.90   |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

Time

15:29:47

| TOP LEFT     | : | 26.75 | 179.90  |
|--------------|---|-------|---------|
| TOP RIGHT    |   | 29.75 | -179.90 |
| BOTTOM LEFT  | : | 26.75 | -179.90 |
| BOTTOM RIGHT |   | 29.75 | 179.90  |

Increment Size (in)= 0.50Number of Indexes Specified= 12Number of Indexes Completed= 7Scan Area - Original Techniques (sq in)= 1118.7Scan Area - This Scan (sq in)= 1118.7Scan Area - Completed (sq in)= 624.7

Scan Started

Scan Completed

15:34:59 04/18/02 DATE 11 DATE //F

Date

04/18/02

Robot Operator Signature

UT Operator Signature

Comments

••••



|                                |                                  | R.V. C0 | OVERAG | E ESTI  | MATE B            | REAKD | OWNS   |      |        |     |  |
|--------------------------------|----------------------------------|---------|--------|---------|-------------------|-------|--------|------|--------|-----|--|
| PLANT                          |                                  |         |        |         |                   |       |        |      |        |     |  |
|                                |                                  |         |        |         |                   | We    | esDy   | ne   |        |     |  |
| COMPONENT NOZZLE TO SHELL WELD |                                  |         |        |         |                   |       |        |      |        |     |  |
| International                  |                                  |         |        |         |                   |       |        |      |        |     |  |
| WELD NO 29-RCN-1210            |                                  |         |        |         |                   |       |        |      |        |     |  |
| BEAM ANGLE BREAK DOWN          |                                  |         |        |         |                   |       |        |      |        |     |  |
|                                | BEAM DIRECTION                   | 10 & 5  | 0 DEG. | 45 S    | hear              | 45 L  | Single | 45 L | Dual   |     |  |
| <b>)</b>                       |                                  | WELD    | VOLUME | WELD    | VOLUME            | WELD  | VOLUME | WELD | VOLUME |     |  |
|                                | PARALLEL                         |         |        | 55.50   | 71.00             | 55.50 | 71.00  | 55.5 | 71.00  |     |  |
|                                | BORE AXIAL                       | 100.00  | 100.00 |         |                   |       |        |      |        |     |  |
|                                | (10 & 50 DEG.)<br>AVERAGE 100.00 |         |        |         | 63.25 63.25 63.25 |       |        |      |        |     |  |
| Comme                          | ents:                            |         |        |         |                   |       |        |      |        |     |  |
|                                |                                  |         |        |         |                   |       |        |      |        |     |  |
| C(                             | OMBINED AVERAGE                  | 72      | .44    | Analyst | 1 dere            | sh f  | 2      | Date | 1/19/2 | הלי |  |
| 280                            |                                  |         |        |         | $\mathcal{O}$     |       |        |      |        |     |  |

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## WesDyne International Reactor Vessel Inservice Examination Scan Parameter Execution

CUSTOMERPUBLIC SERVICE ELECTRIC & GASSITESALEM - UNIT 2OUTAGE2R12VESSEL TYPEPWR-WESTINGHOUSE 4 LOOP

WELD IDENTIFICATION - 29-RCN-1210

Weld and Scan Type = NOZZLE TO SHELL (TAN) PARALLEL SCAN Scan Data File Name = WN338-TAN-ON

SCAN AREA PER THE ORIGINAL TECHNIQUES

| UDRPS SCAN AREA | DEFINITION | RADIUS<br>(IN) | AZIMUTH<br>(DEGREES) |
|-----------------|------------|----------------|----------------------|
| START CW        | :          | 85.44          | 179.90               |
| END CCW         | :          | 85.44          | -179.90              |
| START CW        | :          | 85.44          | 179.90               |
| END CCW         | :          | 85.44          | -179.90              |

SCAN AREA/AREAS OBTAINED DURING THE SCAN

| TOP LEFT     | : | 26.75 | 179.90  |
|--------------|---|-------|---------|
| TOP RIGHT    | : | 32.10 | 179.90  |
| BOTTOM LEFT  | : | 26.75 | -179.90 |
| BOTTOM RIGHT | : | 32.10 | -179.90 |

Increment Size (in) = Number of Indexes Specified = Number of Indexes Completed = Scan Area - Original Techniques (sq in) = Scan Area - This Scan (sq in) = Scan Area - Completed (sq in) =

Scan Started

Scan Completed

15:59:39 04/18/02

0.50

1118.7

1118.7

1118.7

04/18/02

Date

12

12

Robot Operator Signature DATE 1 au DATE 4/181 UT Operator Signature

Time

15:49:49

Comments

1.3

| mments | • |
|--------|---|
|        |   |
|        |   |



|      | <u>r</u> |                              |                  |                             |             |                              |             |             | FTI V                 | VESS_VOLF | ₹RP 07 | 7/15/00 2 | 2                |
|------|----------|------------------------------|------------------|-----------------------------|-------------|------------------------------|-------------|-------------|-----------------------|-----------|--------|-----------|------------------|
| 7    | RA       | MATOM                        | EAI              | YP VESSEL                   | VOL         |                              | MIN         | <b>IA</b> ] |                       | OVER/     | \GE    | REPO      | RT               |
| ;UST | OMER:    | SALEM 2R12                   |                  |                             | s           | YSTEM:<br>PRESSURI           | ZER         | }           |                       |           |        |           |                  |
| SUMA | MARY NO  | ):<br>010900                 |                  |                             | c           | OMPONENT ID: 2               | 2-PZ        | 'R-(        | CIRC-DU               | ч         |        |           |                  |
| 1.0  | CALC     | JLATE REQUIR                 | RED EX           | AM VOLUME FOR               | STR         | AIGHT BEAM PLA               | NAI         | <u>R F</u>  | LAWS                  |           |        |           |                  |
|      | 1.1      | Exam Height 2                | X Exam           | n Width X Exam Le           | ngth =      | = Exam                       | 50          | <b>x</b>    | 6.80 X                | 290.00    | = 8    | ,874.00   | cu.in            |
| 2.0  | CALCI    | JLATE REQUIR                 | RED EX           | AM VOLUME FOR               | STR         | AIGHT BEAM LAM               | <u>IINA</u> |             | <u>FLAWS</u>          |           |        |           |                  |
|      | 2.1      | Exam Height                  | X Exam           | n Width X Exam Le           | ngth =      | • Exam 0.0                   | 00          | х<br>—      | 0.00 X                | 0.00      | =      | 0.00      | cu.in            |
| 3.0  | CALCI    | JLATE REQUIR                 | ED PA            | RALLEL EXAM VC              | DLUN        | IE FOR 45° AND 60            | <u>)°_</u>  |             |                       |           |        |           |                  |
|      | 3.1      | Exam Height )                | K Exam           | n Width X Exam Lei          | ngth =      | : Exam                       | 50          | x           | 6.80 X                | 580.00    | =13    | 7,748.00  | ) cu.in          |
| 4.0  | CALCL    | JLATE REQUIR                 | EDTR             | ANSVERSE EXAM               | VOL         | UME FOR 45° AND              | <u>) 60</u> | <u>°</u>    |                       |           |        |           |                  |
|      | 4.1      | Exam Height >                | (Exam            | Width X Exam Ler            | ngth =      | : Exam                       | 50          | X           | 6.80 X                | 580.00    | =1     | 7,748.00  | ) cu.ir          |
| 5.0  | CALCL    | ILATE STRAIG                 | <u>HT BE</u>     | AM PLANAR EXAM              | <u>1 CO</u> | VERAGE                       |             |             |                       |           |        |           |                  |
|      | 5.1      | Limited above                |                  |                             |             |                              |             |             |                       |           |        |           |                  |
|      |          | Height of<br>Obstructed Volu | ume              | Width of<br>Obstructed Area |             | Length of<br>Obstructed Area |             |             | Volume w<br>Exam Co   |           |        |           |                  |
|      |          | 4.50                         | _ x              | 3.95                        | x           | 290                          | H           | _           | 5,154.                | .75       |        |           |                  |
|      | 5.2      | Limited Below /              | CW e             | xam volume                  |             |                              |             |             |                       |           |        |           |                  |
|      |          | Height of<br>Obstructed Volu | ume              | Width of<br>Obstructed Area |             | Length of<br>Obstructed Area |             |             | Volume w<br>Exam Co   |           |        |           |                  |
|      |          | 0.00                         | _ x              | 0.00                        | x           | 0.00                         | ÷           | _           | 0.00                  | )         |        |           |                  |
|      |          | Total straight be            | eam pla          | anar exam volume :          | not ex      | amined                       | =           |             | 5,154.                | 75        |        |           |                  |
|      | 5.3      | Percent Volume               | e Exam           | ined                        |             |                              |             |             |                       |           |        |           |                  |
|      |          |                              | l 0 vol<br>Cover | Total C<br>age Exam         |             | ne                           |             |             | Percent V<br>Examined |           |        |           |                  |
|      |          | 100 - {[5                    | ,154.7           | <u>5</u> / <u>8,87</u>      | 74.00       | <b>x</b> 100 }               | =           |             | 41.91                 | %         |        |           |                  |
|      |          | ory mutual<br>Nce Compan     |                  |                             |             |                              |             |             |                       |           |        | 283       | 2 I <sup>3</sup> |

FTI VESS\_VOL.FRP 07/16/00 2 FRAMATOME ANP **VESSEL VOLUMETRIC EXAMINATION COVERAGE REPORT** CALCULATE STRAIGHT BEAM LAMINAR EXAM COVERAGE 6.0 6.1 Limited above / CW exam volume Length of Height of Width of Volume with no **Obstructed Area Obstructed Volume Obstructed Area** Exam Coverage Х 0.00 0.00 0.00 0.00 Х 6.2 Limited Below / CW exam volume Length of Height of Width of Volume with no. **Obstructed Volume Obstructed Area Obstructed Area** Exam Coverage X 0.00 Х 0.00 0.00 0.00 Total straight beam planar exam volume not examined 0.00 6.3 Percent Volume Examined Total 0° vol Total 0° Percent Volume Exam Volume Examined w/No Coverage 0.00 0.00 0.00 100 - {[ 1 x 100} % 7.0 CALCULATE PARALLEL 45° EXAM COVERAGE 7.1 Limited above / CW exam volume Height of Width of Length of Volume with no **Obstructed Volume Obstructed** Area **Obstructed Area** Exam Coverage 290.00 4.50 X 3.65 Х 4,763.25 7.2 Limited Below / CCW exam volume Height of Width of Length of Volume with no **Obstructed Volume Obstructed Area Obstructed Area** Exam Coverage Х X 366.50 4.50 4.50 7,421.63 -Total 45° parallel exam volume not examined 12,184.88 Ξ .7.3 Percent Volume Examined Total 45° parallel Total 45° parallel Percent Volume vol w/No Coverage Exam Volume Examined **100 - {[** 12,184.88 1 17,748.00 100 } 31.35 % х FACTORY MUTUAL INSURANCE COMPANY

Delton E. Tillers 4-19-11

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| ALC | CULATE PARALLEI                                                                                                                                                         | L 60°                                         | EXAM COVERAG                                                                                                                                                        | E                            |                                                                                                          |   |                                                                                                                                       |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|----------------------------------------------------------------------------------------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------|
| 8.1 | Limited above / CW exam volume                                                                                                                                          |                                               |                                                                                                                                                                     |                              |                                                                                                          |   | Above / CW exam                                                                                                                       |
|     | Height of<br>Obstructed Volum                                                                                                                                           | ne                                            | Width of<br>Obstructed Area                                                                                                                                         | Length of<br>Obstructed Ar   |                                                                                                          |   | Volume with no<br>Exam Coverage                                                                                                       |
|     | 4.50                                                                                                                                                                    | X                                             | 3.59                                                                                                                                                                | X                            | 290.00                                                                                                   | 8 | 4,684.95                                                                                                                              |
| 8.2 | Limited Below / C                                                                                                                                                       | CW (                                          | exam volume                                                                                                                                                         |                              |                                                                                                          |   | Below / CCW exam                                                                                                                      |
|     | Height of<br>Obstructed Volum                                                                                                                                           | ie                                            | Width of<br>Obstructed Area                                                                                                                                         |                              | Length of<br>Obstructed Area                                                                             |   | Volume with no<br>Exam Coverage                                                                                                       |
|     | 4.50                                                                                                                                                                    | X                                             | 4.50                                                                                                                                                                | X                            | 392.00                                                                                                   | 2 | 7,938.00                                                                                                                              |
|     | Total 60° parallel                                                                                                                                                      | exam                                          | i volume not exam                                                                                                                                                   | ined                         |                                                                                                          | H | 12,622.95                                                                                                                             |
| 8.3 | Percent Volume E                                                                                                                                                        | Exam                                          | ined                                                                                                                                                                |                              |                                                                                                          |   |                                                                                                                                       |
|     | Total 6<br>Vol w/t                                                                                                                                                      | •                                             | raliel Total<br>overage Exam                                                                                                                                        |                              |                                                                                                          |   | Percent Volume<br>Examined                                                                                                            |
|     | 100 - {[ 12,0                                                                                                                                                           | 622.9                                         | 95 / 17,7                                                                                                                                                           | 48.0                         | 0] x 100}                                                                                                | 8 | 28.88 <b>%</b>                                                                                                                        |
| 9.1 |                                                                                                                                                                         |                                               |                                                                                                                                                                     |                              |                                                                                                          |   |                                                                                                                                       |
|     | Limited Clockwise<br>Height of<br>Obstructed Volum                                                                                                                      |                                               | Width of                                                                                                                                                            |                              | Length of<br>Obstructed Area                                                                             |   | CW Exam<br>Volume with no<br>Exam Coverage                                                                                            |
|     |                                                                                                                                                                         |                                               |                                                                                                                                                                     | x                            | Length of<br>Obstructed Area<br>254.50                                                                   | 1 |                                                                                                                                       |
|     | Height of<br>Obstructed Volum<br>4.50                                                                                                                                   | ie<br>X                                       | Width of<br>Obstructed Area                                                                                                                                         |                              | Obstructed Area                                                                                          | 8 | Volume with no<br>Exam Coverage                                                                                                       |
| 9.2 | Height of<br>Obstructed Volum<br>4.50                                                                                                                                   | ie<br>X<br>unter                              | Width of<br>Obstructed Area<br>4.50                                                                                                                                 |                              | Obstructed Area                                                                                          | = | Volume with no<br>Exam Coverage                                                                                                       |
|     | Height of<br>Obstructed Volum<br><u>4.50</u><br>Limited Below Con<br>Height of                                                                                          | ie<br>X<br>unter                              | Width of<br>Obstructed Area<br>4.50<br>clockwise exam vo<br>Width of                                                                                                |                              | Obstructed Area<br>254.50<br>Length of                                                                   | 8 | Volume with no<br>Exam Coverage<br>5,153.63<br>CCW Exam<br>Volume with no                                                             |
|     | Height of<br>Obstructed Volum<br><u>4.50</u><br>Limited Below Con<br>Height of<br>Obstructed Volum<br><u>4.50</u>                                                       | e<br>X<br>unter<br>e<br>X                     | Width of<br>Obstructed Area<br><u>4.50</u><br>clockwise exam vo<br>Width of<br>Obstructed Area                                                                      | olume<br>X                   | Obstructed Area<br>254.50<br>Length of<br>Obstructed Area<br>254.50                                      |   | Volume with no<br>Exam Coverage<br>5,153.63<br>CCW Exam<br>Volume with no<br>Exam Coverage                                            |
| 9.2 | Height of<br>Obstructed Volum<br><u>4.50</u><br>Limited Below Con<br>Height of<br>Obstructed Volum<br><u>4.50</u>                                                       | e<br>X<br>unter<br>e<br>X                     | Width of<br>Obstructed Area<br><u>4.50</u><br>clockwise exam vo<br>Width of<br>Obstructed Area<br><u>4.50</u><br>cam volume not ex                                  | olume<br>X                   | Obstructed Area<br>254.50<br>Length of<br>Obstructed Area<br>254.50                                      | = | Volume with no<br>Exam Coverage<br>5,153.63<br>CCW Exam<br>Volume with no<br>Exam Coverage<br>5,153.63                                |
|     | Height of<br>Obstructed Volum<br><u>4.50</u><br>Limited Below Con<br>Height of<br>Obstructed Volum<br><u>4.50</u><br>Total 45° transver                                 | ie<br>X<br>unter<br>k<br>X<br>rse ex<br>xami: | Width of<br>Obstructed Area<br><u>4.50</u><br>clockwise exam vo<br>Width of<br>Obstructed Area<br><u>4.50</u><br>cam volume not ex                                  | X<br>5° pa                   | Obstructed Area<br><u>254.50</u><br>Length of<br>Obstructed Area<br><u>254.50</u><br>ed                  | = | Volume with no<br>Exam Coverage<br>5,153.63<br>CCW Exam<br>Volume with no<br>Exam Coverage<br>5,153.63                                |
| 9.2 | Height of<br>Obstructed Volum<br><u>4.50</u><br>Limited Below Con<br>Height of<br>Obstructed Volum<br><u>4.50</u><br>Total 45° transver<br>Percent Volume E<br>Total 45 | ie<br>X<br>unter<br>k<br>X<br>rse ex<br>xami: | Width of<br>Obstructed Area<br><u>4.50</u><br>clockwise exam ve<br>Width of<br>Obstructed Area<br><u>4.50</u><br>cam volume not examed<br>rallel Total 4<br>Exam ve | X<br>xamin<br>5° pa<br>Volun | Obstructed Area<br><u>254.50</u><br>Length of<br>Obstructed Area<br><u>254.50</u><br>ed<br>arallel<br>ne | = | Volume with no<br>Exam Coverage<br>5,153.63<br>CCW Exam<br>Volume with no<br>Exam Coverage<br>5,153.63<br>10,307.25<br>Percent Volume |

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FRAMATOME ANP VESSEL VOLUMETRIC EXAMINATION COVERAGE REPORT CALCULATE TRANSVERSE 60° EXAM COVERAGE 10.0 10.1 Limited Clockwise exam volume CW exam Width of Length of Height of Volume with no **Obstructed Area Obstructed Volume Obstructed Area** Exam Coverage 4.50 4.50 X 254.50 5,153.63 X 10.2 Limited Counterclockwise exam volume CCW exam Width of Length of Height of Volume with no **Obstructed Area Obstructed Area Obstructed Volume** Exam Coverage 254.50 4.50 Х 5,153.63 4.50 х Total 60 transverse exam volume not examined 10,307.25 10.3 Percent Volume Examined Total 60° Trans Vol Total 60° Trans Percent Volume Exam Volume Examined w/NoCoverage 100 - {[ 10,307.25 17,748.00 41.92 1 X 100 } % 11.0 CALCULATE PERCENT OF TOTAL VOLUME EXAMINED Sum of Exam Volumes % 11.1 Examination Steps 5 Thur 10 No. Of Exams (6) Coverage 5.00 37.20 185.98 % The total circumferential area available for scanning was 140" out of the total circumference of 290". Within this 140", the scan was limited on the head side of the weld 360 degrees by a support ring. The distance from the indicated weld centerline to the bottom of the support ring is 2.50". The dimensions shown in this form are not reflective of actual dimensions, however the totals used calculate the coverages for each of the steps are accurate. 282 Date: 04/11/02 Examiner: Mike Zeise Level J-Kelle

MUTUAL

## REQUEST FOR ADDITIONAL INFORMATION REQUEST FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR IN-SERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

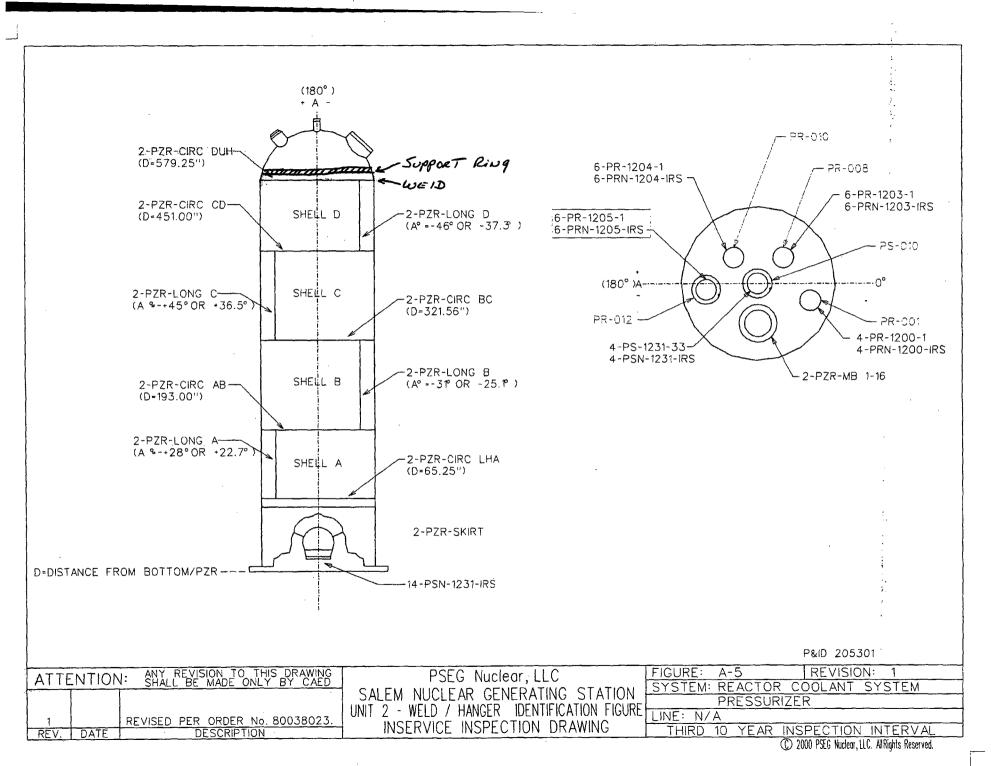
| QUESTION       | sufficient to demonstrate<br>the form of drawings, ske | JH the Information submitted by the licensee is not<br>impracticality. Please submit further information in<br>tches and/or descriptions to support the<br>pection of this weld is limited and impractical |
|----------------|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Summary #      | 010900                                                 | -                                                                                                                                                                                                          |
| Component I.D. | 2-PZR-CIRC-DUH                                         | -                                                                                                                                                                                                          |
| Description    | Shell "D" to Upper Head                                | -                                                                                                                                                                                                          |
|                |                                                        | Comments                                                                                                                                                                                                   |
| 1              | Weld X-Section                                         | See Attached                                                                                                                                                                                               |
| 2              | Material                                               | Carbon Steel / Stainless Steel Clad                                                                                                                                                                        |
| 3              | Thickness / weld Crown                                 | Thickness 4.50" / Weld Crown 2.30"                                                                                                                                                                         |
| 4              | Obstruction                                            | Support Ring Clamped to Head                                                                                                                                                                               |
| 5              | Exam Area Highlighted on Drawing                       | Yes X No                                                                                                                                                                                                   |
| 6              | Transducer ray exit point                              | See Attached                                                                                                                                                                                               |

### Comments

UT exam was conducted using 45 and 60 degree shear wave transducer. The exam was limited to 37% of code required coverage due to Pressurizer support ring clamped to the upper head. A total of 140 degrees of total circumference was accessible for examination. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.

Page

of



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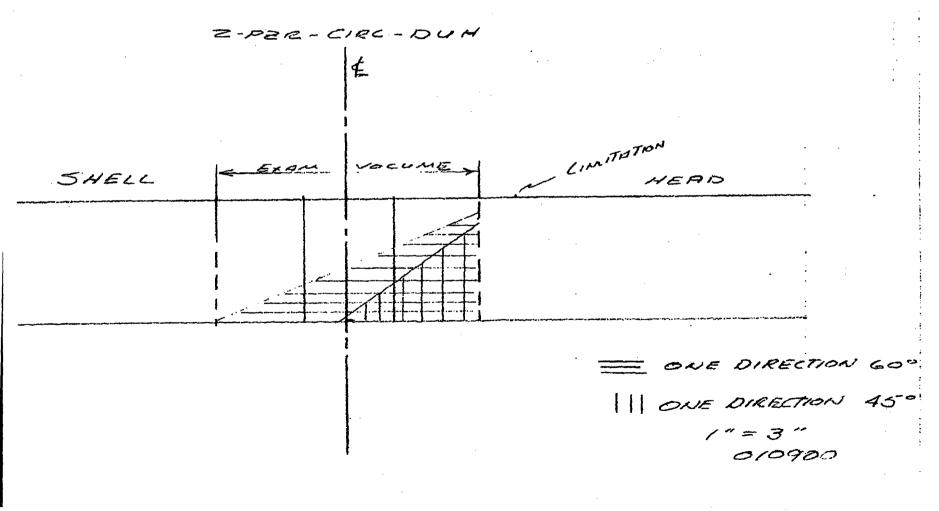
## Supplemental Drawing

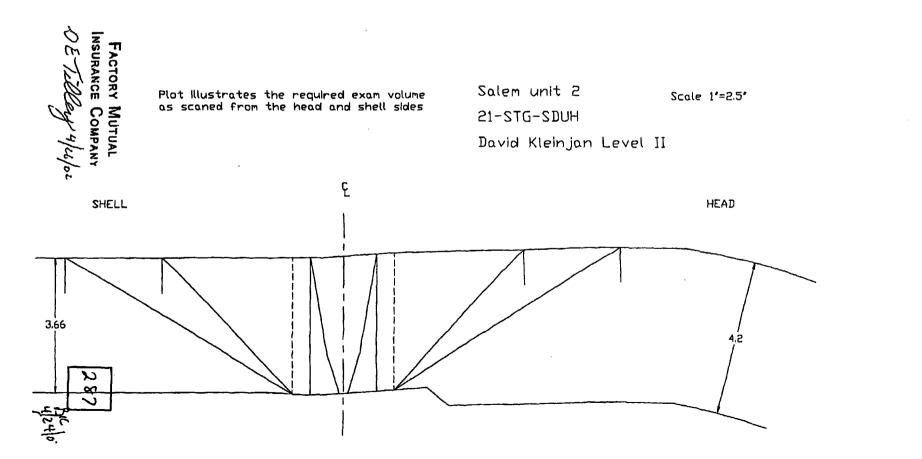
| Summary # 10900 |                         | Component I.D. | 2-PZR-CIRC-D | UH |
|-----------------|-------------------------|----------------|--------------|----|
| Description     | Shell "D" to Upper Head |                | Page         | of |

Comments

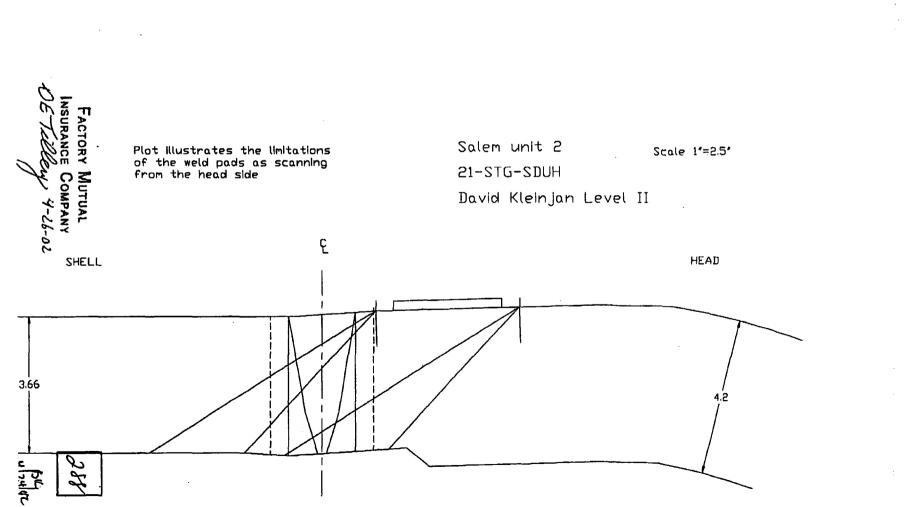
The exam completed was limited to 37% of code required coverage due to the Pressurizer support ring clamped to the upper head. A total of 140 degrees of the total circumference was accessible for exam.

Sketch





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| JUST | TOMER:     | SALEM 2R12                                           | S      | YSTEM:<br>STEAN           | A GENE     | RA         | TOR #21               |         |          |         |             |
|------|------------|------------------------------------------------------|--------|---------------------------|------------|------------|-----------------------|---------|----------|---------|-------------|
| SUM  | MARY NO    | ):<br>272900                                         | C      | OMPONENT II               | D:<br>21-9 | STG        | i-SDUH                |         | <u> </u> |         |             |
| 1.0  | CALC       | JLATE REQUIRED EXAM VOLUME FOR                       | STR    | AIGHT BEAM                | PLANA      | <u>R F</u> | LAWS                  |         |          |         |             |
|      | 1.1        | Exam Height X Exam Width X Exam Le                   | ngth = | = Exam                    | 3.72       | X          | 3.00 X                | 553.00  | = 6,     | 171.48  | cu          |
| 2.0  | CALCI      | JLATE REQUIRED EXAM VOLUME FOR                       | STR    | AIGHT BEAM                | LAMIN      | AR         | FLAWS                 |         |          |         |             |
|      | 2.1        | Exam Height X Exam Width X Exam Let                  | ngth = | - Exam                    | 0.00       | <b>x</b>   | 0.00 X                | 0.00    | =        | 0.00    | <b>C</b> U  |
| 3.0  | CALCI      | JLATE REQUIRED PARALLEL EXAM VC                      | DLUM   | E FOR 45° AN              | D 60°      |            |                       |         |          |         |             |
|      | 3.1        | Exam Height X Exam Width X Exam Ler                  | ngth = | Exam                      | 3.72<br>   | <b>x</b>   | 3.00 X                | 1,106.0 | =12      | ,342.96 | 6 <b>cu</b> |
| 1.0  | CALCU      | ILATE REQUIRED TRANSVERSE EXAM                       | VOL    | UME FOR 45°               | AND 6      | <u>0°</u>  |                       |         |          |         |             |
|      | <b>4.1</b> | Exam Height X Exam Width X Exam Ler                  | ngth = | Exam                      | 3.72       | х<br>      | 3.00 X                | 1,106.0 | =12      | ,342.96 | ) cu        |
| i.0  | CALCL      | ILATE STRAIGHT BEAM PLANAR EXAM                      |        | VERAGE                    |            |            |                       |         |          |         |             |
|      | 5.1        | Limited above / CW exam volume                       |        |                           |            |            |                       |         |          |         |             |
|      |            | Height ofWidth ofObstructed VolumeObstructed Area    |        | Length of<br>Obstructed A | rea        |            | Volume w<br>Exam Co   |         |          |         |             |
|      |            | <u>3.72</u> X <u>1.45</u>                            | x      | 49.50                     | _ =        | -          | 267.0                 | 00      |          |         |             |
|      | 5.2        | Limited Below / CW exam volume                       |        |                           |            |            |                       |         |          |         |             |
|      |            | Height of Width of Obstructed Volume Obstructed Area |        | Length of<br>Obstructed A | rea        |            | Volume w<br>Exam Co   |         |          |         |             |
|      |            | <u> </u>                                             | X      | 49.50                     | ~ =        | _          | 267.0                 | 0       |          |         |             |
|      |            | Total straight beam planar exam volume               | not ex | kamined                   | =          | -          | 534.0                 | )1      |          |         |             |
|      | 5.3        | Percent Volume Examined                              |        |                           |            |            |                       |         |          |         |             |
|      |            | Total 0 vol Total 0<br>w/No Coverage Exam            |        | ne                        |            |            | Percent V<br>Examined |         |          |         |             |
|      |            | <b>100 - {[</b> 534.01 / 6,1]                        | 71.48  | ] x 100                   | )} =       |            | 91.35                 | %       |          |         |             |

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|            | CULATE STRAIGHT BE                                                                                                                                                           | AM LAMINAR EXA                                                                                                                                                               | MCC           | DVERAGE                                                                         |   |                                                                        |  |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------|---|------------------------------------------------------------------------|--|
| 6.1        | Limited above / CW e                                                                                                                                                         | exam volume                                                                                                                                                                  |               |                                                                                 |   |                                                                        |  |
|            | Height of<br>Obstructed Volume                                                                                                                                               | Width of<br>Obstructed Area                                                                                                                                                  |               | Length of<br>Obstructed Area                                                    |   | Volume with no<br>Exam Coverage                                        |  |
|            | 0.00 X                                                                                                                                                                       | 0.00                                                                                                                                                                         | X             | 0.00                                                                            | = | 0.00                                                                   |  |
| 6.2        | Limited Below / CW e                                                                                                                                                         | xam volume                                                                                                                                                                   |               |                                                                                 |   |                                                                        |  |
|            | Height of<br>Obstructed Volume                                                                                                                                               | Width of<br>Obstructed Area                                                                                                                                                  |               | Length of<br>Obstructed Area                                                    |   | Volume with no<br>Exam Coverage                                        |  |
|            | 0.00 X                                                                                                                                                                       | 0.00                                                                                                                                                                         | X             | 0.00                                                                            | = | 0.00                                                                   |  |
|            | Total straight beam pl                                                                                                                                                       | anar exam volume r                                                                                                                                                           | not ex        | xamined                                                                         | = | 0.00                                                                   |  |
| 6.3        | Percent Volume Exan                                                                                                                                                          | nined                                                                                                                                                                        |               |                                                                                 |   |                                                                        |  |
|            | Total 0° vo<br>w/No Cove                                                                                                                                                     |                                                                                                                                                                              |               | ne                                                                              |   | Percent Volume<br>Examined                                             |  |
|            | 100 - {[0.00                                                                                                                                                                 | /0.                                                                                                                                                                          | 00            | _] x 100}                                                                       | = | 0.00 %                                                                 |  |
| - A1 C     |                                                                                                                                                                              |                                                                                                                                                                              |               |                                                                                 |   |                                                                        |  |
| MLL        | JULATE PARALLEL 45"                                                                                                                                                          | EXAM COVERAGE                                                                                                                                                                | Ξ             |                                                                                 |   |                                                                        |  |
|            |                                                                                                                                                                              | EXAM COVERAGE                                                                                                                                                                |               |                                                                                 |   |                                                                        |  |
|            | Limited above / CW e<br>Height of<br>Obstructed Volume                                                                                                                       |                                                                                                                                                                              |               | Length of<br>Obstructed Area                                                    |   | Volume with no<br>Exam Coverage                                        |  |
|            | Limited above / CW e<br>Height of                                                                                                                                            | xam volume<br>Width of                                                                                                                                                       | x             |                                                                                 | Ŧ |                                                                        |  |
| 7.1        | Limited above / CW e<br>Height of<br>Obstructed Volume                                                                                                                       | xam volume<br>Width of<br>Obstructed Area<br>3.00                                                                                                                            | -             | Obstructed Area                                                                 | = | Exam Coverage                                                          |  |
| 7.1        | Limited above / CW e<br>Height of<br>Obstructed Volume<br><u>3.72</u> X                                                                                                      | xam volume<br>Width of<br>Obstructed Area<br>3.00                                                                                                                            | -             | Obstructed Area                                                                 | Ŧ | Exam Coverage                                                          |  |
| 7.1        | Limited above / CW e<br>Height of<br>Obstructed Volume<br><u>3.72</u> X<br>Limited Below / CCW<br>Height of                                                                  | xam volume<br>Width of<br>Obstructed Area<br><u>3.00</u><br>exam volume<br>Width of                                                                                          | -             | Obstructed Area<br>96.30<br>Length of                                           | E | Exam Coverage<br>1,074.71<br>Volume with no                            |  |
| 7.1        | Limited above / CW e<br>Height of<br>Obstructed Volume<br><u>3.72</u> X<br>Limited Below / CCW<br>Height of<br>Obstructed Volume                                             | xam volume<br>Width of<br>Obstructed Area<br>3.00<br>exam volume<br>Width of<br>Obstructed Area<br>3.00                                                                      | x             | Obstructed Area<br>96.30<br>Length of<br>Obstructed Area                        |   | Exam Coverage<br>1,074.71<br>Volume with no<br>Exam Coverage           |  |
| 7.1        | Limited above / CW e<br>Height of<br>Obstructed Volume<br>X<br>Limited Below / CCW<br>Height of<br>Obstructed Volume<br>X                                                    | xam volume<br>Width of<br>Obstructed Area<br><u>3.00</u><br>exam volume<br>Width of<br>Obstructed Area<br><u>3.00</u>                                                        | x             | Obstructed Area<br>96.30<br>Length of<br>Obstructed Area                        | E | Exam Coverage<br>1,074.71<br>Volume with no<br>Exam Coverage<br>856.53 |  |
| 7.1<br>7.2 | Limited above / CW e<br>Height of<br>Obstructed Volume<br><u>3.72</u> X<br>Limited Below / CCW<br>Height of<br>Obstructed Volume<br><u>3.72</u> X<br>Total 45° parallel exam | xam volume<br>Width of<br>Obstructed Area<br><u>3.00</u><br>exam volume<br>Width of<br>Obstructed Area<br><u>3.00</u><br>n volume not examinined<br>ined<br>arallel Total 45 | X<br>X<br>ned | Obstructed Area<br><u>96.30</u><br>Length of<br>Obstructed Area<br><u>76.75</u> | E | Exam Coverage<br>1,074.71<br>Volume with no<br>Exam Coverage<br>856.53 |  |

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FTI VESS\_VOL.FRP 07/15/00 7 FRAMATOME ANP VESSEL VOLUMETRIC EXAMINATION COVERAGE REPORT CALCULATE PARALLEL 60° EXAM COVERAGE 8.0 8.1 Limited above / CW exam volume Above / CW exam Length of Width of Height of Volume with no **Obstructed Volume Obstructed Area Obstructed Area** Exam Coverage 3.72 3.00 X 96.80 1,080.29 X 8.2 Limited Below / CCW exam volume Below / CCW exam Volume with no Length of Height of Width of Exam Coverage **Obstructed Area Obstructed Volume Obstructed Area** 856.53 3.72 3.00 X 76.75 X Total 60° parallel exam volume not examined 1,936.82 8.3 Percent Volume Examined Total 60° parallel Total 60° parallel Percent Volume Exam Volume Vol w/No Coverage Examined **100 - {[** 1,936.82 12,342.96 84.31 x 100} 1 H % 9.0 CALCULATE TRANSVERSE 45° EXAM COVERAGE 9.1 Limited Clockwise exam volume CW Exam Height of Width of Length of Volume with no Obstructed Volume Obstructed Area **Obstructed Area** Exam Coverage 3.72 3.00 X 68.00 758.88 X 9.2 Limited Below Counter clockwise exam volume CCW Exam Heiaht of Width of Length of Volume with no Obstructed Volume **Obstructed Area Obstructed Area** Exam Coverage 3.72 3.00 68.00 Х X 758.88 Total 45° transverse exam volume not examined 1,517.76 Ξ Percent Volume Examined 9.3 Total 45° parallel Total 45° parallel Percent Volume Exam Volume Examined 12,342.96 ] x 100 } = **100 - {[** 1,517.76 1 87.70 % FACTORY MUTUAL INSURANCE COMPANY n---- 10 ....

| D CAL                 | CULATE TRANSVERSE                                                                                   | 60° EXAM COVER                                                                                    | AGE                   |                                                                                   |                                                       |                                                                    |
|-----------------------|-----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-----------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------------|
| 10.1                  | Limited Clockwise ex                                                                                | am volume                                                                                         |                       |                                                                                   |                                                       | CW exam                                                            |
|                       | Height of<br>Obstructed Volume                                                                      | Width of<br>Obstructed Area                                                                       |                       | Length of<br>Obstructed Area                                                      |                                                       | Volume with no<br>Exam Coverage                                    |
|                       | <u> </u>                                                                                            | 3.00                                                                                              | x                     | 68.00                                                                             | =                                                     | 758.88                                                             |
| 10.2                  | Limited Counterclock                                                                                | wise exam volume                                                                                  |                       |                                                                                   |                                                       | CCW exam                                                           |
|                       | Height of<br>Obstructed Volume                                                                      | Width of<br>Obstructed Area                                                                       |                       | Length of Obstructed Area                                                         |                                                       | Volume with no<br>Exam Coverage                                    |
|                       | <u>    3.72                                </u>                                                     | 3.00                                                                                              | X                     | 68.00                                                                             | 2                                                     | 758.88                                                             |
|                       | Total 60 transverse e                                                                               | xam volume not exa                                                                                | amine                 | d                                                                                 | =                                                     | 1,517.76                                                           |
|                       |                                                                                                     |                                                                                                   |                       |                                                                                   |                                                       |                                                                    |
| <u>CAL</u><br>11.1    | <b>100 - {</b> [ <u>1,517</u> .<br>CULATE PERCENT OF<br>Sum of Exam Volume                          | TOTAL VOLUME E                                                                                    |                       | INED                                                                              | T                                                     | <b>87.70 %</b>                                                     |
|                       | CULATE PERCENT OF                                                                                   | TOTAL VOLUME E                                                                                    | EXAM                  | <u>INED</u><br>Exa                                                                | =<br>mina<br>erago                                    | 2•                                                                 |
|                       | CULATE PERCENT OF                                                                                   | TOTAL VOLUME E                                                                                    | EXAM                  | IINED<br>Exa<br>Cov                                                               | mina                                                  |                                                                    |
| 11.1                  | CULATE PERCENT OF<br>Sum of Exam Volume<br>Steps 5 Thur 10                                          | TOTAL VOLUME E<br>es %<br>No. Of Exams (<br>5.00                                                  | <u>EXAM</u><br>6)     | IINED<br>Exa<br>Cov                                                               | mina<br>erago<br>87.0                                 |                                                                    |
| 11.1<br>Exam          | CULATE PERCENT OF<br>Sum of Exam Volume<br>Steps 5 Thur 10<br>435.42 /                              | TOTAL VOLUME E<br>es %<br>No. Of Exams (<br>5.00                                                  | EXAM<br>6)<br>s and   | IINED<br>Exa<br>Cov<br>=<br>welded plates bot                                     | mina<br>erage<br>87.0<br>th sid                       |                                                                    |
| 11.1<br>Exam<br>Heigh | CULATE PERCENT OF<br>Sum of Exam Volume<br>Steps 5 Thur 10<br>435.42 /                              | TOTAL VOLUME E<br>es %<br>No. Of Exams (<br>5.00 ]<br>ation support plate<br>of the obstructed as | 6)<br>s and<br>reas i | INED<br>Exa<br>Cov<br>=<br>welded plates bot<br>ndicated are not a                | mina<br>erag<br>87.0<br>th sid                        | tion<br>e<br>8 %<br>des of the weld. The<br>ate, however the total |
| 11.1<br>Exam<br>Heigt | CULATE PERCENT OF<br>Sum of Exam Volume<br>Steps 5 Thur 10<br>435.42 /<br>aination limited by insul | TOTAL VOLUME E<br>es %<br>No. Of Exams (<br>5.00 ]<br>ation support plate<br>of the obstructed as | 6)<br>s and<br>reas i | INED<br>Exa<br>Cov<br>=<br>welded plates bot<br>ndicated are not a                | mina<br>erag<br>87.0<br>th sid                        | tion<br>e<br>8 %<br>des of the weld. The<br>ate, however the total |
| 11.1<br>Exam<br>Heigt | CULATE PERCENT OF<br>Sum of Exam Volume<br>Steps 5 Thur 10<br>435.42 /<br>aination limited by insul | TOTAL VOLUME E<br>es %<br>No. Of Exams (<br>5.00 ]<br>ation support plate<br>of the obstructed as | 6)<br>s and<br>reas i | Exa<br>Cov<br>=<br>welded plates bot<br>ndicated are not a<br>otal obstructed vol | mina<br>erag<br>87.0<br>th sid<br>ccurr<br>ume<br>FAC | tion<br>e<br>8 %<br>des of the weld. The<br>ate, however the total |

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|            |                     |                                                |                                                 |                        |                                 |                          |                   | FT S         | JRF_COV.FRP | 1     |
|------------|---------------------|------------------------------------------------|-------------------------------------------------|------------------------|---------------------------------|--------------------------|-------------------|--------------|-------------|-------|
|            | FRA                 | MATOME A                                       | NP                                              | SL                     | IRFACE EX/                      | AMINAT                   |                   | VERA         | GE REPC     | ORT   |
| CUST       | TOMER:              | SALEM 2 RFO-12                                 |                                                 |                        | SYSTEM: B                       | oiler Feed               | water             | <u> </u>     |             |       |
| SUM        | MARY N              | O:<br>330645                                   |                                                 |                        | COMPONEN                        | Г ID:<br>14-             | BF-2221           | 3PL-1        | THRU-8      |       |
|            |                     |                                                | SUR                                             | FACE EX                |                                 | IS                       |                   |              |             |       |
| 1.0        | CALC                | ULATE REQUIRED                                 | FYAMINATIC                                      |                        |                                 |                          |                   |              |             |       |
|            |                     | late Examination Area                          |                                                 |                        | :                               | <u>x</u>                 | <u>*</u>          | =            | 224.800     | sq.in |
| 2.0        | CALC                | ULATE AREA NOT                                 | EXAMINED                                        |                        |                                 |                          |                   |              |             |       |
|            | 2.1                 | Length of Limitation                           | <u>n</u>                                        | Width c                | f Limitation                    |                          | <u>Area</u>       | Not Exa      | amined      |       |
|            |                     | ·¥                                             |                                                 |                        | 4                               | _ = .                    |                   | <del>*</del> | ·····       | sq.in |
|            | B.                  | <u> </u>                                       | × _                                             | <u> </u>               | <u>*</u>                        |                          |                   | *            | ···         |       |
|            | C.                  | <u> </u>                                       | × _                                             |                        | *                               |                          |                   | ×            |             |       |
|            | D.                  | · <del>X</del>                                 | × _                                             |                        | *                               | _ = .                    |                   | *            |             | •     |
| <b>i.0</b> | 3.1<br><u>TOTA</u>  | Calculate Percent c                            |                                                 | •                      |                                 |                          |                   | 21.50        | <u> </u>    |       |
|            | 4.1                 | Calculate Percent of                           | if Total Area I                                 | Examined (             | 100 - LP):                      | <u></u>                  | 78                | .514%        |             |       |
|            |                     |                                                |                                                 |                        |                                 |                          |                   |              |             |       |
|            |                     | Ŀ                                              |                                                 |                        | LATION / RE                     | MARKS                    | <u>i</u>          |              |             |       |
| ¥          | <u> </u>            |                                                |                                                 |                        |                                 |                          |                   |              |             |       |
|            | Percent             | L<br>weld examined is a<br>ot examined were du | total calcula                                   | ted from al            | 1 lugs @ 0, 90                  | ), 180, an               | d 270 de          | igree lo     | ocations.   |       |
|            | Percent             | weld examined is a                             | total calcula                                   | ted from al            | 1 lugs @ 0, 90                  | ), 180, an               | d 270 de          | igree la     | ocations.   |       |
|            | Percent             | weld examined is a                             | total calcula                                   | ted from al            | 1 lugs @ 0, 90                  | ), 180, an               | d 270 de          | ogree k      | ocations.   |       |
|            | Percent             | weld examined is a                             | total calcula                                   | ted from al            | 1 lugs @ 0, 90                  | ), 180, an               | d 270 de          | egree la     | ocations.   |       |
|            | Percent             | weld examined is a                             | total calcula                                   | ted from al            | 1 lugs @ 0, 90                  | ), 180, an               | d 270 de          | egree la     | ocations.   |       |
|            | Percent<br>Areas no | weld examined is a                             | total calcula<br>ue to inability                | ted from al            | 1 lugs @ 0, 90                  | ), 180, an<br>ct orienta | d 270 de<br>tion. |              | ocations.   |       |
|            | Percent<br>Areas no | weld examined is a                             | total calcular<br>ue to inability<br>Date: 04/0 | ted from al            | l lugs @ 0, 90<br>yoke in corre | ), 180, an<br>ct orienta | d 270 de<br>tion. |              | acations.   | me    |
|            | Percent<br>Areas no | weld examined is a ot examined were du         | total calcular<br>ue to inability<br>Date: 04/0 | ted from all to access | l lugs @ 0, 90<br>yoke in corre | ), 180, an<br>ct orienta | d 270 de<br>tion. |              | ations.     | me    |

# REQUEST FOR ADDITIONAL INFORMATION REQUEST FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR IN-SERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

QUESTION

2.2(a) For certain component attachments and support welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

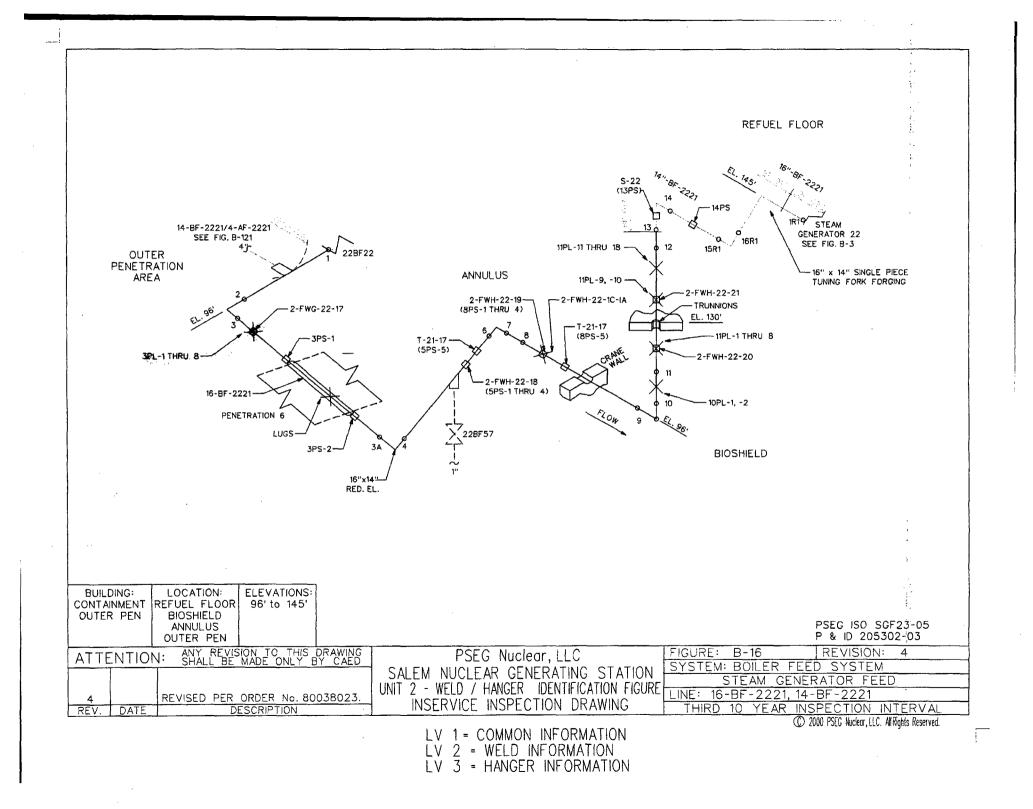
| Summary #      | 330645                           |                 |
|----------------|----------------------------------|-----------------|
| Component I.D. | 14-BF-2221-3PL-1 thru 8          |                 |
| Description    | PIPE LUGS                        |                 |
|                |                                  | Comments        |
| 1              | Weld X-Section                   | N/A             |
| 2              | Material                         | Carbon Steel    |
| 3              | Thickness / weld Crown           | N/A             |
| 4              | Obstruction                      | adjacent piping |
| 5              | Exam Area Highlighted on Drawing | Yes X No        |
| 6              | Transducer ray exit point        | N/A             |

### Comments

MT exam was conducted on this component. The MT exam was limited to 79% because the box beam configuration and adjacent piping in the area of the welded attachment prevented sufficient access to examine some portions of the welds in two directions. A system pressure test was also completed with no inaccessible indications observed.

Page

of



|               | X <b>⊈ #:</b> 330645  |       |                                  |        | EXAMINATIO<br>Lar generati | •    |             |        |            |                                                                                                                                      |
|---------------|-----------------------|-------|----------------------------------|--------|----------------------------|------|-------------|--------|------------|--------------------------------------------------------------------------------------------------------------------------------------|
| SYSTEM        | EEDWATER              | SYST  | EM                               | · · ·  | CONF                       | 'IG. | :           |        | 2-FWG-22-  | -17                                                                                                                                  |
| LINE #        | : 14-BF-2221          | L     |                                  |        | RELI                       | EF   | REG         | 2.:    |            |                                                                                                                                      |
| COMP.         | <b>ID.:</b> 14-BF-222 | L-3PL | -1 THRU 8                        |        | CAL.                       | BI   | OCI         | ς:     |            |                                                                                                                                      |
| LTP FI        | <b>G.:</b> B-16       |       |                                  |        | ASME                       | CZ   | <b>T/</b> ] | TE     | M: C-C /   | C3.20                                                                                                                                |
| NDE<br>METHOD | ·                     | ACCES | SABILITY.<br>RESULTS<br>FILE NDE | EXAM   | CALIBRATION                | N    | GE          | 0<br>T | RESOLUTION |                                                                                                                                      |
| IN LTP        | PROCEDURE             | REV.  | EXAMS                            | RECORD | RECORD                     | R    | ō           | H      | RECORD     | REMARKS                                                                                                                              |
| MT            | 54-ISI-270-37         | 37    | МТ                               | DPOO5  | _                          |      | -           | -      | -          | 02RF - FTI UNDER W/O#<br>50029032TO PERFORM NDE. MT<br>EXAM LIMITED TO 78.5% OF CODE<br>REQUIRED COVERAGE DUE TO<br>INACCESSABILITY. |
|               |                       |       | ł                                |        |                            |      |             |        |            |                                                                                                                                      |
|               |                       |       |                                  |        |                            |      |             |        |            | FACTORY MUTUAL<br>Insurance Company<br>Delton E. Tilley 4-15-00                                                                      |

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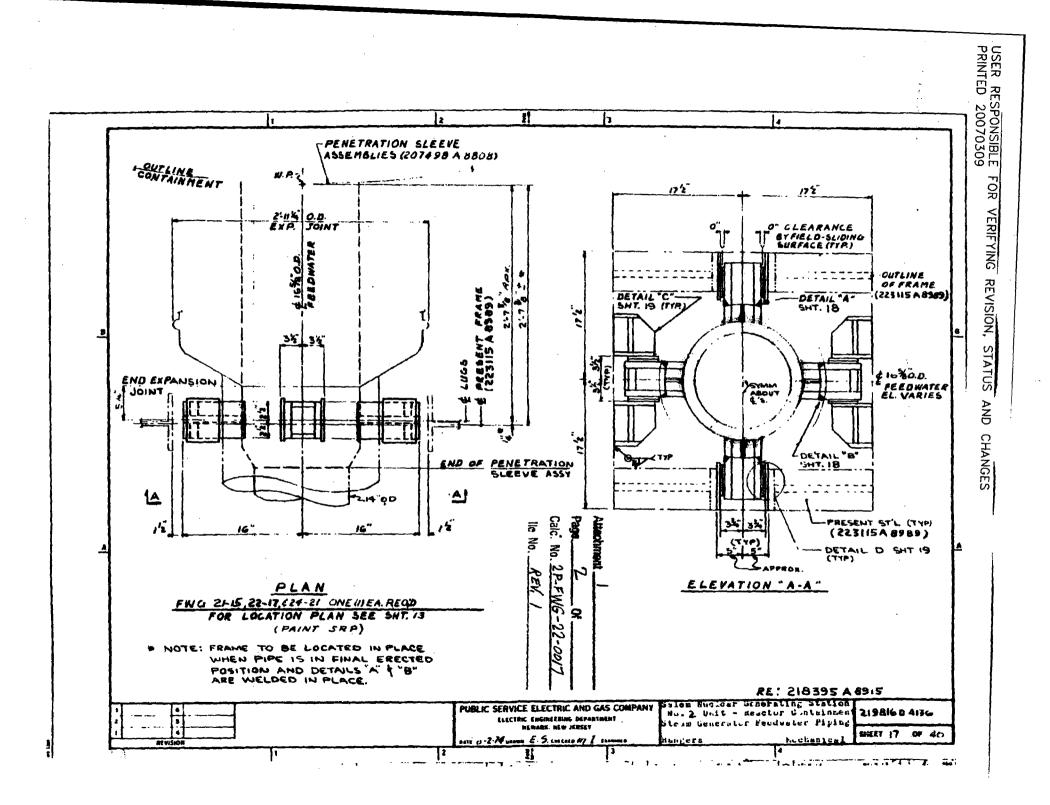
| FRAMATOME ANP                                                                                                                             |                         | EXAN          | INATION                                      | FTI IBI EX BARY.FRP 02/16/00 5 |
|-------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|---------------|----------------------------------------------|--------------------------------|
| MMARY 330645                                                                                                                              | DATA PACKAGE            | S2R12DP005    | an an the same of a super-                   | DATEApr 10 2002                |
| SITE: SALEM 2, RFO-12                                                                                                                     | EXAMINATION<br>METHOD:  | МТ            |                                              |                                |
| SYSTEM / 14-BF-2221-3PL-1 THRU 8                                                                                                          | EXAMINATION PROC        | EDURES:       |                                              |                                |
| COMPONENT<br>DESCRIPTION : 2-FWG-22-17                                                                                                    | 54-ISI-270-37           | •             |                                              |                                |
| EXAMINATION C3.20<br>CATEGORY:                                                                                                            |                         |               |                                              |                                |
| ISO / DRAWING : B-16                                                                                                                      |                         |               |                                              |                                |
| CALIBRATION N/A<br>SHEET NO(S):                                                                                                           | EXAMINATION<br>RESULTS: |               | portable Indicati<br>table indicati<br>stric |                                |
| THE EXAMINATION WAS PERFORMED WITH<br>COVERAGE DUE TO A INACCESSABILITY.<br>IN CORRECT ORIENTATION.<br>EXAMINATION WAS COMPARED TO PREVIO | AREAS NOT EXAN          | NINED WERE DU | JE TO INABIL                                 | ITY TO PLACE YOKE              |
|                                                                                                                                           |                         | Ins<br>Oct    |                                              | Cley 4-15-02                   |
| Prepared By: Date: Reviewe<br>Bolt Willichell 4/10 \$2 Bolt                                                                               | By: (ellerhold 4        | Pate:<br>PURZ | tility Review By:                            | Date: 4-13-02<br>Pageof        |

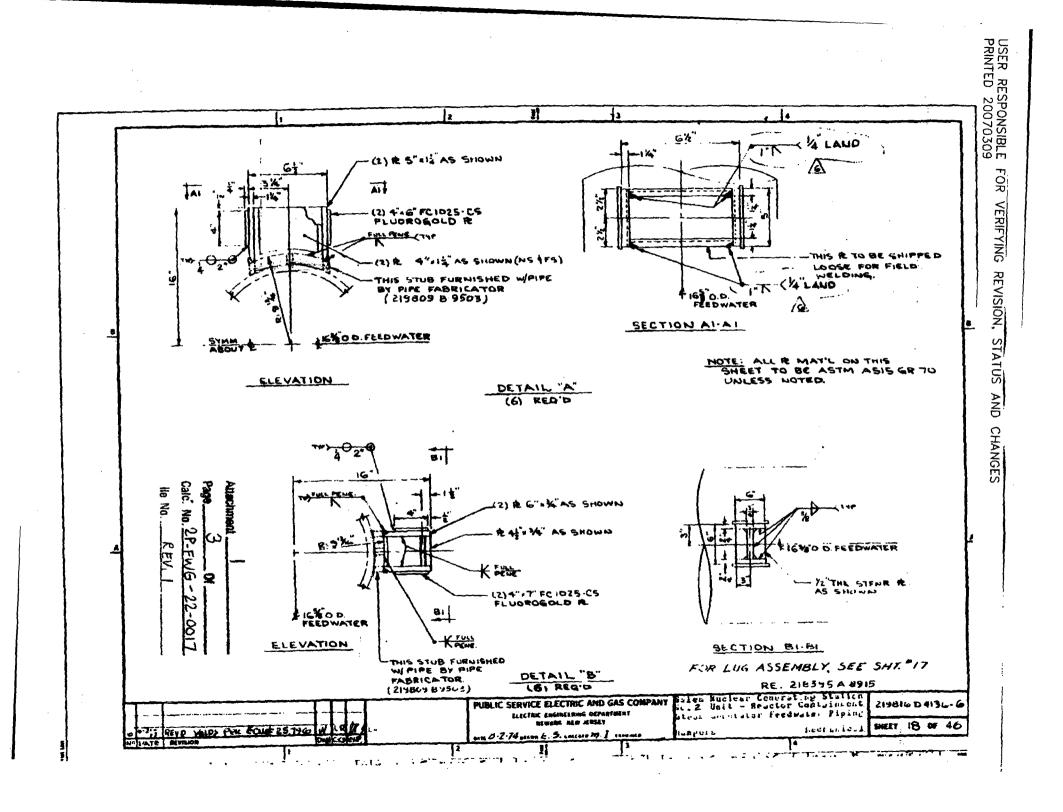
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| /F              | RAMATOME                                             | ANP            | MAG                   | INETI           | C PARTICL                              | E EXAMINA                       | TION DATA               |
|-----------------|------------------------------------------------------|----------------|-----------------------|-----------------|----------------------------------------|---------------------------------|-------------------------|
| ustome<br>SA    | er :<br>LEM 2, RFO-12                                | E              | xam Date :<br>04/05/0 | 2               |                                        | Figure / Summary N<br>330645    | ło.:                    |
| iystem/(<br>14- | Component ID.:<br>-BF-2221-3PL-1 THRU 8              |                |                       |                 |                                        | Nominal Thickness<br>N/A        | ;                       |
| Compon<br>2-1   | ent Description :<br>WG-22-17                        |                |                       |                 |                                        |                                 |                         |
| itage of<br>FI  | Fabrication (End Prep, Repair<br>NAL                 | , Root, in Pro | ocess, Final)         | :               | ISO/Drewing No :<br>B-16               |                                 |                         |
| urface<br>GI    | (ISI Prep, As Welded, Ground, ROUND                  | Other) :       |                       |                 | Procedure No.:<br>54-ISI-270-3         | 7                               |                         |
| 1&TE N          | io, (Yoka) :<br>032                                  | C              | allbration Du 06/29/2 | e Date :<br>002 |                                        | Exam Area / Figure<br>IWC-2500- | ::<br>5(b)              |
| A&TE N<br>N/    | io. (Black Light Meter) ;<br>A                       | C              | alibration Du<br>N/A  | e Date :        | ,                                      | Black Light Intensit<br>N/A     | yuW/CM <sup>2</sup>     |
|                 | Batch or Lot No.:<br>G098                            | N              | tanufacturer:<br>MAGN | AFLUX           |                                        | Visible / Fluorescer<br>Visible | nt :                    |
| Vet / Dr<br>Dr  |                                                      | F              | article Color<br>YELL |                 |                                        | Temperature (F) :<br>72         |                         |
|                 | lo. (Thermometer) :<br>048                           | C              | alibration Du         |                 |                                        | AC/DC:<br>AC                    |                         |
|                 | EX                                                   | AMINATIO       | N DATA                |                 |                                        | TYPICAL                         | <u>ę</u>                |
| ESUL            | TS: No Recordable Indication<br>Ref Point            |                | LIMITATIO             |                 | es                                     |                                 |                         |
| ND #            | Location                                             | Size           | L                     | w               | Orientation to Weld                    |                                 | Reference<br>Point      |
|                 |                                                      |                | ┝───┤                 |                 |                                        | L- Dist to                      | -+ <del>-</del>         |
|                 |                                                      | L              |                       |                 |                                        | from Ind C                      | <u>}</u>                |
| Ì               |                                                      |                |                       | 1               |                                        | W=dist,                         | -+ w +                  |
|                 |                                                      |                |                       |                 | ······································ | to weld 2                       |                         |
|                 |                                                      |                | ┼──┼                  |                 | ·····                                  | - I                             | i i                     |
|                 |                                                      | L              |                       |                 |                                        | L                               |                         |
| əmarks<br>xami  | s/Sketch (if necessary)<br>nation limited to 78.5% d | lue to acce    | ssability.            | See attac       | hed Surface Exam                       | nination Coverage H             | Report for limitations. |
|                 |                                                      |                | -                     |                 |                                        | _                               | -                       |
| ,               |                                                      |                |                       |                 | •                                      |                                 |                         |
|                 |                                                      |                | - ,                   |                 |                                        |                                 |                         |
|                 |                                                      |                |                       |                 |                                        |                                 |                         |
| vamine          | r: Phillip Wright                                    | Level:         | Date                  |                 | Examiner: N/A                          |                                 | eval: N/A Date:         |
| Ŋ               | the hlut                                             | 201011         |                       | -02             | :                                      | RY MUTUAL                       |                         |
| eviewe          | id:                                                  | Levei:         | í Date                | );              |                                        | CE COMPANY                      | Date:                   |
| B               | Astellechell                                         |                | 4/9/                  | g2              | Delto                                  | nE. Tille                       | AL 4-15-0               |
| ustom           |                                                      |                | Date                  |                 | ER No.: N/A                            | · /                             | 1 -                     |
|                 |                                                      |                | 4-13-                 |                 |                                        |                                 | /N A                    |

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|-----|--------|------------------------------------------------------|--------|-----------------------------|--------------|------------|-----------------------|-------------|-----|----------|-------|
| _   | FRA    | MATOME ANP VESSEL                                    | VOL    |                             | KAMII        | AA'        |                       | OVERA       | G   | EREPO    | RT    |
| ,US | TOMER: | SALEM 2, RFO 12                                      | S      | YSTEM:<br>BORON             | I INJE       | CTI        | ON TANK               | (           |     |          |       |
| SUM | MARY N | <b>O:</b><br>715180                                  | C      | OMPONENT ID                 | :<br>2-Bl    | T-4        | Α                     |             |     | <u> </u> |       |
| 1.0 | CALC   | ULATE REQUIRED EXAM VOLUME FOR                       | STR    | AIGHT BEAM F                | PLANA        | <u>R</u> F | LAWS                  |             |     |          |       |
|     | 1.1    | Exam Height X Exam Width X Exam Le                   | ngth = | Exam                        | 2.75         | x          | 4.00 X                | 110.00      | =   | 1,210.00 | cu.in |
| 2.0 | CALC   | ULATE REQUIRED EXAM VOLUME FOR                       | STR    | AIGHT BEAM L                | .AMIN        | AR         | FLAWS                 |             |     |          |       |
|     | 2.1    | Exam Height X Exam Width X Exam Le                   | ngth = | Exam                        | 0.00         | X          | 0.00 X                | 0.00        | =   | 0.00     | cu.in |
| 3.0 | CALC   | ULATE REQUIRED PARALLEL EXAM VC                      | DLUM   | E FOR 45° ANI               | <u>) 60°</u> |            |                       |             |     |          |       |
|     | 3.1    | Exam Height X Exam Width X Exam Lei                  | ngth = | Exam                        | 2.75         | <u>х</u>   | 4.00 X                | 220.00      | = : | 2,420.00 | cu.in |
| 4.0 | CALC   | ULATE REQUIRED TRANSVERSE EXAM                       | VOL    | UME FOR 45°                 | AND 6        | <u>0°</u>  |                       |             |     |          |       |
|     | 4.1    | Exam Height X Exam Width X Exam Ler                  | ngth = | Exam                        | 2.75         | X          | 4.00 X                | 220.00      | = : | 2,420.00 | cu.in |
| 5.0 | CALC   | ULATE STRAIGHT BEAM PLANAR EXAM                      |        | /ERAGE                      |              |            |                       |             |     |          | I     |
|     | 5.1    | Limited above / CW exam volume                       |        |                             |              |            |                       |             |     |          |       |
|     |        | Height of Width of Obstructed Volume Obstructed Area |        | Length of<br>Obstructed Ar  | ea           |            | Volume w<br>Exam Co   |             |     | ·        |       |
|     |        | <u>    0.00    X     0.00  </u>                      | X      | 0.00                        | _ =          | -          | 0.00                  | )           |     |          | ļ     |
|     | 5.2    | Limited Below / CW exam volume                       |        |                             |              |            |                       |             |     |          |       |
|     |        | Height of Width of Obstructed Volume Obstructed Area |        | Length of<br>Obstructed Are | ea           |            | Volume w<br>Exam Co   |             |     |          |       |
|     |        | 0.00 X 0.00                                          | X      | 0.00                        | - 2          | -          | 0.00                  | )           |     |          |       |
|     |        | Total straight beam planar exam volume               | not ex | amined                      | =            | _          | 0.00                  | )           |     |          |       |
|     | 5.3    | Percent Volume Examined                              |        |                             |              |            |                       |             |     |          |       |
|     | •      | Total 0 vol Total 0<br>w/No Coverage Exam            |        | ie .                        |              |            | Percent V<br>Examined |             |     | <b></b>  |       |
|     |        |                                                      |        | TORY MUTUA                  | L            | -          | 100.00                | %           |     | 29       | 4     |
|     |        |                                                      | NSUF   | RANCE COMPA                 | NY           |            |                       |             |     | Av ils   | 2 8   |

| LAL  | CULATE STRAIGHT BE                                                                                                                                                                 | AM LAMINAR EXAM                                                                                                                                                                                                                             | COVERAGE                                                                       |   |                                                                                                 |   |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------|---|
| 5.1  | Limited above / CW e                                                                                                                                                               | xam volume                                                                                                                                                                                                                                  |                                                                                |   |                                                                                                 |   |
|      | Height of<br>Obstructed Volume                                                                                                                                                     | Width of<br>Obstructed Area                                                                                                                                                                                                                 | Length of<br>Obstructed Area                                                   |   | Volume with no<br>Exam Coverage                                                                 |   |
|      | <u> </u>                                                                                                                                                                           | ,                                                                                                                                                                                                                                           | <                                                                              | = | 0.00                                                                                            |   |
| 6.2  | Limited Below / CW ex                                                                                                                                                              | xam volume                                                                                                                                                                                                                                  |                                                                                |   |                                                                                                 |   |
|      | Height of<br>Obstructed Volume                                                                                                                                                     | Width of<br>Obstructed Area                                                                                                                                                                                                                 | Length of<br>Obstructed Area                                                   |   | Volume with no<br>Exam Coverage                                                                 |   |
|      | X                                                                                                                                                                                  | <u> </u>                                                                                                                                                                                                                                    | <                                                                              | = |                                                                                                 |   |
|      | Total straight beam pla                                                                                                                                                            | anar exam volume not                                                                                                                                                                                                                        | t examined                                                                     | Ĩ | 0.00                                                                                            |   |
| i.3  | Percent Volume Exam                                                                                                                                                                | ined                                                                                                                                                                                                                                        | •                                                                              |   |                                                                                                 |   |
|      | Total 0° vol                                                                                                                                                                       |                                                                                                                                                                                                                                             |                                                                                |   | Percent Volume                                                                                  |   |
|      | w/No Cover                                                                                                                                                                         | age Exam Vo                                                                                                                                                                                                                                 | lume                                                                           |   | Examined                                                                                        |   |
|      |                                                                                                                                                                                    | -                                                                                                                                                                                                                                           |                                                                                | = |                                                                                                 |   |
| AI C | w/No Cover<br>100 - {[0.00                                                                                                                                                         | /0.00                                                                                                                                                                                                                                       |                                                                                | 8 |                                                                                                 |   |
|      | w/No Cover<br><b>100 - {[</b> 0.00<br>CULATE PARALLEL 45°                                                                                                                          | EXAM COVERAGE                                                                                                                                                                                                                               |                                                                                | = |                                                                                                 | · |
|      | w/No Cover<br>100 - {[0.00                                                                                                                                                         | EXAM COVERAGE                                                                                                                                                                                                                               |                                                                                | 2 |                                                                                                 |   |
| .1   | w/No Cover<br><b>100 - {[</b> 0.00<br><u>CULATE PARALLEL 45°</u><br>Limited above / CW ex<br>Height of                                                                             | EXAM COVERAGE<br>cam volume<br>Width of                                                                                                                                                                                                     | Length of<br>Obstructed Area                                                   | = | 0.00 %                                                                                          |   |
| .1   | w/No Cover<br>100 - {[0.00<br>CULATE PARALLEL 45°<br>Limited above / CW ex<br>Height of<br>Obstructed Volume<br>2.75 X                                                             | / 0.00<br>EXAM COVERAGE<br>cam volume<br>Width of<br>Obstructed Area<br>4.00 X                                                                                                                                                              | Length of<br>Obstructed Area                                                   | = | 0.00 %<br>Volume with no<br>Exam Coverage                                                       |   |
| .1   | w/No Cover<br><b>100 - {[</b> 0.00<br>CULATE PARALLEL 45°<br>Limited above / CW ex<br>Height of<br>Obstructed Volume                                                               | / 0.00<br>EXAM COVERAGE<br>cam volume<br>Width of<br>Obstructed Area<br>4.00 X                                                                                                                                                              | Length of<br>Obstructed Area                                                   | 2 | 0.00 %<br>Volume with no<br>Exam Coverage                                                       |   |
| .1   | w/No Cover<br>100 - {[ 0.00<br>CULATE PARALLEL 45°<br>Limited above / CW ex<br>Height of<br>Obstructed Volume<br>2.75 X<br>Limited Below / CCW ex<br>Height of                     | / 0.00<br>EXAM COVERAGE<br>cam volume<br>Width of<br>Obstructed Area<br>4.00 X<br>exam volume<br>Width of                                                                                                                                   | Length of<br>Obstructed Area<br>32.00<br>Length of<br>Obstructed Area          | 8 | 0.00 %<br>Volume with no<br>Exam Coverage<br>352.13                                             |   |
|      | w/No Cover<br>100 - {[0.00<br>CULATE PARALLEL 45°<br>Limited above / CW ex<br>Height of<br>Obstructed Volume<br>2.75 X<br>Limited Below / CCW e<br>Height of<br>Obstructed Volume  | Image: 1 to 100 me         EXAM COVERAGE         cam volume         Width of         Obstructed Area         4.00         Exam volume         Width of         Obstructed Area         2.00         X                                       | Length of<br>Obstructed Area<br>32.00<br>Length of<br>Obstructed Area<br>32.00 |   | 0.00 %<br>Volume with no<br>Exam Coverage<br>352.13<br>Volume with no<br>Exam Coverage          |   |
| .1   | w/No Cover<br>100 - {[0.00<br>CULATE PARALLEL 45°<br>Limited above / CW ex<br>Height of<br>Obstructed Volume<br>X<br>Limited Below / CCW ex<br>Height of<br>Obstructed Volume<br>X | Image: 1 to 100 me         EXAM COVERAGE         cam volume         Width of         Obstructed Area         4.00         X         exam volume         Width of         Obstructed Area         2.00         X         volume not examined | Length of<br>Obstructed Area<br>32.00<br>Length of<br>Obstructed Area<br>32.00 | = | 0.00 %<br>Volume with no<br>Exam Coverage<br>352.13<br>Volume with no<br>Exam Coverage<br>70.40 |   |

FTI VESS\_VOL.FRP 07/15/00 5 FRAMATOME ANP **VESSEL VOLUMETRIC EXAMINATION COVERAGE REPORT** CALCULATE PARALLEL 60° EXAM COVERAGE 8.0 Limited above / CW exam volume 8.1 Above / CW exam Width of Length of Height of Volume with no **Obstructed Volume Obstructed Area Obstructed Area** Exam Coverage 2.75 X 32.00 Х 4.00 352.00 8.2 Limited Below / CCW exam volume Below / CCW exam Volume with no Length of Width of Height of Exam Coverage **Obstructed Area** Obstructed Volume **Obstructed Area** X 4.00 X 32.00 2.55 326.40 Total 60° parallel exam volume not examined 678.40 8.3 Percent Volume Examined Total 60° parallel Total 60° parallel Percent Volume Vol w/No Coverage Exam Volume Examined 100 - {[ 678.40 1 2,420.00 x 100 } 71.97 Ξ % 9.0 **CALCULATE TRANSVERSE 45° EXAM COVERAGE** 9.1 Limited Clockwise exam volume CW Exam Height of Width of Length of Volume with no **Obstructed Volume Obstructed Area Obstructed Area** Exam Coverage 2.00 2.75 X 32.00 176.00 х 9.2 Limited Below Counter clockwise exam volume CCW Exam Height of Width of Length of Volume with no **Obstructed Volume Obstructed Area Obstructed Area** Exam Coverage 2.75 32.00 2.00 Х Х 176.00 Total 45° transverse exam volume not examined 352.00 9.3 Percent Volume Examined Total 45° parallel Total 45° parallel Percent Volume Exam Volume Examined 2,420.00 ] x 100 } 100 - {[ 352.00 85.45 = % 1 FACTORY MUTUAL 14 INSURANCE COMPANY NET. Mara 4-25-AZ

|          | <b>*</b>  | FTI VESS_VOLERP 07/15/00 5                                                                                                                           |
|----------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------|
|          | RA        | MATOME ANP VESSEL VOLUMETRIC EXAMINATION COVERAGE REPORT                                                                                             |
| 10.0     | CALC      | ULATE TRANSVERSE 60° EXAM COVERAGE                                                                                                                   |
|          | 10.1      | Limited Clockwise exam volume CW exam                                                                                                                |
|          |           | Height of         Length of         Volume with no           Obstructed Volume         Obstructed Area         Obstructed Area         Exam Coverage |
|          |           | 2.00  X  2.75  X  32.00  =  176.00                                                                                                                   |
|          | 10.2      | Limited Counterclockwise exam volume CCW exam                                                                                                        |
| [        |           | Height of     Length of     Volume with no       Obstructed Volume     Obstructed Area     Obstructed Area                                           |
|          |           | 2.00  X  2.75  X  32.00  =  176.00                                                                                                                   |
|          |           | Total 60 transverse exam volume not examined = <u>352.00</u>                                                                                         |
|          | 10.3      | Percent Volume Examined Total 60° Trans Percent Volume                                                                                               |
|          |           | w/NoCoverage Exam Volume Examined                                                                                                                    |
| r<br>Í   |           | 100 - { $[352.00]$ / $2,420.00$ ] x 100 } = $85.45$ %                                                                                                |
| 11.0     | CALC      | ULATE PERCENT OF TOTAL VOLUME EXAMINED                                                                                                               |
|          | 11.1      | Sum of Exam Volumes %                                                                                                                                |
|          |           | Steps 5 Thur 10 No. Of Exams (6) Examination<br>Coverage                                                                                             |
|          |           | [ <u>425.42</u> / <u>5.00</u> ] = <u>85.08</u> %                                                                                                     |
|          | SCAN      | S LIMITED IN 4 AREAS BY TANK SUPPORT LEGS.                                                                                                           |
|          |           |                                                                                                                                                      |
|          |           | · · · · · · · · · · · · · · · · · · ·                                                                                                                |
|          |           |                                                                                                                                                      |
|          |           | FACTORY MUTUAL                                                                                                                                       |
| <b>i</b> |           | DE Tilley 4-25-02 297                                                                                                                                |
|          | . Mike Ze |                                                                                                                                                      |
| Sign:    |           | sign:                                                                                                                                                |

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|                                        |                                           |           |          |                    | PR                                                                                                                         | OFILE AND THICKNESS                                             |
|----------------------------------------|-------------------------------------------|-----------|----------|--------------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| FR<br>FR                               | AMA                                       | TOME      | E        | xam Da             | ite: 10/12/00                                                                                                              | Summary No.: 011800                                             |
| Site: Sale                             | əm Un                                     | it 2, RF  | 0 11     |                    |                                                                                                                            | Examination Method: UT                                          |
| System:                                | PRES                                      | SURIZI    | ER       |                    |                                                                                                                            | Identification: 6-PR-1205-1                                     |
| POSITION 1 2 3 4 5                     | 0<br>1.4"<br>1.4"<br>1.2"<br>1.2"<br>1.2" | 90        | 180      | 270                | CROWN HEIGHT: <u>SEE NOTES</u><br>CROWN WIDTH: <u>SEE NOTES</u><br>NOM DIAMETER: <u>6.0"</u><br>WELD LENGTH: <u>18.85"</u> | $\begin{array}{c ccccccccccccccccccccccccccccccccccc$           |
|                                        | 1.2                                       | <u> </u>  | <u> </u> |                    |                                                                                                                            |                                                                 |
| ······································ | 1.2                                       |           |          |                    | ELBOW SAI                                                                                                                  | END - NOZZLE BOSS                                               |
| NOTES:                                 | 1- WELI<br>2- THEF                        | RE IS NOT | T ENOU   | TERMINA<br>3H ROOM | TE. CANNOT DISCRIMINATE WELD TO                                                                                            | SAFE END INTERFACE.<br>DES TO PROVIDE A MEANINGFUL EXAMINATION. |

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## REQUEST FOR ADDITIONAL INFORMATION REQUEST FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR IN-SERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

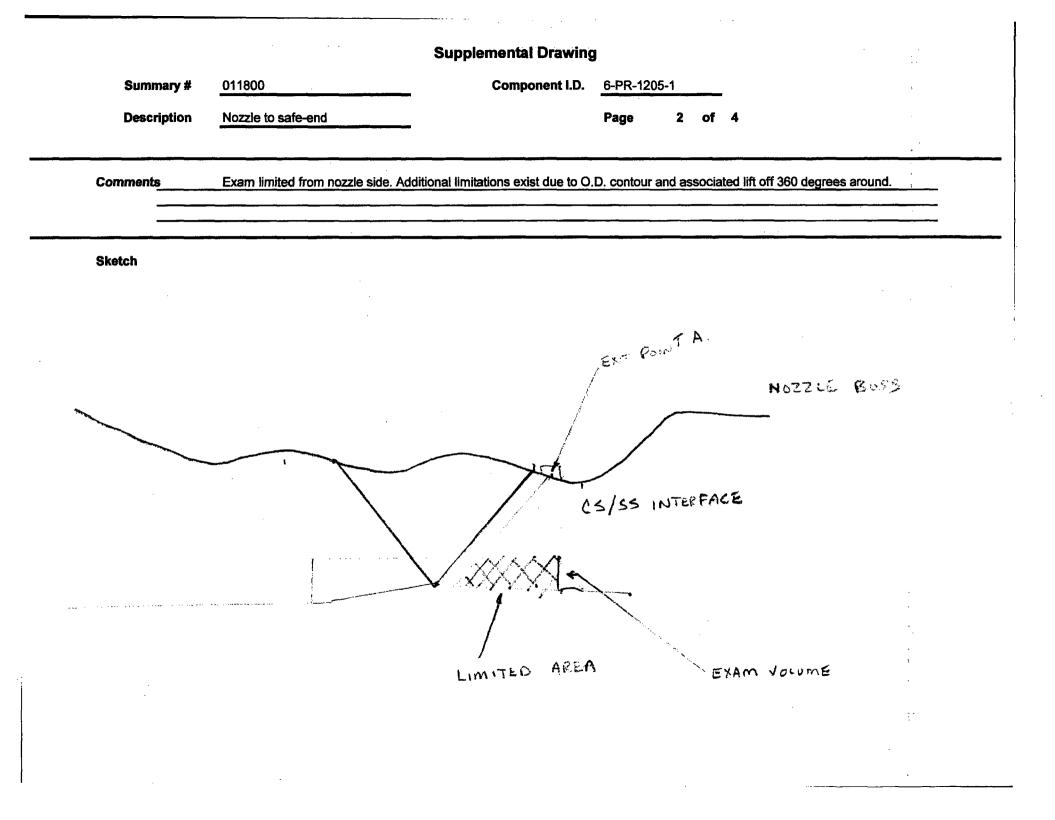
QUESTION 1.3 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

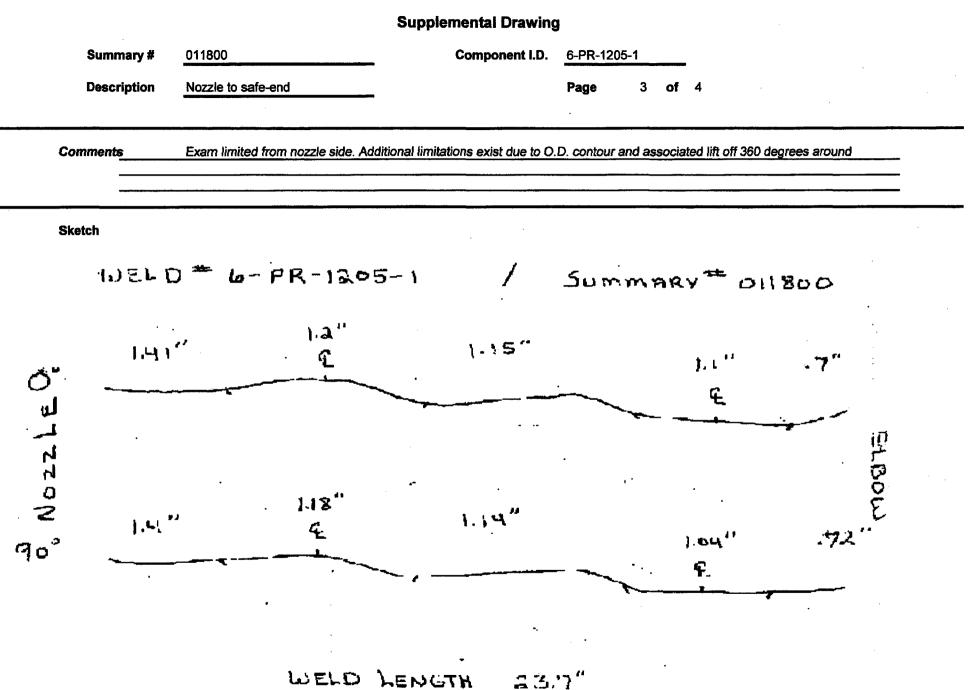
| Summary #      | 011800                    |         |                                |
|----------------|---------------------------|---------|--------------------------------|
| Component I.D. | 6-PR-1205-1               |         |                                |
| Description    | Nozzle to Safe-End        |         |                                |
|                |                           |         | Comments                       |
| 1              | Weld X-Section            |         | In determinant                 |
| 2              | Material                  |         | Stainless Steel / Carbon Steel |
| 3              | Thickness / weld Crown    |         | See Attached Sheet             |
| 4              | Obstruction               |         | Surface Contour                |
| 5              | Exam Area Highlighted or  | Drawing | Yes X No                       |
| 6              | Transducer ray exit point |         | Point "A"                      |

### Comments

UT exam was performed of this component using 30 degree refracted longitudinal wave transducer. The ultrasonic examination completed was partially limited to 38% of the code required coverage being achieved due to the OD configuration of the nozzle to safe-end that did not lend itself to achieving full coverage from the upstream side when scanning was performed. There were no unacceptable indications observed. UT exam performed was best effort. This weld configuration does not contain alloy 600, or 82/182 weld material. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.

Page 1 of 4





WELD LENGTH 23.7" WELD CROWN WIDTH 1.5"

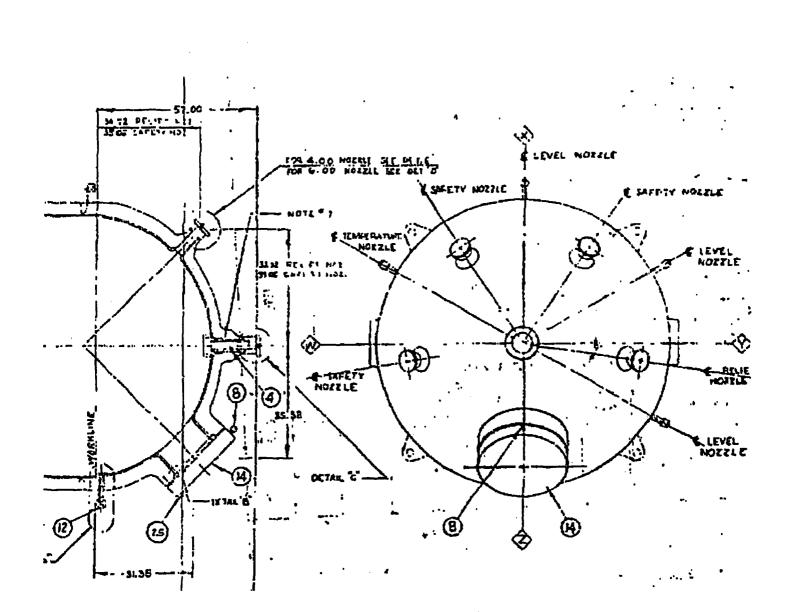


DELD = 6-PR-1205-1 SUMMARY = 011800

# USER RESPONSIBLE FOR VERIFYING REVISION, STATUS AND CHANGES VTD 139846 000 1 PRINTED 20050111

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see a construction whereas a structure is



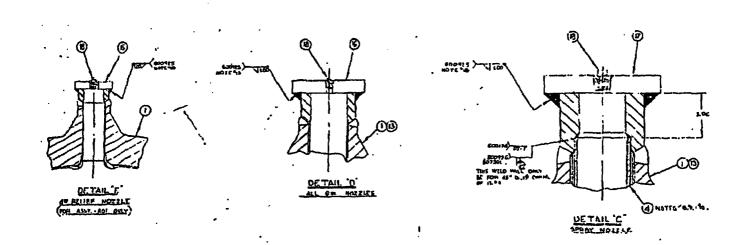
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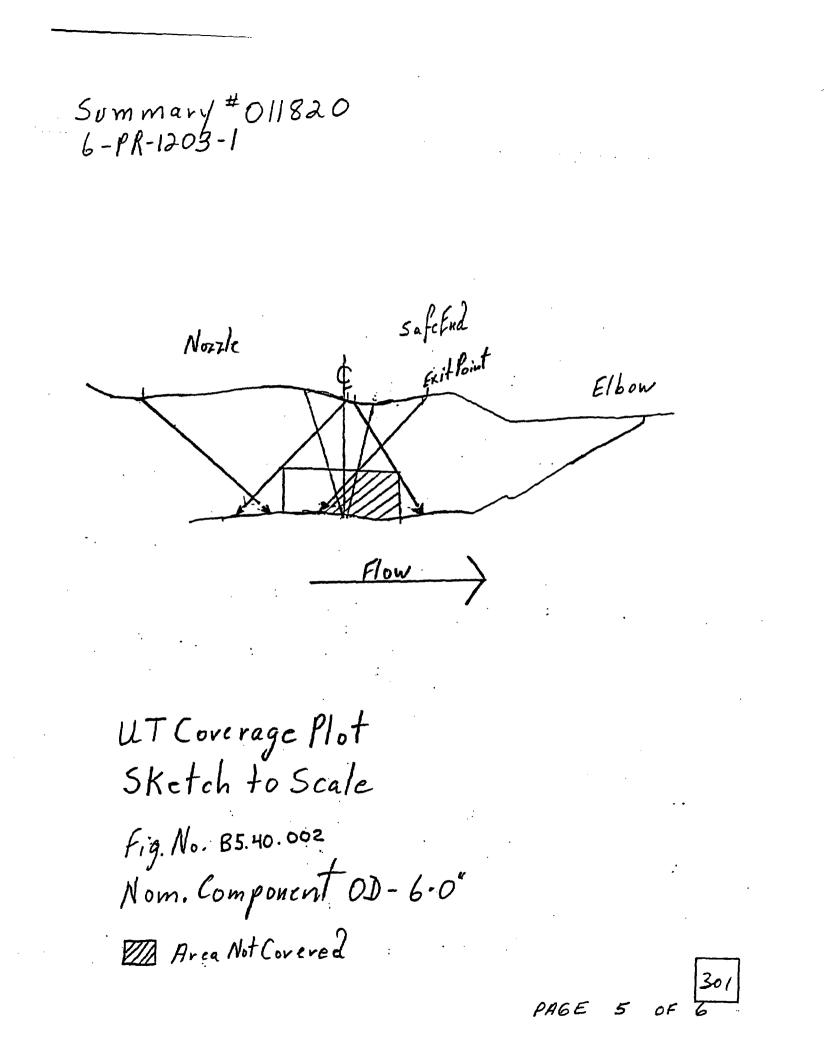
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| CUSTON                             |                | PSE&G<br>EM UNIT-2, 10 RFO    | SYST                |                            |                   | OR COOLANT SYSTEM,<br>JRIZER RELIEF                    |
|------------------------------------|----------------|-------------------------------|---------------------|----------------------------|-------------------|--------------------------------------------------------|
| SUMMAI                             |                | 011820                        | COMP                | ONENT ID                   |                   | 6-PR-1203-1<br>RCS PR NOZZLE TO SAFE-END               |
|                                    |                | VOLU                          | JMETRIC PIPIN       | IG EXAMI                   | NATIO             | INS                                                    |
| 1.0 <u>AX</u>                      | IAL ULTRA      | SONIC EXAMINATIO              | NS (Indications     | Parallel to                | the W             | eid)                                                   |
| 1.1                                | Compute        | Examination Volume            | (Height x Widt      | h x Length)                | = Vt <sub>1</sub> | <u>0.50" x 1.25" x 14.5" = 9.10<sup>3</sup> inches</u> |
| 1.2                                | Compute        | Volume Not Examine            | d on Upstream S     | ide of Weld                | I = A             | 0.00 <sup>3</sup> inches                               |
| 1.3                                | Compute        | Upstream Limitation           | Percentage (A +     | Vt <sub>1</sub> ) x 100 :  | = Z1              | 0.00 %                                                 |
| 1.4                                | Compute        | Volume Not Examine            | d on Downstrear     | n Side of W                | ield = B          | 5.1 <sup>3</sup> inches                                |
| 1.5                                | Compute        | Downstream Limitation         | on Percentage (f    | 3 + Vt <sub>1</sub> ) x 10 | )0 = Z2           | <u> </u>                                               |
| 2.0 <u>CIR</u>                     | CUMFERE        | NTIAL ULTRASONIC              | EXAMINATION         | <u>S (Indicatio</u>        | ons Per           | rpendicular to the Weld)                               |
| 2.1                                | Compute        | Examination Volume            | (Height x Widtl     | n x Length)                | = Vt <sub>2</sub> | 0.50" x 1.75" x 14.5" = 12.7 <sup>3</sup> inches       |
| 2.2                                | Compute        | Volume Not Examine            | d in the Clock Wi   | ise Direction              | 1 = C             | 0.00 <sup>3</sup> inches                               |
| 2.3                                | Compute        | Clock Wise Limitation         | Percentage (C       | + Vt <sub>2</sub> ) x 100  | ) = Z3            | 0.00 %                                                 |
| 2.4                                | Compute        | Volume Not Examine            | d in the Counter    | CW Directio                | on = D            | 0.00 <sup>3</sup> inches                               |
| 2.5                                | Compute        | Counter CW Limitatio          | n Percentage (D     | ) + Vt <sub>2</sub> ) x 10 | 0 = Z4            | 0.00 %                                                 |
| 3.0 <u>TO</u>                      |                | NATION COVERAGE               | OBTAINED            |                            |                   |                                                        |
| 3.1                                | Compute        | Total Limitation Perce        | entage (Z1 + Z2     | + Z3 + Z4) /               | 4 = L             | 14.0 %                                                 |
| 3.2                                | Compute        | Total Coverage                | 100 – L             |                            |                   | 86.0 %                                                 |
|                                    |                | LIMI                          | TATION EXPLAI       | NATION/RE                  | MARK              | <u>S</u>                                               |
| <u>Lim</u>                         | itation exists | s on the Safe-End side        | of the weld for t   | <u>he axial exa</u>        | minatio           | ons                                                    |
| See                                | the attache    | d UT Coverage Plot.           | The 45 degree s     | <u>hear wave t</u>         | ransdu            | cer was scanned                                        |
| ove                                | the require    | ed volume on both side        | es of the weld in o | order to ach               | ieve 44           | 1.0 percent coverage in the                            |
| axia                               | I direction.   | The examination volu          | ne was compute      | d using actu               | ual OD            | pipe sizes and schedule wall                           |
| thick                              | nessesTh       | <u>ne height value is com</u> | puted using the c   | liameter at t              | the inn           | er one third of the                                    |
|                                    | wall thickne   | 3                             | Inches DE           |                            |                   |                                                        |
| PREPARED BY: DATE: REVIEWER: DATE: |                |                               |                     |                            |                   |                                                        |

# REQUEST FOR ADDITIONAL INFORMATION REQUEST FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR IN-SERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

QUESTION

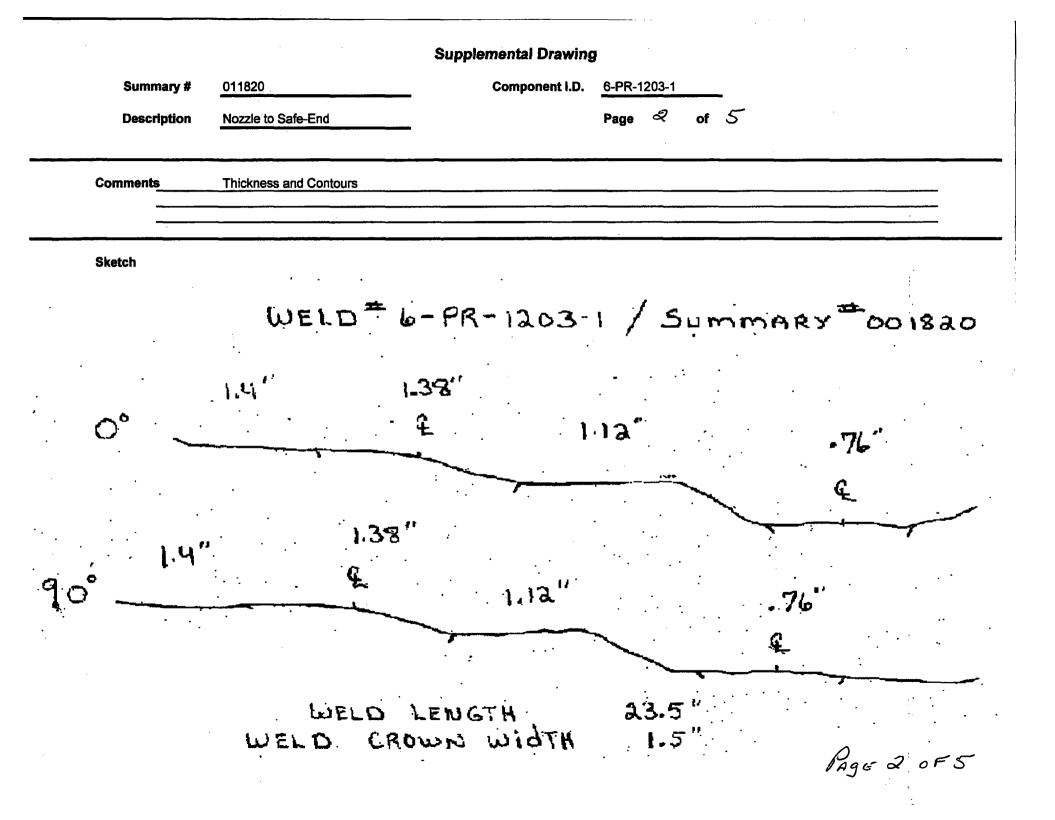
1.3 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

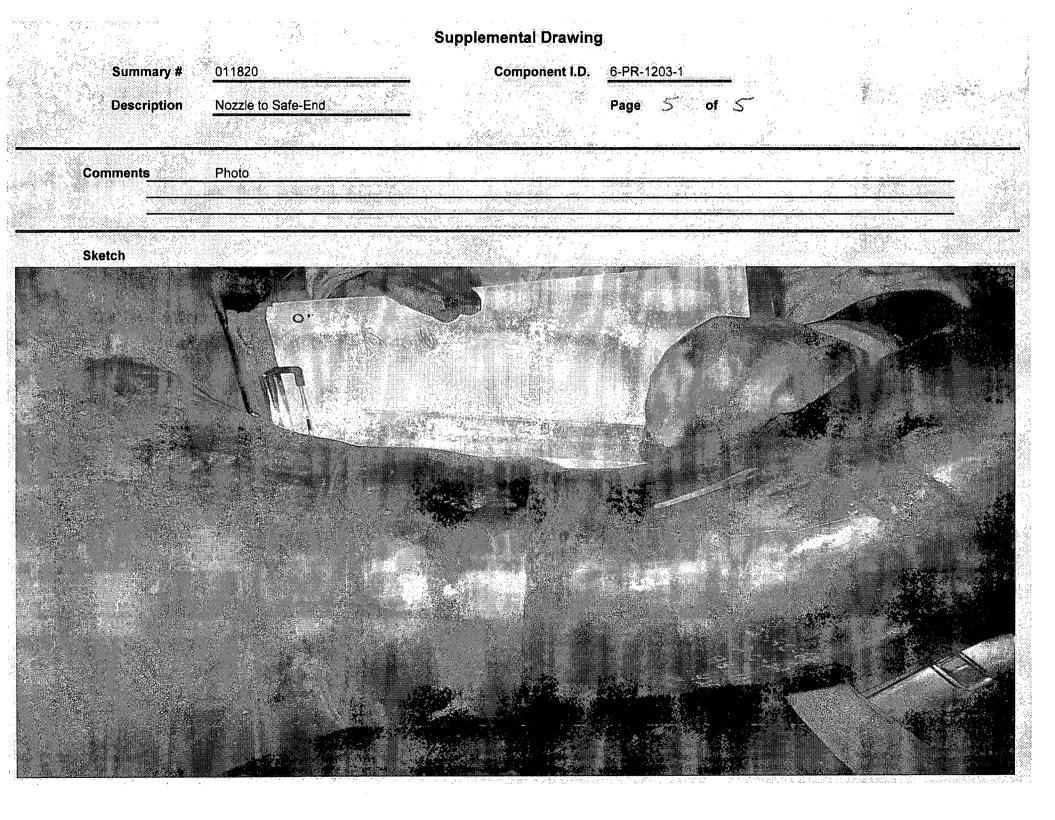
| Summary #      | 011820                           |                                |
|----------------|----------------------------------|--------------------------------|
| Component I.D. | 6-PR-1203-1                      |                                |
| Description    | Nozzle to Safe-End               |                                |
|                |                                  | Comments                       |
| 1              | Weld X-Section                   | See Attached                   |
| 2              | Material                         | Stainless Steel / Carbon Steel |
| 3              | Thickness / weld Crown           | See Attached                   |
| 4              | Obstruction                      | Surface Contour                |
| 5              | Exam Area Highlighted on Drawing | Yes X No                       |
| 6              | Transducer ray exit point        | See Attached                   |

### Comments

Ut exam was performed of this component using 45 and 25 degree shear and refracted longitudinal wave transducer. The ultrasonic examination completed was limited to 86% of the code required coverage being achieved due to the OD configuration of the nozzle to safe-end. There were no unacceptable indications observed. This weld configuration does not contain alloy 600, or 82/182 weld material. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.

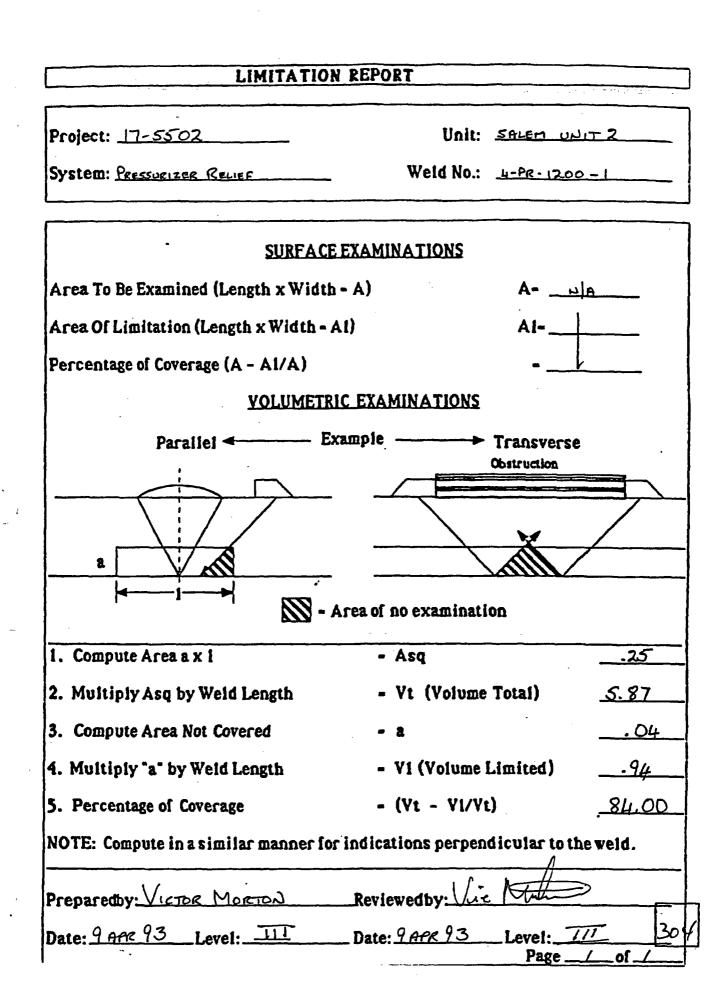
Page 1 of 5





|                        | S               | WRI P                | ROFILE                           | AND                  | THIC              | KNESS INFO                            | RMA        | TION RE        | CORD                     | · · ·                  |
|------------------------|-----------------|----------------------|----------------------------------|----------------------|-------------------|---------------------------------------|------------|----------------|--------------------------|------------------------|
| PROJECT NO:            | 17-5502         |                      | alem Genera                      |                      |                   | AY - MONTH - YEAR                     |            | ME 124 HR. CLO |                          | SHEET NO: 135115       |
| EXAMINER               |                 |                      | tation, Unit 2<br>SNI LEVEL      | THK. MEAS            |                   | 8 APR 93                              | SERIAL N   | 07 X FINAL     | COMPONENT                |                        |
|                        |                 |                      |                                  | BY PROCED            | URE<br>15,22.0032 | SONIC MARK I                          |            |                |                          | •                      |
| W.1                    | TAWRIN          | 5                    | I                                | SAM1-<br>REV2        | u 7 3             | OTHER 136 A                           | 3          | <u>6 ÜK</u>    | <u>4. PR</u>             | 1200-1                 |
| EXAMINER               |                 |                      | SNT LEVEL                        | CHG O                |                   | COUPLANT:                             | WATE       | ж П            | REFERENCE                | SLK NO:                |
| U.B                    | YLER            |                      | ĪT                               | ICN                  |                   | OTHER ISPECIFYI4LTRA                  |            |                | 5                        | 5-113                  |
| SEARCH                 | i units         |                      | <u>-</u>                         |                      |                   | in the interest                       | K          |                |                          |                        |
| BRAND                  |                 |                      | · · ·                            | • • •                | 4                 |                                       | • •        |                |                          | r<br>N                 |
|                        | AEROTTCH        |                      |                                  |                      |                   |                                       |            |                |                          |                        |
| SERIAL NO              | E.1197.7        |                      |                                  |                      |                   |                                       |            |                |                          | ۰.<br>۲                |
| SIZE                   | 1/4             |                      |                                  |                      |                   |                                       |            |                |                          |                        |
| FREQ. (MHz)            | 5               |                      |                                  |                      |                   | · · · · · · · · · · · · · · · · · · · |            |                | 1                        |                        |
| INSTRUMENT             | SETTINGS        |                      |                                  |                      |                   |                                       |            |                | API<br>(Dec              | 1 I REVENT             |
| SCREEN SIZE            | 5               |                      | C                                | :<br>Allan           |                   |                                       |            |                | DATE                     | 4/13/93                |
| DELAY                  |                 | Exam                 |                                  | ) 9/11/13<br>1515 10 | <del>0%-45</del>  | Tor Wees on                           | <u>⊾</u> γ |                | n                        | PSEG                   |
|                        | .164            |                      |                                  |                      |                   |                                       | ·          |                |                          | ION SERVICES           |
| MATL. CAL.<br>VELOCITY | .205            |                      |                                  |                      |                   |                                       |            |                | Revie <del>we</del><br>/ | d and Approved         |
| RANGE                  | 5               | •                    | •                                |                      |                   |                                       |            |                | N.D.E                    | SUPERVISOR             |
| REP. RATE              | YKHZ_           | ->                   |                                  |                      |                   |                                       |            | ~              |                          |                        |
| JACK USED              | 00.11.          | -><br>NOZZIE<br>4520 |                                  |                      |                   | * CHECKED AT                          |            | NAME:          |                          | SOFE CNO<br>SNT LEVEL: |
| TRANS MODE             | RCU/XMT<br>DUAL |                      | Search Unit ch<br>Search Unit ch |                      | -                 | -                                     | nodes.     | VIETOR         | Morion                   |                        |
| REVIEWED BY:           | Lie Note        |                      |                                  | SNT LEV              | EL:               | TIL                                   |            | DATE: 4 197    | 98 93                    |                        |

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## REQUEST FOR ADDITIONAL INFORMATION REQUEST FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR IN-SERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

QUESTION

1.3 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

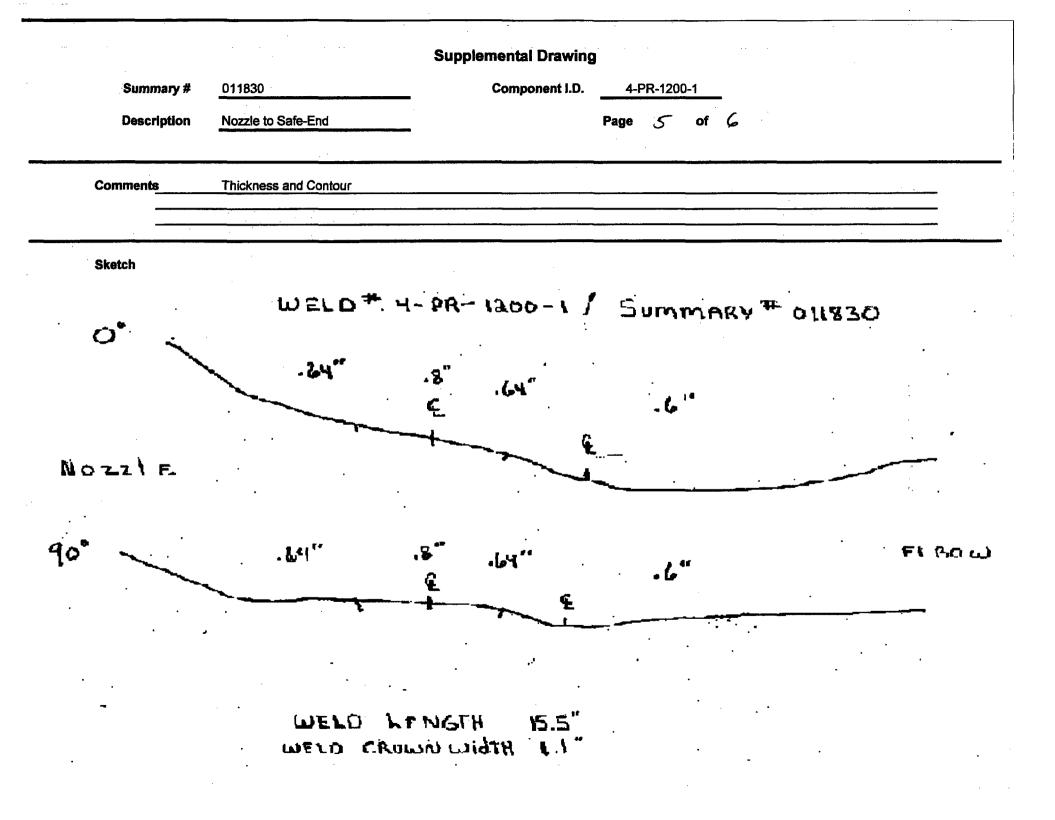
| Summary #      | 011830                           |                                |  |  |  |
|----------------|----------------------------------|--------------------------------|--|--|--|
| Component I.D. | 4-PR-1200-1                      |                                |  |  |  |
| Description    | Nozzle to Safe-End               |                                |  |  |  |
|                |                                  | Comments                       |  |  |  |
| 1              | Weld X-Section                   | Marked                         |  |  |  |
| 2              | Material                         | Stainless Steel / Carbon Steel |  |  |  |
| 3              | Thickness / weld Crown           | See Attached                   |  |  |  |
| 4              | Obstruction                      | Surface Contour                |  |  |  |
| 5              | Exam Area Highlighted on Drawing | Yes X No                       |  |  |  |
| 6              | Transducer ray exit point        | See Attached                   |  |  |  |

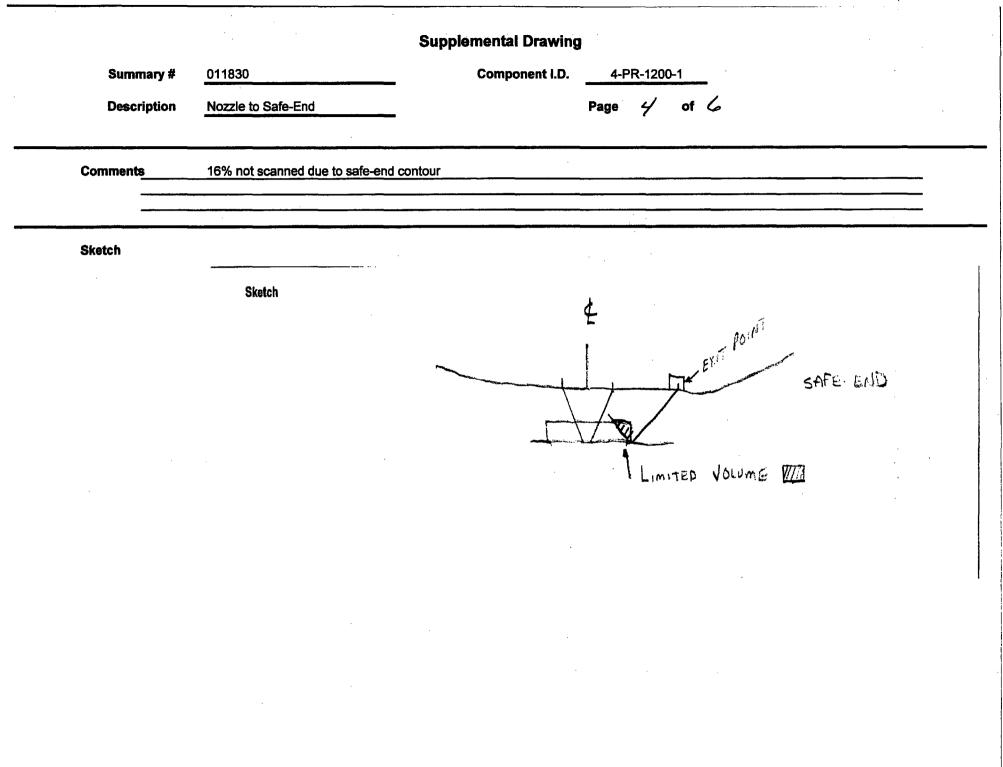
### Comments

On 4/29/99 a Ut exam was performed of this component using 45 degree shear wave transducer. The ultrasonic examination completed was limited to 84% of the code required coverage being achieved due to the OD configuration of the nozzle to safe-end. There were no unacceptable indications observed. This weld configuration does not contain alloy 600, or 82/182 weld material. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.

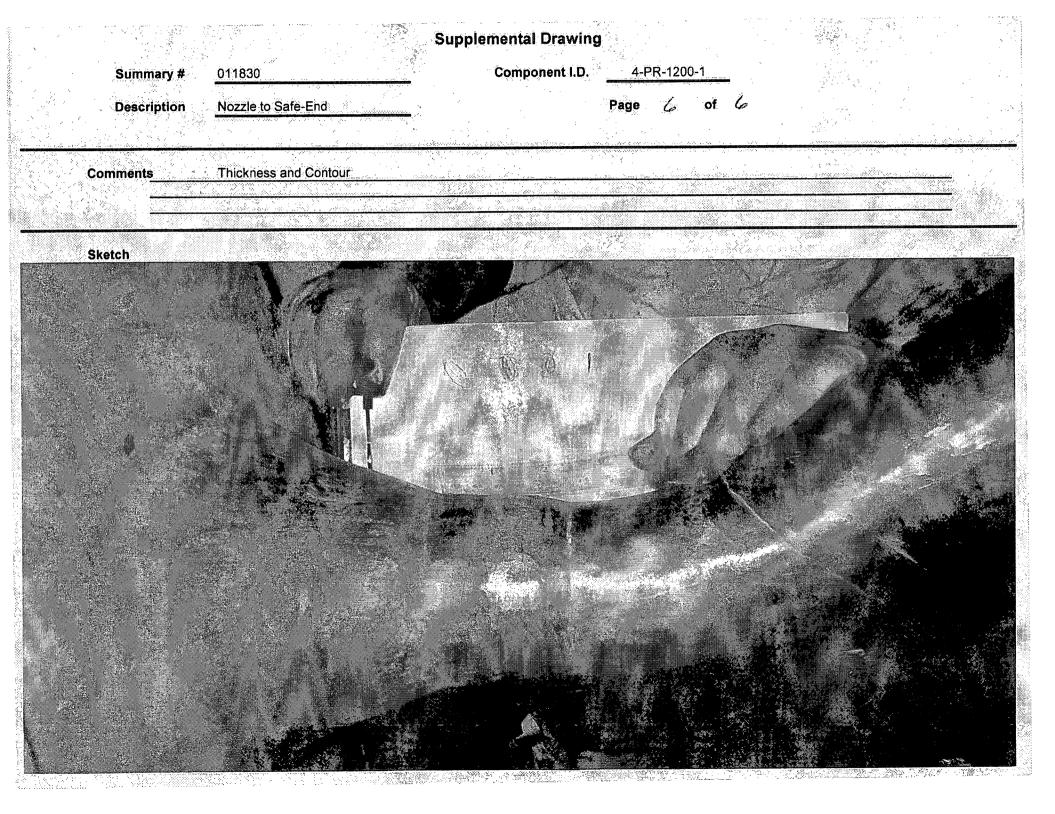
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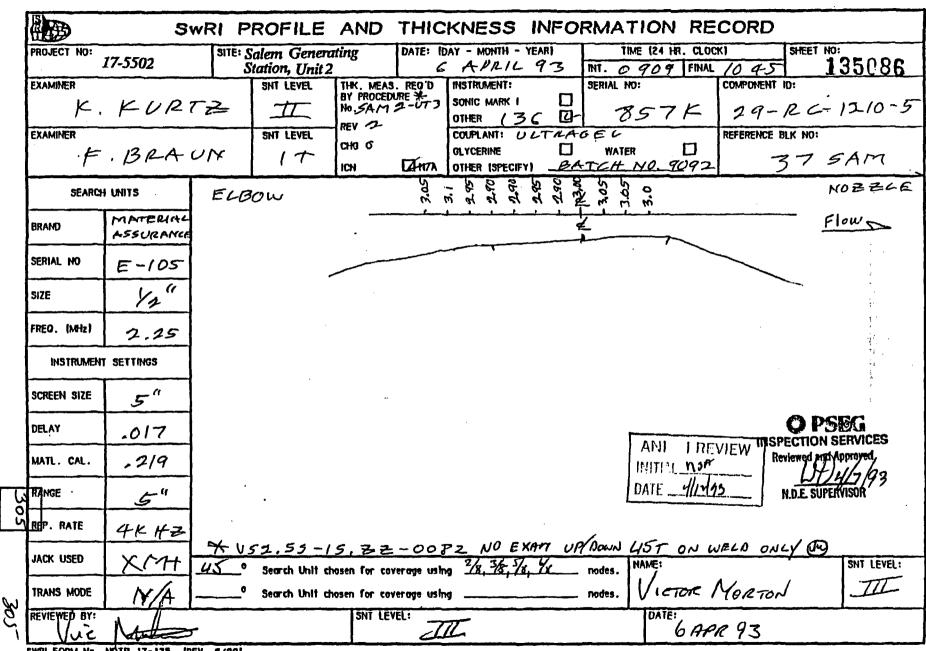
of





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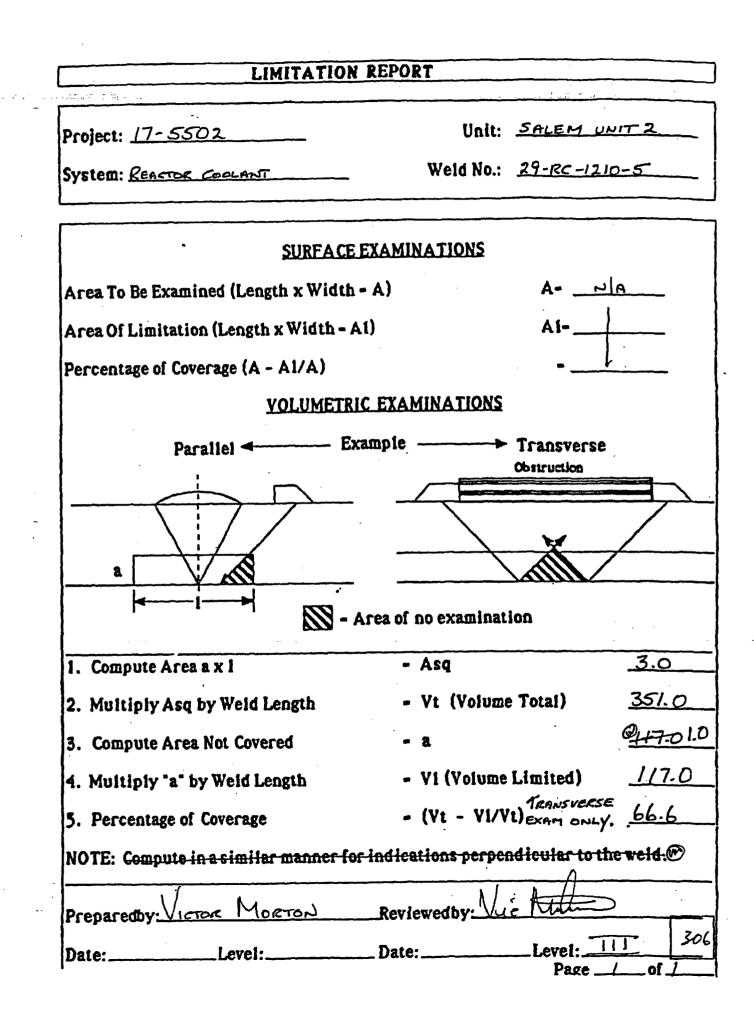




SWRI FORM No. NOTR 17-135 [REV. 6/90]

i

<sup>083300</sup> 



QUESTION

1.3 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

| Summary #      | 083300                           |                                  |
|----------------|----------------------------------|----------------------------------|
| Component I.D. | 29-RC-1210-5                     |                                  |
| Description    | Elbow to Nozzle                  |                                  |
|                |                                  | Comments                         |
| 1              | Weld X-Section                   | See Attached                     |
| 2              | Material                         | ASTM 351-65 S/S Cast / C/S       |
| 3              | Thickness / weld Crown           | Thickness 3" / Weld Crown 4"     |
| 4              | Obstruction                      | Material Type & OD Configuration |
| 5              | Exam Area Highlighted on Drawing | Yes X No                         |
| 6              | Transducer ray exit point        | <u> </u>                         |

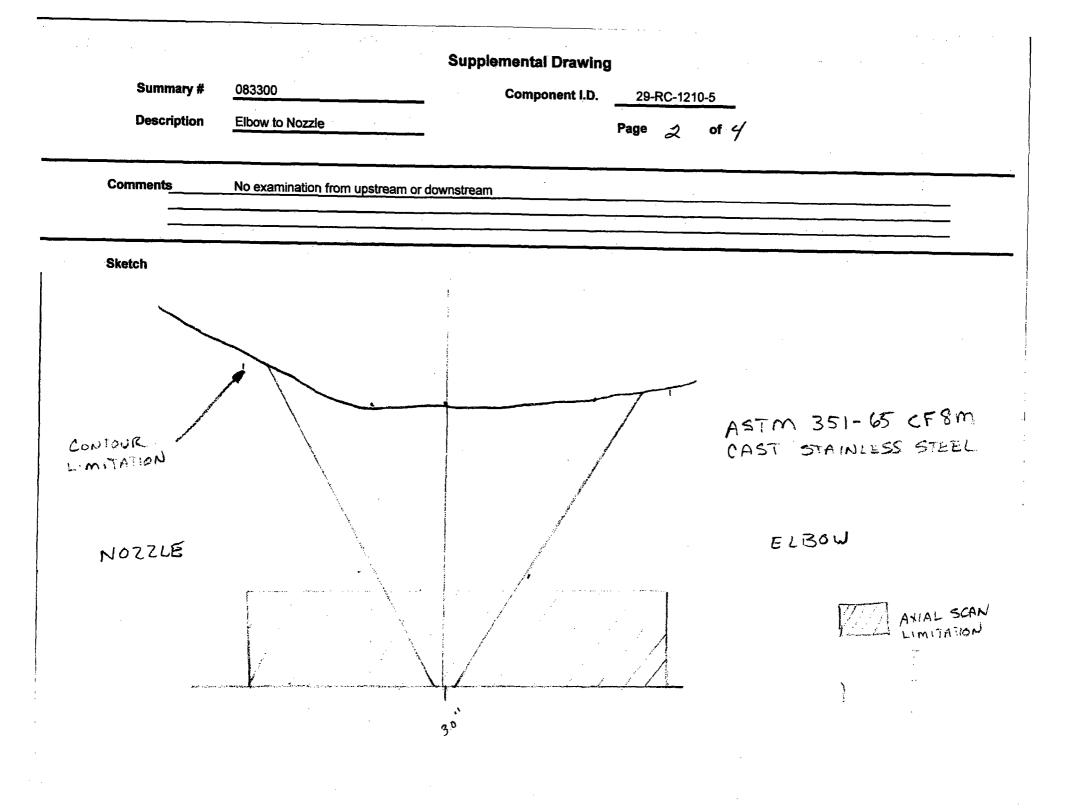
#### Comments

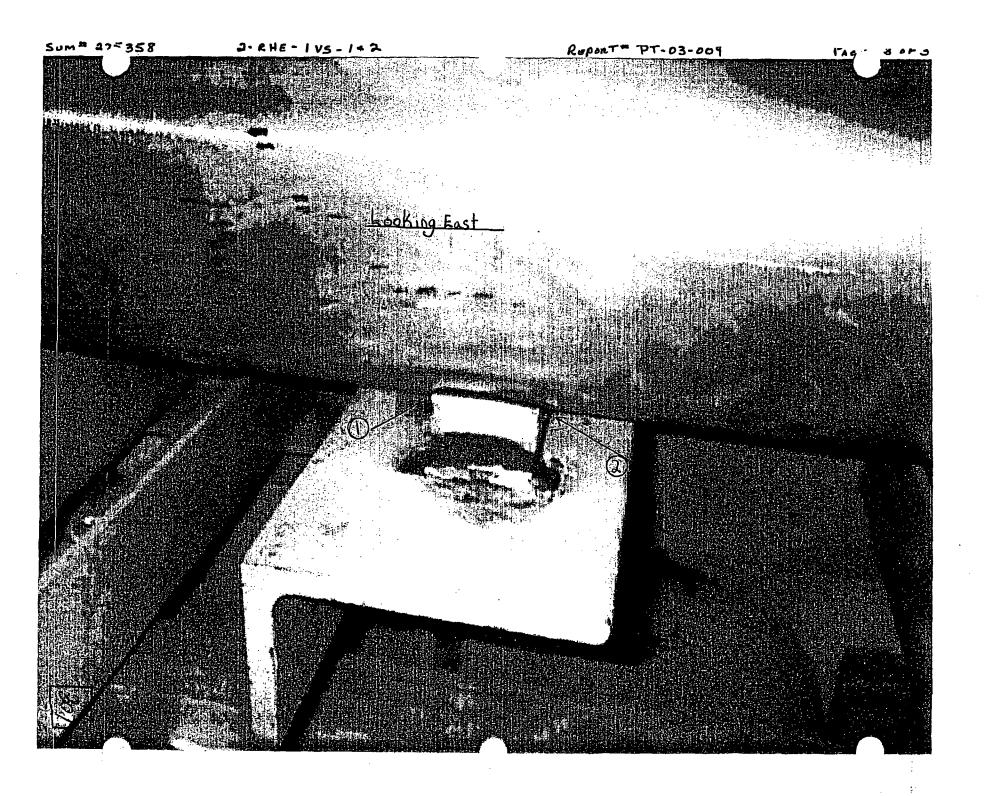
Ut exam was performed of this component using 45 degree shear wave transducer. The ultrasonic examination completed was limited to 67% of the code required coverage being achieved due to no UT axial scan exam was performed from the upstream or the downstream side of the weld due to the elbow being fabricated from ASTM351-65 CF8M cast stainless steel whose acoustic properties is not conductive for ultrasonic examination and the OD configuration of the nozzle A clockwise and counterclockwise exam was performed of the weld crown. There were no unacceptable indications observed. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.

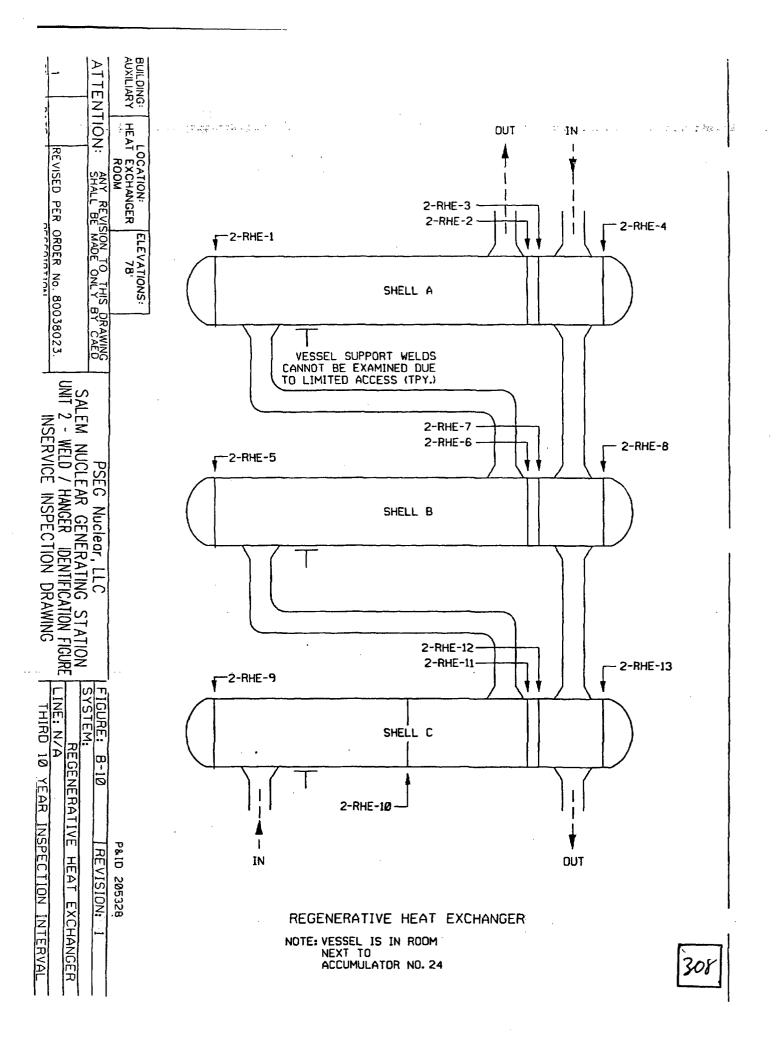
#### Note:

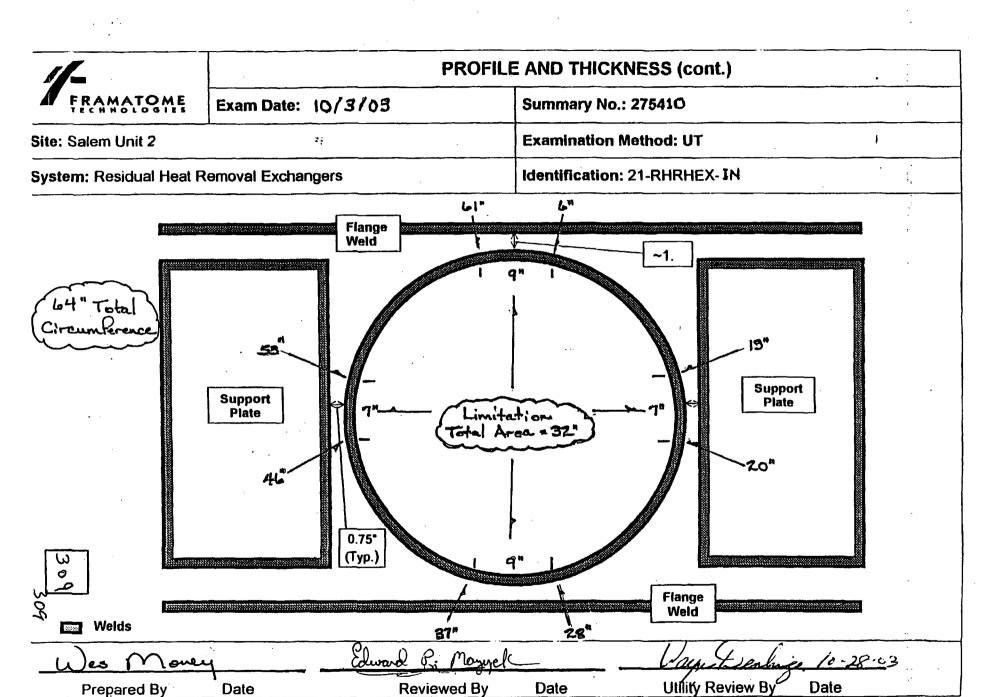
Original submittal stated 67% code coverage was obtained. Actual coverage limited to 50%

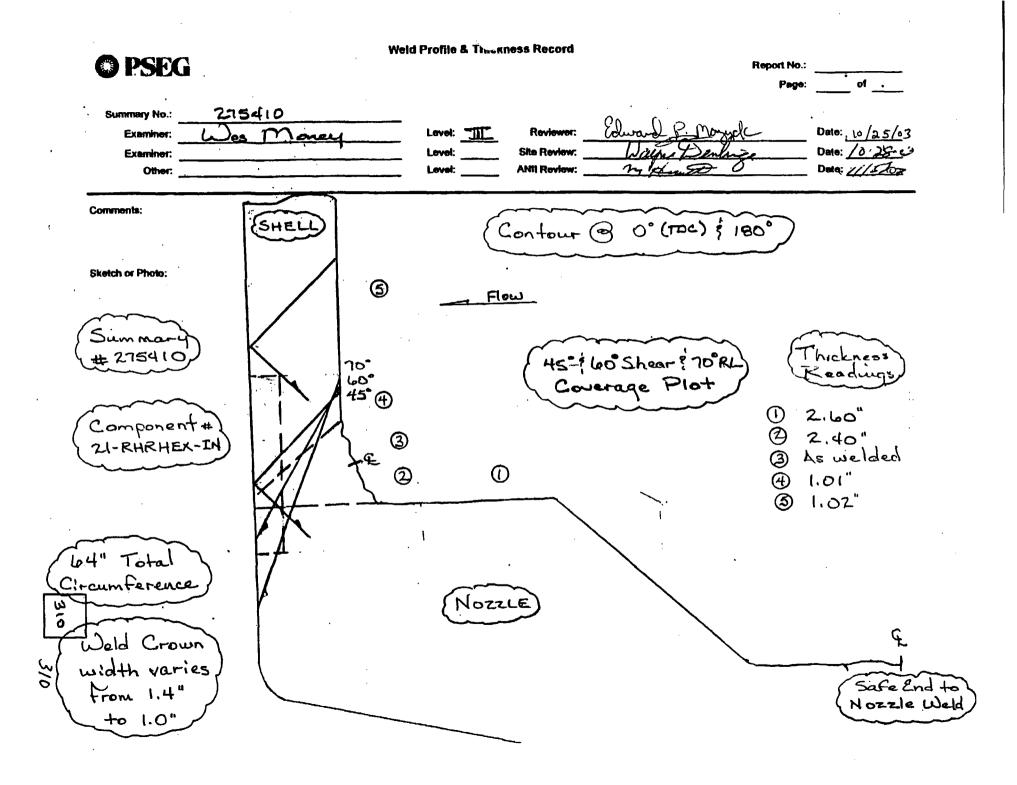
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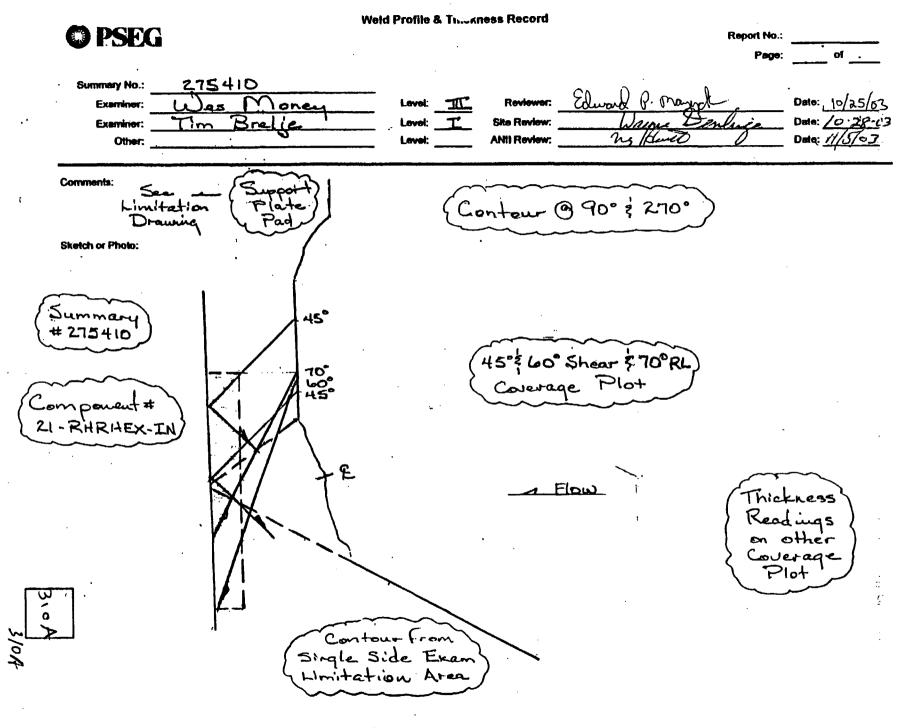












|      |                         |                                |                             | · · · · · · · · · · · · · · · · · · · |                 |                              |          |          |    |
|------|-------------------------|--------------------------------|-----------------------------|---------------------------------------|-----------------|------------------------------|----------|----------|----|
| TOد  | MER:                    | Pseg                           |                             | SYSTEM:                               | RHR             |                              |          | ,        |    |
| UMMA | ARY N                   | 0: 275410                      |                             | COMPONENT                             | ID: 21-1        | RHR HEX-                     | IN       | <u> </u> |    |
| .0   | CALC                    | ULATE REQUIRED EX              | AM VOLUME FOR ST            | RAIGHT BEAM                           | PLANAR F        | LAWS                         |          |          |    |
|      | 1.1                     | Exam Height X Exam             | n Width X Exam Length       | n = Exam Volum                        | x               | X                            | =        | N/A      | сц |
| .0   | CALC                    | ULATE REQUIRED EX              | AM VOLUME FOR ST            | RAIGHT BEAM                           |                 |                              |          | N 4      |    |
|      | 2.1                     | Exam Height X Exan             | n Width X Exam Length       | n = Exam Volum                        | neX             | X                            | 2        | NA       | CL |
| .0   |                         | ULATE REQUIRED PA              | RALLEL EXAM VOLU            | 84.48                                 | 84,48<br>ND 60° |                              |          |          |    |
|      | 3.1                     | Exam Height X Exan             | Width X Exam Length         | a = Exam Volum                        | .33° ×          | 2" x 25                      | ا = مادً | 6.96     |    |
| •    |                         | ULATE REQUIRED TR              | ANSVERSE EXAM VO            | 84.4<br>DLUME FOR 45                  |                 | 8                            |          |          |    |
|      | 4.1                     | Exam Height X Exam             | n Width X Exam Length       | n = Exam Volum                        | ,33' X          | 2" x 25                      | ا = ما   | 68.9b    | ci |
| .0   | CALC                    | ULATE STRAIGHT BE              | AM PLANAR EXAM C            | OVERAGE                               |                 |                              |          |          |    |
|      | <b>5.1</b> <sup>.</sup> | Limited above / CW e           | xam volume                  |                                       |                 |                              | ·        |          |    |
|      |                         | Height of<br>Obstructed Volume | Width of<br>Obstructed Area | Length of<br>Obstructed               | Area            | Volume with r<br>Exam Covera |          |          |    |
|      |                         | <u>N/A</u> X                   | <u>N/A</u>                  | ( <u>N/A</u>                          | 2               | N/A                          |          |          |    |
|      | <b>5.2</b>              | Limited Below / CW e           | xam volume                  |                                       |                 |                              |          |          |    |
|      |                         | Height of<br>Obstructed Volume | Width of<br>Obstructed Area | Length of<br>Obstructed               | Area            | Volume with r<br>Exam Covera |          |          |    |
|      |                         | <u>N/A</u> X                   | <u>N/A</u>                  | c <u>N/A</u>                          | =               | <u> </u>                     |          |          |    |
|      |                         | Total straight beam pl         | anar exam volume not        | examined                              | =               | <u>N/A</u>                   |          |          |    |
| •    | 5.3                     | Percent Volume Exan            | nined                       |                                       | ·               |                              |          |          |    |
| ·    |                         | Total 0 vol                    |                             |                                       |                 | Percent Volu                 | me _     |          |    |
|      |                         | w/No Cove                      | erage Exam Vo               | olume                                 |                 | Examined                     | z        | 100      |    |

| CAL                | CULATE STRAIGHT BEA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | M LAMINAR EXAM CO                                                                                                                                                              | DVERAGE                      |   |                                                                                                                                          |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|---|------------------------------------------------------------------------------------------------------------------------------------------|
| 5:1                | Limited above / CW ex                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | am volume                                                                                                                                                                      |                              |   |                                                                                                                                          |
|                    | Height of<br>Obstructed Volume                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Width of<br>Obstructed Area                                                                                                                                                    | Length of<br>Obstructed Area |   | Volume with no<br>Exam Coverage                                                                                                          |
|                    | <u>N/a</u> X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <u> </u>                                                                                                                                                                       | N/A                          | = | N/A                                                                                                                                      |
| 6.2                | Limited Below / CW ex                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | am volume                                                                                                                                                                      |                              |   |                                                                                                                                          |
|                    | Height of<br>Obstructed Volume                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Width of<br>Obstructed Area                                                                                                                                                    | Length of<br>Obstructed Area | į | Volume with no<br>Exam Coverage                                                                                                          |
|                    | N/A X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <u> </u>                                                                                                                                                                       | N/A                          | = | - N/A                                                                                                                                    |
|                    | Total straight beam pla                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | nar exam volume not e                                                                                                                                                          | xamined                      | = | <u> </u>                                                                                                                                 |
| 5.3                | Percent Volume Exami                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ned                                                                                                                                                                            |                              |   |                                                                                                                                          |
|                    | Total 0° vol<br>w/No Covera                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Total 0°<br>age Exam Volu                                                                                                                                                      | me                           |   | Percent Volume<br>Examined                                                                                                               |
|                    | W/No Cover:<br>100 - {[]/A<br>CULATE PARALLEL 45°                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | age Exam Volu<br><u>ا ۲ ۲۸/۵</u><br>EXAM COVERAGE                                                                                                                              | me<br>] x 100 }              | E |                                                                                                                                          |
| <u>CALC</u><br>7.1 | W/No Cover:<br>100 - {[/A<br>CULATE PARALLEL 45°  <br>Culate Parallel 45° | age Exam Volu<br><u>ا الم</u><br>EXAM COVERAGE<br>am volume<br>Width of                                                                                                        | ] x 100 }                    | = | Examined<br><u>N/A %</u><br>Volume with no                                                                                               |
|                    | W/No Cover:<br>100 - {[                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | age Exam Volu<br><u>ا الم</u><br>EXAM COVERAGE<br>مس volume                                                                                                                    | ] x 100}                     | - | Examined                                                                                                                                 |
| 7.1                | W/No Cover:<br>100 - {[                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | age Exam Volu<br><u>I N/A</u><br>EXAM COVERAGE<br>am volume<br>Width of<br>Obstructed Area<br><u>I,00</u> X                                                                    | Length of<br>Obstructed Area |   | Examined<br><u>N/A %</u><br>Volume with no<br>Exam Coverage                                                                              |
| 7.1                | W/No Cover:<br>100 - {[/A<br>CULATE PARALLEL 45°<br>Limited Ebove / Wext<br>Height of<br>Obstructed Volume<br>.33 <sup>u</sup> X<br>Documents for each<br>Limited Economic Cove<br>Height of                                                                                                                                                                                                                                                                                                                                                                         | Exam Volu<br>EXAM COVERAGE<br>EXAM COVERAGE<br>EXAM COVERAGE<br>Width of<br>Obstructed Area<br>I.OO X<br>Exam volume<br>Width of                                               | Length of<br>Obstructed Area | - | Examined<br><u>N/A %</u><br>Volume with no<br>Exam Coverage<br><u>P-1.12 cu</u> w<br>Volume with no                                      |
| 1                  | W/No Cover:<br>100 - {[                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Exam Volu<br>EXAM COVERAGE<br>EXAM COVERAGE<br>Width of<br>Obstructed Area<br>I.OO" X<br>Exam volume<br>Width of<br>Obstructed Area<br>I.OO" X                                 | Length of<br>Obstructed Area | - | Examined<br><u>N/A %</u><br>Volume with no<br>Exam Coverage<br><u>P-1.12 cu</u><br>Volume with no<br>Exam Coverage                       |
| 7.1                | W/No Cover:<br>100 - { [ //A<br>CULATE PARALLEL 45°  <br>Upstream CL<br>Limited above / CW ex<br>Height of<br>Obstructed Volume<br>.33" X<br>Limited Below CCW ex<br>Height of<br>Obstructed Volume<br>.33" X                                                                                                                                                                                                                                                                                                                                                        | Exam Volu<br>EXAM COVERAGE<br>EXAM COVERAGE<br>EXAM COVERAGE<br>Width of<br>Obstructed Area<br>I.OO" X<br>Exam volume<br>Width of<br>Obstructed Area<br>I.OO" X<br>Exam volume | Length of<br>Obstructed Area | - | Examined<br><u>N/A %</u><br>Volume with no<br>Exam Coverage<br><u>2-1.12 cu m</u><br>Volume with no<br>Exam Coverage<br><u>42.24 cum</u> |

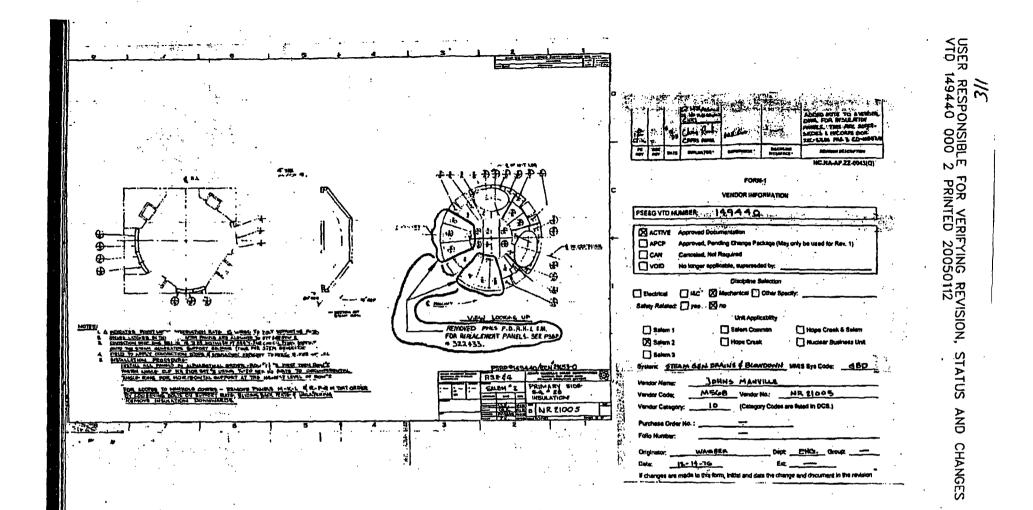
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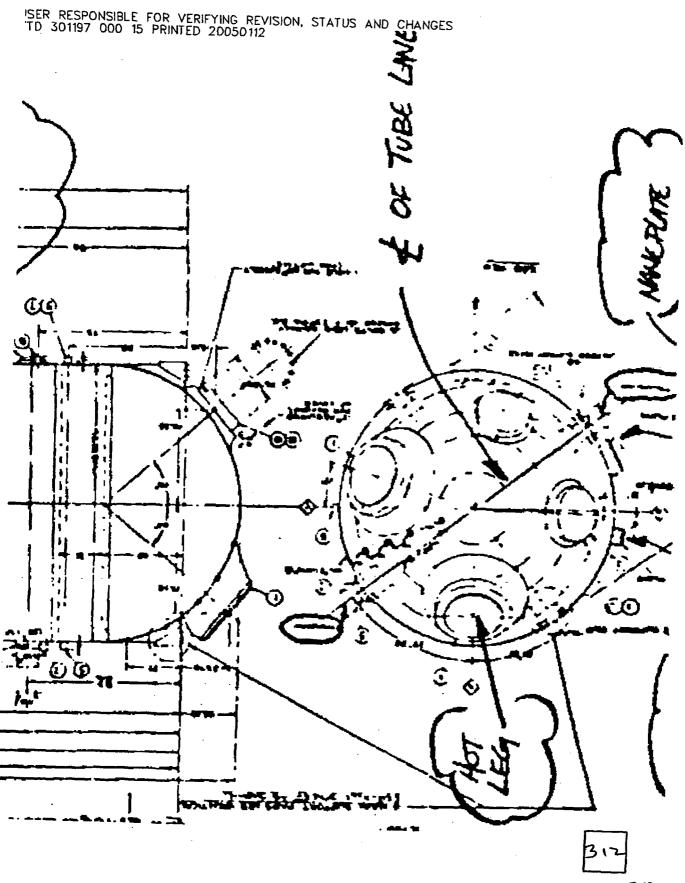
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FTI VESS\_VOL.FRP 07/15/00 2 FRAMATOME VESSEL VOLUMETRIC EXAMINATION COVERAGE REPORT d.Ü CALCULATE PARALLEL 60° EXAM COVERAGE (Cew) upetrea 8.1 Limited above /CWDexam volume Above / CW exam Width of Length of Height of Volume with no **Obstructed Volume Obstructed Area Obstructed Area** Exam Coverage .33 ' 1.00" X X 21,12 6 0 -Limited Below (CCW)exam volume 8.2 Below / CCW exam Volume with no Width of Length of Height of Exam Coverage **Obstructed Volume Obstructed Area Obstructed Area** 1.00 " X 28" X 42.24 22" Total 60° parallel exam volume not examined 63.36 **Percent Volume Examined** 8.3 Total 60° parallel Total 60° parallel Percent Volume Vol w/No Coverage Exam Volume Examined 25 63.36 100 - {[ 84.48 100 3 % 9.0 **CALCULATE TRANSVERSE 45° EXAM COVERAGE** re Downstream Looki Limited Glockwise exam volume 9.1 CW Exam Height of Width of Length of Volume with no **Obstructed Area Obstructed Area Obstructed Volume** Exam Coverage 1.00 33" X Х Limited Below Counter clockwise exam volume 9.2 CCW Exam Width of Length of Height of Volume with no Exam Coverage **Obstructed Volume Obstructed Area Obstructed Area** 128" .33\* Х 1.00\* Х 2.24 Total 45° transverse exam volume not examined 63.36 C Percent Volume Examined 9.3 Total 45° parallel Percent Volume Total 45° parallel Examined Exam Volume Vol w/No Coverage 100 - {[- 6336 cil 25 3103 84.4823 100 } %

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2 FRAMATOME ANP VESSEL VOLUMETRIC EXAMINATION COVERAGE REPORT CALCULATE TRANSVERSE 60° EXAM COVERAGE - Doken Ľ Journaf 10.1 Limited Clockwise exam volume CW exam Width of Length of Height of Volume with no Obstructed Volume **Obstructed Area Obstructed Area** Exam Coverage سلي المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة المعالمة معالمة م X X 21,12 cu 33 hoe Limited Gounterclockwise exam volume 10.2 CCW exam Length of Width of Volume with no Height of **Obstructed Area Obstructed Area Obstructed Volume** Exam Coverage 28 Х X 1.00 Total 60 transverse exam volume not examined 63.36 J. 10.3 Percent Volume Examined Total 60° Trans Percent Volume Total 60° Trans Vol Examined Exam Volume w/NoCoverage 25 100 - {[ 21.12 1 84,48 ] x 100} % = CALCULATE PERCENT OF TOTAL VOLUME EXAMINED 11.0 11.1 Sum of Exam Volumes % Examination hur 10 i No. Of Exam Steps Coverage 75 % No scan from nozzle side or on weld due to configuration. Date: Level: Level: Date: Reviewer: Examiner: 3106 310E S. 1. 1

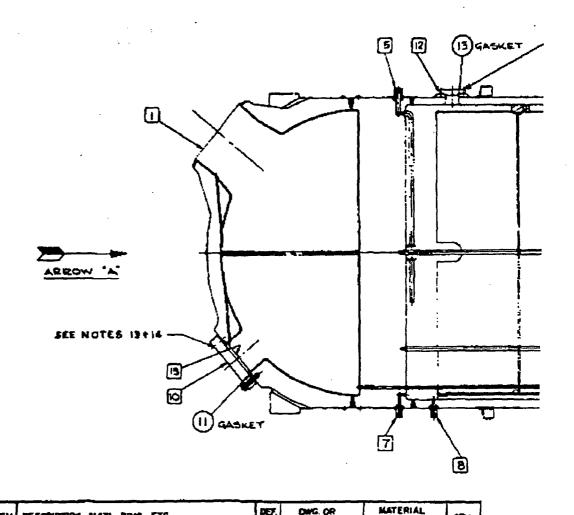




SER RESPONSIBLE-FOR VERIFYING REVISION, STATUS AND CHANGES

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| 112.34 | DESCRIPTION, MATL. DUNS., ETC.   |                                                                                                                 | Carlo Carl |          |            | THE COURSE |             | OTY       |     |          |        |          |          |
|--------|----------------------------------|-----------------------------------------------------------------------------------------------------------------|------------|----------|------------|------------|-------------|-----------|-----|----------|--------|----------|----------|
| _      |                                  | CODE                                                                                                            | L .'       | -        | YLI        | _          |             | <b>_</b>  |     | PEC.     |        | RIT      | Q.T      |
|        | UPPER SHELL ALSU                 |                                                                                                                 | 1.1        | 7        |            | 36         | 4,1         | Ϋ́́́́́, S |     |          |        |          | 000      |
|        | TUDE BUNDLE ASST                 | Γ.                                                                                                              | 7          | 7        |            | •          |             | 1.02      | 1   |          |        |          | 225      |
|        | TRANS. WRAPPERI SNI RUIANE ASSU. | T.                                                                                                              | <b>B</b> 7 |          | <b>C</b> { | 1          | <u>e</u> ļe | 101       |     |          |        |          | 000      |
| 004    | INSTALLATION OF FORMED VAUE      |                                                                                                                 | 4          | E        | 4          | 2          | <b>ن</b> ها | 0         | F   |          | _      |          | 2.20     |
|        |                                  | +                                                                                                               | ┢╸         | -        | ••         |            | -+          |           | ╋┷  |          |        | <u> </u> | <u> </u> |
|        |                                  |                                                                                                                 | <u> </u>   | <u>_</u> |            | مد         |             |           |     |          |        |          |          |
|        |                                  |                                                                                                                 | 1-<br>1    |          |            |            | -           |           |     |          |        | -        |          |
|        | PLJG, ( P.PL), 1.25              | the second second second second second second second second second second second second second second second se | -          |          | _          |            | -           | 207       |     |          |        |          | 033      |
|        | PLUG (P.PE) 2.00                 |                                                                                                                 |            |          |            | _          | -           | 209       |     |          |        | _        | 000      |
| 011    | GASKET (PRIMARY MADWAN)          | 1.                                                                                                              | 24         | ) d      | A.         | 22         | 91          | 101       | 1.  |          |        |          | 500      |
| SIS    | GASKET ( SECONDARY MANYAN)       |                                                                                                                 | 3.9        | 10       | <b>N</b>   | 32         | 91          | 103       |     |          |        |          | 000      |
|        | GASKET (SECONDARY HANDHOLE)      | L                                                                                                               | 35         | 20       | A.         | 25         | 91          | 102       |     |          |        |          | 622      |
| -      | SPARE PARTS (ERECTION)           |                                                                                                                 | 7          | 7        | J          | 5          | . :         | 101       |     |          | _      |          | 000      |
|        |                                  |                                                                                                                 |            |          |            |            |             |           |     |          |        |          |          |
|        |                                  |                                                                                                                 |            | -        |            |            |             | - •       |     | <u> </u> |        |          | <u> </u> |
|        |                                  |                                                                                                                 | }_≁-       |          |            |            | ~~~         | ·         | ••• |          | 4<br>4 |          |          |



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QUESTION 1.2 (a) For certain nozzle welds, information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers

| Summary #      | 021300                           |                             |
|----------------|----------------------------------|-----------------------------|
| Component I.D. | 29-STG-1210-IRS                  |                             |
| Description    | #21 Cold Leg Inner Radius        |                             |
|                |                                  | Comments                    |
| 1              | Weld X-Section                   | N/A                         |
| 2              | Material                         | Carbon Steel / Inconel Clad |
| 3              | Thickness / weld Crown           | N/A                         |
| 4              | Obstruction                      | Generator Support Lug       |
| 5              | Exam Area Highlighted on Drawing | Yes X No                    |
| 6              | Transducer ray exit point        | N/A                         |

#### Comments

UT exam was conducted using 28 and 38 degree longitudinal wave transducers. The exams completed was limited to 82% code required coverage due to due to the insulation support brackets attached to the steam generators lower head that and permanent support lugs interfered with scanning. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.

> Page of 3 1

| Summary #   | 021300                    | Component I.D. | 29-STG- | 1210-IRS |
|-------------|---------------------------|----------------|---------|----------|
| Description | #21 Cold Leg Inner Radius |                | Page    | _2 of _3 |

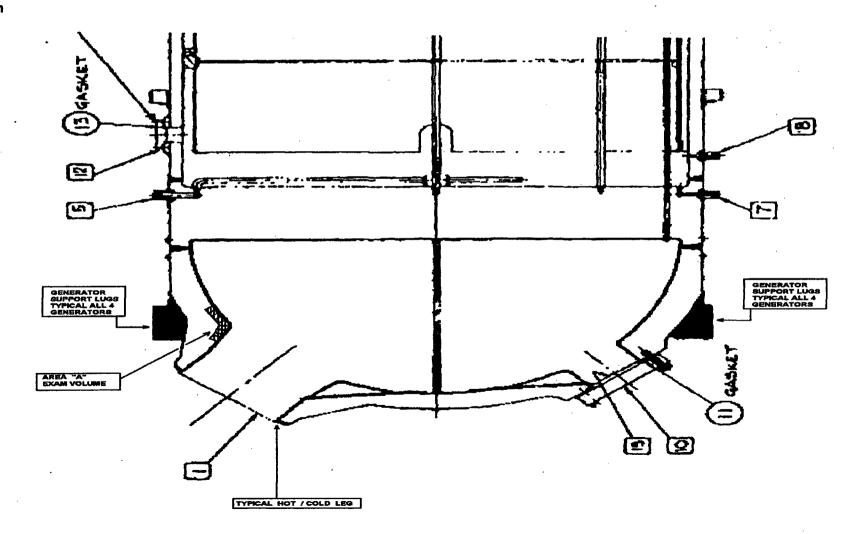
 Comments
 Ultrasonic exam area limited to 82% of code required coverage due to permanent Steam Generator support lugs

 See Sketch below showing support lug interference with exam area

 Drawing was created in order to assist in the evaluation of the request for relief regarding examination coverage only.



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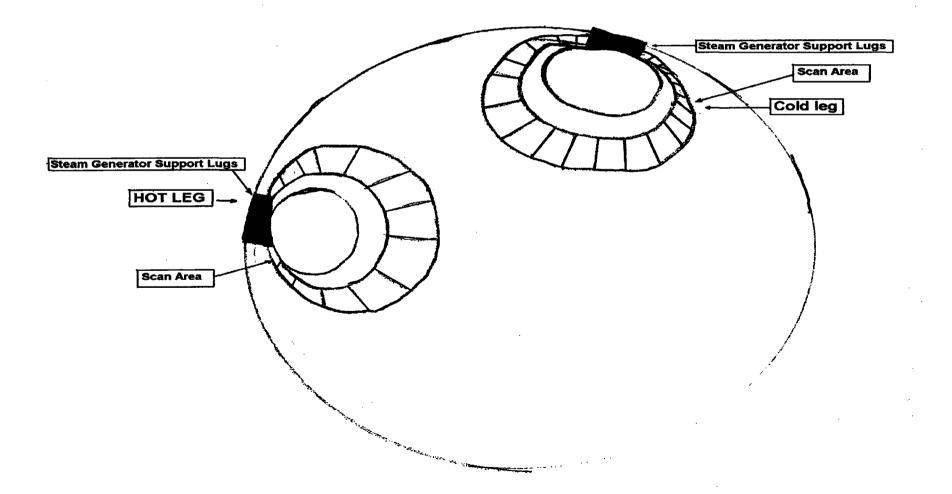


| Summary #   | 021300                    | Component I.D. | 29-STG-1210-IRS    |  |
|-------------|---------------------------|----------------|--------------------|--|
| Description | #21 Cold Leg Inner Radius |                | Page <u>3 of 3</u> |  |

Comment: Ultrasonic exam area limited to 82% of code required coverage due to permanent Steam Generator support lugs See Sketch below showing support lug interference with exam area

Drawing was created in order to assist in the evaluation of the request for relief regarding examination coverage only.



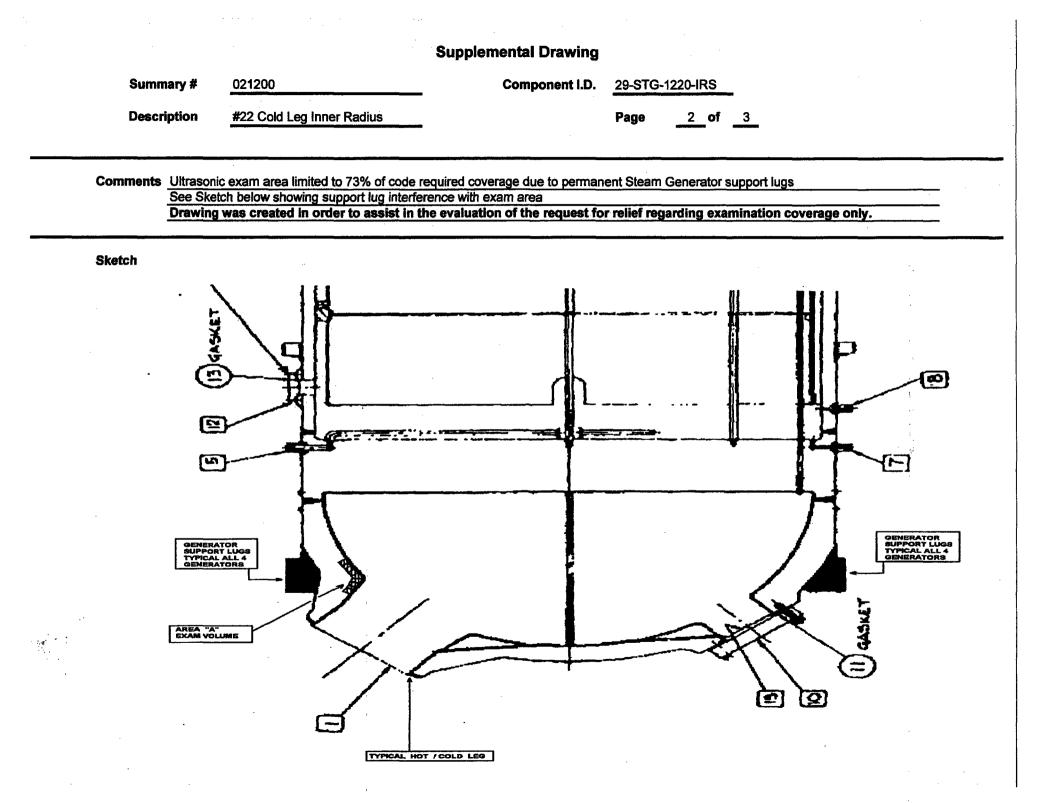


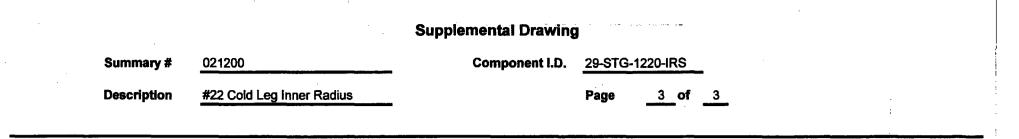
QUESTION 1.2 (a) For certain nozzle welds, information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers

| Summary #      | 021200                           | _                          |
|----------------|----------------------------------|----------------------------|
| Component I.D. | 29-STG-1220-IRS                  | _                          |
| Description    | #22 Cold Leg Inner Radius        | _                          |
|                |                                  | Comments                   |
| 1              | Weld X-Section                   | N/A                        |
| 2              | Material                         | Carbon Steel / Income Clad |
| 3              | Thickness / weld Crown           | N/A                        |
| 4              | Obstruction                      | Generator Support Lug      |
| 5              | Exam Area Highlighted on Drawing | Yes X No                   |
| 6              | Transducer ray exit point        | N/A                        |

#### Comments

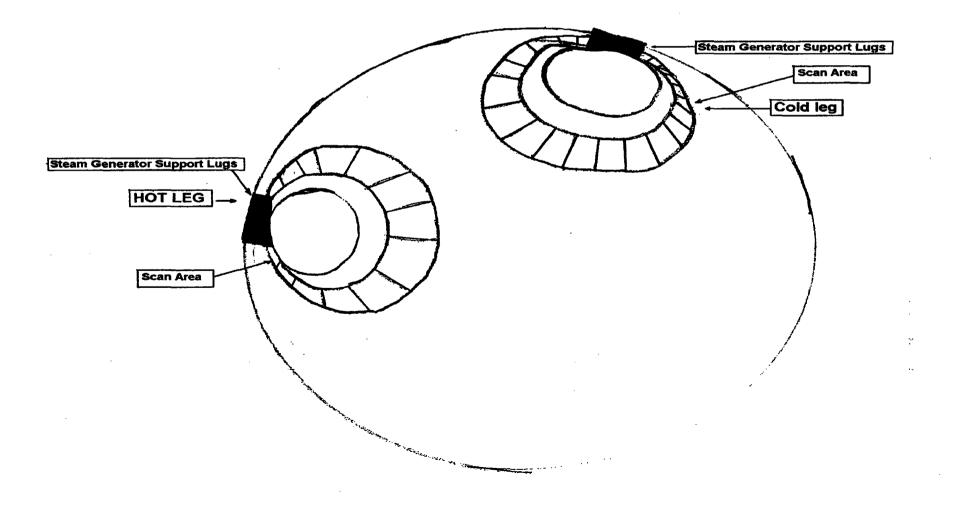
UT exam was conducted using 28 and 38 degree longitudinal wave transducers. The exams completed was limited to 73% code required coverage due to due to the insulation support brackets attached to the steam generators lower head that and permenent support lugs interfered with scanning. The exam surface is approximately 154" with the length of the limitation being 73". No exam was able to be performed between 24" cow to 15" cow from datum zero support lug located 77" cow to 79" cow with 2" W measurement. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.





Comment: Ultrasonic exam area limited to 73% of code required coverage due to permanent Steam Generator support lugs See Sketch below showing support lug interference with exam area Drawing was created in order to assist in the evaluation of the request for relief regarding examination coverage only.

Sketch

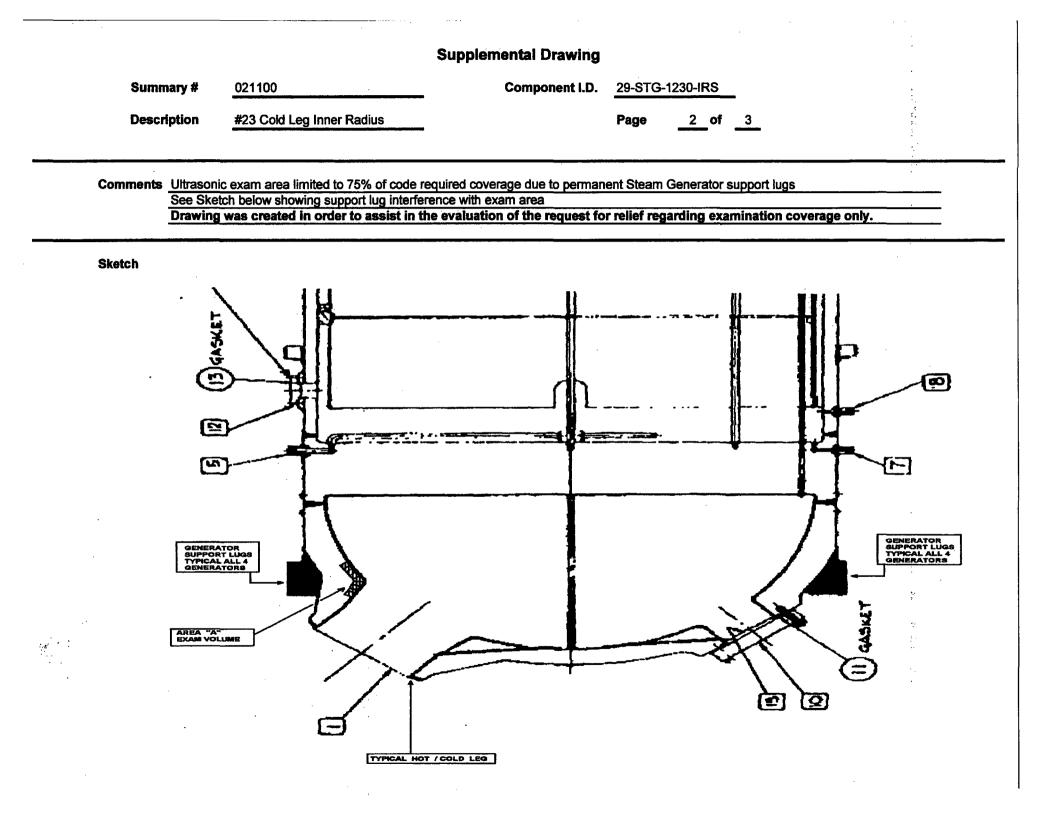


QUESTION 1.2 (a) For certain nozzle welds, information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers

| Summary #      | 021100                           |                             |
|----------------|----------------------------------|-----------------------------|
| Component I.D. | 29-STG-1230-IRS                  |                             |
| Description    | #23 Cold Leg Inner Radius        |                             |
|                |                                  | Comments                    |
| 1              | Weld X-Section                   | N/A                         |
| 2              | Material                         | Carbon Steel / Inconel Clad |
| 3              | Thickness / weld Crown           | N/A                         |
| 4              | Obstruction                      | Generator Support Lug       |
| 5              | Exam Area Highlighted on Drawing | Yes X No                    |
| 6              | Transducer ray exit point        | N/A                         |

### Comments

UT exam was conducted using 28 and 38 degree longitudinal wave transducers. The exams completed was limited to 75% code required coverage due to due to the insulation support brackets attached to the steam generators lower head that and permanent support lugs interfered with scanning. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.

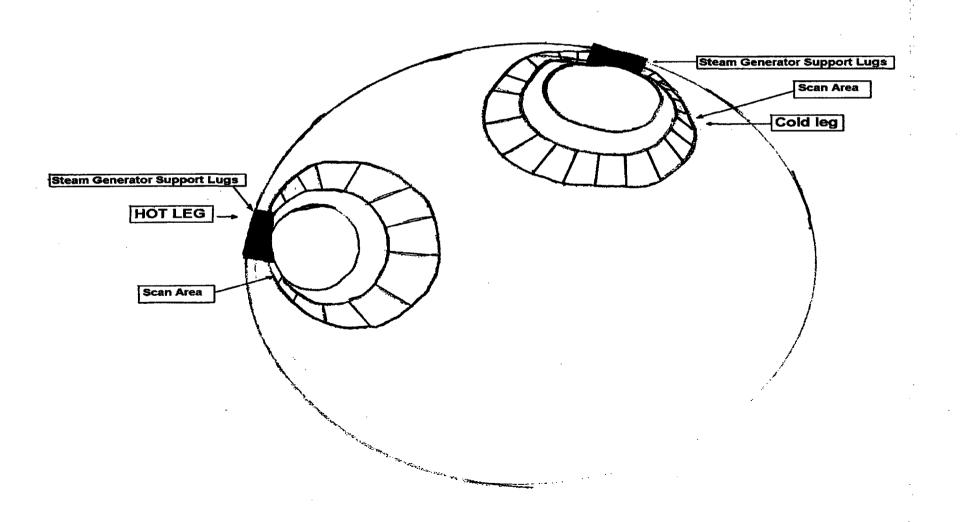


| Summary #   | ary # 021100 Component I.D. |  | 29-STG-1230-IRS |        |  |  |  |
|-------------|-----------------------------|--|-----------------|--------|--|--|--|
| Description | #23 Cold Leg Inner Radius   |  | Page            | 3 of 3 |  |  |  |

Comment: Ultrasonic exam area limited to 75% of code required coverage due to permanent Steam Generator support lugs See Sketch below showing support lug interference with exam area

Drawing was created in order to assist in the evaluation of the request for relief regarding examination coverage only.

Sketch



QUESTION 1.2 (a) For certain nozzle welds, information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers

| Summ   | nary #   | 021000                    |         |                             |
|--------|----------|---------------------------|---------|-----------------------------|
| Compon | ent I.D. | 29-STG-1240-IRS           |         |                             |
| Descr  | iption   | #24 Cold Leg Inner Radius |         |                             |
|        |          |                           |         | Comments                    |
| [      | 1        | Weld X-Section            |         | N/A                         |
| [      | 2        | Material                  |         | Carbon Steel / Inconel Clad |
| [      | 3        | Thickness / weld Crown    |         | N/A                         |
| : [    | 4        | Obstruction               |         | Generator Support Lug       |
| [      | 5        | Exam Area Highlighted on  | Drawing | Yes X No                    |
| [      | 6        | Transducer ray exit point |         | <u> </u>                    |

### Comments

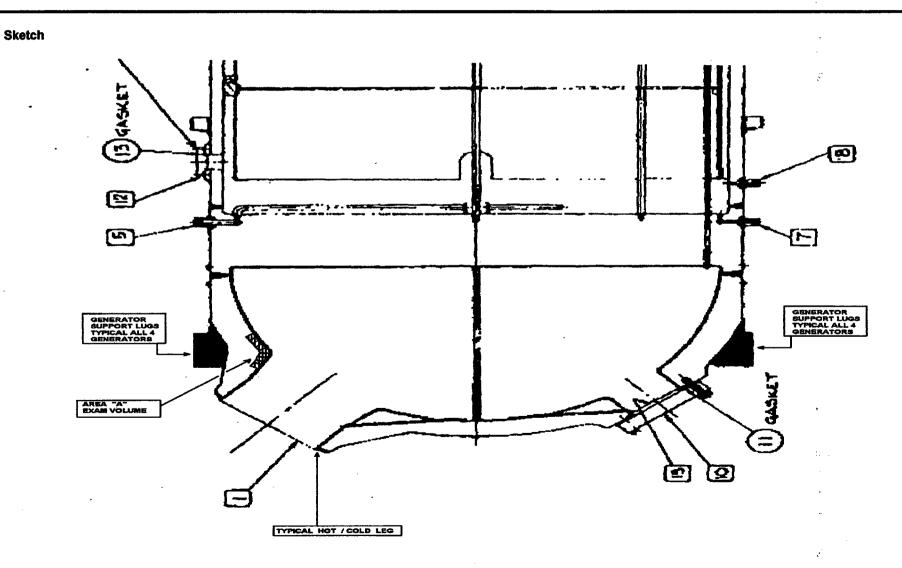
UT exam was conducted using 28 and 38 degree longitudinal wave transducers. The exams completed was limited to 86% code required coverage due to due to the insulation support brackets attached to the steam generators lower head that and permanent support lugs interfered with scanning. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.

| Summary #   | 021000                    | Component I.D. | 29-STG-1 | 240-IRS |
|-------------|---------------------------|----------------|----------|---------|
| Description | #24 Cold Leg Inner Radius |                | Page     | 2 of 3  |

 Comments
 Ultrasonic exam area limited to 86% of code required coverage due to permanent Steam Generator support lugs

 See Sketch below showing support lug interference with exam area

 Drawing was created in order to assist in the evaluation of the request for relief regarding examination coverage only.

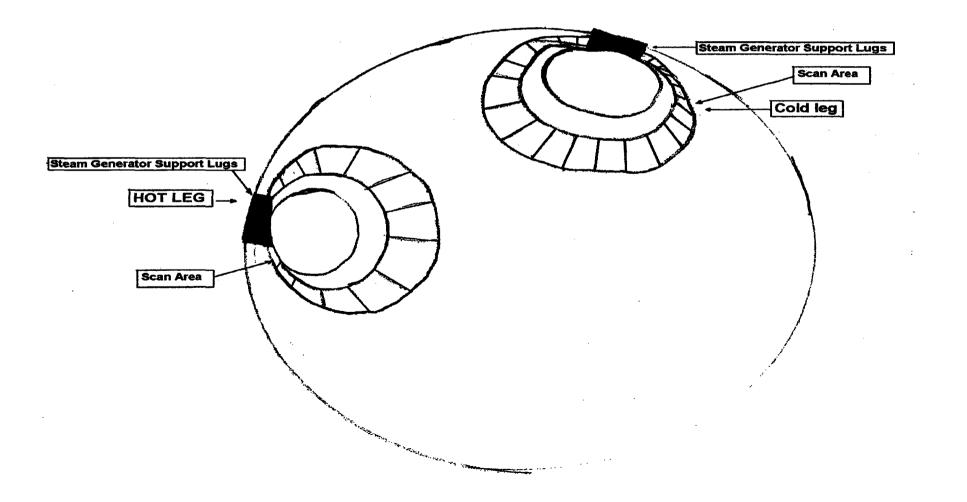


| Summary #   | 021000                    | Component I.D. | 29-STG-1240-IRS           |  |
|-------------|---------------------------|----------------|---------------------------|--|
| Description | #24 Cold Leg Inner Radius |                | Page <u>3</u> of <u>3</u> |  |

Comment: Ultrasonic exam area limited to 86% of code required coverage due to permanent Steam Generator support lugs See Sketch below showing support lug interference with exam area

Drawing was created in order to assist in the evaluation of the request for relief regarding examination coverage only.

Sketch



QUESTION

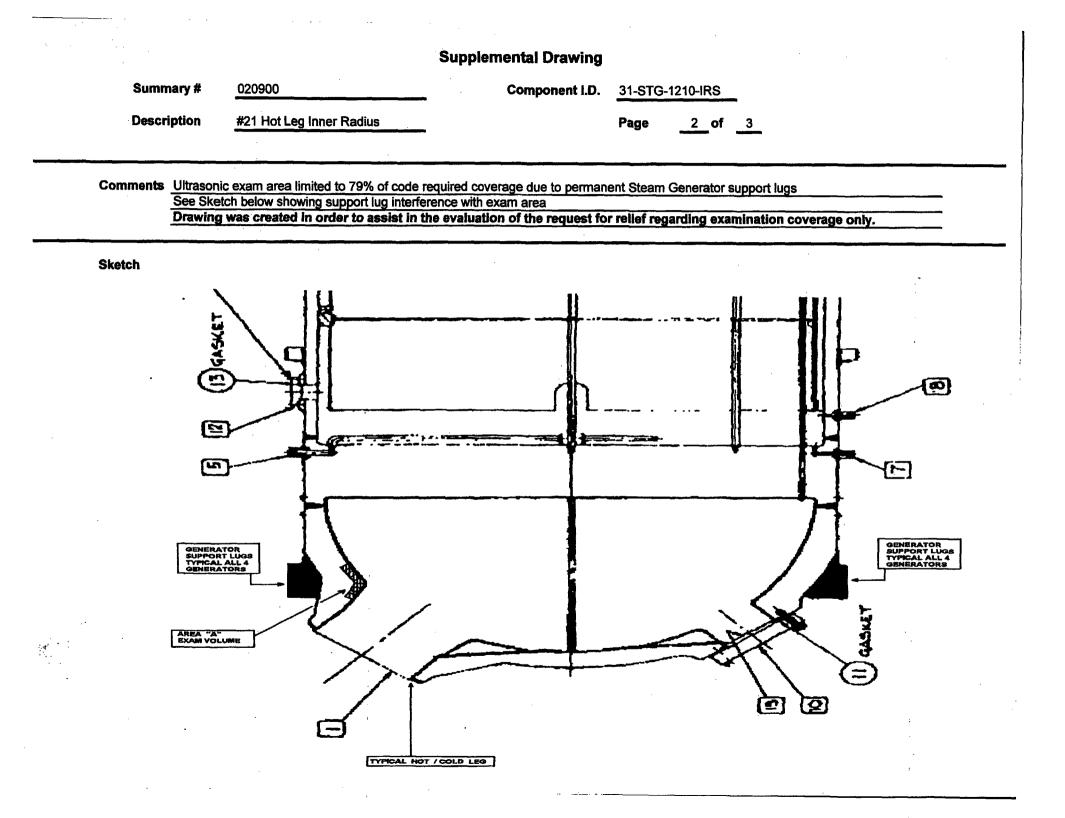
1.2 (a)

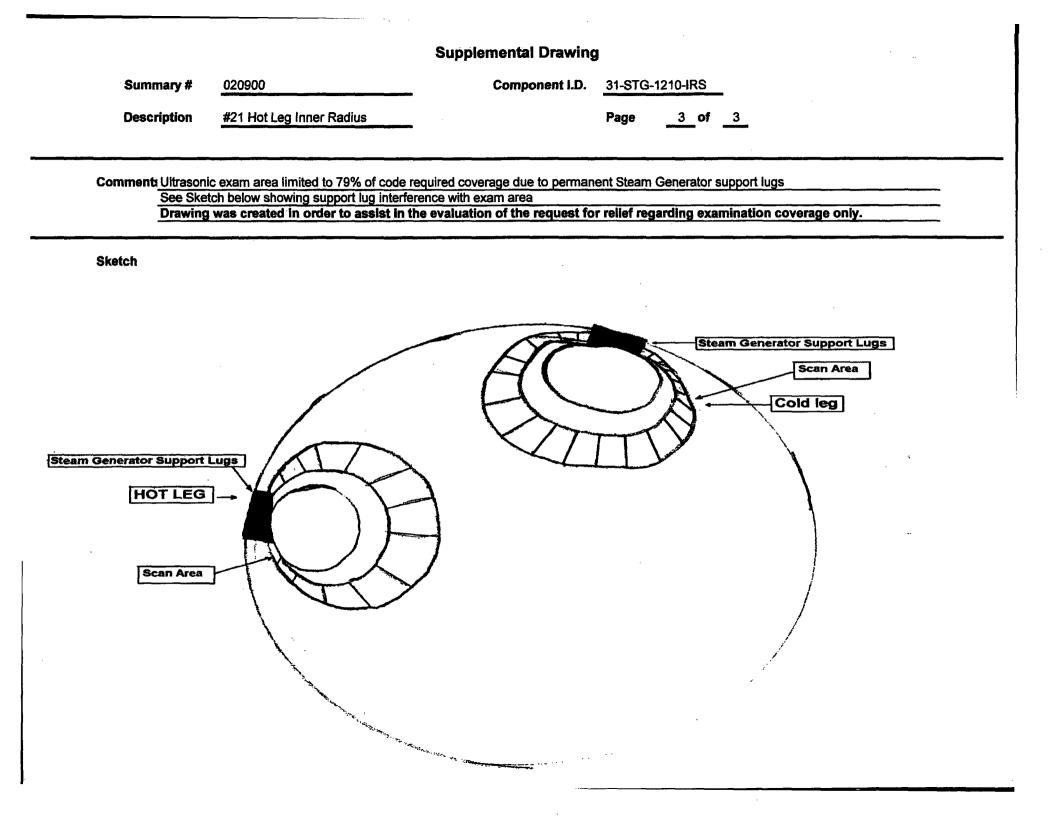
For certain nozzle welds, information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers

| Summary #      | 020900                           | · · · ·                     |
|----------------|----------------------------------|-----------------------------|
| Component I.D. | 31-STG-1210-IRS                  |                             |
| Description    | #21 Hot Leg Inner Radius         |                             |
|                |                                  | Comments                    |
| 1              | Weld X-Section                   | N/A                         |
| 2              | Material                         | Carbon Steel / Inconel Clad |
| 3              | Thickness / weld Crown           | N/A                         |
| 4              | Obstruction                      | Generator Support Lug       |
| 5              | Exam Area Highlighted on Drawing | Yes X No                    |
| 6              | Transducer ray exit point        | N/A                         |

#### Comments

UT exam was conducted using 28 and 38 degree longitudinal wave transducers. The exams completed was limited to 79% code required coverage due to due to the insulation support brackets attached to the steam generators lower head that and permanent support lugs interfered with scanning. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.





QUESTION 1.2 (a) For certain nozzle welds, information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers

| Summary #      | 020800                        |                             |
|----------------|-------------------------------|-----------------------------|
| Component I.D. | 31-STG-1220-IRS               |                             |
| Description    | #22 Hot Leg Inner Radius      |                             |
|                |                               | Comments                    |
| 1              | Weld X-Section                | N/A                         |
| 2              | Material                      | Carbon Steel / Inconel Clad |
| 3              | Thickness / weld Crown        | N/A                         |
| 4              | Obstruction                   | Generator Support Lug       |
| 5              | Exam Area Highlighted on Draw | ving Yes X No               |
| 6              | Transducer ray exit point     | N/A                         |

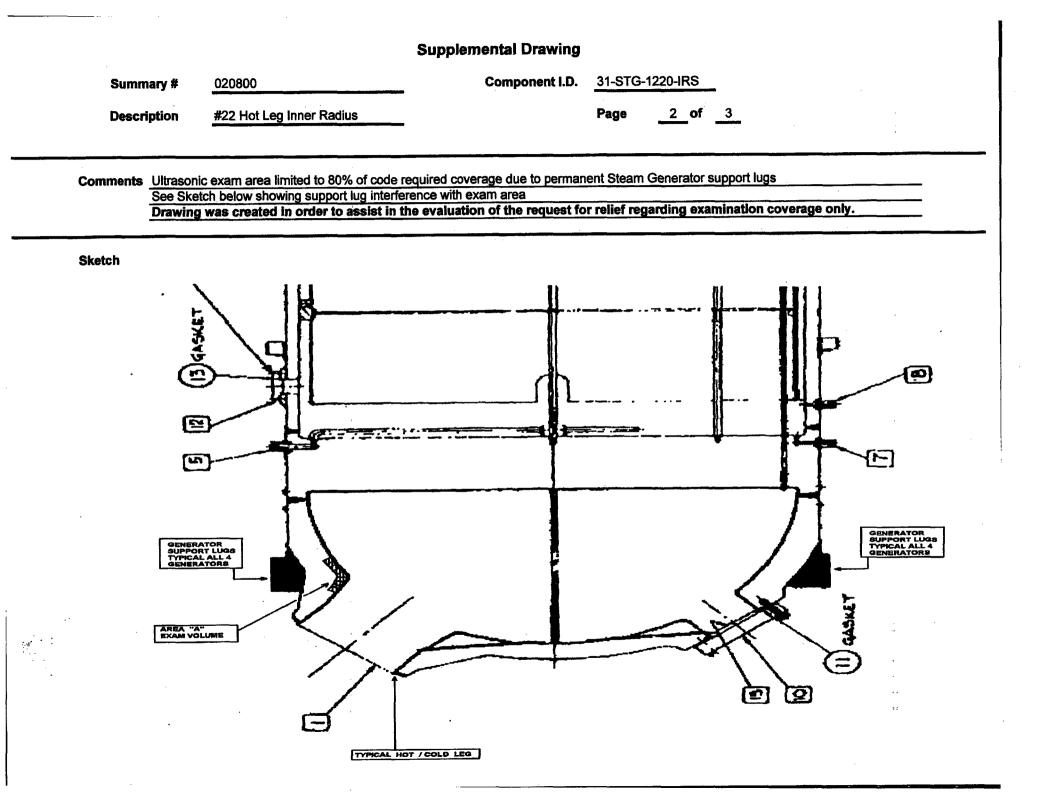
 Comments
 UT exam was conducted using 28 and 38 degree refracted longitudinal wave transducers.

 The exam
 completed was limited to 80% of code required coverage due to permanent Steam Generator

 support lugs. The exam surface is approximately 153.9" with the length of the limitation being 30".

 No exam could be performed between 15" ccw to 15" cw from datum zero. No unacceptable indications

were noted. A system pressure test was also completed with no unacceptable indications observed

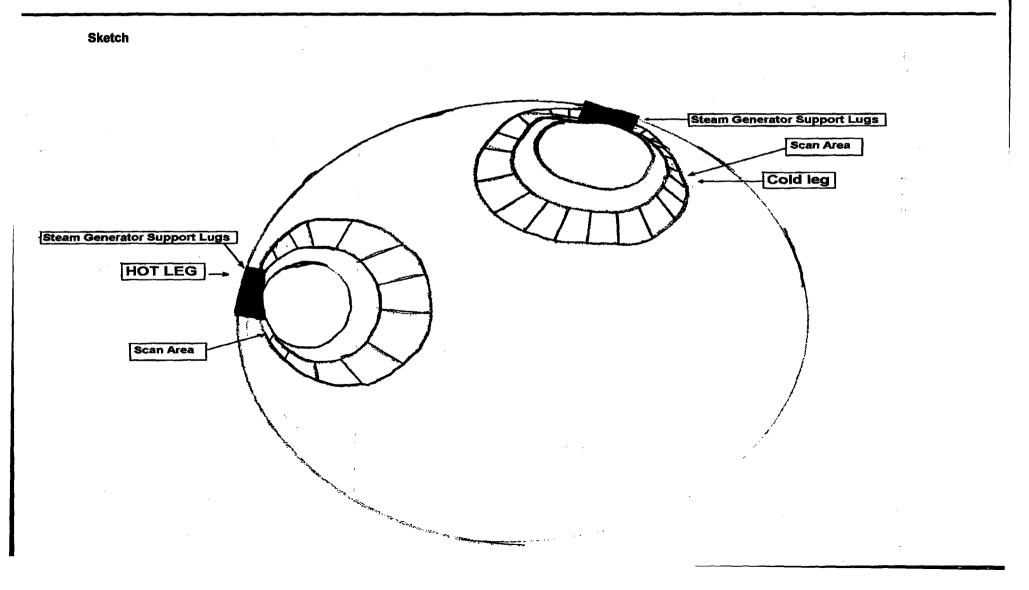


| Supplemental | Drawing |
|--------------|---------|
|--------------|---------|

| Summary #   | 020800                   | Component I.D. | 31-STG-1220-IRS    |
|-------------|--------------------------|----------------|--------------------|
| Description | #22 Hot Leg Inner Radius |                | Page <u>3 of 3</u> |

Comment: Ultrasonic exam area limited to 80% of code required coverage due to permanent Steam Generator support lugs See Sketch below showing support lug interference with exam area

Drawing was created in order to assist in the evaluation of the request for relief regarding examination coverage only.



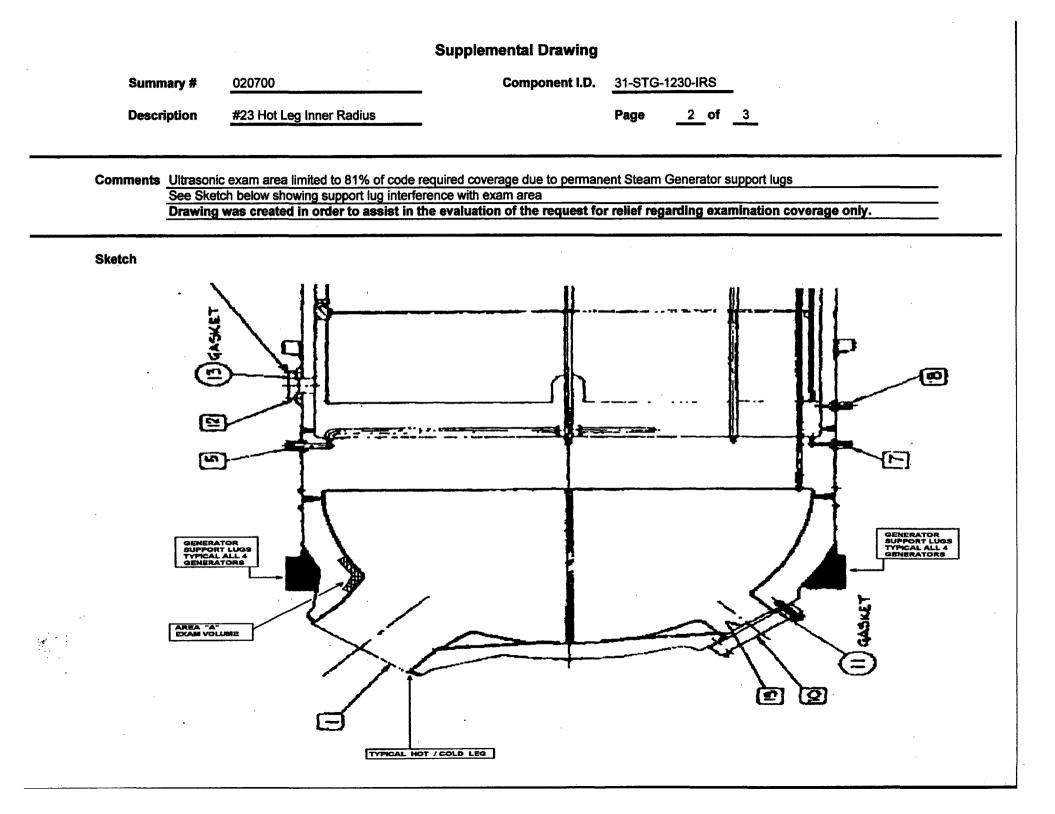
QUESTION

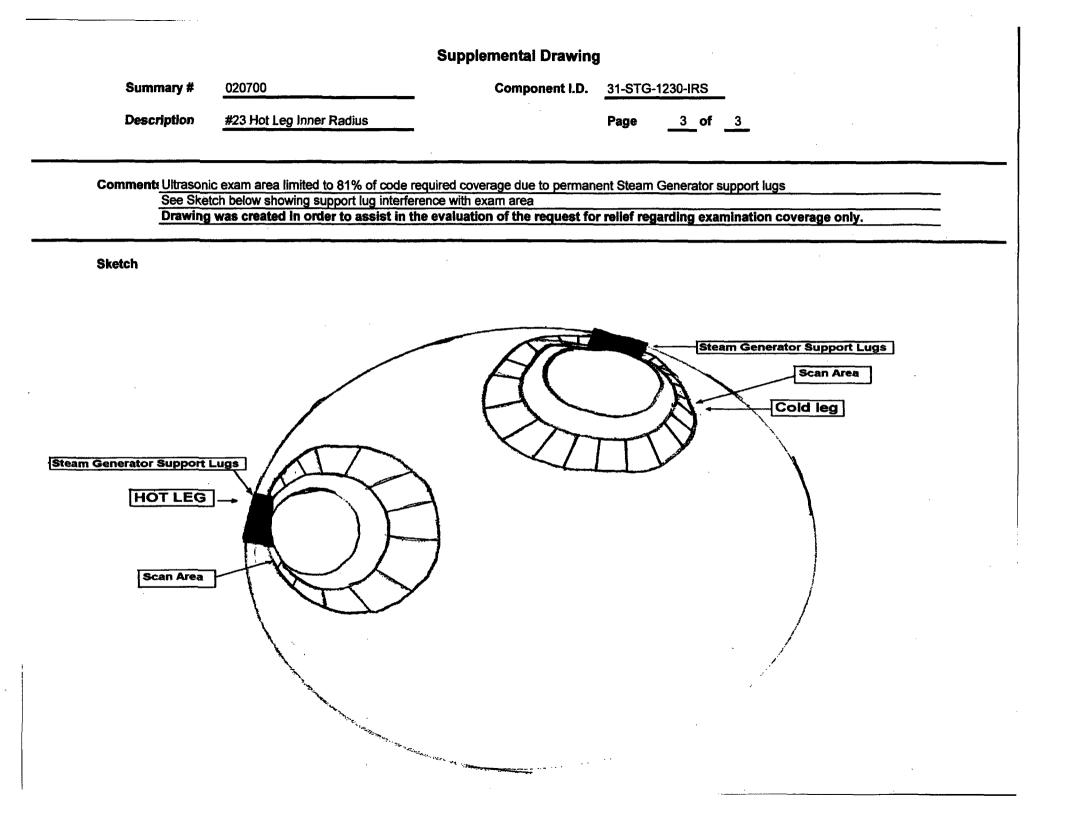
1.2 (a) For certain nozzle welds, information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers

| Summary #      | 020700                           | _                           |
|----------------|----------------------------------|-----------------------------|
| Component I.D. | 31-STG-1230-IRS                  | -                           |
| Description    | #23 Hot Leg Inner Radius         | -                           |
|                |                                  | Comments                    |
| 1              | Weld X-Section                   | N/A                         |
| 2              | Material                         | Carbon Steel / Inconel Clad |
| 3              | Thickness / weld Crown           | N/A                         |
| 4              | Obstruction                      | Generator Support Lug       |
| 5              | Exam Area Highlighted on Drawing | Yes X No                    |
| 6              | Transducer ray exit point        | N/A                         |

#### Comments

UT exam was conducted using 28 and 38 degree longitudinal wave transducers. The exams completed was limited to 81% code required coverage due to due to the insulation support brackets attached to the steam generators lower head that and permanent support lugs interfered with scanning. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.





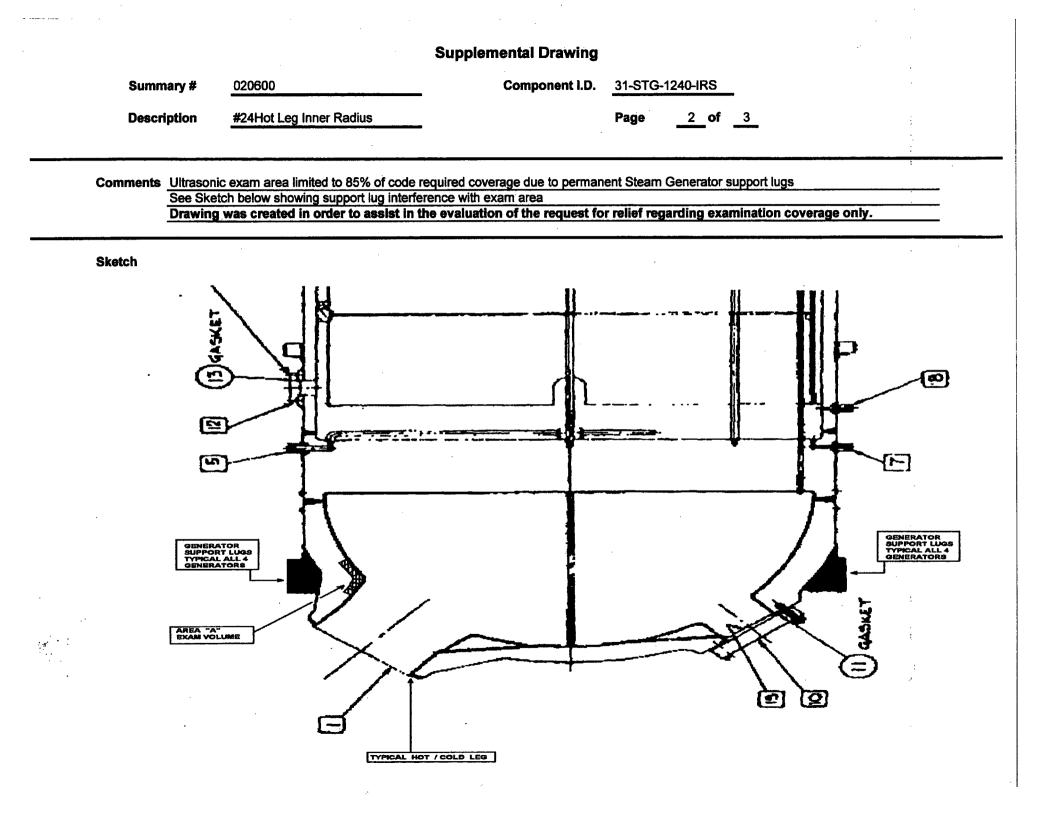
QUESTION

1.2 (a) For certain nozzle welds, information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers

| Summary #      | 020600                    |         |                             |
|----------------|---------------------------|---------|-----------------------------|
| Component I.D. | 31-STG-1240-IRS           |         |                             |
| Description    | #24 Hot Leg Inner Radius  |         |                             |
|                |                           |         | Comments                    |
| 1              | Weld X-Section            |         | N/A                         |
| 2              | Material                  |         | Carbon Steel / Inconel Clad |
| 3              | Thickness / weld Crown    |         | N/A                         |
| 4              | Obstruction               |         | Generator Support Lug       |
| 5              | Exam Area Highlighted on  | Drawing | Yes X No                    |
| 6              | Transducer ray exit point |         | N/A                         |

### Comments

UT exam was conducted using 28 and 38 degree longitudinal wave transducers. The exams completed was limited to 85% code required coverage due to due to the insulation support brackets attached to the steam generators lower head that and permanent support lugs interfered with scanning. No unacceptable indications were noted. A system pressure test was also completed with no unacceptable indications observed.



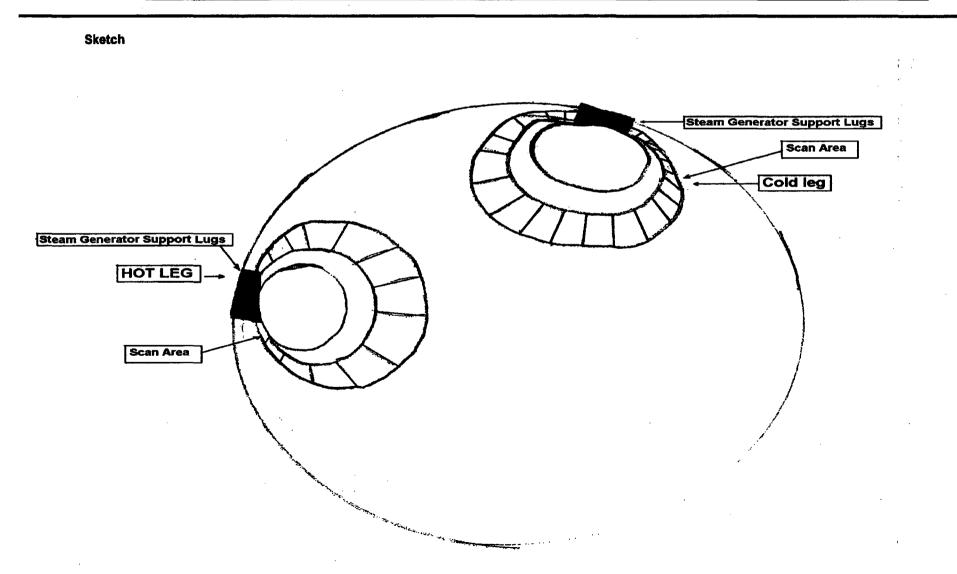
### Supplemental Drawing

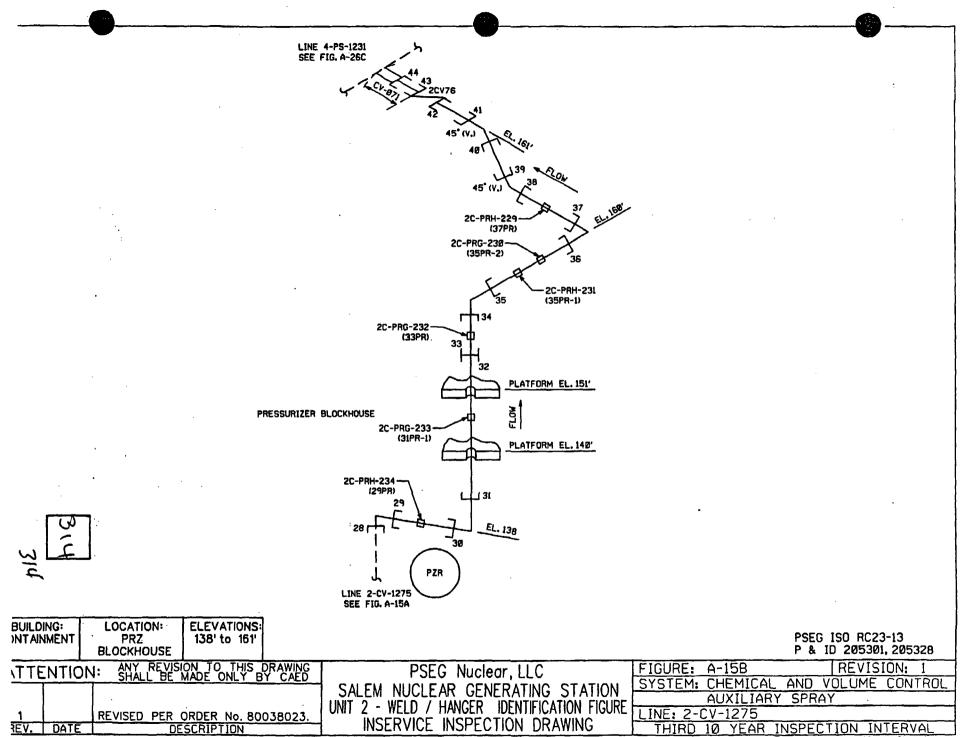
| Summary #   | 020600                   | Component I.D. | 31-STG-1240-IRS    |
|-------------|--------------------------|----------------|--------------------|
| Description | #24 Hot Leg Inner Radius |                | Page <u>3 of 3</u> |

Comment: Ultrasonic exam area limited to 85% of code required coverage due to permanent Steam Generator support lugs

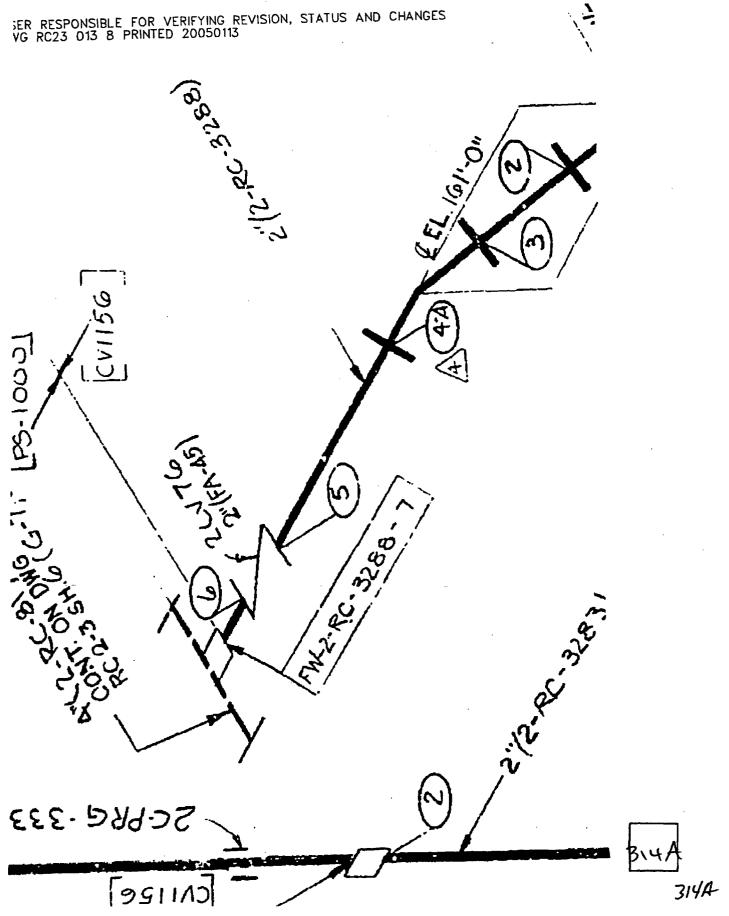
See Sketch below showing support lug interference with exam area

Drawing was created in order to assist in the evaluation of the request for relief regarding examination coverage only.





<sup>(</sup> JANA DEEP Huntow LLP - HIL Diable Decorriged



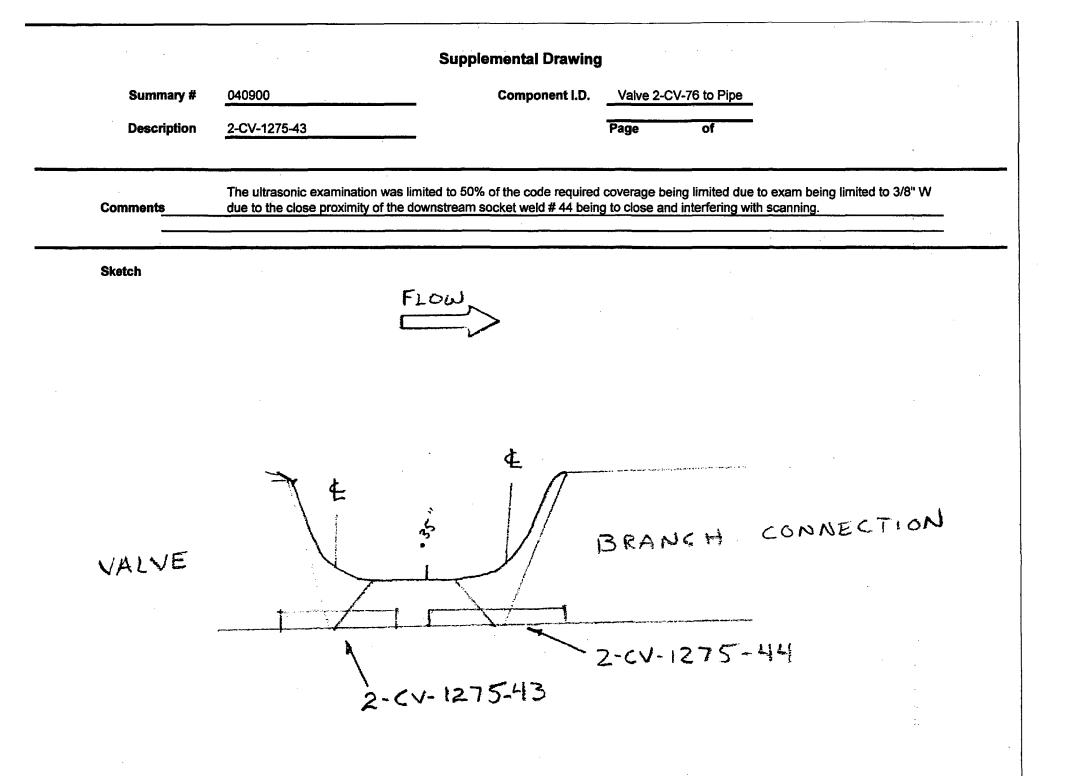
QUESTION 1.3 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

| Summary #      | 040900                           |                                      |
|----------------|----------------------------------|--------------------------------------|
| Component I.D. | 2-CV-1275-43                     |                                      |
| Description    | Valve 2CV76 to Pipe              |                                      |
|                |                                  | Comments                             |
| 1              | Weld X-Section                   | See Attached                         |
| 2              | Material                         | Stainless Steel                      |
| 3              | Thickness / weld Crown           | Thickness .35" / Weld Crown .5"      |
| 4              | Obstruction                      | OD contour on valve side and weld 44 |
| 5              | Exam Area Highlighted on Drawing | Yes X No                             |
| 6              | Transducer ray exit point        | See Attached                         |

### Comments

UT exam was performed of this component using 45 degree shear wave transducer. The ultrasonic examination was limited to 50% of the code required coverage being limited due to the exam limited to 3/8" W due to the close proximity of the downstream socket weld # 44 being to close that interfered with scanning. Component selected as an augmented 88-08 exam. No unacceptable indications were observed. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.

Page of



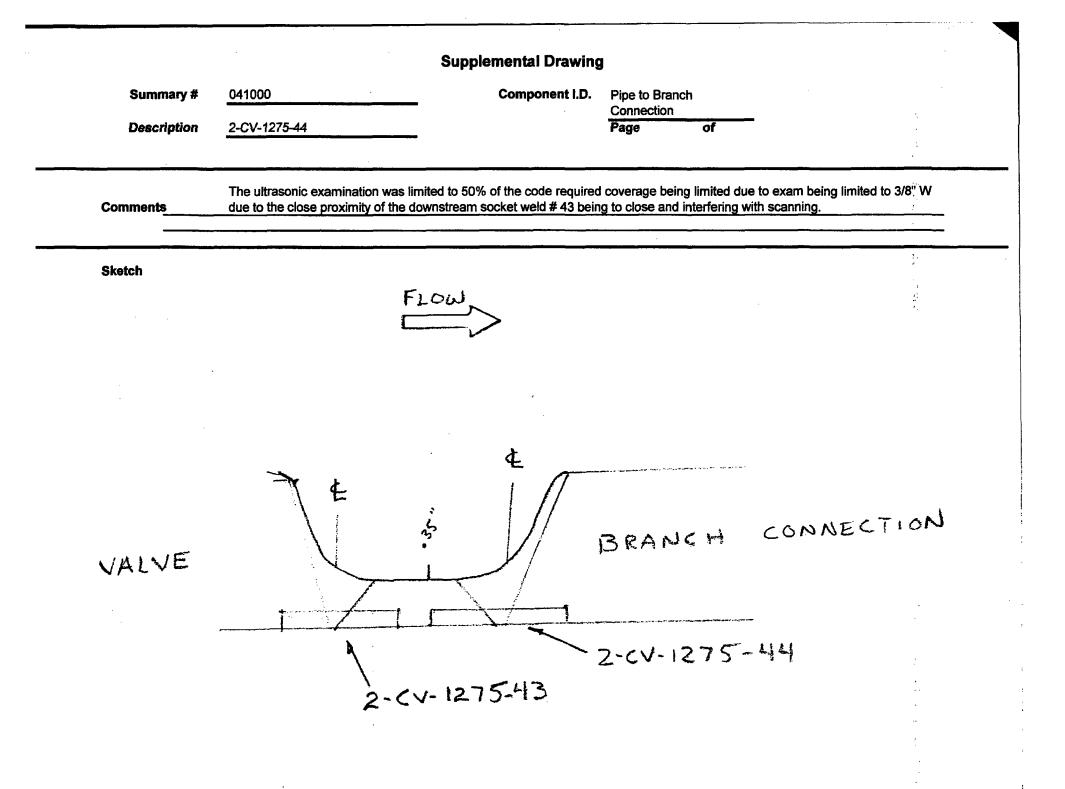
QUESTION

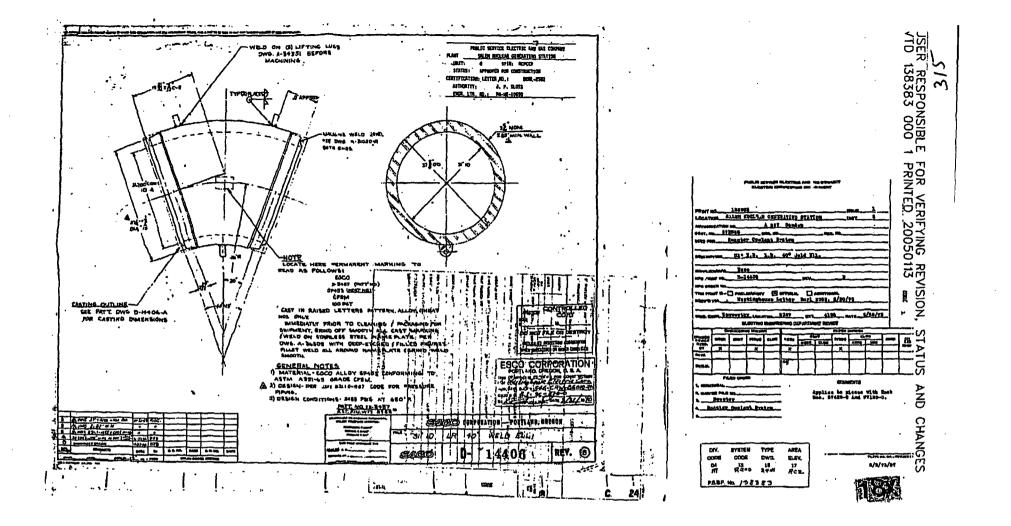
1.3 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

| Summary #      | 041000                           |                                  |
|----------------|----------------------------------|----------------------------------|
| Component I.D. | 2-CV-1275-44                     |                                  |
| Description    | Pipe to Branch Connection        |                                  |
|                |                                  | Comments                         |
| 1              | Weld X-Section                   | See Attached                     |
| 2              | Material                         | Stainless Steel                  |
| 3              | Thickness / weld Crown           | Thickness .35" / Weld Crown 1.5" |
| 4              | Obstruction                      | Joint Configuration              |
| 5              | Exam Area Highlighted on Drawing | Yes X No                         |
| 6              | Transducer ray exit point        | N/A                              |

### Comments

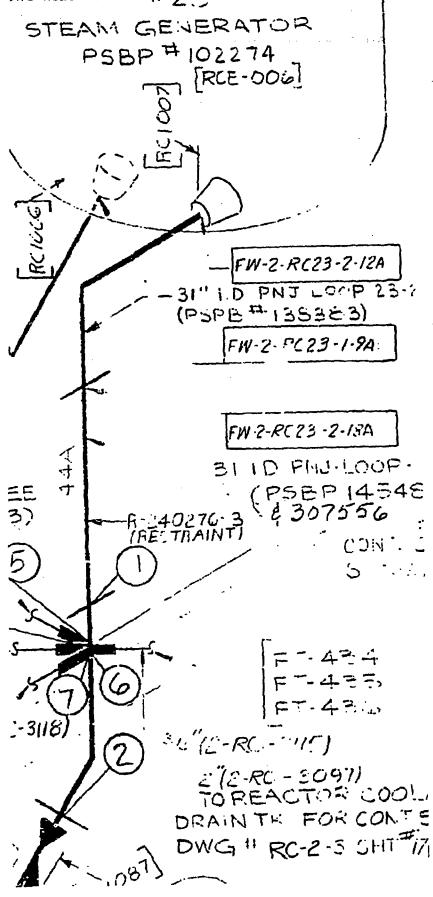
UT exam was performed of this component using 45 degree shear wave transducer. The ultrasonic examination was limited to 50% of the code required coverage being limited due to the exam limited to 3/8" W due to the close proximity of the downstream socket weld # 43 being to close that interfered with scanning. Component selected as an augmented 88-08 exam. No unacceptable indications were observed. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.





# #SIE

JSER RESPONSIBLE FOR VERIFYING REVISION, STATUS AND CHANGES



315A

| STEAM GENERATOR 24                                                                                                                                                                                             | 31518                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| EL-94 98° (ELL.)                                                                                                                                                                                               |                                            |
| () 2<br>3LD-8<br>3LD-1<br>3LD-1                                                                                                                                                                                |                                            |
| 5 %.<br>5 %.                                                                                                                                                                                                   |                                            |
| BO (ELL.)                                                                                                                                                                                                      |                                            |
| PUMP 24 <u>EL. 90'</u><br>6 <b>CA</b><br>4A<br>4A<br>4BC-2 5<br>5 <b>SLU-3</b>                                                                                                                                 |                                            |
| LINE 2-RC-1241<br>SEE FIG. A-47<br>LINE 3-CV-1243<br>SEE FIG. A-10<br>SEE FIG. A-10                                                                                                                            |                                            |
| 3.23                                                                                                                                                                                                           |                                            |
| BUILDING: LOCATION: ELEVATIONS:<br>CONTAINMENT BIOSHIELD B7' to 94'                                                                                                                                            | PSEG ISO RC23-02<br>P & IO 205301          |
| ATTENTION: ANY REVISION TO THIS DRAWING PSEG Nuclear, LLC FIGURE: A-29<br>SHALL BE MADE ONLY BY CAED SALEM NUCLEAR GENERATING STATION SYSTEM: REACTOR<br>UNIT 2 - WELD / HANGER IDENTIFICATION FIGURE #24 CROS | REVISION: 1<br>COOLANT SYSTEM<br>SOVER LEG |
|                                                                                                                                                                                                                | INSPECTION INTERVAL                        |

.

QUESTION

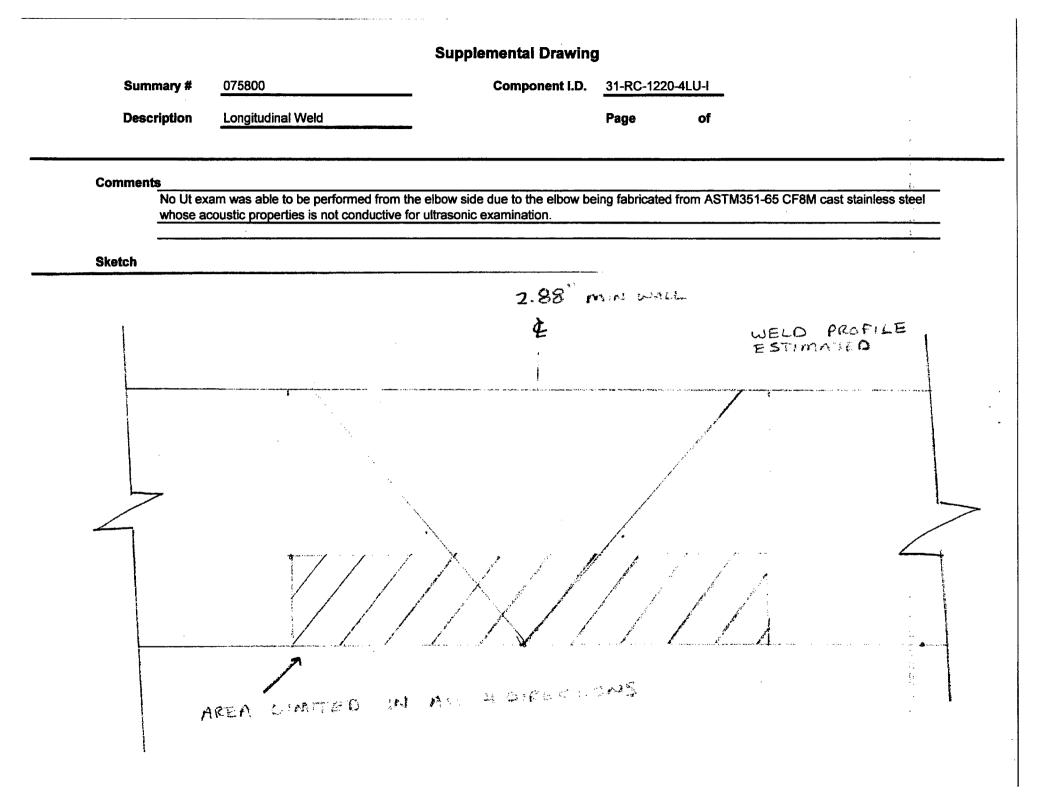
1.3 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

| Summary #      | 075800                           |                                        |
|----------------|----------------------------------|----------------------------------------|
| Component I.D. | 31-RC-1220-4LU-I                 |                                        |
| Description    | Longitudinal Weld                |                                        |
| ·              |                                  | Comments                               |
| 1              | Weld X-Section                   | See Attached                           |
| 2              | Material                         | Cast S/S ASTM 351-65 CF8M              |
| 3              | Thickness / Weld Crown           | Thickness 2.88 / Weld<br>Crown Unknown |
| 4              | Obstruction                      | Cast Material                          |
| 5              | Exam Area Highlighted on Drawing | Yes X No                               |
| 6              | Transducer ray exit point        | N/A                                    |

#### Comments

No Ut exam was able to be performed from the elbow side due to the elbow being fabricated from ASTM351-65 CF8M cast stainless steel whose acoustic properties is not conductive for ultrasonic examination. A PT exam of the long seam was performed in lieu of the UT exam because of the elbow's acoustic properties of the casting. There were no unacceptable indications observed.

Page of



QUESTION

1.3 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

| Summary #      | 075900                           |                                        |
|----------------|----------------------------------|----------------------------------------|
| Component I.D. | 31-RC-1220-4LU-O                 |                                        |
| Description    | Longitudinal Weld                |                                        |
|                |                                  | Comments                               |
| 1              | Weld X-Section                   | See Attached                           |
| 2              | Material                         | Cast S/S ASTM 351-65 CF8M              |
| 3              | Thickness / Weld Crown           | Thickness 2.88 / Weld<br>Crown Unknown |
| 4              | Obstruction                      | Cast Material                          |
| 5              | Exam Area Highlighted on Drawing | Yes X No                               |
| 6              | Transducer ray exit point        | N/A                                    |

#### Comments

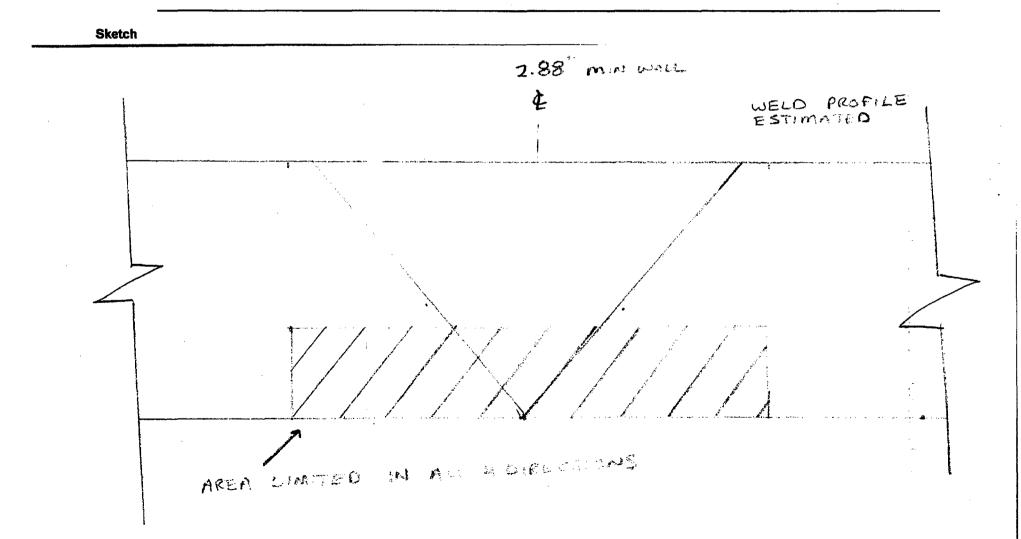
No Ut exam was able to be performed from the elbow side due to the elbow being fabricated from ASTM351-65 CF8M cast stainless steel whose acoustic properties is not conductive for ultrasonic examination. A PT exam of the long seam was performed in lieu of the UT exam because of the elbow's acoustic properties of the casting. There were no unacceptable indications observed.

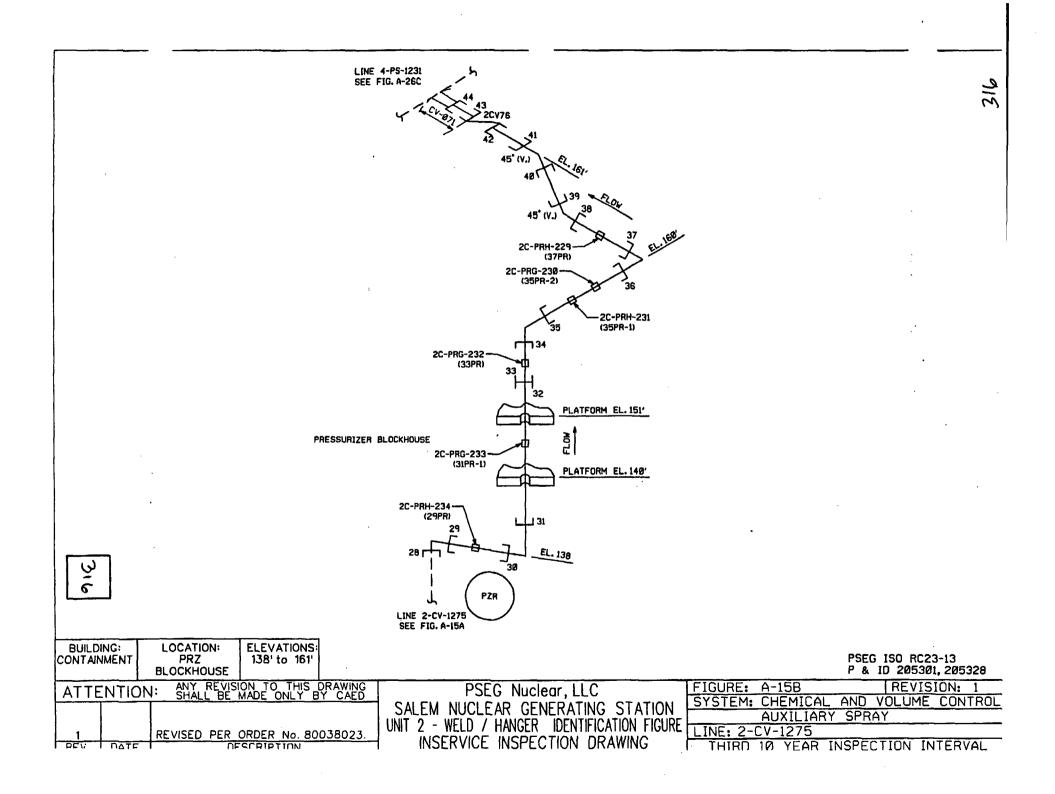
Page of

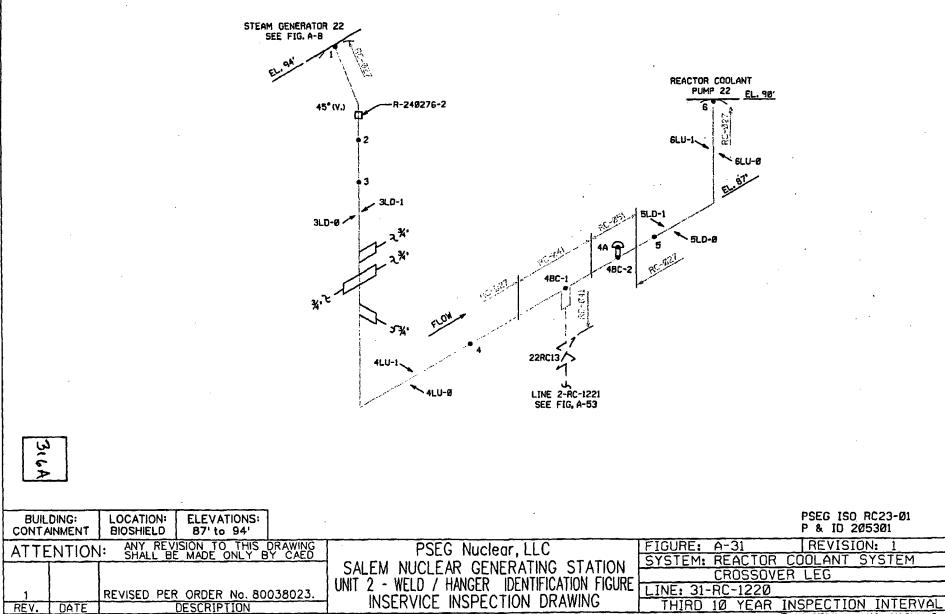


Comments

No Ut exam was able to be performed from the elbow side due to the elbow being fabricated from ASTM351-65 CF8M cast stainless steel whose acoustic properties is not conductive for ultrasonic examination.







<sup>() 2000</sup> PSEG Nuclear, LLC. All Rights Rese

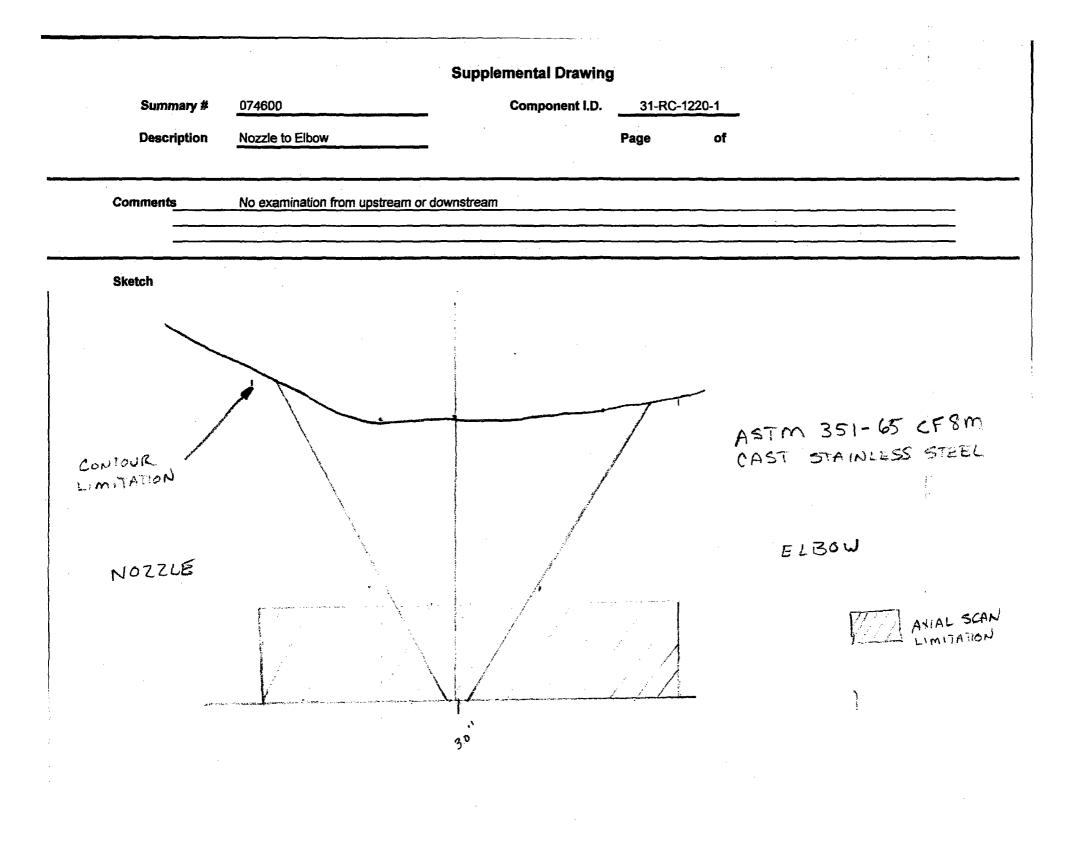
QUESTION 1.3 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

| Summary #      | 074600                           |                                  |
|----------------|----------------------------------|----------------------------------|
| Component I.D. | 31-RC-1220-1                     |                                  |
| Description    | Nozzle to Elbow                  |                                  |
|                |                                  | Comments                         |
| 1              | Weld X-Section                   | See Attached                     |
| 2              | Material                         | ASTM 351-65 S/S Cast / C/S       |
| 3              | Thickness / weld Crown           | Thickness 3" / Weld Crown 4"     |
| 4              | Obstruction                      | Material Type & OD Configuration |
| 5              | Exam Area Highlighted on Drawing | Yes X No                         |
| 6              | Transducer ray exit point        | N/A                              |

### Comments

Ut exam was performed of this component using 45 degree shear wave transducer. The ultrasonic examination completed was limited to 50% of the code required coverage being achieved due to no UT axial scan exam was performed from the upstream or the downstream side of the weld due to the elbow being fabricated from ASTM351-65 CF8M cast stainless steel whose acoustic properties is not conductive for ultrasonic examination and the OD configuration of the nozzle A clockwise and counterclockwise exam was performed of the weld crown. There were no unacceptable indications observed. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.

Page



| FRA                                                                                   | MATQME                                                                                                                                |                                              | UT                                  | CALI                       | BRA                                                           | TION                   | DATA                        | SHE         | ET          |                                        |                 |
|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|-------------------------------------|----------------------------|---------------------------------------------------------------|------------------------|-----------------------------|-------------|-------------|----------------------------------------|-----------------|
| Customer: SALEM U                                                                     | NIT-2, 10 RFO                                                                                                                         | Exan                                         | n Date:                             | 04/14                      | /99                                                           |                        | Figure No.:                 |             | <b>B</b> 5. | 70.002                                 |                 |
| System/Component I.D.:                                                                | 31-RC-1220-1 (                                                                                                                        | Summary                                      | #074600)                            |                            |                                                               |                        | Calibration                 | No.:        | 99S:        | 2010                                   | ····            |
| Component Description:                                                                | Crossover Leg                                                                                                                         | Nozzle to                                    | Elbow We                            | eld                        |                                                               |                        |                             |             |             |                                        |                 |
| SO/Drawing No: RC-2                                                                   | 2-3, A-31                                                                                                                             | Procedure                                    | No./Rev.:                           | 54-ISI-1                   | 21 RE                                                         | V. 01                  | Code/Acce                   | pt. Criteri | a: A        | SME 198                                | 16, Sec. 3      |
| Material: - <del>CS</del> SS<br>55L 4-20-99                                           |                                                                                                                                       | Diameter:                                    |                                     | 31.0" O                    | D                                                             |                        | Thickness:                  |             | 2.          | 3" Nom.                                |                 |
| INSTRUMENT                                                                            | SETTINGS                                                                                                                              |                                              | SEAR                                | CH UNIT                    |                                                               |                        | C                           | ALIBRA      | TION        | STANDA                                 | RD              |
| Mfg: STAVELEY                                                                         | Model: SONIC-136                                                                                                                      | DB /Serial I                                 | No.: 341                            | 99                         |                                                               |                        | Cai. Block N                | 0.2.312-S   | <u>S-37</u> | -SAM                                   |                 |
| Serial/MT&E#:: DB#                                                                    | 12102                                                                                                                                 | Size:                                        | (2)                                 | .5 X .75                   |                                                               |                        | Cal. Block                  | Thicknes    | s (in)      | : 2.31"                                |                 |
| Aat. Cal./Velocity: 0.169                                                             | in/micro sec.                                                                                                                         | Freq. (MHz                                   | ): 2.                               | 25                         |                                                               |                        | Cal. Block                  | Dia. (in):  | FL.         | AT                                     |                 |
| Delay: 0.480"                                                                         | Zero Offset: N/A                                                                                                                      | Long/Shea                                    | r/Single/Dua                        | I: LONG                    | /DUAL                                                         |                        | Temp (F) B                  | lock: 71    |             | Comp.:                                 | 83              |
| ach Major Screen Div.#                                                                | 0.5"                                                                                                                                  | Nominal Ar                                   | ngle: 45                            | Measu                      | red: 45                                                       |                        | Therm. No.                  | : D         | B# 1        | 5352                                   |                 |
| Channel#: 17                                                                          | ······································                                                                                                | Fixture/Size                                 |                                     | 1.25"                      |                                                               |                        | Couplant T                  | ype: U      | LTR         | AGEL II                                |                 |
| Range: 5.00"                                                                          | Freq (MHz): 2.25                                                                                                                      |                                              | & Length:                           |                            | 2.0'                                                          |                        | Couplant B                  |             |             | 5325                                   |                 |
| amping: 500 Ohms                                                                      | Reject: OFF                                                                                                                           | No. of Con                                   |                                     |                            |                                                               |                        |                             |             |             | TD. SIMUL                              | ATOR            |
| tep.Rate: 4 Khz                                                                       | Pulse: 222 ns                                                                                                                         |                                              |                                     |                            |                                                               |                        | Serial No.:                 |             |             | N/A                                    |                 |
| ate: OFF                                                                              | Display: Filter 1                                                                                                                     |                                              | DAC                                 | PLOT                       |                                                               |                        | Sweep Pos                   | ition/Dep   |             |                                        |                 |
| lode: Dual                                                                            | Jack: XMT-RCV                                                                                                                         | 100                                          |                                     |                            |                                                               |                        | Signal Amp                  |             |             | N/A                                    |                 |
| ef. Sensitivity: 57.2 d                                                               |                                                                                                                                       | 90                                           |                                     |                            |                                                               |                        | Gain DB (d                  |             | '           |                                        |                 |
| can Sensitivity: 69.2 c                                                               |                                                                                                                                       | 80 +                                         |                                     |                            |                                                               |                        |                             |             |             |                                        |                 |
|                                                                                       |                                                                                                                                       |                                              |                                     |                            | Scan Direction to Weld: CW/CCW                                |                        |                             |             |             |                                        |                 |
| (Amt. dB to bring<br>otch dB (Piping): 57.2                                           | · · · · · · · · · · · · · · · · · · ·                                                                                                 |                                              |                                     |                            | (0 to Material, US, DS, CW, CCW, Vessel: UP/Down)             |                        |                             |             |             |                                        |                 |
| otch dB (Vessels): N/A                                                                | 00                                                                                                                                    | 50 - + - + - +                               |                                     |                            | Recordable Geometry (Yes/No): NO                              |                        |                             |             |             |                                        |                 |
|                                                                                       |                                                                                                                                       | 40                                           |                                     |                            | Recordable Indications (Yes/No): NO                           |                        |                             |             |             |                                        |                 |
| CALIBRATIC                                                                            |                                                                                                                                       | 30                                           |                                     |                            |                                                               |                        |                             |             |             |                                        |                 |
| Tim                                                                                   | 10                                                                                                                                    |                                              |                                     |                            | Limited Exam (Yes/No): Note-1<br>Percent Scan Completed: 100% |                        |                             |             |             |                                        |                 |
| hitial Cal: 1142                                                                      |                                                                                                                                       | 10                                           | <br>                                | ، ا<br>ا ا ا ا             |                                                               |                        |                             |             |             |                                        |                 |
| nit. Sim. Cal: N/A                                                                    |                                                                                                                                       | 0                                            |                                     | , , ,<br><b>.</b>          | , ,<br>                                                       |                        | Percent_Ex                  |             |             |                                        |                 |
| termediate: N/A                                                                       |                                                                                                                                       | 0 1                                          | 2 3 4                               | 56                         | 78                                                            | 9 10                   |                             |             |             | ICKNESS                                | ONLY            |
| termediate: N/A                                                                       |                                                                                                                                       |                                              |                                     |                            |                                                               |                        | Comp.: S                    | _           | (No         | 1                                      |                 |
| termediate: N/A                                                                       |                                                                                                                                       |                                              | Amplitude vs. Range BM: 2.9" HAZ: 1 |                            |                                                               |                        | HAZ: N                      | A           |             |                                        |                 |
| termediate: N/A                                                                       |                                                                                                                                       | Signal to N                                  | oise Ratio:                         |                            |                                                               |                        | C/L Weld: 2                 |             |             |                                        |                 |
| termediate: N/A                                                                       |                                                                                                                                       |                                              |                                     |                            |                                                               | i                      |                             | Ibow (N     | ote-2       |                                        |                 |
| inal Cal.: 1733                                                                       |                                                                                                                                       | 0.5                                          |                                     | 1-1                        |                                                               |                        |                             | /A          |             | HAZ: N/                                | A               |
| Scan Direction                                                                        |                                                                                                                                       | 0 Deg.                                       |                                     | xial                       | Ci                                                            |                        | Crown HT.:                  |             | FLU         |                                        | ·               |
| (Yes/i                                                                                | NO)                                                                                                                                   | NO                                           |                                     | 0                          |                                                               | ES                     | Weld Width                  | :·          | ~2.0        | ······································ |                 |
| eflector                                                                              |                                                                                                                                       | <u>1/4T SDH</u>                              | 3/4T SDH                            | ID Note                    | <u>h</u>                                                      |                        |                             |             |             | <u> </u>                               |                 |
| Sweep Pos./Depth in Inches                                                            |                                                                                                                                       | 0.58"                                        | 1.70"                               | 2.30"                      |                                                               |                        |                             | · · · ·     |             | · · · · ·                              | +               |
|                                                                                       |                                                                                                                                       | 40                                           | 80                                  | 80                         |                                                               |                        |                             |             |             |                                        |                 |
| otes: Note-1: Circumfe<br>examination volu<br>configuration and<br>transducer exit po | rential examination per<br>me is derived from prev<br>l from the acoustic pro<br>int and the ID notch is 2<br>ss profiles performed w | ious data. T<br>perties of the<br>.3 inches. | he limitation<br>cast stainle       | is for this<br>iss steel e | weld are<br>Ibow.                                             | e from ti<br>The surfa | ie nozzle<br>ace distance l | oetween t   | he 4        | 5 degree                               | - <u></u><br>SS |
|                                                                                       | • •                                                                                                                                   |                                              |                                     |                            |                                                               |                        |                             |             |             |                                        |                 |
| ote-2: Ultrasonic thickne<br>step wedge.<br>xaminer: M.W.                             |                                                                                                                                       | Date: (                                      | 04/14/99                            | Exami                      | ner:                                                          | _N//                   | TORY MU                     |             | l:          | Date                                   | a:              |

| Reviewed:<br>Sign: | D.J. Langenfold Level: II<br>D.G. Langenbeld | Date:<br>4-20-99 | ANII Review Breinsenine Association | Date:<br>5-4-99 |
|--------------------|----------------------------------------------|------------------|-------------------------------------|-----------------|
| Customer:<br>Sign: | Wayne Denlinger                              | Date:<br>4-29-99 | Page: 2                             | of 3            |
|                    |                                              |                  |                                     |                 |

QUESTION

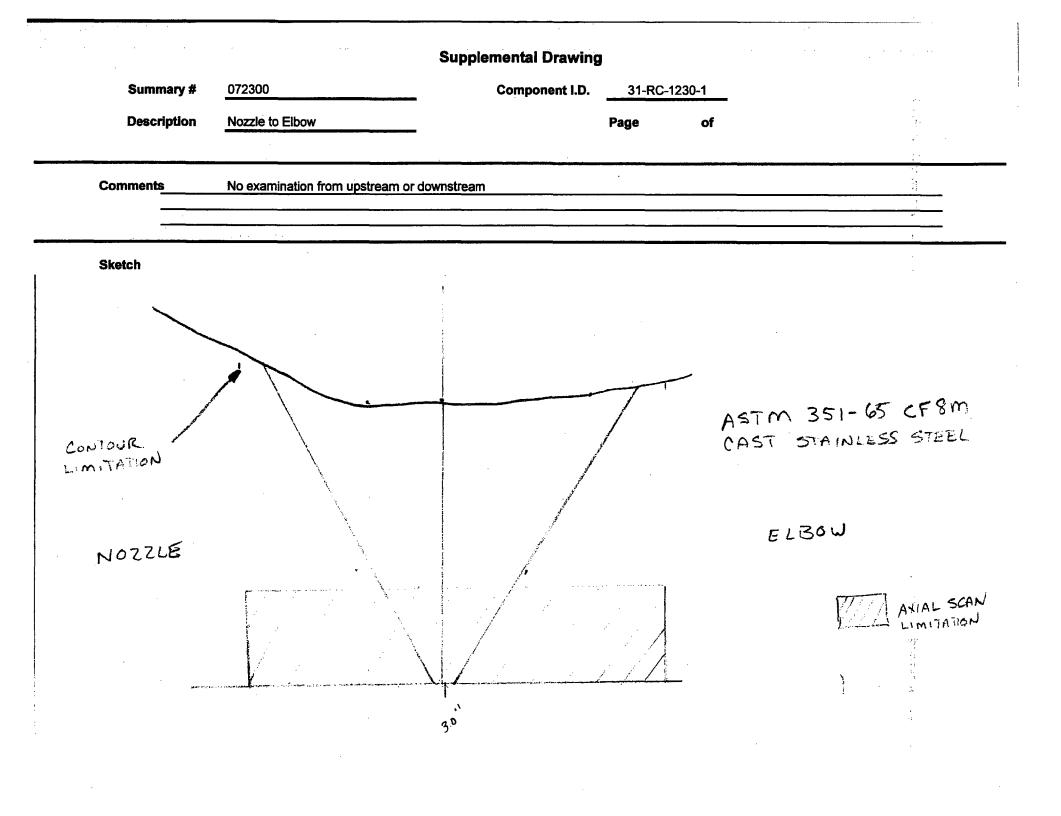
1.3 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

| Summary #      | 072300                           | _                                |
|----------------|----------------------------------|----------------------------------|
| Component I.D. | 31-RC-1230-1                     |                                  |
| Description    | Nozzle to Elbow                  |                                  |
|                |                                  | Comments                         |
| 1              | Weld X-Section                   | See Attached                     |
| 2              | Material                         | ASTM 351-65 S/S Cast / C/S       |
| 3              | Thickness / weld Crown           | Thickness 3" / Weld Crown 4"     |
| 4              | Obstruction                      | Material Type & OD Configuration |
| 5              | Exam Area Highlighted on Drawing | Yes X No                         |
| 6              | Transducer ray exit point        | <u> </u>                         |

#### Comments

Ut exam was performed of this component using 45 degree shear wave transducer. The ultrasonic examination completed was limited to 50% of the code required coverage being achieved due to no UT axial scan exam was performed from the upstream or the downstream side of the weld due to the elbow being fabricated from ASTM351-65 CF8M cast stainless steel whose acoustic properties is not conductive for ultrasonic examination and the OD configuration of the nozzle A clockwise and counterclockwise exam was performed of the weld crown. There were no unacceptable indications observed. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.

Page



|                                                                                                                       |                                                                                |                                                 |                                 |                                                  |                       |                                                  | FTI          | ISI UTCA_CR1.FR | ° 02/22/96<br>10 |
|-----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|-------------------------------------------------|---------------------------------|--------------------------------------------------|-----------------------|--------------------------------------------------|--------------|-----------------|------------------|
| FRA                                                                                                                   | MATOME                                                                         |                                                 | UT                              | CALIB                                            | RATION                |                                                  | SHEE         | г               | 10               |
| Customer: SALEM U                                                                                                     |                                                                                | Exar                                            | n Date:                         | 04/14/9                                          | 9                     | Figure No.:                                      | B            | 5.70.001        |                  |
| System/Component I.D.:                                                                                                |                                                                                | (Summary                                        | #072300)                        | n e na<br>Alt -                                  |                       | Calibration I                                    | No.: 99      | S2009           |                  |
| Component Description:                                                                                                | Crossover Leg                                                                  | Nozzle to H                                     | Elbow Wel                       | d                                                |                       |                                                  |              |                 |                  |
| ISO/Drawing No: RC-2                                                                                                  | 2-3, A-30                                                                      | Procedure                                       | No./Rev.:                       | 54-ISI-121                                       | REV. 01               | Code/Accep                                       | t. Criteria: | ASME 198        | 36, Sec.         |
| Material: <del>CS</del> 55                                                                                            | 031<br>4-20-99                                                                 | Diameter:                                       | <u> </u>                        | 31.0" OD                                         | <u></u>               | Thickness:                                       |              | 2.3" Nom.       |                  |
| INSTRUMEN                                                                                                             | SETTINGS                                                                       |                                                 | SEAR                            | CH UNIT                                          |                       | · c                                              |              | ON STANDA       | RD               |
| Mfg: STAVELEY                                                                                                         | Model: SONIC-136                                                               | DB /Serial                                      |                                 |                                                  |                       | Cal. Block No                                    |              |                 |                  |
|                                                                                                                       | 12102                                                                          | Size:                                           | (2)                             | .5 X .75                                         |                       | Cal. Block T                                     |              |                 |                  |
| Mat. Cal./Velocity: 0.169                                                                                             |                                                                                | Freq. (MHz                                      |                                 | 25                                               |                       | Cal. Block D                                     |              |                 |                  |
| Delay: 0.480''                                                                                                        | Zero Offset: N/A                                                               |                                                 | r/Single/Dua                    | LONG/D                                           | UAL                   | Temp (F) Bl                                      |              | Comp.:          | 83               |
| Each Major Screen Div.#                                                                                               |                                                                                | Nominal A                                       |                                 | Measure                                          |                       | Therm, No.:                                      |              | 15352           |                  |
| Channel#: 17                                                                                                          |                                                                                |                                                 | e: 1.25" x                      |                                                  |                       | Couplant Ty                                      |              |                 |                  |
| Range: 5.00"                                                                                                          | Freq (MHz): 2.25                                                               |                                                 | e. 1.25 x                       |                                                  |                       | Couplant Ba                                      |              |                 |                  |
|                                                                                                                       |                                                                                |                                                 |                                 |                                                  |                       |                                                  |              | STD. SIMUL      | ATOP             |
| Damping: 500 Ohms                                                                                                     | Reject: OFF                                                                    | INU. OF CON                                     | nectors: 0                      |                                                  |                       | Serial No.:                                      |              |                 |                  |
| Rep.Rate: 4 Khz                                                                                                       | Pulse: 222 ns                                                                  | <b>+</b>                                        |                                 |                                                  | <u></u>               |                                                  | lion/Dr-4    | <u>N/A</u>      |                  |
| Gate: OFF                                                                                                             | Display: Filter 1                                                              | <u> </u>                                        | DAC                             | PLOT                                             |                       | Sweep Posi                                       |              |                 |                  |
| Mode: Dual                                                                                                            | Jack: XMT-RCV                                                                  |                                                 |                                 |                                                  |                       | Signal Amp.                                      |              | N/A             | ······           |
| Ref. Sensitivity: 57.2                                                                                                |                                                                                | 90                                              |                                 | <u> </u>                                         |                       | Gain DB (dB): N/A                                |              |                 |                  |
| Scan Sensitivity: 69.2                                                                                                |                                                                                | 80                                              |                                 |                                                  |                       | EXAM DATA                                        |              |                 |                  |
| (Amt. dB to bring                                                                                                     |                                                                                | 70                                              |                                 |                                                  |                       |                                                  |              | : CW/CCW        |                  |
| Notch dB (Piping): 57.2                                                                                               | db                                                                             | 60                                              | - 4/                            | 4 4 1 1<br>1 1 1                                 |                       | (0 to Material, US, DS, CW, CCW, Vessel: UP/Down |              |                 | /Down)           |
| Notch dB (Vessels): N/A                                                                                               |                                                                                | 50 + - + -                                      | -/+!!-                          | +<br>    t                                       | -+                    | Recordable                                       | Geometry     | (Yes/No):       | NO               |
| CALIBRATIC                                                                                                            | N CHECK                                                                        | 40                                              |                                 |                                                  | - +                   | Recordable                                       | Indications  | (Yes/No):       | NO               |
| Tin                                                                                                                   | <u>ie OK Initials</u>                                                          | 30                                              |                                 | ·                                                | - <u>+</u> - <u>+</u> | Limited Exa                                      | m (Yes/No    | ): Note-        | - <u>1</u>       |
| nitial Cal: 1142                                                                                                      |                                                                                | 20                                              |                                 | ·                                                |                       | Percent Sca                                      | n Complet    | ed: 100%        | ó                |
| nit. Sim. Cal: N/A                                                                                                    |                                                                                | 10                                              |                                 |                                                  |                       | Percent Exa                                      | m Comple     | ted: 50.0%      | 6                |
| ntermediate: N/A                                                                                                      |                                                                                | 0 ++-                                           |                                 |                                                  | ·                     | 0 DE                                             | G. WELD      | THICKNESS       | ONLY             |
| ntermediate: N/A                                                                                                      |                                                                                | 0 1                                             | 234                             | 5 6 7                                            | 8 9 10                | Comp.: SC                                        | G Nozzle (N  | Note-2)         |                  |
| ntermediate: N/A                                                                                                      | · · · · · · · · · · · · · · · · · · ·                                          |                                                 | Amplitude                       | vs. Range                                        |                       | BM: 3.0                                          |              | HAZ: N          | /A               |
| ntermediate: N/A                                                                                                      |                                                                                | Signal to N                                     | oise Ratio:                     |                                                  |                       | C/L Weld: 2                                      | .4"          |                 |                  |
| ntermediate: N/A                                                                                                      |                                                                                |                                                 |                                 |                                                  |                       | Comp.: El                                        | bow (Note    | -2)             |                  |
| Final Cal.: 1733                                                                                                      | - A                                                                            | 1                                               |                                 |                                                  |                       | BM: N/                                           |              | HAZ: N          | /A               |
| Scan Direction                                                                                                        | on Cal, Block                                                                  | 0 Deg.                                          | A                               | xial                                             | Circ                  | Crown HT.:                                       |              | JUSH            |                  |
| (Yes/I                                                                                                                |                                                                                | NO                                              |                                 | NO                                               | YES                   | Weld Width                                       |              | .0"             |                  |
| Reflector                                                                                                             |                                                                                | 1/4T SDH                                        | 3/4T SDH                        | ID Notch                                         | 1.00                  |                                                  |              | ·ř              | 1                |
| Sweep Pos./Depth in Inch                                                                                              |                                                                                | 0.58"                                           | 1.70"                           | 2.30"                                            | +                     | <u> </u>                                         |              | 1               | +-               |
| mplitude in %                                                                                                         |                                                                                |                                                 | 1                               |                                                  | +                     | ┼────┤                                           |              |                 | +                |
| Gain in dB                                                                                                            |                                                                                | 40                                              | 80                              | 80<br>57.2                                       | +                     |                                                  | ,,,,,,       |                 | +                |
| lotes; Note-1: Circumfer<br>examination volu<br>configuration and<br>transducer exit po<br>lote-2: Ultrasonic thickne | ne is derived from prev<br>from the acoustic prop<br>int and the ID notch is 2 | ious data. T<br>perties of the (<br>2.3 inches. | he limitation<br>cast stainless | total Examin<br>is for this we<br>is steel elbow | ld are from t         | he nozzle<br>e distance betw                     | een the 45   | degree          | ss               |
| step wedge.<br>xaminer: M.W.                                                                                          | Key / Level: III                                                               | Date:                                           | 04/14/99                        | Examiner<br>Sign:                                | : N/                  | A<br>CTORY MU                                    | Level:       | Dat             | e:               |
| Sign: //<br>eviewed: D.J. L<br>Sign: D.A                                                                              | angenfeld Level: II<br>Tangenfeld                                              | Date:                                           | 20-99                           | ANII Revi<br>Sign:                               |                       |                                                  |              | N Dat<br>** 3** |                  |
|                                                                                                                       | · · · · · · · · · · · · · · · · · · ·                                          | 14                                              | V 11                            |                                                  |                       | - T L                                            |              |                 | <u> </u>         |

QUESTION

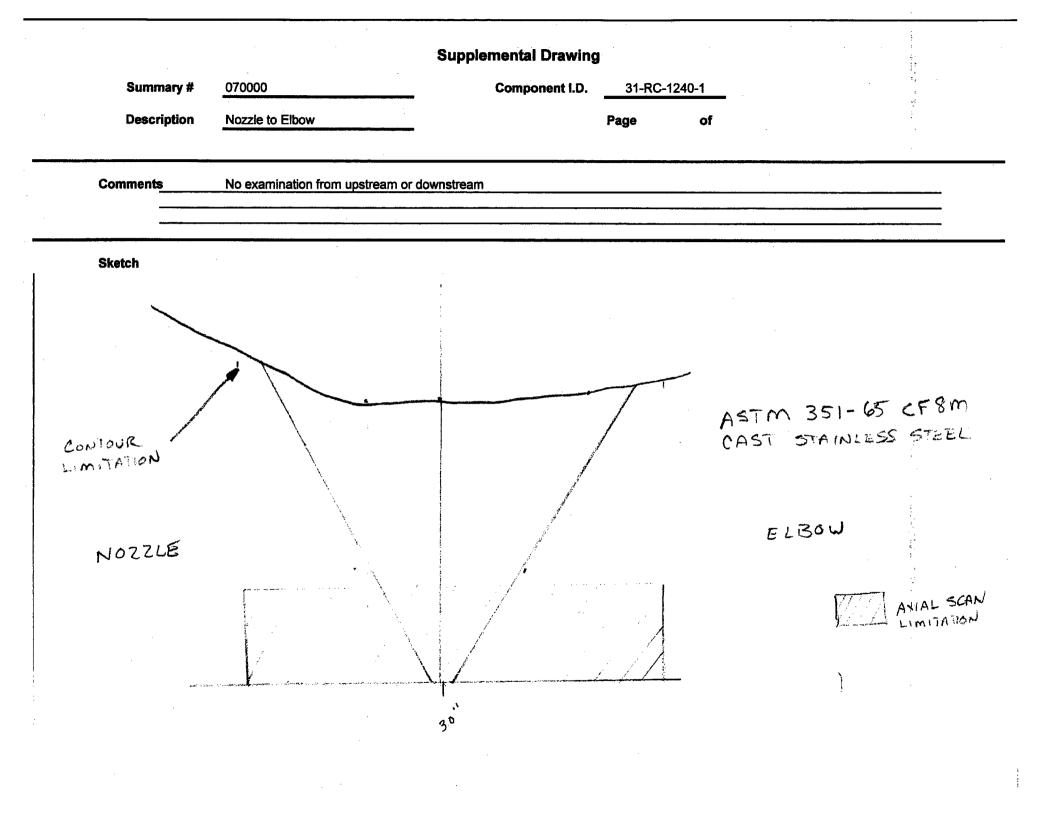
1.3 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

| Summary #      | 070000                           |                                  |
|----------------|----------------------------------|----------------------------------|
| Component I.D. | 31-RC-1240-1                     | · · ·                            |
| Description    | Nozzle to Elbow                  |                                  |
|                |                                  | Comments                         |
| 1              | Weld X-Section                   | See Attached                     |
| 2              | Material                         | ASTM 351-65 S/S Cast / C/S       |
| 3              | Thickness / weld Crown           | Thickness 3" / Weld Crown 4"     |
| 4              | Obstruction                      | Material Type & OD Configuration |
| 5              | Exam Area Highlighted on Drawing | Yes X No                         |
| 6              | Transducer ray exit point        | N/A                              |

### Comments

Ut exam was performed of this component using 45 degree shear wave transducer. The ultrasonic examination completed was limited to 50% of the code required coverage being achieved due to no UT axial scan exam was performed from the upstream or the downstream side of the weld due to the elbow being fabricated from ASTM351-65 CF8M cast stainless steel whose acoustic properties is not conductive for ultrasonic examination and the OD configuration of the nozzle A clockwise and counterclockwise exam was performed of the weld crown. There were no unacceptable indications observed. A liquid penetrant examination and system pressure test was also completed with no record able indications observed.

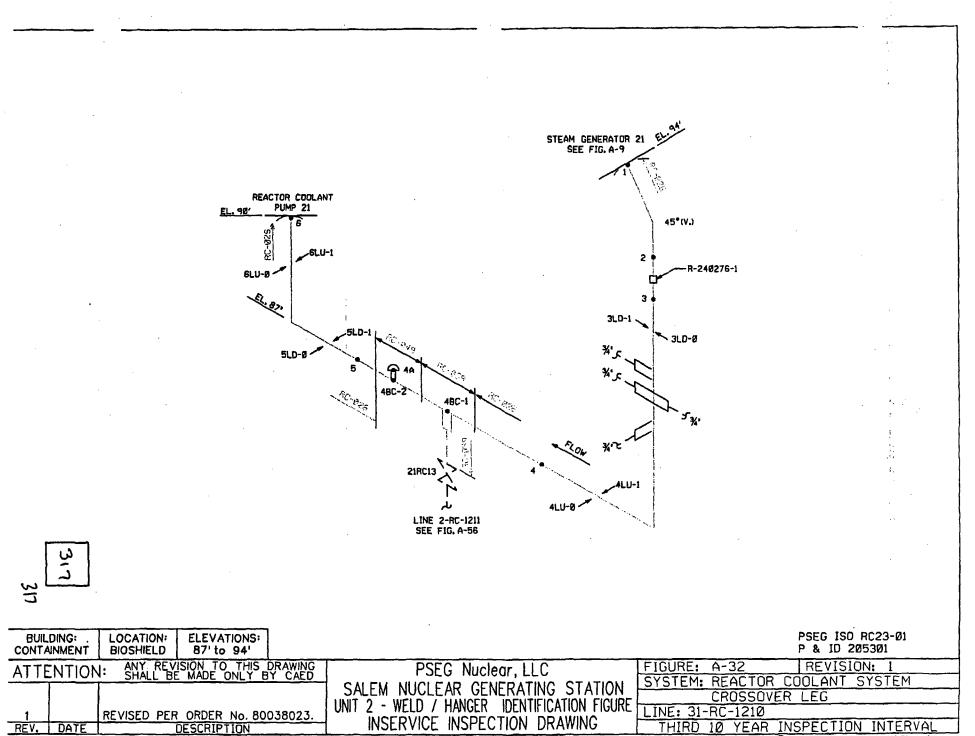
Page







| MINATION AREA<br><u>REACTOR</u><br>MINER<br><u>8. Robe</u><br>MINER<br><u>T. TACI</u> | COON  | COMPJ<br>FNT |     |                       | 31.             |            | )       |                                  |              |          | 2B                    | OCT 94                  |                            |          |                                        |                    | 51              | 100      | 104                    |  |
|---------------------------------------------------------------------------------------|-------|--------------|-----|-----------------------|-----------------|------------|---------|----------------------------------|--------------|----------|-----------------------|-------------------------|----------------------------|----------|----------------------------------------|--------------------|-----------------|----------|------------------------|--|
| REACTOR<br>MINER<br>8. AOBE<br>MINER<br>T. JACI                                       | COON  | TNF          |     |                       | 31.             |            |         |                                  |              |          | i (inentie)           | 10 OCT 94               |                            |          | EXAM STARTED 11.26<br>EXAM ENDED 11.55 |                    |                 |          |                        |  |
| MINER<br><u>8. Aobe</u><br>MINER<br><u>T. JAC</u>                                     |       |              |     | SNT LE                | 21.             | - KL '     |         | (LINE/SUBASSEMBLY)<br>31-RC-1240 |              |          |                       |                         |                            | Lo LOCA  | Lo LOCATION                            |                    |                 |          | ,                      |  |
| T. JACI                                                                               | ERDS  |              |     | SNT LEVEL PROCEDURE * |                 |            |         |                                  |              | ·        | CALIBRA               | TION                    | ANGLE                      | •        | <u>L</u>                               | WELD TYPE          | WE              | EXAM     | SURFAC                 |  |
| T. JACI                                                                               |       | 8. AOBERDS   |     |                       | IT No 9AM 2-UT3 |            |         |                                  |              |          | SHEET(S)              |                         |                            | 45 N/    |                                        | NOZZLE TO ELROW BE |                 | BEFOR    | TEMP "F<br>ORE   AFTER |  |
|                                                                                       | Inca. |              |     | SNT LET               | nel ci<br>ic    | 10,30      | •[1.1   | Г                                | Ā            |          | 147                   | nig                     | SCANNING<br>dB             | 71.8     | A .                                    | WELD LENG          | 194<br>19 117/4 | 170      | TR                     |  |
|                                                                                       | MAX   | <u> </u>     | L   |                       |                 |            |         |                                  | ······ · · · |          |                       | · · ·                   |                            | -        | 1                                      | Dolg               | 7 ] ]/ / /4     | 10       |                        |  |
|                                                                                       |       | 20% 50%      |     | 100%                  | 1/2 MA)         | MAX        | 1/2 MAX | 100%                             | 50%          | 20%      | SEARCH<br>UNIT<br>LOC | SEARCH<br>UNIT<br>ANGLE | DAMPS<br>(IF YES, EXPLAIN) |          |                                        | REM                | REMARKS         |          | INITIAL                |  |
|                                                                                       |       | DAC          | DAC | DAC                   | DAC             |            | DAC     | DAC                              | DAC          | DAC      | ON                    |                         |                            | <u> </u> | +                                      | <u> </u>           |                 |          |                        |  |
| NO REC                                                                                | ADA   | BLE          | ТМД | ICAI                  | TIDA            | <u>.</u> S |         |                                  |              | <b> </b> | WEND                  | H5 <sup>P</sup> T       |                            |          | w                                      | Iccw               | ·<br>-          |          | BAR                    |  |
|                                                                                       |       |              |     |                       |                 |            |         |                                  |              |          |                       |                         |                            |          |                                        |                    | ·               | •        |                        |  |
|                                                                                       | 1     |              |     |                       |                 |            |         |                                  |              |          |                       |                         |                            |          |                                        |                    |                 |          |                        |  |
|                                                                                       |       |              |     |                       |                 |            |         |                                  |              | <b></b>  |                       |                         |                            |          |                                        |                    |                 | <u> </u> |                        |  |
|                                                                                       |       |              |     |                       |                 |            |         |                                  |              | [        |                       | [ [                     |                            |          | ·                                      |                    |                 |          |                        |  |
|                                                                                       |       |              |     |                       |                 |            |         |                                  |              |          |                       |                         |                            | CCEPT    |                                        | OP                 | SEG             | <u>.</u> |                        |  |
|                                                                                       |       |              |     |                       |                 |            |         |                                  |              | <u> </u> |                       |                         | FACTORY                    | NUTUAL   |                                        | <b>VEPECTION</b>   | SERVICES        |          |                        |  |
|                                                                                       |       |              |     |                       |                 |            |         |                                  |              |          |                       | ENG                     | NEERING A                  | SSOCIA   | TON                                    | 112                |                 |          |                        |  |
|                                                                                       |       |              |     |                       |                 |            |         |                                  |              |          |                       |                         | as ho                      |          | 194                                    | NDE SU             | PERVISOR        |          |                        |  |
|                                                                                       |       |              |     |                       |                 |            |         |                                  |              |          |                       | AUCH NUC                | LEAR INSERVIC              | EINCP.   | DATE                                   |                    |                 |          | <b> </b>               |  |
|                                                                                       |       |              |     |                       |                 |            |         |                                  |              | ľ        |                       |                         |                            |          |                                        |                    |                 |          |                        |  |



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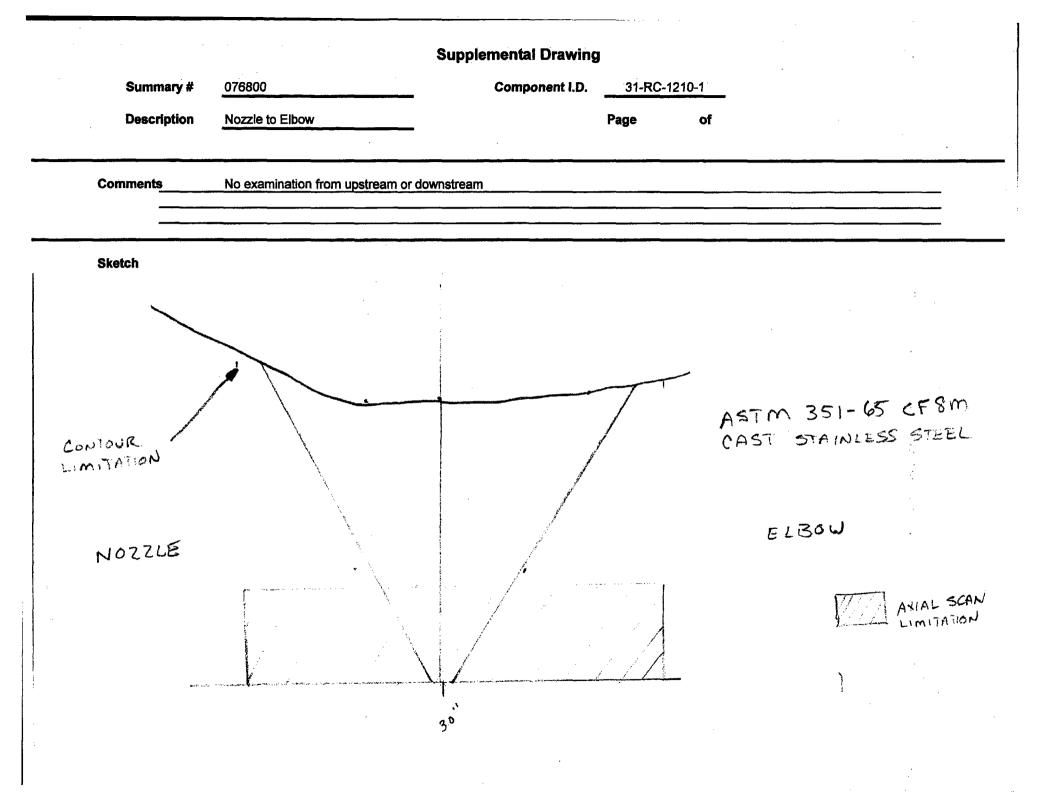
QUESTION 1.3 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

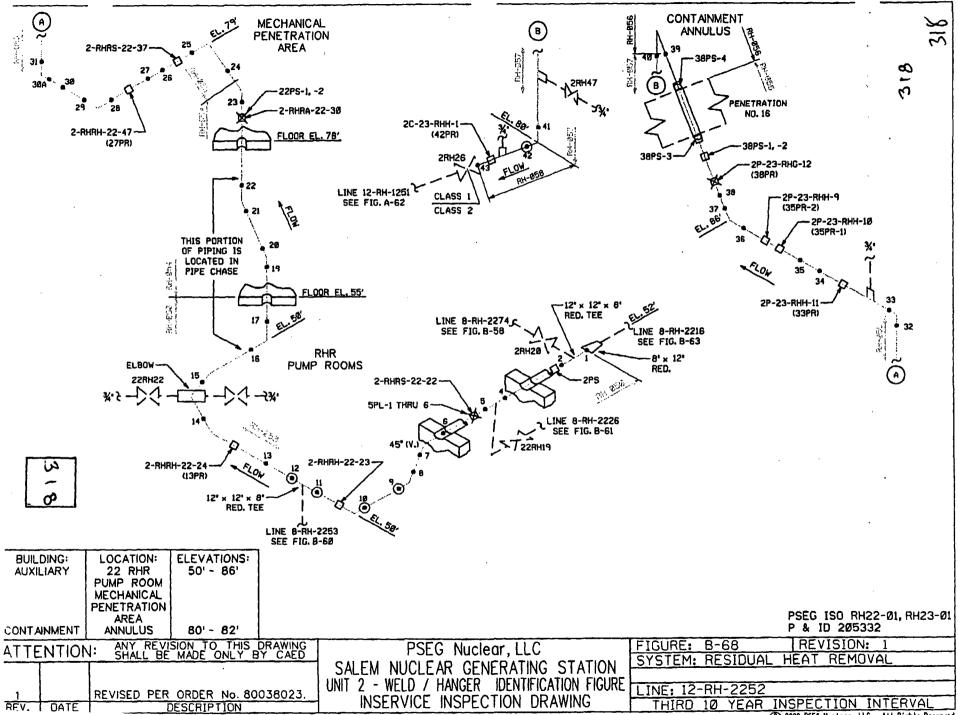
| Summary #      | 076800                           |                                  |
|----------------|----------------------------------|----------------------------------|
| Component I.D. | 31-RC-1210-1                     |                                  |
| Description    | Nozzle to Elbow                  |                                  |
|                |                                  | Comments                         |
| 1              | Weld X-Section                   | See Attached                     |
| 2              | Material                         | ASTM 351-65 S/S Cast / C/S       |
| 3              | Thickness / weld Crown           | Thickness 3" / Weld Crown 4"     |
| 4              | Obstruction                      | Material Type & OD Configuration |
| 5              | Exam Area Highlighted on Drawing | Yes X No                         |
| 6              | Transducer ray exit point        | N/A                              |

### Comments

Ut exam was performed of this component using 45 degree shear wave transducer. The ultrasonic examination completed was limited to 50% of the code required coverage being achieved due to no UT axial scan exam was performed from the upstream or the downstream side of the weld due to the elbow being fabricated from ASTM351-65 CF8M cast stainless steel whose acoustic properties is not conductive for ultrasonic examination and the OD configuration of the nozzle A clockwise and counterclockwise exam was performed of the weld crown. There were no unacceptable indications observed. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.

Page





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QUESTION 2.2(a) For certain component attachments and support welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

| Summary #      | 573055                           |                      |
|----------------|----------------------------------|----------------------|
| Component I.D. | 12-RH-2252-5PL-1 thru 6          |                      |
| Description    | PIPE LUG                         |                      |
|                |                                  | Comments             |
| 1              | Weld X-Section                   | N/A                  |
| 2              | Material                         | Stainless Steel      |
| 3              | Thickness / weld Crown           | N/A                  |
| 4              | Obstruction                      | SYSTEM CONFIGURATION |
| 5              | Exam Area Highlighted on Drawing | Yes X No             |
| 6              | Transducer ray exit point        | N/A                  |

### Comments

PT exam was conducted of this component. The PT exam was limited to 33% because the lugs 2,3,4,5 due to accessibility. The inaccessible pipe lugs are located within a permanent piping penetration sleeve. A system pressure test was also completed with no unacceptable indications observed.

Page

### SECOND INTERVAL, SECOND PERIOD, SECOND

| SUMMAR                    | <b>¥ #:</b> 573055                      |                                                  |                | EXAMINATIO<br>Lar generati   |        |           |           |                                             |                                                                                                                                                                                                                                                                                    |
|---------------------------|-----------------------------------------|--------------------------------------------------|----------------|------------------------------|--------|-----------|-----------|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SYSTEM<br>LINE #<br>COMP. | • • • • • • • • • • • • • • • • • • • • | AT REMOVAL SYS<br>[PSE&G #12"~2]<br>5PL-1 THRU 6 | RH1006]        | CONFIG.<br>RELIEF<br>CAL. BL | REÇ    | 9.:       |           | PE LUG<br>-C1                               |                                                                                                                                                                                                                                                                                    |
| LTP IN                    | AND                                     |                                                  | CCESSIBI       | LITY. THE L                  | UGS    | AF        | KE 1      | LOCATED INS                                 | A, NO EXAM ON LUG NOS. 2, 3, 4,<br>IDE A PIPING PENETRATION<br>MARKED.                                                                                                                                                                                                             |
| NDE<br>METHOD<br>IN LTP   | PROCEDURE                               | RESULTS FILE<br>NDE<br>EXAMS                     | EXAM<br>RECORD | CALIBRATION<br>RECORD        |        | _         |           | RESOLUTION<br>RECORD                        | REMARKS                                                                                                                                                                                                                                                                            |
| PT                        | 54-ISI-240-36                           | PT                                               | 2DP093         |                              | X      |           |           | -                                           | 99RF - FTI UNDER W.O.#990125024<br>TO PERFORM NDE. THE WELD LO<br>WAS FOUND NOT MARKED.<br>LIMITATION: EXAMINED (PT) 33%<br>OF THE CODE REQUIRED AREA, NO<br>EXAM ON LUG NOS. 2, 3, 4, AND 5<br>DUE TO INACCESSIBILITY. THE<br>LUGS ARE LOCATED INSIDE A<br>PIPING PENETRATION SLE |
| Prepa                     | red by:                                 | La De                                            |                | F                            | ACTEET | OR<br>INC | Y M<br>AS | CCEPTED<br>UTUAL<br>SOCIATION<br>INSP. DATE | Total dose received while<br>performing the required                                                                                                                                                                                                                               |
| Revie                     | wed by: Way                             | Denhigi                                          | <u> </u>       |                              |        |           |           |                                             | NDE examinations Man Mrem                                                                                                                                                                                                                                                          |

22

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| 1/-                                            | EXAMINATION SUMMARY                                                                                                                                   |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| FRAMATOME<br>TECHNOLOGIES Summary              | No: 573055 Data Package No.: S2DP093                                                                                                                  |
| Site: Salem Unit 2. (U2R10)                    | Examination Methods: PT                                                                                                                               |
| System: Residual Heat Removal                  | Examination Procedures: 54-ISI-240-36 (PT)                                                                                                            |
| Identification: 12-RH-2252-5PL<br>-1 Through 6 |                                                                                                                                                       |
| Description: Pipe Lug                          | Cal. Sheet No(s).: N/A                                                                                                                                |
| ASME Section XI Category: C-C                  | Figure No.: C3.20.004                                                                                                                                 |
| ASME Section XI Item No.: C3.20                | Examination Results:<br>_x_NRIRIGeometric                                                                                                             |
| No PT examination performed on Lu              | vas performed with no recordable indications noted.<br>ugs 2, 3, 4 and 5 due to inaccessibility. The<br>inside a Permanent Piping Penetration Sleeve. |

therefore 33.0% of the code required surface area was examined as denoted in previous data.

The PT examination results were compared to previous data.

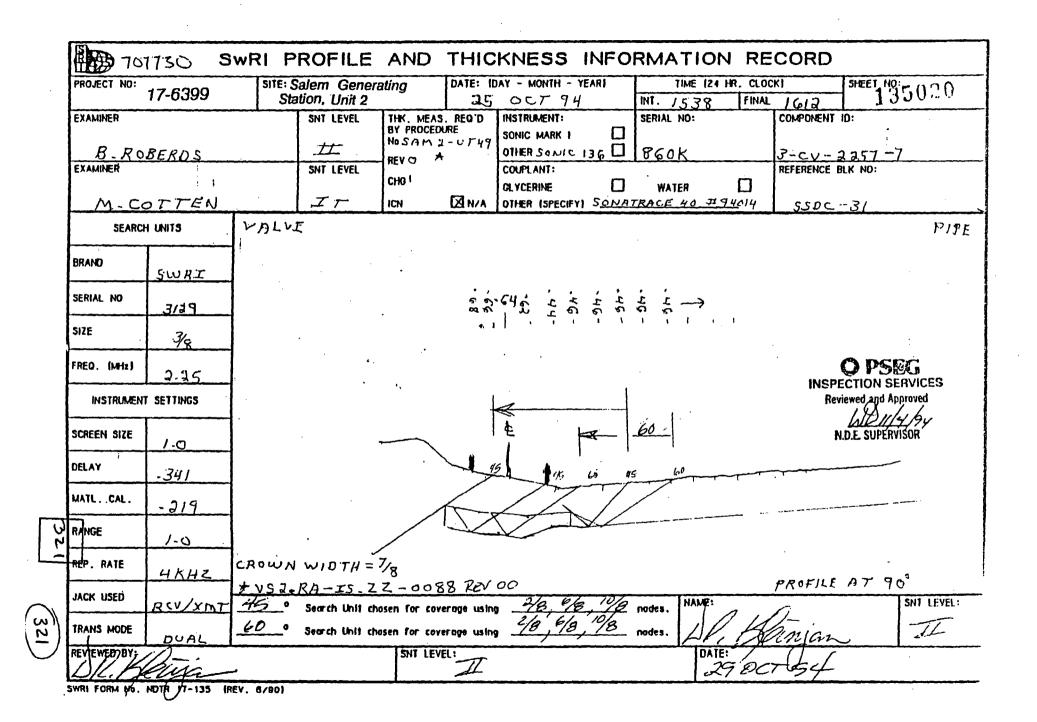
**FIEVIEWED & ACCEPTED** FACTORY MUTUAL ENGINEERING ASSOCIATION AUTH. NUCLEAR INSURIVICE INSP

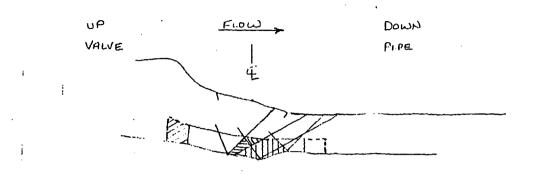
NRI = No Recordable Indications RI = Recordable Indication

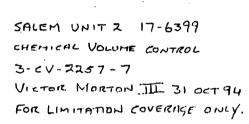
D.J. LANGENFELD <u>N.g.</u> Zangafill Prepared By 5-12.99 Reviewed By Date Utility Review By O Date Date

|                     | er:<br>LEM UNIT-2, 10 RI                                              | ĩO               | E                 | xam Date:<br>05/06/9 | 99              |                                       | Figure No<br>C3.2               | Figure No.:<br>C3.20.004 |              |               |                    |
|---------------------|-----------------------------------------------------------------------|------------------|-------------------|----------------------|-----------------|---------------------------------------|---------------------------------|--------------------------|--------------|---------------|--------------------|
| System              | /Component I.D.:<br>-RH-2252-5PL-1 to                                 |                  | <br>ry #57        | /3055)               |                 | Nominal Thickness:<br>N/A             |                                 |                          |              |               |                    |
| Compo               | nent Description:<br>HR Pipe Lug                                      |                  |                   |                      |                 | <u></u>                               |                                 |                          | ·            |               |                    |
| tage o              | f Fabrication (End Pre                                                | əp, Repair, Ro   | oot, In Pi        | rocess, Fina         | ai):            | ISO/Drawing No<br>RH-2-2,             | );<br>B-68                      |                          |              | <u> </u>      |                    |
| urface              | (ISI Prep, As Welded<br>I PREP                                        | , Ground, Oth    | er):              |                      |                 | Procedure No./F<br>54-ISI-24          | <br>Rev.:                       | . 36                     |              | Tem           | perature (F)<br>72 |
| &TE N               | No. (Thermometer):<br>B# 15352                                        |                  |                   | Calibration<br>07/19 |                 |                                       |                                 | Acceptan                 | ce Std (ASM  |               | etc):              |
| &TE N               | No. (Black Light Meter)                                               | ,<br>,<br>,      |                   | Calibration<br>N/A   | Due Date:       | . <u></u>                             |                                 |                          | Intensity uW |               | <u> </u>           |
|                     | nt Material Clean                                                     | er: 98A11K       | I.                |                      | Penetra         | nt: 95L03K                            |                                 | Deve                     | eloper: 98L  | 03K           |                    |
|                     |                                                                       | <u> </u>         |                   |                      |                 |                                       | TYPI                            | CAL                      | ę            |               |                    |
| ND # Ref Point Size |                                                                       |                  | Lo                | cation<br>W          | Status<br>A / U | Orientation to<br>Weld                |                                 |                          |              |               | Reference<br>Point |
| NRI                 |                                                                       |                  |                   |                      |                 |                                       | 4                               | :                        |              |               | Ļ                  |
|                     |                                                                       |                  |                   |                      |                 |                                       |                                 |                          |              | ,             |                    |
|                     |                                                                       |                  |                   |                      |                 | · · · · · · · · · · · · · · · · · · · | L≂dist to<br>reference<br>point |                          | w            | ¥             |                    |
|                     |                                                                       |                  |                   |                      |                 |                                       | -{W≈dia<br>to v                 | nt.<br>weld E            |              |               |                    |
|                     |                                                                       |                  |                   |                      |                 |                                       | 1                               |                          | 1 1          | 1             |                    |
| .emark              | s/Sketch (If necessary                                                | LI<br>)          |                   |                      | <u>اا</u>       |                                       | J                               |                          |              |               | · ··-              |
| o rec               | ordable indication                                                    | s found.         |                   |                      |                 |                                       |                                 |                          |              |               |                    |
|                     |                                                                       |                  | NT - 1- 0         | 2 4                  |                 | - <b>C</b>                            |                                 |                          |              | 1             |                    |
|                     | : No PT examinat                                                      |                  |                   |                      |                 | the code requi                        |                                 |                          |              |               | ocated             |
| ote-1               | inside a Piping                                                       |                  |                   |                      |                 |                                       |                                 |                          |              |               |                    |
|                     |                                                                       |                  |                   |                      |                 | •                                     |                                 |                          |              |               |                    |
|                     | inside a Piping 1<br>act No. 1220721                                  |                  |                   |                      |                 | ·                                     |                                 |                          |              |               |                    |
|                     |                                                                       |                  |                   |                      |                 | ·                                     |                                 |                          |              |               |                    |
|                     |                                                                       |                  |                   |                      |                 | ·                                     |                                 |                          |              |               |                    |
| Contr               | act No. 1220721                                                       |                  | evel:             | Date                 |                 | -<br>                                 | N/A                             |                          | Level:       |               | Date:              |
| Contr<br>xamin      | act No. 1220721                                                       | 2 L              | evel:             |                      | 6/99            | -<br>                                 | N/A                             |                          | Level:       | N/A           | Date:              |
| Contr<br>Examin     | er: H.E. Poster                                                       | old L            | evel:   <br>evel: | 05/0<br><br>Date:    | 6/99<br>        | Examiner:                             | N/A                             |                          | Level:       |               | Date:              |
|                     | er: H.E. Poster<br>H.E. Poster<br>H.G. O.J. Langenfe<br>D.J. Langenfe | ald L<br>ganfeld |                   | 05/0                 | 6/99<br>        | Examiner:<br>Sign:                    | N/A                             |                          | Level:       | N/A<br>57k1/9 | Date:              |

| PSE&G LI                                      | MITATION REPOR                        | Γ          |            |
|-----------------------------------------------|---------------------------------------|------------|------------|
| PROJECT: 17-6399                              | UNIT: SALEA                           | 1.2        | e e e e de |
| SYSTEM: CHEMICAL VOLUME CONTROL               | WELD NO .: 3-CV                       | - 2257 - 7 |            |
| Prepared By: VICTOR MORTON                    | Date: 31.00                           | т 94       |            |
| SURFACE                                       | EEXAMINATIONS                         |            | *****      |
| Area To Be Examined (length x Width = A)      | <u>A=</u>                             | NIA        |            |
| Area Of Limitation (Length $x$ Width = Al)    | <u>Al=</u>                            |            |            |
| Percentage Of Coverage                        | (A-AI <u>/A)=</u>                     | ¥          |            |
| VOLUMET                                       |                                       | IS         |            |
| A. Axial Exams (Indications Parallel To Weld) |                                       | ,          |            |
| 1. Compute Exam Volume (height x v            | vidth x length) = Vt1                 | 3.40       |            |
| 2. Compute Vol. Not Covered Upstream          | = A                                   | .99        |            |
| 3. Compute Upstream Limitation Percentage     | (A / Vt1) x 100 = Z1                  | 29.12      |            |
| 4. Compute Vol. Not Covered Downstream        | = B                                   | •49        |            |
| 5. Compute Downstream Limitation Percentage   | (B / Vt1) x 100 = Z2                  | 14.41      |            |
| B. Circumferential Exams (Indications Perpend | icular To Weld)                       |            |            |
| 1. Compute Exam Volume (height x w            | vidth x length) = $Vt2$               | 4.64       |            |
| 2. Compute Vol. Not Covered CW                | = C                                   |            |            |
| 3. Compute CW Limitation Percentage           | (C / Vi2) x 100 = Z3                  | 16.59      |            |
| 4. Compute Vol. Not Covered CCW               | = D                                   | .77        |            |
| 5. Compute CCW Limitation Percentage          | (D / Vt2) x 100 = Z4                  | 16.59      |            |
| C. Total Coverage                             |                                       | · ·        |            |
| 1. Compute Total Limitation Percentage        | (Z1+Z2+Z3+Z4) / 4 = L                 | 19.18      |            |
| 2. Compute Total Coverage                     | 100 – L                               | 80.82      |            |
| REMARKS:                                      | ~                                     |            |            |
|                                               | · · · · · · · · · · · · · · · · · · · |            | 02750      |
|                                               |                                       |            | 22         |



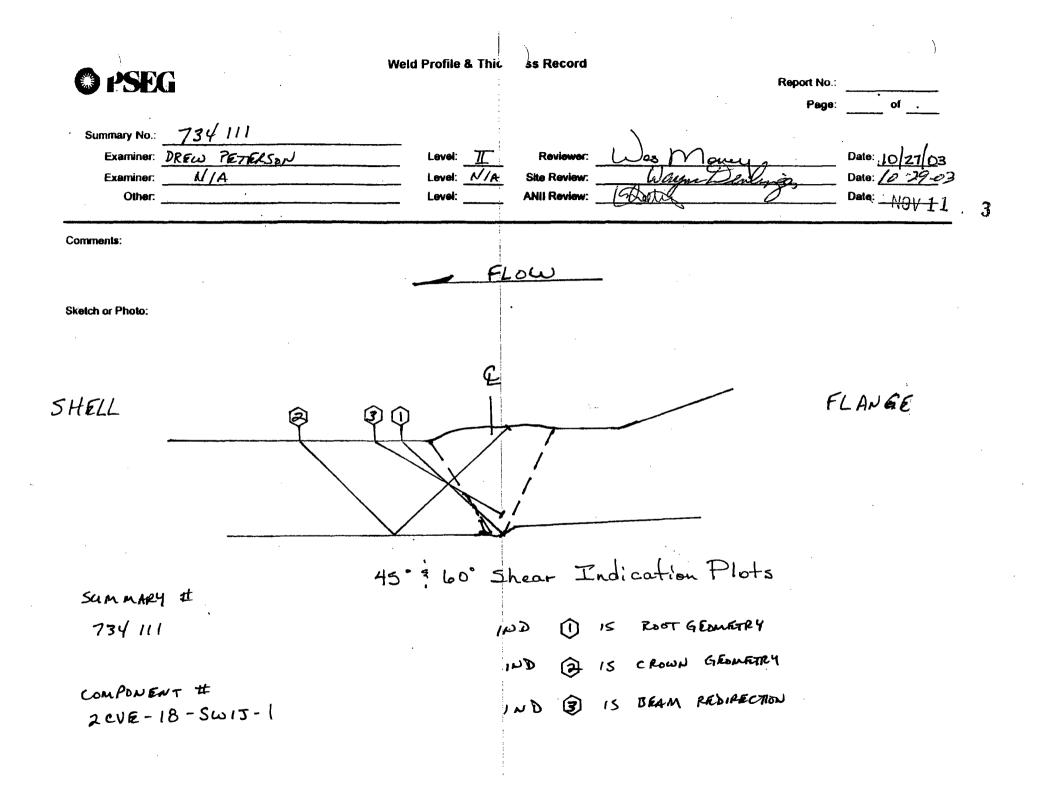




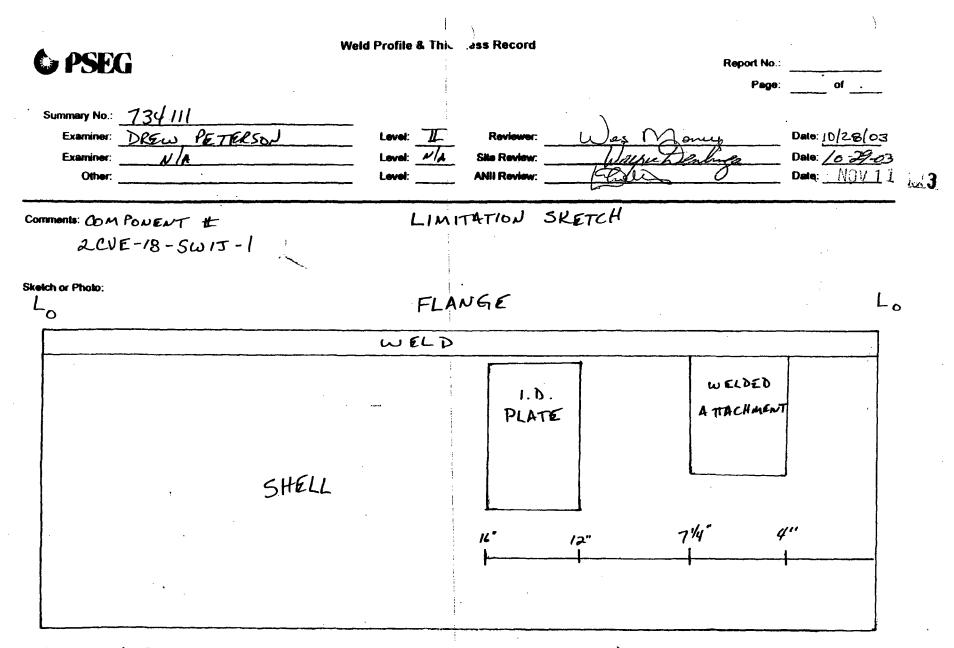
= AREA NOT COVERED CW/CCW = AREA NOT COVERED UP/DOWN = AREA NOT COVERED UPSTREAM SIDE. = AREA NOT COVERED UPSTREAM SIDE.

---- CIRCUMFERENTIAL AREA





Weld Profile & Tt. yss Record **C PSEG** Report No .: Page: of 734 111 Summary No.: DREW PETERSON Date: 10/27 Level: Reviewer Examiner: ЛL. N/A Level: Examiner: Site Review Date: ANII Review: Other: Level: Date: MOV 3 Single Side examination due to Flange configuration (For Axial Coverage) Comments: Ô  $\odot$  $\bigcirc$  $\odot$ 3 Sketch or Photo: FLOW FLANGE SHELL 70°RL 45'5 45°S THICKNESS READINGS SUMMARY I 734 111 1.0" 1.0" 45° Shear \$ 70° RL Coverage Plot P COMPONENT # 1.06 3 2CVE-18-SWIJ-1 1.0 " A (5) None due to Flange Configuration

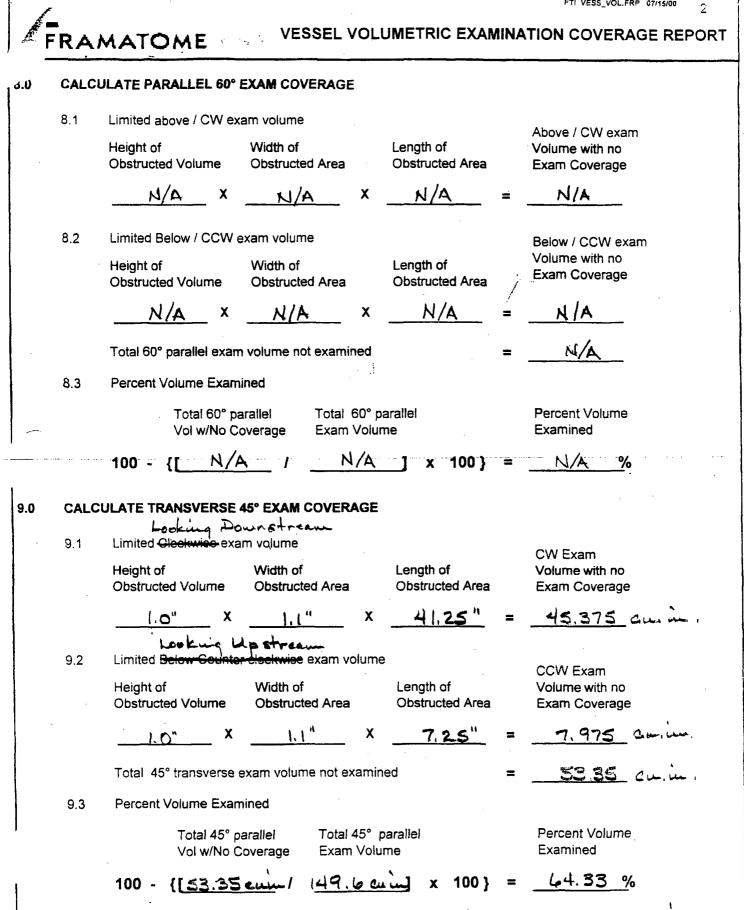


NO AXIAL SCANS WERE PERFORMED ON THE UPSTREAM SIDE OF THE WELD DUE TO THE FLANGE CONFIGURATION. NO SCANS WERE PERFORMED ON THE DOWNSTREAM (SHELL) SIDE OF THE WELD IN THE AREAS WHERE THE I.D. PLATE AND WELDED AMACHMENT ARE LOCATED.

|               |        |                                |                             |                         |           | FTI VESS_VOL.FRP                | 07/15/00 2                         |
|---------------|--------|--------------------------------|-----------------------------|-------------------------|-----------|---------------------------------|------------------------------------|
| <i>l</i> € FI | RAN    | ATOME                          | VESSEL V                    | OLUMETRIC               | EXAMINA   | TION COVERA                     | GE REPORT                          |
| ــــ<br>TOند  | MER:   | PSEG                           |                             | SYSTEM: C               | ve        |                                 |                                    |
| SUMMA         | ARY NO | : 734111                       |                             | COMPONENT               | ID: ZCV   | E-18-5WI                        | 7-1                                |
| 1.0           | CALCU  | LATE REQUIRED EXAN             | VOLUME FOR S                | TRAIGHT BEAM            | PLANAR FI |                                 |                                    |
|               | 1.1    | Exam Height X Exam W           | idth X Exam Lengt           | th = Exam Volum         | ne        | X =                             | = N/A cu.i                         |
| 2.0           | CALCU  | LATE REQUIRED EXAN             | VOLUME FOR S                | TRAIGHT BEAM            |           | LAWS                            |                                    |
|               | 2.1    | Exam Height X Exam W           | /idth X Exam Leng           | th = Exam Volun         | ne 1.0" 🗡 | 2,2"× 34" :                     | = 74,8 <sup>"</sup> cu.i           |
| 3.0           | CALCU  | ILATE REQUIRED PARA            | LLEL EXAM VOL               | UME FOR 45° A           |           |                                 |                                    |
|               | 3.1    | Exam Height X Exam W           | /idth X Exam Leng           |                         | ne        | Z.2" X 68" :                    | = <u>1</u> .4 <b>° 1</b> . lo CU.1 |
|               |        | JLATE REQUIRED TRAN            | ISVERSE EXAM V              | 149                     | AND 60    | -                               |                                    |
| ···           | 4.1    | Exam Height X Exam V           | Vidth X Exam Leng           | th = Exam Volun         | ne        | 2.2 × 136                       | = 299.2 cu.i                       |
| 5.0           | CALCI  | JLATE STRAIGHT BEAM            | PLANAR EXAM                 | COVERAGE                |           |                                 |                                    |
|               | 5.1    | Limited above / CW exa         | m volume                    |                         |           |                                 |                                    |
|               |        | Height of<br>Obstructed Volume | Width of<br>Obstructed Area | Length of<br>Obstructed | Area      | Volume with no<br>Exam Coverage |                                    |
|               |        | <u>N/A</u> X                   | N/A                         | X <u>N/A</u>            | =         | <u> </u>                        |                                    |
|               | 5.2    | Limited Below / CW exa         | m volume                    |                         |           |                                 |                                    |
|               |        | Height of<br>Obstructed Volume | Width of<br>Obstructed Area | Length of<br>Obstructed | d Area    | Volume with no<br>Exam Coverage |                                    |
|               |        | <u> </u>                       | N/A                         | X <u>N/A</u>            |           | N/A                             |                                    |
|               |        | Total straight beam plan       | nar exam volume n           | ot examined             |           | N/A                             |                                    |
|               | 5.3    | Percent Volume Exami           | ned                         |                         |           |                                 |                                    |
| •             |        | Total 0 vol<br>. w/No Covera   | Total 0<br>Ige Exam V       | Volume                  |           | Percent Volume<br>Examined      |                                    |
|               |        | 100 - {[ <u>N/A</u>            | /N                          | <u>/</u> A_] × ′        | 100 } =   | <u> </u>                        |                                    |

··· · --

|                     | ULATE STRAIGHT BEA                                                                                         | M LAMINAR EXAN                                                                               |       | VERAGE                       |     |                                                     |
|---------------------|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-------|------------------------------|-----|-----------------------------------------------------|
| 5.1                 | Limited above / OW ex                                                                                      | am volume                                                                                    |       |                              |     |                                                     |
|                     | Height of<br>Obstructed Volume                                                                             | Width of<br>Obstructed Area                                                                  |       | Length of<br>Obstructed Area |     | Volume with no<br>Exam Coverage                     |
|                     | <u> </u>                                                                                                   |                                                                                              | X     | 34 "                         | =   | 20.4 cm.in                                          |
| 5. <b>2</b>         | Limited Below / CW ex                                                                                      | D<br>am volume                                                                               |       |                              |     |                                                     |
|                     | Height of<br>Obstructed Volume                                                                             | Width of<br>Obstructed Area                                                                  |       | Length of<br>Obstructed Area | į   | Volume with no<br>Exam Coverage                     |
|                     | X                                                                                                          | .6"                                                                                          | X     | 26.75"                       | . = | 16.05 cu.m.                                         |
|                     | Total straight beam pla                                                                                    | anar exam volume n                                                                           | ot ex | amined                       | =   | <u>_36.45 cum</u>                                   |
| 5.3                 | Percent Volume Exam                                                                                        | ined                                                                                         |       | 2                            |     |                                                     |
|                     | Total 0° vol<br>w/No Cover                                                                                 |                                                                                              |       | ne                           |     | Percent Volume<br>Examined                          |
|                     | /                                                                                                          |                                                                                              |       |                              |     |                                                     |
|                     | Limited above CVV                                                                                          | CW)                                                                                          |       |                              |     | 51.3 %                                              |
| C <b>ALC</b><br>7.1 | Upstream) (C                                                                                               | CW)                                                                                          |       | Length of<br>Obstructed Area |     | Volume with no<br>Exam Coverage                     |
|                     | Limited above CVV                                                                                          | کنی<br>(am volume<br>Width of<br>Obstructed Area                                             | X     | _                            | -   | Volume with no                                      |
| 7.1                 | Limited above CVV<br>Height of<br>Obstructed Volume                                                        | کریک<br>width of<br>Obstructed Area                                                          |       | Obstructed Area              | . 2 | Volume with no<br>Exam Coverage                     |
| 7.1                 | Limited above CVV<br>Height of<br>Obstructed Volume                                                        | کریک<br>Kam volume<br>Width of<br>Obstructed Area<br><u></u><br>width of<br>Width of         |       | Obstructed Area              |     | Volume with no<br>Exam Coverage<br><u>40.8</u> cm m |
| 7.1                 | Limited above CVV<br>Height of<br>Obstructed Volume<br>Limited Below CCW<br>Height of<br>Obstructed Volume | width of<br>Obstructed Area<br><u>ا</u><br>فری<br>exam volume<br>Width of<br>Obstructed Area | ×     | Obstructed Area              |     | Volume with no<br>Exam Coverage<br><u>40.8</u> cm m |

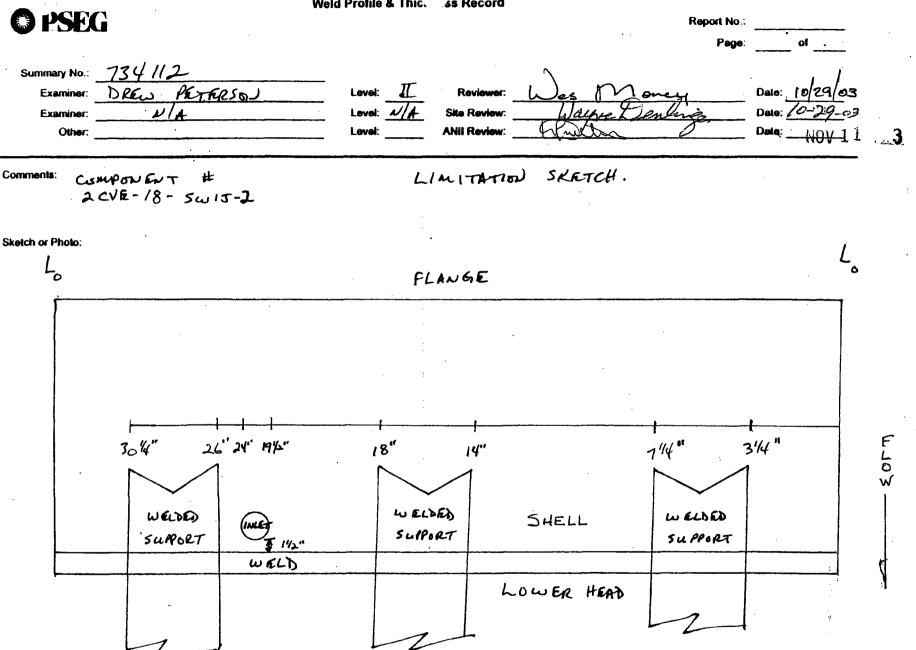


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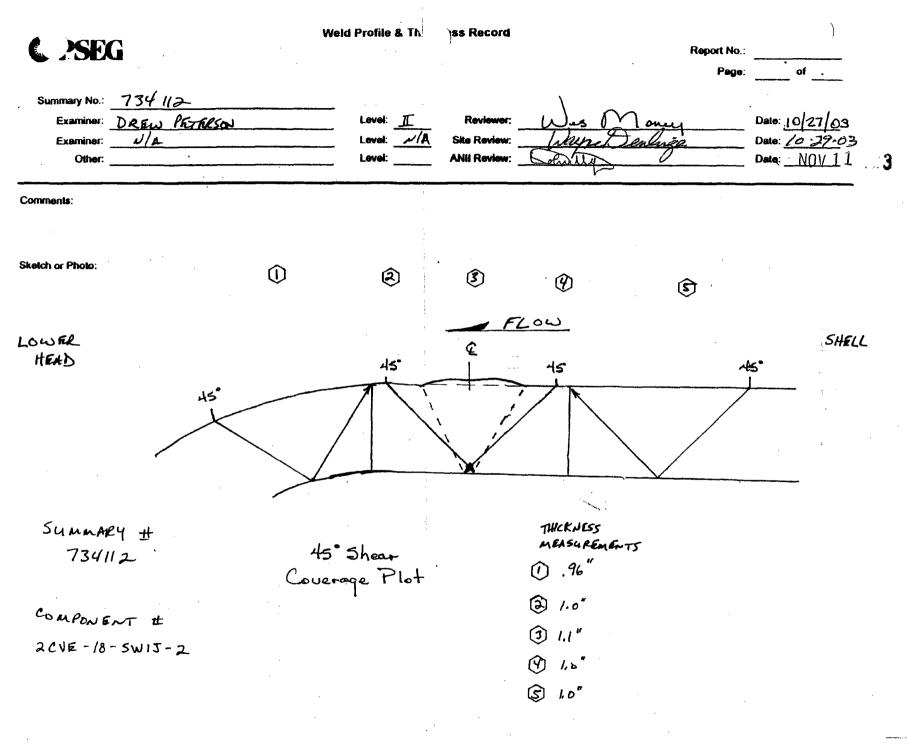
FRAMATOME AND VESSEL VOLUMETRIC EXAMINATION COVERAGE REPORT 10.0 CALCULATE TRANSVERSE 60° EXAM COVERAGE Limited Glockwise exam volume 10.1 CW exam Height of Width of Length of Volume with no **Obstructed Volume Obstructed Area Obstructed Area** Exam Coverage X (11" X 41.25" 1.0 45.375. cu Looking Upstream 10.2 Limited Counterclockwise exam volume CCW exam Width of Length of Height of Volume with no Obstructed Volume **Obstructed Area** Obstructed Area Exam Coverage **X** 1.L" X 1.04 7.25" 7.975 cu Total 60 transverse exam volume not examined È 53.35 cm. 10.3 Percent Volume Examined Total 60° Trans Vol Total 60° Trans Percent Volume Exam Volume Examined w/NoCoverage 100 - {[ 53,35 cm, in / 149,6 cm, ] x 100 } = 44,33 % 11.0 CALCULATE PERCENT OF TOTAL VOLUME EXAMINED d28/03 Sum of Exam Volumes % 11.1 6,7,9\$10 10125005 Examination Steps 5 Thur 10 No. Of Exams-(0) Coverage 246.86701 61.72 % +lange No scan from nozzle side or on weld due to configuration. Date: Level: Date: Reviewer: Level: Examiner:

| PSEG                                      | Weld Prome & Thic. 355 Record                                                                    | Report No.:            |  |  |
|-------------------------------------------|--------------------------------------------------------------------------------------------------|------------------------|--|--|
|                                           |                                                                                                  | Page: of               |  |  |
| Summary No.: 734112                       |                                                                                                  |                        |  |  |
| Examiner: DRew PETERSon<br>Examiner: N/A_ | Level: <u>T</u> Reviewer: Uses Money                                                             | Date: 10 27/03         |  |  |
| Examiner: <u>P/A</u><br>Other:            | Level: N/A Ste Review: <u>Nather Denlinge</u><br>Level: ANII Review: <u>ANII ANII Review</u>     | Date: <u>/0 -29-03</u> |  |  |
|                                           |                                                                                                  | Date:1                 |  |  |
| Comments:                                 |                                                                                                  |                        |  |  |
|                                           |                                                                                                  |                        |  |  |
| Sketch or Photo:                          | FLOW                                                                                             |                        |  |  |
| Lower<br>HEAD                             | E<br>O<br>O<br>O<br>O<br>O<br>O<br>O<br>O<br>O<br>O<br>O<br>O<br>O<br>O<br>O<br>O<br>O<br>O<br>O | SHELL                  |  |  |
| SUMMARY #                                 | 45° : 60° Shear Indication Plot                                                                  | 5                      |  |  |
| 734112                                    | WD'S (), 3, ¢ S ARE ROOT O                                                                       | EDMETRY                |  |  |
| COMPONENT #                               | IND'S BED ARE CROWN GEOM                                                                         | Γ.T.R.Y                |  |  |
| 2CVE - 18 - SWIJ-2                        |                                                                                                  |                        |  |  |

Weld Profile & Thic. is Record



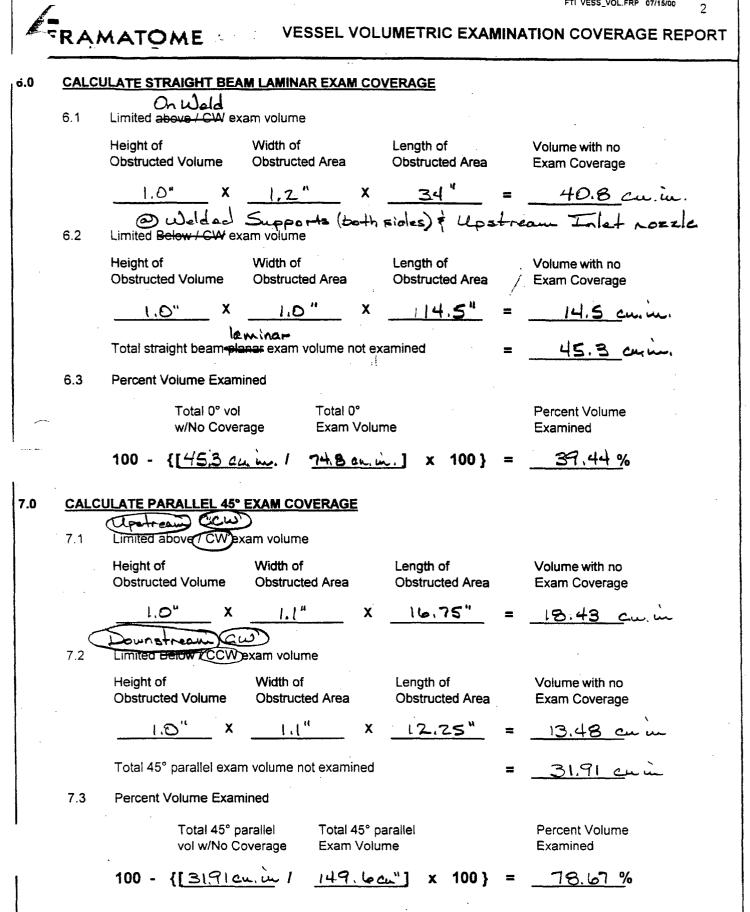
NO SCANS WERE PERFORMED ON EITHER SIDE OF THE WELD IN THE AREAS OF THE WELDED SUPPORTS AND ON THE UPSTREAM (SHELL) SIDE DUE TO THE INLET MOZZLE. NO SCANS ON THE WELD DUE TO THE AS WELDED CONDITION.

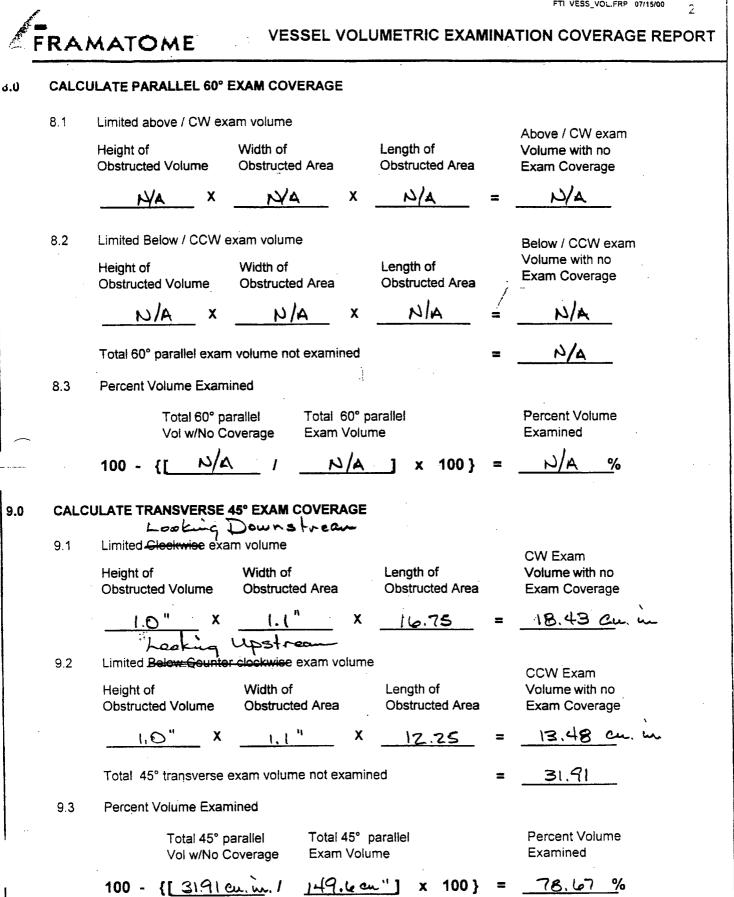


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| <i>k</i> = |                                  |                                                                                                                                                                                                         |                                                                                                                                                                                 |                               |                                                                                                                                                                                                   |                | FTI VESS_VOL.FR                                                                  | 2           |
|------------|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------------------------------------------------------------------------|-------------|
| Æ F        | RAJ                              | MATOME                                                                                                                                                                                                  | VESSEL                                                                                                                                                                          | VOL                           |                                                                                                                                                                                                   | MINA           | TION COVERA                                                                      | GE REPORT   |
| TCد        | MER:                             | PSEG                                                                                                                                                                                                    |                                                                                                                                                                                 | SI                            | rstem: CV                                                                                                                                                                                         | ic.            | ···                                                                              |             |
| UMM        | ARY NO                           | 0: 734112                                                                                                                                                                                               | <u> </u>                                                                                                                                                                        | C                             | OMPONENT ID:                                                                                                                                                                                      | 20             | VE - 18-50                                                                       | T.T - 7     |
|            |                                  |                                                                                                                                                                                                         |                                                                                                                                                                                 |                               |                                                                                                                                                                                                   |                |                                                                                  |             |
| .0         |                                  | ULATE REQUIRED EXA                                                                                                                                                                                      |                                                                                                                                                                                 | STRA                          | IGHT BEAM PLAI                                                                                                                                                                                    |                | LAWS                                                                             |             |
|            | 1.1                              | Exam Height X Exam                                                                                                                                                                                      | Width X Exam Ler                                                                                                                                                                | igth =                        | Exam Volume                                                                                                                                                                                       | Ya x           | N/AX N/A                                                                         | = N/A cu.   |
| .0         |                                  | ULATE REQUIRED EXA                                                                                                                                                                                      |                                                                                                                                                                                 | STR/                          |                                                                                                                                                                                                   | INAR           | FLAWS                                                                            |             |
|            | 2.1                              | Exam Height X Exam                                                                                                                                                                                      | Width X Exam Ler                                                                                                                                                                | igth =                        | Exam Volume                                                                                                                                                                                       | 0"/x           | ~2.2"x 34"                                                                       | = 74.8" cu. |
|            | `                                |                                                                                                                                                                                                         |                                                                                                                                                                                 |                               | _                                                                                                                                                                                                 |                |                                                                                  |             |
| 3.0        | CALC                             | ULATE REQUIRED PAR                                                                                                                                                                                      | RALLEL EXAM VC                                                                                                                                                                  | LUM                           |                                                                                                                                                                                                   |                | (2.2"× 68"                                                                       | - 1491-01   |
|            | 3.1                              | Exam Height X Exam                                                                                                                                                                                      | Width X Exam Ler                                                                                                                                                                | ngth =                        | Exam Volume                                                                                                                                                                                       |                |                                                                                  |             |
|            |                                  |                                                                                                                                                                                                         |                                                                                                                                                                                 |                               |                                                                                                                                                                                                   |                |                                                                                  |             |
| $\sim$     | CALC                             | ULATE REQUIRED TRA                                                                                                                                                                                      | ANSVERSE EXAM                                                                                                                                                                   | VOLI                          | -                                                                                                                                                                                                 | 149.1<br>(60°) | ما                                                                               |             |
|            |                                  | ULATE REQUIRED TRA                                                                                                                                                                                      |                                                                                                                                                                                 |                               | JME FOR 45 ANE                                                                                                                                                                                    | 600            | 6<br>. 2.2 x 136                                                                 | = 299.2 cu. |
|            | <u>CALC</u><br>4.1               | ULATE REQUIRED TRA                                                                                                                                                                                      |                                                                                                                                                                                 |                               | JME FOR 45 ANE                                                                                                                                                                                    | 600            |                                                                                  | = 299,2 cu  |
|            | 4.1                              |                                                                                                                                                                                                         | Width X Exam Ler                                                                                                                                                                | ngth =                        | Exam Volume                                                                                                                                                                                       | 600            |                                                                                  | = 299.2 cu  |
| .0         | 4.1                              | Exam Height X Exam                                                                                                                                                                                      | Width X Exam Ler                                                                                                                                                                | ngth =                        | Exam Volume                                                                                                                                                                                       | 600            |                                                                                  | = 299.2 cu  |
| .0         | 4.1                              | Exam Height X Exam<br>ULATE STRAIGHT BEA                                                                                                                                                                | Width X Exam Ler                                                                                                                                                                | ngth =<br><u>I COV</u>        | Exam Volume                                                                                                                                                                                       | 600            |                                                                                  | = 299.2 cu  |
| .0         | 4.1                              | Exam Height X Exam<br><b>ULATE STRAIGHT BEA</b><br>Limited above / CW ex<br>Height of                                                                                                                   | Width X Exam Ler<br>M PLANAR EXAN<br>(am volume<br>Width of                                                                                                                     | ngth =<br><u>I COV</u>        | Length of                                                                                                                                                                                         | 600            | Volume with no                                                                   | = 299.2 cu. |
| 5.0        | 4.1                              | Exam Height X Exam<br><b>ULATE STRAIGHT BEA</b><br>Limited above / CW ex<br>Height of<br>Obstructed Volume                                                                                              | Width X Exam Ler<br>M PLANAR EXAM<br>cam volume<br>Width of<br>Obstructed Area                                                                                                  | ngth =<br>I COV               | Length of<br>Obstructed Area                                                                                                                                                                      | 600            | Volume with no Exam Coverage                                                     | = 299.2 cu  |
| 5.0        | 4.1<br><u>CALC</u><br>5.1        | Exam Height X Exam<br>ULATE STRAIGHT BEA<br>Limited above / CW ex<br>Height of<br>Obstructed Volume<br>N/AX                                                                                             | Width X Exam Ler<br>M PLANAR EXAM<br>cam volume<br>Width of<br>Obstructed Area                                                                                                  | ngth =<br><u>I COV</u>        | Length of<br>Obstructed Area                                                                                                                                                                      | 600            | Volume with no Exam Coverage                                                     | = 299.2 cu  |
| .0         | 4.1<br><u>CALC</u><br>5.1        | Exam Height X Exam<br>ULATE STRAIGHT BEA<br>Limited above / CW ex<br>Height of<br>Obstructed Volume<br><u>N/A</u> X<br>Limited Below / CW ex<br>Height of                                               | Width X Exam Ler<br>M PLANAR EXAM<br>cam volume<br>Width of<br>Obstructed Area<br><u>N /A</u><br>cam volume<br>Width of                                                         | ngth =<br><u>I COV</u>        | Length of<br>N/A                                                                                                                                                                                  | 600            | Volume with no Exam Coverage $\frac{N/A}{}$                                      | = 299.2 cu  |
| .0         | 4.1<br><u>CALC</u><br>5.1        | Exam Height X Exam                                                                                                                                                                                      | Width X Exam Ler<br>M PLANAR EXAM<br>cam volume<br>Width of<br>Obstructed Area<br>N/A<br>width of<br>Obstructed Area<br>N/A                                                     | ngth =<br><u>I COV</u><br>. X | Exam Volume<br>Exam Volume                                                                                                                                                                        | 600            | Volume with no Exam Coverage $\frac{N/A}{}$                                      | = 299.2 cu  |
| 5.0        | 4.1<br><u>CALC</u><br>5.1        | Exam Height X Exam                                                                                                                                                                                      | Width X Exam Ler<br>M PLANAR EXAM<br>(am volume<br>Width of<br>Obstructed Area<br>N/A<br>(am volume<br>Width of<br>Obstructed Area<br>N/A<br>anar exam volume                   | ngth =<br><u>I COV</u><br>. X | Exam Volume<br>Exam Volume                                                                                                                                                                        | 600            | Volume with no<br>Exam Coverage<br>N/A<br>Volume with no<br>Exam Coverage<br>N/A | = 299.2 cu  |
| 5.0        | 4.1<br><b>CALC</b><br>5.1<br>5.2 | Exam Height X Exam<br>ULATE STRAIGHT BEA<br>Limited above / CW ex<br>Height of<br>Obstructed Volume<br>X<br>Limited Below / CW ex<br>Height of<br>Obstructed Volume<br>N /AX<br>Total straight beam pla | Width X Exam Ler<br>M PLANAR EXAM<br>kam volume<br>Width of<br>Obstructed Area<br>N/A<br>kam volume<br>Width of<br>Obstructed Area<br>N/A<br>anar exam volume<br>hined<br>Total | ngth =<br>I COV<br>X<br>X     | JME FOR 45 ANE         Exam Volume         Exam Volume         /ERAGE         Length of         Obstructed Area         N/A         Length of         Obstructed Area         N/A         kamined | 600            | Volume with no<br>Exam Coverage<br>N/A<br>Volume with no<br>Exam Coverage<br>N/A | = 299.2 cu  |





| CALC<br>10.1 | Limited Glockwise exam volume                                                                                                                                                                                      |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10.1         | CW exam         Height of       Length of       Volume with no         Obstructed Volume       Obstructed Area       Exam Coverage                                                                                 |
|              | <u>1.0" X 1.1" X 16.75" = 18.43 cu</u> in<br>rooknig lepstream                                                                                                                                                     |
| 10.2         | Limited <del>Counterclockwise</del> exam volume<br>Height of Width of Length of Volume with no<br>Obstructed Volume Obstructed Area Obstructed Area Exam Coverage                                                  |
|              | $1.0^{"} \times 1.1^{"} \times 12.25 = 13.48^{"}$ Total 60 transverse exam volume not examined = 31.91"                                                                                                            |
| 10.3         | Total 60 transverse exam volume not examined       =         Percent Volume Examined          Total 60° Trans Vol       Total 60° Trans       Percent Volume         w/NoCoverage       Exam Volume       Examined |
| CALC         | 100 - { $[31.9]$ cm $\lambda$ [49.6 cm $\lambda$ ] x 100} = 78.67 %<br>CULATE PERCENT OF TOTAL VOLUME EXAMINED                                                                                                     |
| 11.1         | Sum of Exam Volumes %<br>6,7,9 \$ 10<br>Steps 5 Thur 10 No. Of Exams (6) Volz 6 (03 Examination<br>Coverage                                                                                                        |
|              | [275.4561 4] = 68.86%                                                                                                                                                                                              |
| NO SC        | can from nozzle side or on weld due to configuration.                                                                                                                                                              |
|              |                                                                                                                                                                                                                    |
|              |                                                                                                                                                                                                                    |
|              | price Review Fluttop MCV 113_                                                                                                                                                                                      |

## REQUEST FOR ADDITIONAL INFORMATION REQUEST FOR RELIEF REGARDING EXAMINATION COVERAGE SECOND TEN-YEAR IN-SERVICE INSPECTION INTERVAL SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 DOCKET NO. 50-311

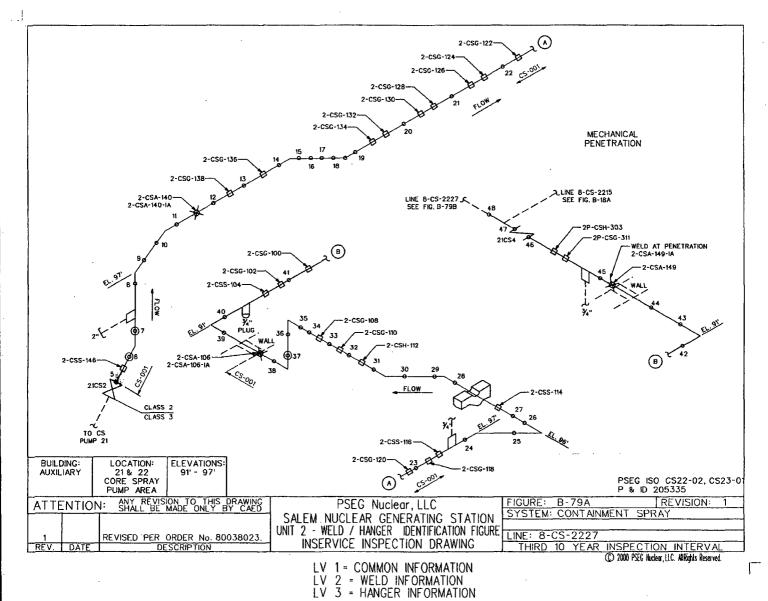
QUESTION 2.1 (c) For certain piping welds, Information submitted by the licensee is not sufficient to demonstrate impracticality. Please submit further information in the form of drawings, sketches and/or descriptions to support this evaluation for the following components, as identified by licensee identification numbers listed below.

| Summary #      | 700000                           |                               |
|----------------|----------------------------------|-------------------------------|
| Component I.D. | 8-CS-2227-5                      |                               |
| Description    | Valve 21CS2 to Pipe              |                               |
|                |                                  | Comments                      |
| 1              | Weld X-Section                   | See Attached                  |
| 2              | Material                         | Stainless Steel               |
| 3              | Thickness / weld Crown           | Thickness .14" / Weld Contour |
| 4              | Obstruction                      | OD Contour of valve 21CS2     |
| 5              | Exam Area Highlighted on Drawing | Yes X No                      |
| 6              | Transducer ray exit point        | N/A                           |

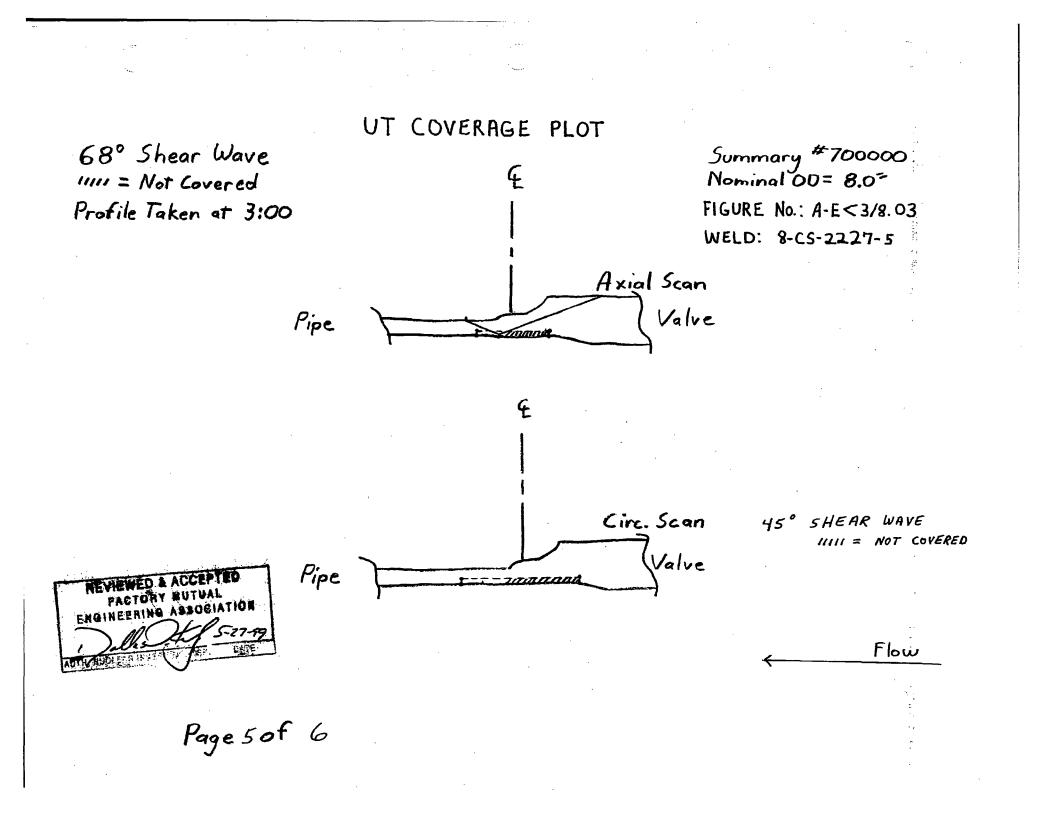
## Comments

UT exam was performed of this component using 45 and 70 degree wave transducer. The ultrasonic examination was limited to 31% of the code required coverage being limited due to upstream side valve OD configuration that restricted scanning. UT scans were performed on and across the weld in both directions No unacceptable indications were observed. A liquid penetrant examination and system pressure test was also completed with no recordable indications observed.

Page of



| CUSTOMER: PSE&G SYSTEM: CONTAINMENT SPRAY                            |               |                                            |                                         |                                                                                    |  |  |  |  |  |  |
|----------------------------------------------------------------------|---------------|--------------------------------------------|-----------------------------------------|------------------------------------------------------------------------------------|--|--|--|--|--|--|
| SUM                                                                  | MARY          | SALEM UNIT-2, 10 RFO<br>7 NO.: 700000      | COMPONENT ID: 8                         | -CS-2227-5                                                                         |  |  |  |  |  |  |
|                                                                      |               |                                            |                                         | ALVE 21CS2 TO PIPE                                                                 |  |  |  |  |  |  |
|                                                                      |               | VOLUMETRIC                                 | C PIPING EXAMINATIO                     | <u>NS</u>                                                                          |  |  |  |  |  |  |
| 1.0 AXIAL ULTRASONIC EXAMINATIONS (Indications Parallel to the Weld) |               |                                            |                                         |                                                                                    |  |  |  |  |  |  |
|                                                                      | 1.1           | Compute Examination Volume (Heigh          | t x Width x Length) = Vt <sub>1</sub>   | 0.046" x 0.80" x 26.21" = 0.96 cu. in.                                             |  |  |  |  |  |  |
|                                                                      | 1.2           | Compute Volume Not Examined on Ups         | stream Side of Weld = A                 | <u>0.046" x 0.475" x 26.21" = 0.57 cu. in</u>                                      |  |  |  |  |  |  |
|                                                                      | 1.3           | Compute Upstream Limitation Percenta       | ge (A + Vt <sub>1</sub> ) x 100 = Z1    | 0.57 in. <sup>3</sup> + 0.96 in. <sup>3</sup> x 100 = 59.4%                        |  |  |  |  |  |  |
|                                                                      | 1.4           | Compute Volume Not Examined on Dov         | vnstream Side of Weld = B               | 0.046" x 0.475" x 26.21" = 0.57 cu. in                                             |  |  |  |  |  |  |
|                                                                      | 1.5           | Compute Downstream Limitation Percen       | ntage (B + Vt <sub>1</sub> ) x 100 = Z2 | 0.57 in. <sup>3</sup> + 0.96 in. <sup>3</sup> x 100 = 59.4%<br>(Beam Direction-DS) |  |  |  |  |  |  |
| 2.0                                                                  | <u>CIRC</u>   | UMFERENTIAL ULTRASONIC EXAMIN              | ATIONS (Indications Per                 | rpendicular to the Weld)                                                           |  |  |  |  |  |  |
|                                                                      | 2.1           | Compute Examination Volume (Heigh          | t x Width x Length) = Vt <sub>2</sub>   | <u>0.046" x 1.30" x 26.21" = 1.57cu. in.</u>                                       |  |  |  |  |  |  |
|                                                                      | 2.2           | Compute Volume Not Examined in the 0       |                                         | 0.046" x 0.80" x 26.21" = 0.96 cu. in.                                             |  |  |  |  |  |  |
|                                                                      | 2.3           | Compute Clock Wise Limitation Percent      |                                         | 0.96 in. <sup>3</sup> + 1.57 in. <sup>3</sup> x 100 = 61.1%                        |  |  |  |  |  |  |
|                                                                      | 2.4           | Compute Volume Not Examined in the C       | Counter CW Direction = D                | 0.046" x 0.80" x 26.21" = 0.96 cu. in                                              |  |  |  |  |  |  |
|                                                                      | 2.5           | Compute Counter CW Limitation Percer       | ntage (D + Vt <sub>2</sub> ) x 100 = Z4 | 0.96 in. <sup>3</sup> + 1.57 in. <sup>3</sup> x 100 = 61.1%                        |  |  |  |  |  |  |
| 3.0                                                                  | <u>тот</u> /  | AL EXAMINATION COVERAGE OBTAIL             | NED                                     |                                                                                    |  |  |  |  |  |  |
|                                                                      | 3.1           | Compute Total Limitation Percentage (      | Z1 + Z2 + Z3 + Z4) / 4 = L              | 60.3 %                                                                             |  |  |  |  |  |  |
|                                                                      | 3.2           |                                            | ) — L                                   | 39.8 %                                                                             |  |  |  |  |  |  |
|                                                                      |               | • • • • • • • • • • • • • • • • • • • •    | EXPLANATION/REMARK                      | <s< td=""></s<>                                                                    |  |  |  |  |  |  |
|                                                                      | l imit:       | ation exists on the Valve side of the weld |                                         |                                                                                    |  |  |  |  |  |  |
|                                                                      |               | hed UT Coverage Plot. The 69 degree s      |                                         | · · · · · · · · · · · · · · · · · · ·                                              |  |  |  |  |  |  |
|                                                                      | ,             |                                            |                                         | · · · · · · · · · · · · · · · · · · ·                                              |  |  |  |  |  |  |
|                                                                      |               | the pipe side of the weld only (one-sided  |                                         |                                                                                    |  |  |  |  |  |  |
|                                                                      | <u>in the</u> | e upstream axial direction. The coverage   | obtained from the downst                | ream axial examination was                                                         |  |  |  |  |  |  |
|                                                                      | <u>40.6</u>   | percent (derived from the 1-1/2 V-Path te  | echnique) due to the Valve              | configuration. The exam volume                                                     |  |  |  |  |  |  |
|                                                                      | was (         | computed using actual OD pipe sizes and    | <u>d schedule wall thicknesse</u>       | s. The Length value is computed                                                    |  |  |  |  |  |  |
|                                                                      | using         | the diameter at the inner one third of the | e pipe wall thickness.                  |                                                                                    |  |  |  |  |  |  |
| PRE                                                                  | PARE          | ο . N                                      | TE: REVIEWER:                           | DATE:                                                                              |  |  |  |  |  |  |
| A                                                                    | €.            | Zangenfeld 05/17/99                        | $ $ $\wedge  $                          | 5/20/99                                                                            |  |  |  |  |  |  |



| FRA                                     | MATOME                                                                          |                                                            | 117                                      | CALIR                     | RATION                                    | I DATA S                                                                                                                                                                         |             | UTCA_CR1.FRP 0   | 2/22/98<br>113 |
|-----------------------------------------|---------------------------------------------------------------------------------|------------------------------------------------------------|------------------------------------------|---------------------------|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------------|----------------|
| Customer: SALEM U                       | ·· _··· ··· ··· ··· ··· ··· ··· ··· ···                                         | Exam                                                       | Date:                                    | 05/07/9                   |                                           | Figure No.:                                                                                                                                                                      |             | E< <b>3/8.03</b> |                |
|                                         |                                                                                 |                                                            |                                          |                           |                                           | Calibration No                                                                                                                                                                   |             |                  |                |
| System/Component I.D.:                  | 8-CS-2227-5 (S                                                                  | ummary #/                                                  | /00000)                                  |                           |                                           |                                                                                                                                                                                  |             | 2108             |                |
| Component Description:                  | Valve 21CS2 Te                                                                  | o Pipe Weld                                                | 1                                        |                           |                                           |                                                                                                                                                                                  |             |                  |                |
| ISO/Drawing No: CS-2                    | 2-2, B-79                                                                       | Procedure 1                                                | No./Rev.:                                | 54-ISI-12                 | REV. 01                                   | Code/Accept.                                                                                                                                                                     | Criteria: A | SME 1986,        | Sec. 2         |
| Material: SS                            | <u> </u>                                                                        | Diameter:                                                  |                                          | 8.0" OD                   |                                           | Thickness:                                                                                                                                                                       | 0.          | .14"             |                |
| INSTRUMEN                               | T SETTINGS                                                                      |                                                            | SEAR                                     | H UNIT                    |                                           | CAL                                                                                                                                                                              | IBRATIO     | N STANDAR        | )              |
| Mfg: STAVELEY                           | Model: SONIC-136                                                                | DB /Serial N                                               | No.: 3463                                | 6                         |                                           | Cal. Block No.                                                                                                                                                                   | 8-SS-101    | 40-24-SAM        |                |
| Serial/MT&E#:: DB#                      | 12105                                                                           | Size:                                                      | 0.2                                      | S" DIA.                   |                                           | Cal. Block Thi                                                                                                                                                                   | ckness (in  | ): 0.140"        |                |
| Mat. Cal./Velocity: 0.284               | in/us                                                                           | Freq. (MHz)                                                | ): 2.2                                   | 5                         |                                           | Cal. Block Dia                                                                                                                                                                   | . (in): 8.0 | 11               |                |
| Delay: 0.513"                           | Zero Offset: N/A                                                                |                                                            | /Single/Dual                             | : Shear/Si                | ngle                                      | Temp (F) Bloc                                                                                                                                                                    |             | Comp.: 78        |                |
| Each Major Screen Div.#                 | -4                                                                              | Nominal An                                                 |                                          | Measure                   |                                           | Therm. No.:                                                                                                                                                                      |             |                  |                |
| Channel#: 15                            |                                                                                 |                                                            | : 0.95" x 0                              |                           |                                           | Couplant Type                                                                                                                                                                    |             |                  |                |
| Range: 5,07"                            | Freq (MHz): 2.25                                                                |                                                            | & Length: 1                              |                           | <br>)†                                    | Couplant Bate                                                                                                                                                                    |             | 05325            |                |
| Damping: 500 Ohms                       | Reject: Off                                                                     |                                                            | nectors: 0                               |                           |                                           | 1                                                                                                                                                                                |             | TD. SIMULA       |                |
| Rep.Rate: 4.0 Khz                       | Pulse: 100 ns                                                                   |                                                            |                                          |                           |                                           | Serial No.:                                                                                                                                                                      |             | N/A              |                |
| Gate: Off                               | Display: Filter 1                                                               | <u>†</u>                                                   | DAC                                      | PLOT                      |                                           |                                                                                                                                                                                  |             |                  |                |
| Mode: Pulse Echo                        | Jack: XMT                                                                       | 100 ,                                                      |                                          |                           |                                           | Sweep Position/Depth: N/A<br>Signal Amp. (%): N/A                                                                                                                                |             |                  |                |
| Ref. Sensitivity: 55.8                  |                                                                                 |                                                            |                                          |                           |                                           |                                                                                                                                                                                  |             |                  | · · · ·        |
| Scan Sensitivity: 61.8                  |                                                                                 | 80                                                         | ╷╷╷╷╷<br>╷╷╷╷╷                           |                           |                                           | Gain DB (dB): N/A<br>EXAM DATA                                                                                                                                                   |             |                  |                |
|                                         |                                                                                 | 70                                                         |                                          |                           |                                           | Coop Disastic                                                                                                                                                                    |             |                  | 1\             |
| (Amt. dB to bring                       |                                                                                 | 60                                                         | ۲ : ۲ : ۲ : ۲<br>سالم – اس – اس .        |                           |                                           | Scan Direction to Weld: US (One Sided)<br>(0 to Material, US, DS, CW, CCW, Vessel: UP/Down)                                                                                      |             |                  |                |
| Notch dB (Piping): 55.8                 |                                                                                 | 50 + -                                                     |                                          |                           |                                           |                                                                                                                                                                                  |             |                  |                |
| Notch dB (Vessels): N/A                 |                                                                                 | 40                                                         |                                          |                           |                                           | Recordable Geometry (Yes/No):       NO         Recordable Indications (Yes/No):       NO         Limited Exam (Yes/No):       Note-1         Percent Scan Completed:       40.6% |             |                  |                |
| CALIBRATIO                              |                                                                                 | 30 + -                                                     |                                          |                           |                                           |                                                                                                                                                                                  |             |                  |                |
|                                         | ne OK Initials                                                                  | 20                                                         | . 1 _ 1 _ 1 _ 1 _                        |                           |                                           |                                                                                                                                                                                  |             |                  |                |
| Initial Cal: 0900                       |                                                                                 |                                                            | ו ו ו<br>                                | ן ן<br>                   |                                           |                                                                                                                                                                                  |             |                  |                |
| Init. Sim. Cal: N/A                     |                                                                                 |                                                            | <br>                                     | 1 1<br>                   |                                           | Percent Exam                                                                                                                                                                     |             |                  |                |
| Intermediate: N/A                       |                                                                                 | 0 1                                                        | 2 3 4                                    | 5 6 7                     | 8 9 10                                    | 0 DEG. WELD THICKNESS ONLY                                                                                                                                                       |             |                  |                |
| Intermediate: N/A                       |                                                                                 | <b></b>                                                    |                                          |                           |                                           | Comp.: Valve (Note-3)                                                                                                                                                            |             |                  |                |
| Intermediate: N/A                       |                                                                                 |                                                            |                                          | vs. Range                 |                                           | BM: 0.53" HAZ: 0.43"                                                                                                                                                             |             |                  |                |
| Intermediate: N/A                       |                                                                                 | Signal to N                                                | oise Ratio:                              | ~2:1                      | ·                                         | C/L Weld: 0.23"                                                                                                                                                                  |             |                  |                |
| Intermediate: N/A                       | w/1.1                                                                           | 4                                                          |                                          |                           |                                           | Comp.; Pipe                                                                                                                                                                      |             | ·······          |                |
| Final Cal.: 123                         |                                                                                 | <u> </u>                                                   |                                          |                           |                                           | BM: 0.14" HAZ: 0.14"                                                                                                                                                             |             |                  |                |
| Scan Direction                          |                                                                                 | 0 Deg.                                                     |                                          | xial                      | Circ                                      | Crown HT.:                                                                                                                                                                       | ~1/3        | 32''             | ····           |
| (Yes.<br>Reflector                      | /NO)                                                                            | NO Notab                                                   |                                          | ES                        | <u>NO</u>                                 | Weld Width:                                                                                                                                                                      | ~ 0.        | 3"               |                |
| Sweep Pos./Depth in Inc                 | -hae                                                                            | ID Notch                                                   | OD Notch                                 | ID Notch                  |                                           | ┼───┼                                                                                                                                                                            |             | ┼┤               | *              |
| Amplitude in %                          |                                                                                 | 0.14"                                                      | 0.28"                                    | 0.42"                     |                                           | ┼╍╍╍┤╸                                                                                                                                                                           |             | <u> </u>         |                |
| Gain In dB                              | 80<br>55.8                                                                      | 55<br>55.8                                                 | 20<br>55.8                               |                           | ┼╌╌╌╴╸┼╴                                  |                                                                                                                                                                                  |             |                  |                |
| Notes: Note-1: The 70 d<br>The total    | l examination coverage i<br>rdable indications were<br>zation SU2-99-005 was us | examination w<br>is 39.8%. See<br>found.<br>sed with 54-IS | vas performe<br>attached Ex<br>I-121-01. | ed from one<br>camination | Coverage Repo                             | ort.                                                                                                                                                                             | Ū           |                  |                |
| step wedge.                             |                                                                                 |                                                            |                                          |                           |                                           |                                                                                                                                                                                  |             |                  |                |
| Examiner: D.G.<br>Sign: <i>Mavillow</i> | i. Garcia Level:   <br>Nota                                                     | Date:                                                      | 05/07/99                                 | Examine<br>Sign:          |                                           | /A                                                                                                                                                                               | Level:      | Date:            | <u> </u>       |
|                                         |                                                                                 |                                                            |                                          |                           | 1. I. |                                                                                                                                                                                  |             | i Datas          |                |

| Examiner:<br>Sign: | D.G. Garcia Level:                           | Date: 05/07/99            | Examiner:<br>Sign:               | N/A     | Level: | Date:            |   |
|--------------------|----------------------------------------------|---------------------------|----------------------------------|---------|--------|------------------|---|
| Reviewed:<br>Sign: | D.J. Langenfeld Level: II<br>D.J. Zangenfeld | Date:<br>0 <i>5/10/99</i> | ANII <del>Review:</del><br>Sign: | las Hul | MATIGN | Date:<br>5-27-99 |   |
| Customer:<br>Sign: | Warne Denlinger                              | R Date:<br>5-20-99        |                                  | Page:   | 2      | of 6             | - |
|                    |                                              |                           |                                  |         | •      |                  |   |

|                   |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     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|                   | IIT-2, 10 RFO<br>8-CS-2227-5 (Su<br>Valve 21CS2 To<br>2, B-79<br>SETTINGS<br>Model: SONIC-136<br>2102<br>in/us<br>Zero Offset: N/A<br>.046 <sup>41</sup><br>Freq (MHz): 5.0<br>Reject: Off<br>Pulse: 100 ns<br>Display: Filter 1<br>Jack: XMT<br>b<br>Notch to DAC)<br>db<br>N CHECK<br>e OK Initials | IIT-2, 10 RFOExam8-CS-2227-5 (Summary #7Valve 21CS2 To Pipe Weld2, B-79Procedure NDiameter:SETTINGSModel: SONIC-136DB /Serial N2102Size:in/usFreq. (MHz)Zero Offset:N/ALong/Shearn.046 <sup>41</sup> Nominal AnFixture/SizeFreq (MHz):5.0Cable TypeReject:OffNo. of ConnPulse:100 nsDisplay:Filter 1Jack:XMT10-1.04660.04670.046Notch to DAC)70.04000102030404050607080900000102030404050607080900010203040405060708 <t< td=""><td>IIT-2, 10 RFO       Exam Date:         8-CS-2227-5 (Summary #700000)         Valve 21CS2 To Pipe Weld         2, B-79       Procedure No./Rev.: 5         Diameter:         SETTINGS       SEARC         Model: SONIC-136       DB /Serial No.: 00C83         2102       Size: 0.25         in/us       Freq. (MHz): 5.4         Zero Offset: N/A       Long/Shear/Single/Dual         .046<sup>41</sup>       Nominal Angle: 45         Fixture/Size: 0.75" x 0         Freq (MHz): 5.0       Cable Type &amp; Length: J         Reject: Off       No. of Connectors: 0         Pulse: 100 ns       Display: Filter 1         Dack: XMT       100         40       -1         50       -1         60       -1         90       -1         90       -1         90       -1         90       -1         90       -1         91       -1         92       -1         93       -1         94       -1         90       -1         90       -1         90       -1         91       -1      <tr< td=""><td>IIT-2, 10 RFO       Exam Date:       05/07/4         8-CS-2227-5 (Summary #700000)       Valve 21CS2 To Pipe Weld         -2, B-79       Procedure No./Rev.:       54-ISI-12         Diameter:       8.0" OE         SETTINGS       SEARCH UNIT         Model: SONIC-136       DB /Serial No.:       00C81D         12102       Size:       0.25" DIA.         in/us       Freq. (MHz):       5.0         Zero Offset:       N/A       Long/Shear/Single/Dual:       Shear/S         .046<sup>41</sup>       Nominal Angle:       45       Measur         Freq (MHz):       5.0       Cable Type &amp; Length:       RG-174/12,         Reject:       Off       No. of Connectors:       0         Pulse:       100 ns       Display:       Filter 1       DAC PLOT         Jack:       XMT       100       -1       -1       -1       -1         Notch to DAC)       70       -1       -1       -1       -1       -1         Mb       50       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       &lt;</td><td>IIT-2, 10 RFO       Exam Date:       05/07/99         8-CS-2227-5 (Summary #700000)         Valve 21CS2 To Pipe Weld         2, B-79       Procedure No./Rev.:       54-ISI-121 REV. 01         Diameter:       8.0" OD         SETTINGS       SEARCH UNIT         Model: SONIC-136       DB /Serial No.:       00C81D         2102       Size:       0.25" DIA.         in/us       Freq. (MHz):       5.0         Zero Offset:       N/A       Long/Shear/Single/Dual:         .046<sup>41</sup>       Nominal Angle:       45         Fixture/Size:       0.75" x 0.45"         Freq (MHz):       5.0       Cable Type &amp; Length:         Reject:       Off       No. of Connectors:       0         Pulse:       100 ns       Display:       Filter 1         Jack:       XMT       100       -1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1</td><td>IIT-2, 10 RFO         Exam Date:         05/07/99         Figure No.:           8-CS-2227-5 (Summary #700000)         Calibration No.:         Valve 21CS2 To Pipe Weld           2, B-79         Procedure No./Rev.:         54-ISI-121 REV. 01         Code/Accept. C           Diameter:         8,0" OD         Thickness:           SETTINGS         SEARCH UNIT         CALIB           Model: SONIC-136         DB /Serial No.:         000281D         Cal. Block No. 8,-2102           Size:         0.25" DIA.         Cal. Block No. 8,-2102         Size:         0.25" DIA.           Add<sup>41</sup>         Nominal Angle:         45         Measured:         45           Zero Offset:         N/A         Long/Shear/Single/Dual:         Shear/Single         Temp (F) Block:           Gelfset::         Off         No. of Connectors:         0         Couplant Type:           Freq (MHz):         5.0         Cal. Block Dia. (2ALIBR/         Serial No.:           Display:         Filter 1         DAC PLOT         Sweep Position/           Jack:         XMT         100        </td></tr<></td></t<> | IIT-2, 10 RFO       Exam Date:         8-CS-2227-5 (Summary #700000)         Valve 21CS2 To Pipe Weld         2, B-79       Procedure No./Rev.: 5         Diameter:         SETTINGS       SEARC         Model: SONIC-136       DB /Serial No.: 00C83         2102       Size: 0.25         in/us       Freq. (MHz): 5.4         Zero Offset: N/A       Long/Shear/Single/Dual         .046 <sup>41</sup> Nominal Angle: 45         Fixture/Size: 0.75" x 0         Freq (MHz): 5.0       Cable Type & Length: J         Reject: Off       No. of Connectors: 0         Pulse: 100 ns       Display: Filter 1         Dack: XMT       100         40       -1         50       -1         60       -1         90       -1         90       -1         90       -1         90       -1         90       -1         91       -1         92       -1         93       -1         94       -1         90       -1         90       -1         90       -1         91       -1 <tr< td=""><td>IIT-2, 10 RFO       Exam Date:       05/07/4         8-CS-2227-5 (Summary #700000)       Valve 21CS2 To Pipe Weld         -2, B-79       Procedure No./Rev.:       54-ISI-12         Diameter:       8.0" OE         SETTINGS       SEARCH UNIT         Model: SONIC-136       DB /Serial No.:       00C81D         12102       Size:       0.25" DIA.         in/us       Freq. (MHz):       5.0         Zero Offset:       N/A       Long/Shear/Single/Dual:       Shear/S         .046<sup>41</sup>       Nominal Angle:       45       Measur         Freq (MHz):       5.0       Cable Type &amp; Length:       RG-174/12,         Reject:       Off       No. of Connectors:       0         Pulse:       100 ns       Display:       Filter 1       DAC PLOT         Jack:       XMT       100       -1       -1       -1       -1         Notch to DAC)       70       -1       -1       -1       -1       -1         Mb       50       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       &lt;</td><td>IIT-2, 10 RFO       Exam Date:       05/07/99         8-CS-2227-5 (Summary #700000)         Valve 21CS2 To Pipe Weld         2, B-79       Procedure No./Rev.:       54-ISI-121 REV. 01         Diameter:       8.0" OD         SETTINGS       SEARCH UNIT         Model: SONIC-136       DB /Serial No.:       00C81D         2102       Size:       0.25" DIA.         in/us       Freq. (MHz):       5.0         Zero Offset:       N/A       Long/Shear/Single/Dual:         .046<sup>41</sup>       Nominal Angle:       45         Fixture/Size:       0.75" x 0.45"         Freq (MHz):       5.0       Cable Type &amp; Length:         Reject:       Off       No. of Connectors:       0         Pulse:       100 ns       Display:       Filter 1         Jack:       XMT       100       -1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1</td><td>IIT-2, 10 RFO         Exam Date:         05/07/99         Figure No.:           8-CS-2227-5 (Summary #700000)         Calibration No.:         Valve 21CS2 To Pipe Weld           2, B-79         Procedure No./Rev.:         54-ISI-121 REV. 01         Code/Accept. C           Diameter:         8,0" OD         Thickness:           SETTINGS         SEARCH UNIT         CALIB           Model: SONIC-136         DB /Serial No.:         000281D         Cal. Block No. 8,-2102           Size:         0.25" DIA.         Cal. Block No. 8,-2102         Size:         0.25" DIA.           Add<sup>41</sup>         Nominal Angle:         45         Measured:         45           Zero Offset:         N/A         Long/Shear/Single/Dual:         Shear/Single         Temp (F) Block:           Gelfset::         Off         No. of Connectors:         0         Couplant Type:           Freq (MHz):         5.0         Cal. Block Dia. (2ALIBR/         Serial No.:           Display:         Filter 1         DAC PLOT         Sweep Position/           Jack:         XMT         100        </td></tr<> | IIT-2, 10 RFO       Exam Date:       05/07/4         8-CS-2227-5 (Summary #700000)       Valve 21CS2 To Pipe Weld         -2, B-79       Procedure No./Rev.:       54-ISI-12         Diameter:       8.0" OE         SETTINGS       SEARCH UNIT         Model: SONIC-136       DB /Serial No.:       00C81D         12102       Size:       0.25" DIA.         in/us       Freq. (MHz):       5.0         Zero Offset:       N/A       Long/Shear/Single/Dual:       Shear/S         .046 <sup>41</sup> Nominal Angle:       45       Measur         Freq (MHz):       5.0       Cable Type & Length:       RG-174/12,         Reject:       Off       No. of Connectors:       0         Pulse:       100 ns       Display:       Filter 1       DAC PLOT         Jack:       XMT       100       -1       -1       -1       -1         Notch to DAC)       70       -1       -1       -1       -1       -1         Mb       50       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       -1       < | IIT-2, 10 RFO       Exam Date:       05/07/99         8-CS-2227-5 (Summary #700000)         Valve 21CS2 To Pipe Weld         2, B-79       Procedure No./Rev.:       54-ISI-121 REV. 01         Diameter:       8.0" OD         SETTINGS       SEARCH UNIT         Model: SONIC-136       DB /Serial No.:       00C81D         2102       Size:       0.25" DIA.         in/us       Freq. (MHz):       5.0         Zero Offset:       N/A       Long/Shear/Single/Dual:         .046 <sup>41</sup> Nominal Angle:       45         Fixture/Size:       0.75" x 0.45"         Freq (MHz):       5.0       Cable Type & Length:         Reject:       Off       No. of Connectors:       0         Pulse:       100 ns       Display:       Filter 1         Jack:       XMT       100       -1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 | IIT-2, 10 RFO         Exam Date:         05/07/99         Figure No.:           8-CS-2227-5 (Summary #700000)         Calibration No.:         Valve 21CS2 To Pipe Weld           2, B-79         Procedure No./Rev.:         54-ISI-121 REV. 01         Code/Accept. C           Diameter:         8,0" OD         Thickness:           SETTINGS         SEARCH UNIT         CALIB           Model: SONIC-136         DB /Serial No.:         000281D         Cal. Block No. 8,-2102           Size:         0.25" DIA.         Cal. Block No. 8,-2102         Size:         0.25" DIA.           Add <sup>41</sup> Nominal Angle:         45         Measured:         45           Zero Offset:         N/A         Long/Shear/Single/Dual:         Shear/Single         Temp (F) Block:           Gelfset::         Off         No. of Connectors:         0         Couplant Type:           Freq (MHz):         5.0         Cal. Block Dia. (2ALIBR/         Serial No.:           Display:         Filter 1         DAC PLOT         Sweep Position/           Jack:         XMT         100 |  |

Notes: Note-1: The 45 degree shear wave circumferential examination was limited due to the weld and Valve configuration.

The total examination coverage is 39.8%. See attached Examination Coverage Report.

No recordable indications were found. Change Authorization SU2-99-005 was used with 54-ISI-121-01.

Note-2: A zero degree lamination examination was performed and no recordable indications were found.

Note-3: The surface distance between the 45 degree transducer exit point and the ID notch is ~0.15 inches.

|           |                 |                   | Sign:        | FARTORY MINT |        |                  |
|-----------|-----------------|-------------------|--------------|--------------|--------|------------------|
| Examiner: |                 | Date:<br>05/10/99 | ANII Review: | les Les      | MATION | Date:<br>5-27-99 |
|           | WAYNE DENLINGER | Date:             |              | Page:        | 3      | of 6             |