

UNITED STATES GOVERNMENT

# Memorandum

TENNESSEE VALLEY AUTHORITY  
NEB '830823 262

TO : L. M. Mills, Manager of Nuclear Licensing, 400 CST2-C

FROM : John A. Raulston, Chief, Nuclear Engineering Support Branch,

W10C126 C-K  
DATE : AUG 23 1983

830829K0017

(3)

SUBJECT: Watts Bar Nuclear Plant - FSAR REVISION PACKAGE NO. 385

Attached is FSAR Revision Package No. 385. The package contains approved OECD design input in accordance with ANSI N45.2.11 for incorporation into the FSAR. As such, the material should not be changed substantially without the prior written approval of NEB-NLS.

If you have any questions on this matter, contact Steve Stant at extension 7171.

*John A. Raulston*  
John A. Raulston

JRW  
Attachment  
cc: CEDS, W5B63 C-K, w/all attachments except figures  
C.M. Pierce 104 CST2-C  
John Standifer, 207 BAE

Principally prepared by Steve Stant extension 7171

DE05;FSAR.R



473

Sheet 1 of 1

ATTACHMENT  
FSAR REVISION PACKAGE NO. 285  
Watts Gas NUCLEAR PLANT

Affected FSAR pages, tables, and figures:

<u>page 3.7-2</u>	<hr/>	<hr/>
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Prepared by: Dottie Qualls

Date: Aug. 22, 1983

474

WBNP

For asymmetric structures, except the steel containment vessel, an eccentricity of 5-percent of the diameter was ~~was~~ assumed. Eccentricity was essentially neglected in modeling the steel containment because of its inherent torsional rigidity.

### 3.7.2.1.1 Category I Rock-Supported Structures

The seismic analyses of Category I structures were based upon dynamic analyses using the lumped mass normal mode method with idealized mathematical models. The inertial properties of the models were characterized by the mass, eccentricity, and mass moment of inertia of each mass point. Mass points were located at floor slabs, changes in geometry, and at intermediate points to accurately model the structure. The stiffness properties were characterized by the moment of inertia, area, shear shape factor, torsion constant, Young's modulus, and shear modulus. All significant modes of vibration were considered in determining the total response. For structures with significant built-in asymmetry, coupled translation and torsion were considered. ~~For axisymmetric structures, an eccentricity of 5 percent of the diameter was assumed.~~ Structural response was calculated in both the east-west and north-south directions except where symmetry justifies one direction. The effect of vertical modes was computed and included in the structural response.

For structures surrounded by soil, the effect of the soil stiffness on the structural response was determined by replacing the soil with springs of equivalent stiffness. Due to seismic motion, the soil pressure against structures was increased above the static soil pressure. The magnitude of this increase was determined by using the shaking table experiments performed for the design of TVA's Kentucky hydro project [1]. For a ground acceleration of 0.18g the static soil pressure was increased 46 percent for a dry fill and 22 percent for a saturated fill. This incremental increase was combined with the static pressure as a triangle of pressure whose apex is at the rock surface and maximum ordinate is at the ground surface. In addition to the soil pressure increase as described above for a saturated fill, the hydrostatic pressure of water within the fill was increased 22 percent. This incremental increase was combined with the static water pressure as a triangle of pressure whose apex is at the water surface and maximum ordinate is at the rock surface or bottom of structure. Calculations using the shaking table experiment results have been confirmed using information in reference [2]. A more detailed description of the seismic analyses of Category I rock-supported structures is discussed below.

The in site measured shear wave velocity of the bedrock upon which the structures are founded has an average value of 5900 feet per second. Therefore, the effect of structure-foundation interaction was investigated for the major structures. The results of the investigation are discussed below as one of the parameters associated with the analysis of those structures.

UNITED STATES GOVERNMENT

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Memorandum

TENNESSEE VALLEY AUTHORITY

CEB '83 1028 008

TO : Civil Engineering Support Branch Files

FROM : Robert E. Day, Mechanical Engineer (Engineering Mechanics Group), Civil Engineering Support Branch, W9D203 C-K

DATE : OCT 28 1983

SUBJECT: WATTS BAR NUCLEAR PLANT - STEEL CONTAINMENT VESSELS FOR THE REACTOR BUILDINGS - EFFECT OF MASS ECCENTRICITY ON RESPONSE SPECTRA

Reference: Report CEB 81-4, "Watts Bar Nuclear Plant - Reactor Building - Dynamic Earthquake Analysis of the Steel Containment Vessel and Response Spectra for Attached Equipment" (CEB 810226 035)

TVA commissioned Black and Veatch to perform an independent review of the auxiliary feedwater system for WBN unit 1. One of the findings which resulted from this review was that a minimum eccentricity equal to 5 percent of the vessel diameter, as required by the FSAR, was not used in the seismic analysis of the steel containment vessel. A study has been performed in response to this finding in order to demonstrate that this discrepancy does not significantly affect the response spectra results presented in the reference. A summary of the results of this study is attached.

*Robert E. Day*  
Robert E. Day

IN		OUT	
N	Date, Time	Date, Time	
✓			ROB
		3/12	ELH
			CG
cy			NAL
			MCR
			TCC
✓	11		WAE
✓		4 10	ORD
✓		7 4	DCG
cy		14 1030	RED
			RFP
			ROR
			TAR

RED:DCG  
Attachment  
cc: R. O. Barnett, W9D224 C-K (Attachment)

10/28/83 -- ROB:BLL  
cc: MEDS, W5B63 C-K (Attachment)  
R. M. Pierce, 104 ESTA-K  
M. N. Sprouse, W11A9 C-K  
J. C. Standifer, 204 GB-K (Attachment)



PURPOSE

Black and Veatch was commissioned by TVA to perform an independent review of the auxiliary feedwater system for WBN unit 1. In the course of this study, it was determined that a minimum eccentricity equal to 5 percent of the diameter, as required by the FSAR, was not used in the seismic analysis of the steel containment vessel (SCV). This discrepancy was reported by Black and Veatch as finding number F504, "The 5-percent minimum eccentricity committed to in FSAR section 3.7.2.1.1 for axisymmetric structures was not considered in the modeling of the containment vessel (document CEB 820810 002, revision 0) and the development of floor response spectra."

APPROACH

A study has been conducted with the objective of demonstrating that the failure to consider a 5-percent minimum eccentricity in the SCV analysis does not significantly affect the response spectra results. This assumption is based on the fact that a cylindrical shell is inherently stiff torsionally. In addition, the response spectra from the original analysis do not exhibit any significant response to the second mode of the structure, which is a predominantly torsional mode.

The first step in this study was to duplicate the original analysis using eccentricities at each mass point equal to the larger of 5 percent of the vessel diameter or the actual eccentricity at the mass point elevation. The next step in the study was to make a series of computer runs in which the eccentricity was increased in 5-percent increments. Response spectra were calculated and portions of the spectra in the region of the second vessel mode were plotted on an enlarged scale to determine the point at which the torsional response becomes significant.

The final step in this study was to calculate response spectra at the mass center, the shear center, and at the extreme points on the vessel shell. In the course of preparing the computer runs, it was discovered that the response spectra in the original analysis were calculated at the center of mass. In this study the response spectra calculated on the surface of the SCV will be used to assess the significance of eccentricity on containment response.

RESULTS

Figures 1 and 2 present copies of response spectra from the original analysis with the corresponding spectra from step 1 of this analysis superimposed. With the scale factors used on these figures, the only point which shows a significant change is the peak acceleration. Note also that the difference which is shown reflects the effects of both the increased eccentricity and the increase in response in moving from the mass center to the surface of the SCV.

Figures 4 and 5 present results from step 2 of this analysis. A "blip" in the response begins to appear at the frequency of the second mode when the eccentricity is increased to 15 percent. However, note that these figures are plotted on a greatly enlarged scale in order to show relatively small changes.

TENNESSEE VALLEY AUTHORITY 09/16/74  
RESPONSE ACCELERATION SPECTRUM  
WATTS BAR CONTAINMENT VESSEL  
MASS POINT NO. 12  
DAMPING RATIO 0.005  
1/2 SSE  
FLOOR ELEVATION 782.5  
HORIZONTAL ACCELERATION

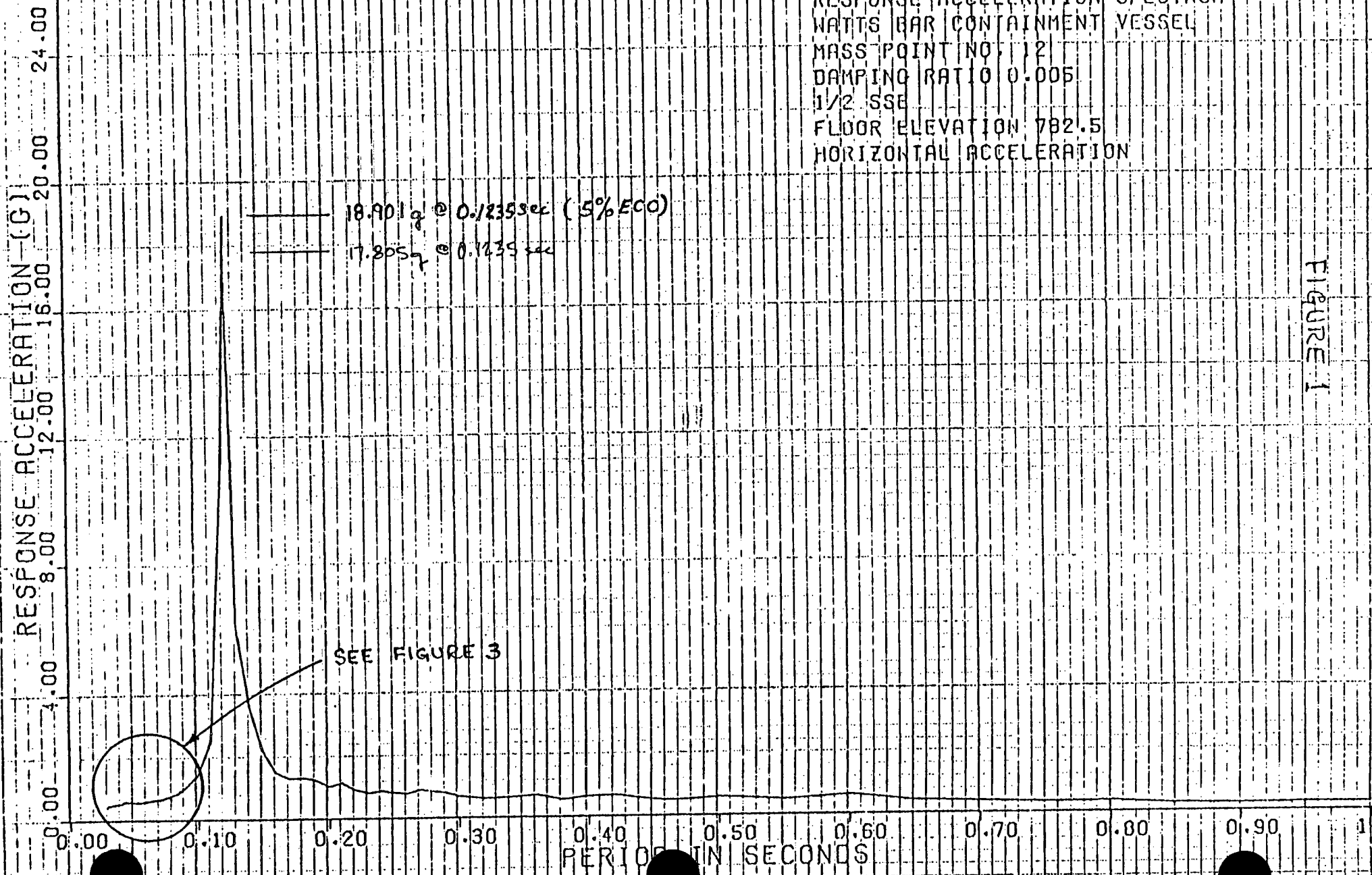


FIGURE 1

g = 316

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TENNESSEE VALLEY AUTHORITY 09/16/71  
RESPONSE ACCELERATION SPECTRUM  
WATTS BAR CONTAINMENT VESSEL  
MASS POINT NO. 19  
DAMPING RATIO 0.005  
1/2 SSE  
FLOOR ELEVATION 841.4584  
HORIZONTAL ACCELERATION

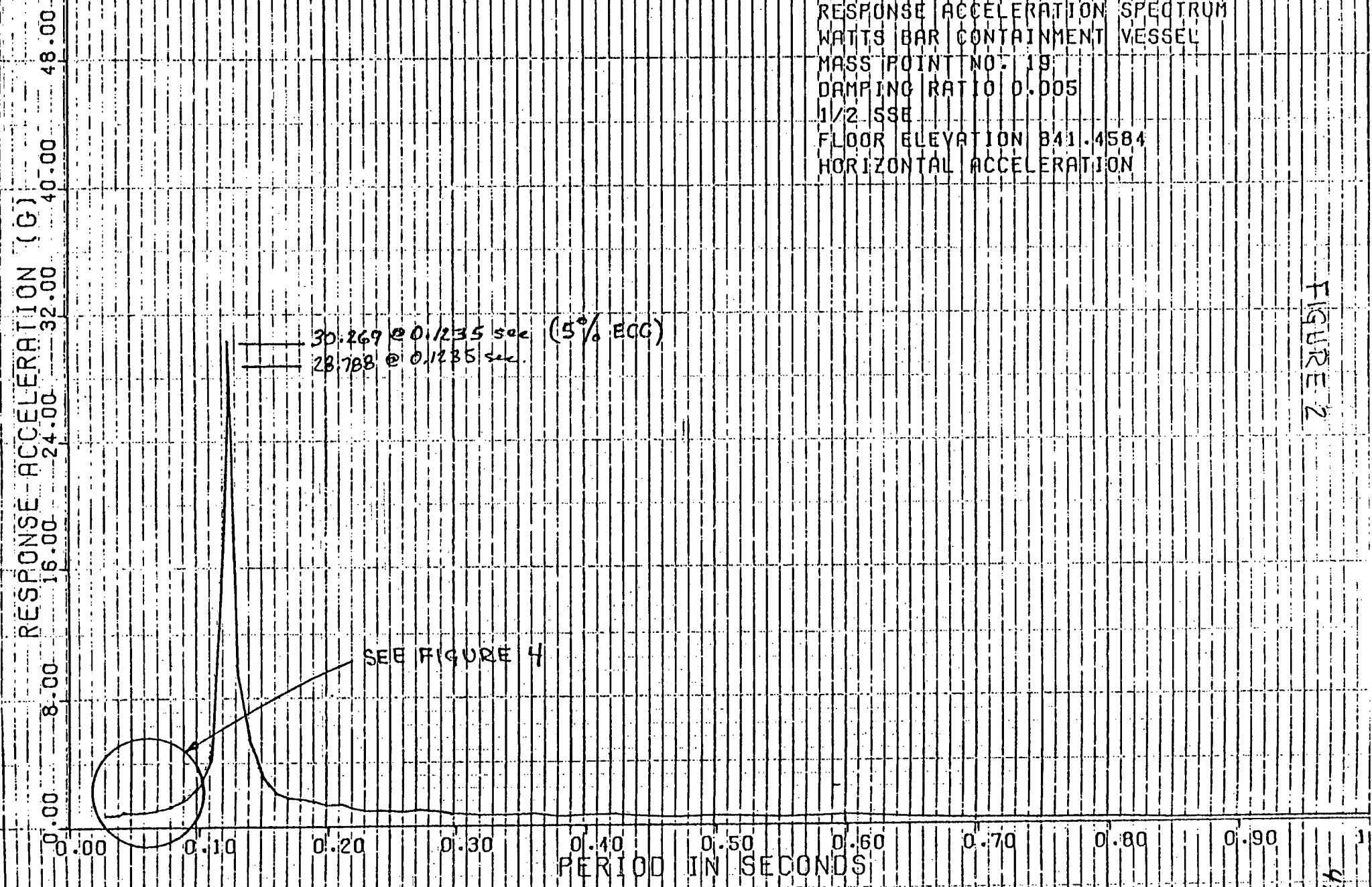


FIGURE 2

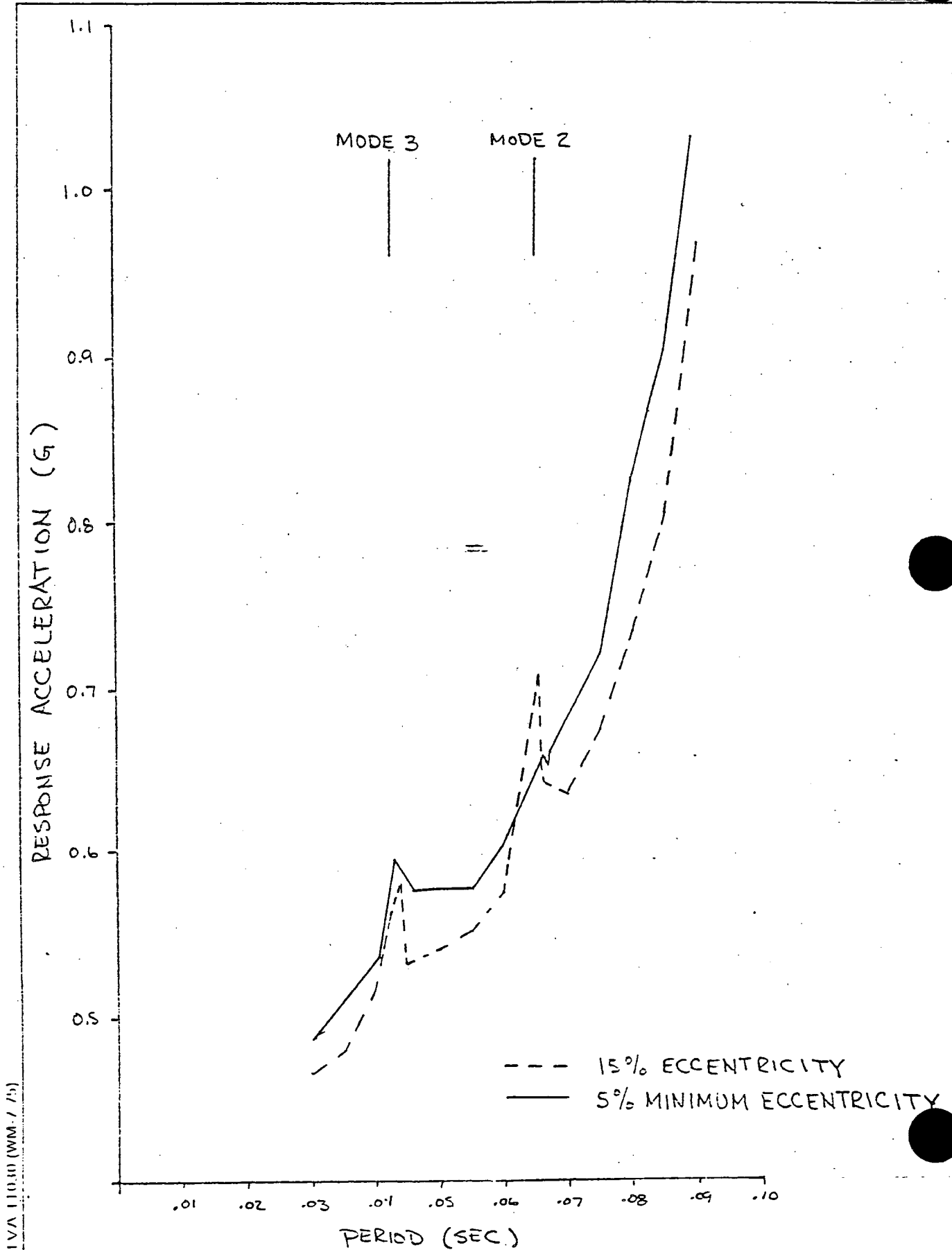
Fig B 25

478

MASS POINT 12, DAMPING RATIO 0.005

COMPUTED \_\_\_\_\_ DATE \_\_\_\_\_

CHECKED \_\_\_\_\_ DATE \_\_\_\_\_

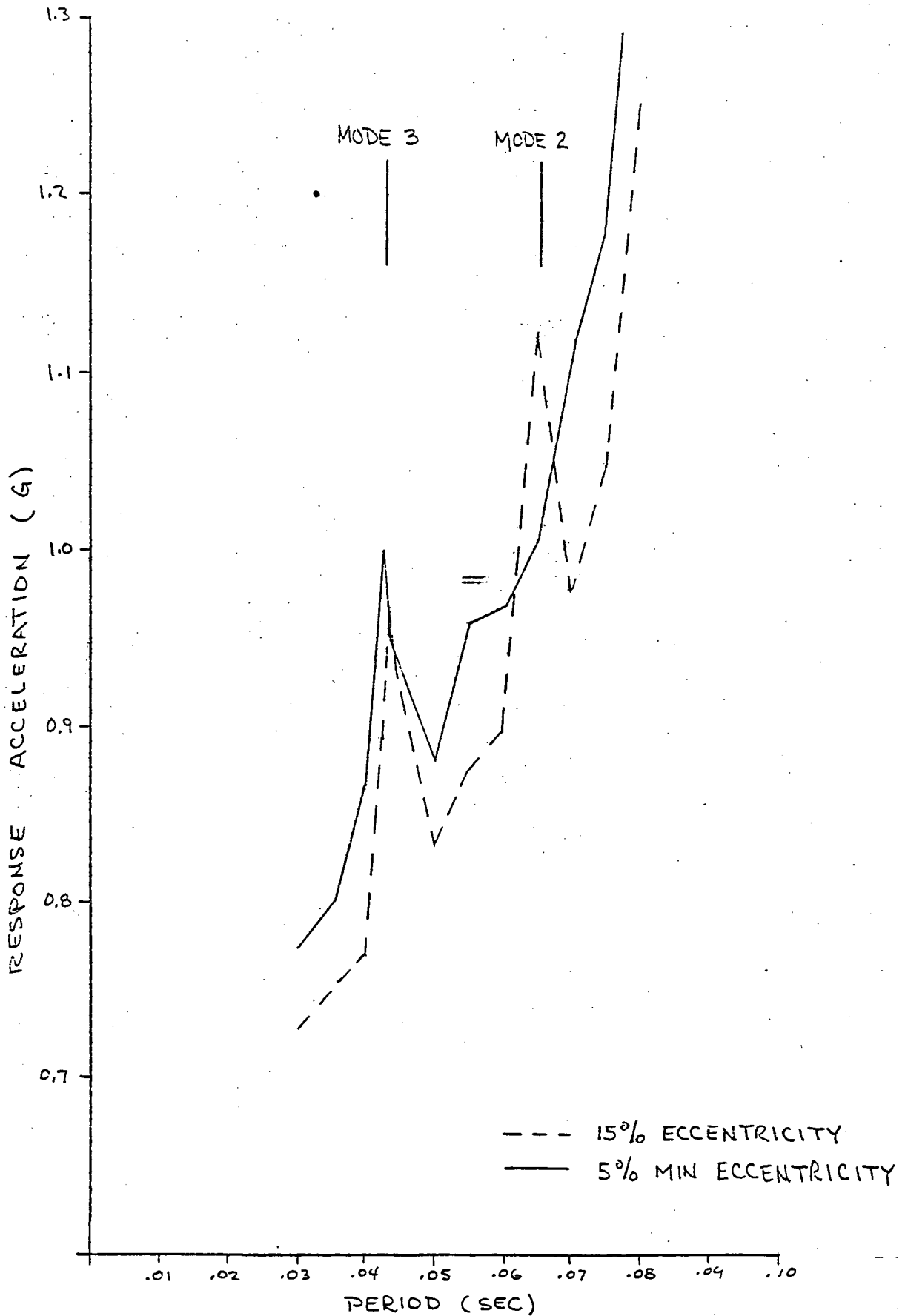




MASS POINT 19, DAMPING RATIO 0.005

COMPUTED \_\_\_\_\_ DATE \_\_\_\_\_

CHECKED \_\_\_\_\_ DATE \_\_\_\_\_



DATE: \_\_\_\_\_

COMPARISON OF MAXIMUM SPECTRAL ACCELERATIONS

COMPUTED DATE

CHECKED DATE

MASS POINT	ORIGINAL ANALYSIS	5% MINIMUM ECCENTRICITY			
		MASS CENTER	SHEAR CENTER	PLUS R	MINUS R
0.5% DAMPING					
3	2.7737	2.7841	2.7692	2.6206	2.9179
4	4.4602	4.5188	4.4933	4.2411	4.7463
6	9.0696	9.2266	9.1778	8.6892	9.6664
8	12.192	12.458	12.353	11.721	12.982
10	14.579	14.453	14.781	14.059	15.503
12	17.805	18.148	18.064	17.228	18.901
14	21.755	22.173	22.078	21.128	23.028
17	24.636	25.158	25.057	24.042	26.072
18	-	27.310	27.208	26.156	28.261
21	31.786	32.340	32.271	31.138	33.403
1.0% DAMPING					
3	1.8755	1.8648	1.8549	1.7568	1.9531
4	2.9997	3.0063	2.9894	2.8227	3.157
6	6.1145	6.1499	6.1173	5.7911	6.4435
8	8.2459	8.3122	8.2411	7.8179	8.6637
10	9.8760	9.9228	9.8743	9.3853	10.360
12	12.078	12.137	12.081	11.519	12.643
14	14.769	14.849	14.785	14.143	15.426
17	16.768	16.863	16.794	16.109	17.480
18	-	18.315	18.246	17.535	18.956
21	21.610	21.708	21.662	20.897	22.426
2.0% DAMPING					
3	1.2384	1.2206	1.2142	1.1512	1.2782
4	1.9681	1.9484	1.9377	1.8319	2.0436
6	3.9625	3.9345	3.9138	3.7061	4.1215
8	5.3365	5.3112	5.2663	4.9954	5.5356
10	6.3874	6.3361	6.3052	5.9961	6.6143
12	7.8069	7.7479	7.7120	7.3530	8.0709
14	9.5412	9.4734	9.4326	9.0247	9.84
17	10.831	10.753	10.709	10.274	11.14
18	-	11.676	11.632	11.180	12.084
21	13.956	13.832	13.803	13.317	14.289

I/A 11030 (WM-7-75)

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F/5/0/6/

O-PL

Comments pertinent to finding:

Corrective action and action to prevent recurrence are covered by NCR WBNCB8203 R1. In summary, in-place work was determined to be acceptable by a statistical sampling program and future work is covered by Project Construction Specification N3C-928 for Locating Attachments on Embedded Plates (issued 2/10/83). All corrective action is complete.

Reference: NCR WBNCB8203 R1

E.H. Cole

Program Team Member

11/14/83

Date

Thomas E. McConnell

OEDC Program Manager

11/19/83

Date

M.S. Martin for Ed Beasley

Chairman, OEDC Policy Committee

11/17/83

Date

*The attached documentation as clarified by the TVA letter Black & Veatch dated 12/16/83 (10520DIN1066) indicates that appropriate action has been taken.*

Classification: Type \_\_\_\_\_ R \_\_\_\_\_ Category A

W.J. Zitzman

Black & Veatch Project Manager

12/29/83

Date

R.E. Brandell

Black & Veatch Senior Review Team Chairman

12/30/83

Date

Memorandum

CEB '83 0512 011

TO : J. C. Standifer, Project Manager, Watts Bar Design Project, 204 GB-K

FROM : R. O. Barnett, Chief, Civil Engineering Support Branch, W9D224 C-K

DATE : MAY 12 1983

SUBJECT: WATTS BAR NUCLEAR PLANT - MULTIPLE SUPPORTS ATTACHED TO EMBEDDED PLATES -  
NCR WBNCEB8203 R1

A copy of the completed subject nonconformance report is attached.

*R. O. Barnett*  
R. O. Barnett

WBP		
MAY 13 '83		
N	Supv	Ntd
	JCS	
<input checked="" type="checkbox"/>	EHC	
	LCB	
	RDT	
	DS	
	JDC	
	DEM	
<input checked="" type="checkbox"/>	AJ	AJ
	BWJ	
	JKH	
		File
		Duplicate

*JWS*  
*JAE*

ROB:DDS:KMP

Attachment

cc (Attachment):

- J. W. Anderson, M155G MIB-K
- E. G. Beasley, W12B21 C-K
- L. J. Cooney, W6D224 C-K
- H. N. Culver, 249A HBB-K
- MEDS, W5B63 C-K
- R. M. Pierce, 104 ESTA-K
- \*J. A. Raulston, W10C126 C-K
- M. N. Sprouse, W11A9 C-K
- G. Wadewitz, Watts Bar Nuclear CONST (3)

\*The information included in the attached NCR constitutes our approved input for the final report.

Principally Prepared By: Dennis D. Stevens, Extension 3389



DIVISION OF ENGINEERING DESIGN  
NONCONFORMANCE REPORT

CEB '83 0512 010 484

MEDS Accession No.

1 REPORT NO. WBNCEB8203R1

PLANT WATTS BAR NUCLEAR PLANT 3 UNIT 1 & 2

PREPARER/ORGANIZATION/DATE B. M. McAlister/CEB/4-18-83

DESCRIPTION OF CONDITION

Multiple supports have been attached to embedded plates without a design review of the embedded plate capacity. This could result in the embedded plate anchors being overloaded and could effect any system utilizing embedded plates.

DATE OF OCCURRENCE EST ( ), ACT. ( ) 9 SIGNIFICANT CONDITION ADVERSE TO QUALITY  
*Edman, R.H., Jr.* YES  NO

METHOD OF DISCOVERY NCR 3842R 10 BEARING IDENTIFICATION  
*Edman, R.H., Jr.* 5/12/83

CORRECTIVE ACTION:

TVA has evaluated a sample of 69 embedded plates to determine if a support failure could occur. The results of the sample were determined to be acceptable since there were 0 failures out of a sample of 69. However, the inspection identified 1 embedded plate stud stressed to .96 Fy. TVA's maximum design allowable is .9 Fy. Stiffeners were added to the embedded plate to reduce the stud stress below .9 Fy. The effected support drawing (EDS drawing 1-70-138) was revised September 14, 1982, to include the required stiffeners.

TVA has completed an analysis of the updated embedded plate sample that covers the period from the time the original sample was taken on March 27, 1982 through January 1983 when the new spacing requirements were being implemented. No additional anchors were found to be overloaded. The support that was determined to have an overloaded stud from the original sample was modified April 4, 1983, to reduce the stud load below .9 Fy.

12 CORRECTIVE ACTION DEVIATES FROM A DESIGN CRITERIA REQUIREMENT YES  NO

13 DESIGN CRITERIA DOCUMENT NO. EXCEPTION REQUEST NO.

ECN REQUIRED  YES  NO  I CN NO 15 SCHEDULE IMPACT  P  A  N

5097

DE  
FCN/R

NONCONFORMANCE REPORT

485  
REPORT NO. WBNCEB82

16 ASSIGNABLE CAUSE: (REQUIRED IF SIGNIFICANT)

EN DES did not provide CONST with requirements in a construction specification or on design drawings to control the minimum distance between attachments on embedded plates or the minimum distance between attachments and embedded plate edges.

THIS IS A GENERIC CONDITION YES  NO

ACTION REQUIRED TO PREVENT RECURRENCE: (REQUIRED IF SIGNIFICANT)

CEB issued WBN Construction Specification N3C-928 (February 10, 1983) for locating attachments on embedded plates. The specification requires design approval of all future attachments to embedded plates that do not meet the specified minimum spacing requirements.

19 \*INDEPENDENT REVIEW: *RI* Rupert Bullock *Rupert Bullock* 5/5/83

20 LABOR EST. ( ) ACT. ( ) MH  21 SCHEDULE EST. ( ) ACT. ( )

22 ACTIVITY NO. 23 TASK DESCRIPTION 24 DATE INITIATED

25 REMARKS:

This revision is being issued because a construction specification was used to transmit the spacing requirements to Construction instead of drawing notes.

27 DISTRIBUTION:  
CONST PROJECT MANAGER  
28 EN DES PROJECT MANAGER  
CHIEF, ESB  
OFFICE OF QA  
NEB (for Significant NCRs)\*\*  
MEDS CIS  
NSRS (for Significant NCRs)\*  
ASSISTANT TO THE MANAGER OF OEDC (Quality and Nuclear Safety) -for Significant NCRs  
DISTRIBUTE AFTER THIS SIGNATURE  
\*\* HANDCARRY COPY TO NEB-NLS

26 ALL EN DES ACTION COMPLETE:

*Altranet* 5/12  
\*BRANCH CHIEF/ORG. DA  
CFR '83 0512 1

MEDS ACCESSION NO.

CEB 8305120619

EN DES  
NONCONFORMANCE REPORT COMPLETION VERIFICATION SHEET

NCR NO. W8N CEB 8203 R1

SIGNIFICANT  
YES  NO

REPORTABLE  
YES  NO

A. Have any analyses, contracts, memorandums, etc., requiring EN DES work been generated? Yes  No  If yes, list in (C) below.

B. Have all ECNs related to the NCR been issued?  
N/A  Yes  No  If yes, list in (C) below.

830518T0004 (1)

C. Documents related to the NCR (ECN, analyses, memos, contract No., etc.)

	REF OR MEDS ACCESS. NO.	STATUS	
		WORKING (see (F) below)	COMPLETE
<u>INTERIOR REQUIREMENTS - INFORMATION</u>	<u>QUALITY 82110017 CEB 8203</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>CONSTRUCTION SPECIFICATIONS</u>	<u>N3C-928</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>BASE PLATE CALCULATIONS</u>	<u>SMP 83024 Q18 -025</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>DRAWING REVISION</u>	<u>1-70-138 Rev 903</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

D. Is action by organization outside EN DES required? Yes  No   
Organization tracking No. (NCR, QCIR, etc.) FIELD TO MAINTY SAMPET PER DOW. Rev.

E. Has all necessary EN DES information been transmitted to an organization outside EN DES to enable the completion of work required?  
Yes  No  N/A  If yes, list in (C) above.

F. If any document listed in (C) above is indicated in the working status block, item 26 on the NCR cannot be signed.

G. Is all EN DES action complete? Yes  No

H. Remarks:

Verified By Sullivan M. White Date 5/4/83



## TELEPHONE MEMORANDUM

10520DIN2113  
10520.15.1000

487

DATE December 2,

TIME 8:30 AM ~~PM~~

FROM (FROM) Homer E. McConnell TELEPHONE 615-632-4450

COMPANY Tennessee Valley Authority cc: H. E. McConnell, TV

RECORDED BY William J. Zidziunas *WJZ* R. E. Blaisdell

PROJECT WBNP-Independent Review PROJ. NO. 10520 PDCA

SUBJECT Finding Report Responses FILE NO. 15.1000 MSR

Mr. McConnell returned my call of earlier this a.m., and we discussed the following.

F506. This Finding concerned clustered loads. Additional information is needed to put part of the TVA action into perspective.

B&V does not have a problem with the action designed to prevent the recurrence of the problem by promulgating a construction specification. We concur that this is appropriate.

We do have a concern over how representative the statistical sample is of the population of embedments in question. It is our opinion that a random sampling of 69 plates would not be adequate, since only those with clustered or edge loads are of concern.

If TVA has attempted to screen the embedments in order to assure that those analyzed are representative of the worst case likely to be encountered, then the approach is probably valid.

If no attempt has been made to screen the embedment candidates, then the analysis of the sample embedments cannot be judged representative.

B&V requests that you provide additional information on how the sample was selected and recommends that the details be made part of the NCR or calculation record.

F718. This item concerned welding of a hanger. TVA submitted ECN 3511, which we assume was supposed to reflect the acceptance of the as-built condition. The differences noted are:

- (1) Upper Left attachment was found to be welded on three sides, in accordance with the drawing. The ECN required welding all around.
- (2) Upper Right attachment was found to be welded on three sides. The ECN indicates single fillet on two sides.
- (3) The weld on the top of the lower angle to the support legs was found to be missing; however, the ECN still indicates weld all around.

Additional clarification is considered to be required.

F803. This is a field item. During the B&V inspection, the relay was found to be wired up. TVA was to affirm that the wiring was, in fact, disconnected. F115 was issued to handle paper work.

Additional response is required.





TELEPHONE MEMORANDUM

2

DATE December 2, 1983

(TO) (FROM) Homer E. McConnell TELEPHONE \_\_\_\_\_

TIME 8:30 AM ~~PM~~

COMPANY \_\_\_\_\_

CC: \_\_\_\_\_

RECORDED BY \_\_\_\_\_

PROJECT \_\_\_\_\_ PROJ. NO. \_\_\_\_\_

SUBJECT \_\_\_\_\_ FILE NO. \_\_\_\_\_

Homer indicated he would look into the matters and respond.

We also briefly discussed the status of the submittals.

bam

RECEIVED B & V  
DEC 06 1983  
PROJECT # 10520

TENNESSEE VALLEY AUTHORITY

KNOXVILLE TENNESSEE 37902

400 West Summit Hill Drive, W10C126

DEC 16 1983

Black & Veatch  
11401 Lamar Avenue  
Overland Park, Kansas 66211

Attention: Mr. W. J. Zidziunas

Gentlemen:

WSZ MJR  
RECEIVED B & V  
DEC 16 1983  
PROJECT # 10520

PERSONAL SERVICES CONTRACT NO. TV-60052A

In response to your telephone request to H. E. McConnell, we are providing the following additional information:

*DIN 5011*  
F-129 - TVA has verified that the field installation is complete for unit 1 and is in accordance with the design information provided with Form 3. Installation records are available at the site.

*DIN 5097*  
F-506 - Enclosed is a description of the screening program TVA used to assure that the sample program was adequate to be representative of the worst case likely to be encountered. This information is included in the NCR documentation.

*DIN 5099*  
F-718 - Enclosed are the field inspection records associated with this finding.

*DIN 5103*  
F-803 - TVA has verified that the field installation is complete for unit 1 and is in accordance with the design information provided with Form 3. Installation records are available at the site.

*DIN 5121*  
F-808 - Calibration and testing of the instrumentation and controls is required before system preoperational tests are conducted. This calibration and testing is done using written procedures and the records are reviewed and filed in accordance with TVA's Quality Assurance Plan. These records are available at the site for review.

*DIN 5122*  
F-856 - Enclosed is a reproducible copy of the computer printout for this finding.

*DIN 5124*  
F-863 - Enclosed is a reproducible copy of the computer printout for this finding.

*DIN 5132*  
F-932 - Enclosed are copies of drawings 47W427-204 R3, 47W427-220 R2, and 47W221 R1.

*DIN 5134*  
F-935 - Drawing 85M47W427-204 has been redrawn. The new drawings are enclosed (see F-932).

*DIN 5137*  
F-948 - Enclosed is a reproducible copy of the computer printout for this finding.

2

Black & Veatch

DEC 16 1983  
D105201

F-960 - Enclosed is a reproducible copy of the computer printout for this finding.

D105173

F-818 - Enclosed is a reproducible copy of the computer printout for this finding.

5233 5171 5172

F-815, F-816, F-817 - Enclosed are copies of 85M45W427-205 and 45W427-206.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

*L E McConnell*

for John A. Raulston  
Chief Nuclear Engineer

Enclosures

Finding F506  
Multiple Attachments to Embedded Plates  
Description of Sampling Method

The sample of embedded plates for NCR WBNCEB8203 was intended to be a random sample of embedded plates which had significant loads from multiple attachments. A random sample of all embedded plates was not taken because many plates do not have any significantly loaded attachments and many do not have any attachments. The intended bias in the direction of more heavily loaded plates does not make the sample nonrandom. The sample was taken using a prearranged plan for surveying specific areas of the auxiliary and reactor buildings and the intake pumping station.

The areas of the buildings which were to be surveyed were selected using drawings which detailed the location of embedded strip plates. About 60 areas were selected. Design engineers then performed a visual survey in each of these areas for embedded plates with significantly loaded multiple attachments. In some areas several plates were included in the sample while in other areas no significantly loaded plates were identified. A total of 69 plates were included in the sample.

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW10520DIN5255  
10520.92.0000  
ref: 10520DIN3554Finding Number F/5/0/8/1

Comments pertinent to finding:

Comments on attached sheet.

<u>John A Ellis</u> Program Team Member	<u>11-22-83</u> ate
<u>Thomas E Mc Linnell</u> OEDC Program Manager	<u>11/23/83</u> Date
<u>E Gray Beasley</u> Chairman, OEDC Policy Committee	<u>11/23/83</u> Date

Black &amp; Veatch

*See attached evaluation*Classification: Type     O     Category A

<u>W. J. Zitzman</u> Black & Veatch Project Manager	<u>1/31/84</u> Date
--------------------------------------------------------	------------------------

<u>R E Blawie</u> Black & Veatch Senior Review Team Chairman	<u>1/31/84</u> Date
-----------------------------------------------------------------	------------------------

FORM 3

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F508 (Continued)

Comments Pertinent to Finding

Computations have been performed on a sample of expansion-anchored pipe supports. The computations were performed to determine the factors of safety of in-place anchors. These computations on 41 randomly-selected base plates used methods which account for plate and anchor deformations.

The results showed that all of the sampled supports had a factor of safety for the worst loading condition greater than 4.0. The results are summarized in the final report on OIE Bulletin 79-02 presently under review by NRC. Stresses in the base plate were also determined but were not addressed in 79-02. The results obtained for both anchor loads and plate stresses meet allowable loads/stresses and support the technical basis used for the types and sizes of expansion-anchored base plates at WBN.

For embedded plates and especially for long strip plates, rigid plate methods of analysis can give unconservative results if the entire plate is included in the structural design model. Currently, embedded plates with multiple rows of anchors are modeled to account for the fact that the anchors adjacent to the support carry most of the load. This method indirectly accounts for plate flexibility.

Computations have been performed on a sample of embedded plates at WBN. This sample was primarily to evaluate the effects of multiple attachments to embedded plates (WBNC8203 and Finding F506). However, the computations also show that modeling of embedded plates did not result in overloading of welded stud anchors or embedded plates.

The calculations for the two sample programs have verified the acceptability of the in-place work.

DIVISION OF ENGINEERING DESIGN  
NONCONFORMANCE REPORT

CEB '83 0512 010

MEDS Accession No.

(1) REPORT NO. WBNCB8203R1

(2) PLANT WATTS BAR NUCLEAR PLANT (3) UNIT 1 & 2

(4) PREPARER/ORGANIZATION/DATE B. M. McAlister/CEB/4-18-83

(5) DESCRIPTION OF CONDITION

Multiple supports have been attached to embedded plates without a design review of the embedded plate capacity. This could result in the embedded plate anchors being overloaded and could effect any system utilizing embedded plates.

(6) DATE OF OCCURRENCE EST ( ), ACT. ( ) (9) SIGNIFICANT CONDITION ADVERSE TO QUALITY  
YES  NO

(7) METHOD OF DISCOVERY NCR 3842R (10) 5/12/83

(8) UNID CODE (EN DES-EP 8.01)

(11) CORRECTIVE ACTION:

TVA has evaluated a sample of 69 embedded plates to determine if a support failure could occur. The results of the sample were determined to be acceptable since there were 0 failures out of a sample of 69. However, the inspection identified 1 embedded plate stud stressed to .96 Fy. TVA's maximum design allowable is .9 Fy. Stiffeners were added to the embedded plate to reduce the stud stress below .9 Fy. The effected support drawing (KDS drawing 1-70-138) was revised September 14, 1982, to include the required stiffeners.

TVA has completed an analysis of the updated embedded plate sample that covers the period from the time the original sample was taken on March 27, 1982 through January 1983 when the new spacing requirements were being implemented. No additional anchors were found to be overloaded. The support that was determined to have an overloaded stud from the original sample was modified April 4, 1983, to reduce the stud load below .9 Fy.

(12) CORRECTIVE ACTION DEVIATES FROM A DESIGN CRITERIA REQUIREMENT YES  NO

(13) DESIGN CRITERIA DOCUMENT NO. EXCEPTION REQUEST NO.

(14) ECV REQUIRED  YES  ICM MI (15) SCHEDULE IMPACT  P  A  M

NONCONFORMANCE REPORT

REPORT NO. WENCEBB203R1

16 ASSIGNABLE CAUSE (REQUIRED IF SIGNIFICANT)

EN DES did not provide CONST with requirements in a construction specification or on design drawings to control the minimum distance between attachments on embedded plates or the minimum distance between attachments and embedded plate edges.

17 THIS IS A GENERIC CONDITION YES  NO

18 ACTION REQUIRED TO PREVENT RECURRENCE (REQUIRED IF SIGNIFICANT)

CEB issued WBN Construction Specification N3C-928 (February 10, 1983) for locating attachments on embedded plates. The specification requires design approval of all future attachments to embedded plates that do not meet the specified minimum spacing requirements.

19 INDEPENDENT REVIEW: <sup>RBH</sup> Rupert Bullock *Rupert Bullock 7/6/83*

20 LABOR EST. ( I, ACT. I ) MH  21 SCHEDULE EST ( I, ACT. I ) DAYS

22 ACTIVITY NO. 23 TASK DESCRIPTION 24 DATE INITIATED

25 REMARKS

This revision is being issued because a construction specification was used to transmit the spacing requirements to Construction instead of drawing notes.

- 27 DISTRIBUTION:
- 28 CONST PROJECT MANAGER
- EN DES PROJECT MANAGER
- CHIEF, ESB
- OFFICE OF QA
- NEB (for Significant NCRs)\*\*
- MEDS CIS
- NSRS (for Significant NCRs)\*
- ASSISTANT TO THE MANAGER OF OEDC (Quality and Nuclear Safety)-for Significant NCRs
- \* DISTRIBUTE AFTER THIS SIGNATURE
- \*\* HANDCARRY COPY TO NEB-NLS

26 ALL EN DES ACTION COMPLETE

*Al Banat* 5/12/83

ALC *JPE* \*BRANCH CHIEF/ORG. DATE

CFR '83 0512 010

MEDS ACCESSION NO.





## TELEPHONE MEMORANDUM

105. PDIN2129  
10520.15.1000

496

DATE January 3,

(TO) ~~(XXXX)~~ H.E. McConnell TELEPHONE 615-632-4450 TIME 9:15 AM ~~PM~~

COMPANY Tennessee Valley Authority CC. H.E. McConnell, TV

RECORDED BY W.J. Zidziunas *WJZ* R.F. Blaisdell

PROJECT WBNP - Independent Review PROJ. NO. 10520 PDCA/File

SUBJECT Finding Report Responses FILE NO. 15.1000

I called Mr. McConnell to discuss the following findings:

1. F300 - The original finding was issued against drawing 47W854-1 Rev. 8. The form 3 cites other drawings which have been modified. Since BSV does not have a copy of the 854-1 drawing and the response forwarded only partial drawing copies, we are unable to relate the information. Please provide copies of drawing 47W854-1 Rev. 8 and the current revision of the drawing which shows the changes. Also, provide copies of the 47W803-1, 47W401-7, and 47W401-9 drawings which show the area where the changes have been made.
2. F502 - TVA submitted internal memoranda indicating that the FSAR change had been requested, but did not indicate that it had been placed in the Commitment Trading System or if the change had already been made. Additional information is requested.
3. F825 - There are still some discrepancies in time that are unexplained. This may be due to delays in communication between the site and office. Please look into this and provide input.
4. F976 - The partial drawing forwarded by form 3 does not contain sufficient drawing area to show the change. Please provide a copy of the full drawing.

Homer indicated that he would be sending a revision for F894 concerning the check valve size.

I advised Homer that I had been in contact with Mr. G. Beasley late last week and had made arrangements to review calculations for the F508 response. Copies of the calculation were to be sent to B&V along with data in support of actions taken on the DRR items.

I informed Homer that as of this AM, fifteen findings are still outstanding and a brief status of each was provided.

I made arrangements for R. Gross to call him to discuss G901 at or about 1:00 pm KC time.

12:15 pm

I returned Homer's call of about 10:15 am and we briefly discussed F718 and the information needed to put the response into perspective.

Homer advised that progress on F502 had passed the point of processing requiring CTR. The information provided was that which was sent to those who actually do FSAR updating.

497

10520DIN2136  
10520.15.1000



TELEPHONE MEMORANDUM

DATE 1/12/84

(TO) (FROM) H. E. McConnell TELEPHONE 615-632-4450 TIME 1:54 ~~AM~~ PM

COMPANY Tennessee Valley Authority CC: H.E. McConnell, TVA  
D. Denton, TVA  
R.E. Blaisdell

RECORDED BY William J. Zidziunas *WJZ* M.M. Moussa  
PDCA/File

PROJECT WBNP - Independent Review PROJ. NO. 10520

SUBJECT Findings Report FILE NO. 15.1000

I called Mr. McConnell in response to his earlier call and to discuss Finding F508.

Mr. McConnell indicated that he would like to have a conference call on F511. I indicated that I would be available any time this p.m. that was convenient for TVA.

I advised Homer that B&V had been reviewing the calculation that had been forwarded by TVA for F508. This review indicated that the finite element program that was utilized to analyze base plates assigned a ZERO flexibility to the bolt axial stiffness. This in effect produces a rigid plate analysis. The calculations used 6000 psi concrete and provided curves indicating average strength. This was considered suspect since minimum values would be more conservative. I indicated that our concern stems from IEB 79-02 and that the prying forces associated with flexible plate design did not appear to be adequately addressed, I suggested that someone at TVA, who has knowledge of what was done, contact Dr. Moussa at Est. 2954 and discuss the various issues. Homer indicated that he would look into setting something up.

2:06 PM

Mr. McConnell called back and a conference was held with Mr. Don Denton of TVA to discuss Finding F511. Mr. Denton provided some of the historical information about events which led up to a TVA in-house review of pipe stress analysis and related areas and information on a subsequent NRC audit. The TVA conference discussed the various actions taken and the various reports issued by TVA and the NRC audit teams.

Although it was clear that the NRC was aware of the problems uncovered during the review and it appears taht the NRC was aware of the maximum projected error associated with the improper peak broadening of response spectra, no information was presented which indicated that the NRC agreed that the error was considered to be inconsequential.

In view of the fact that this is a licensing issue, TVA was advised that lacking NRC acceptance of the deviation, some additional effort was considered to be needed to assess the impact of the error on the design of the piping.

It was ultimately agreed by all parties that the discussion had reached an impress and that further discussion should be delayed until the positions discussed could be further evaluated.

jmd

RECEIVED B & V  
JAN 17 1984  
PROJECT # 10520

498



TELEPHONE MEMORANDUM

2

DATE 1/3/84

(TO) ~~FROM~~ H.E. McConnell TELEPHONE \_\_\_\_\_

TIME 9:15 AM YFN

COMPANY \_\_\_\_\_

CC: \_\_\_\_\_

RECORDED BY \_\_\_\_\_

PROJECT \_\_\_\_\_ PROJ. NO. \_\_\_\_\_

SUBJECT \_\_\_\_\_ FILE NO. \_\_\_\_\_

Homer indicated that our letter dated December 16, 1983 (10520 DIN 1054) had listed F329 in lieu of F328. I confirmed that this was an error and indicated that I would add a notation to our next transmittal acknowledging the error.

jmd

RECEIVED B & V  
JAN 04 1983  
PROJECT # 10520



TELEPHONE MEMORANDUM

DATE January 13, 1984

(TO) (FROM) Mr. Homer McConnell, et.al TELEPHONE \_\_\_\_\_ TIME 2:00 ~~AM~~ PM

COMPANY Tennessee Valley Authority (TVA) cc: All Participants  
(see below)

RECORDED BY M. M. Moussa <sup>MMM</sup> \_\_\_\_\_

PROJECT Watts Bar Independent Review PROJ. NO. 10520 \_\_\_\_\_

SUBJECT Base Plate Design FILE NO. \_\_\_\_\_

The participants were:	TVA:	Mr. Homer McConnell	B&V:	M. M. Moussa
		Mr. John Ellis		W. J. Zidziunas
		Mr. Clancy Glidewell		
		Mr. Rubin Hernandez		
		Mr. Marvin Cones		
		Mr. Perry		

The purpose of the telecon was to obtain TVA's responses to four questions B&V had. The questions arose during B&V review of TVA response on Finding F 508.

Question 1: How was the "prying force" considered in the analysis of the base plates? In particular, how were the stiffness properties of anchor bolts input into the computer for BASEPLATE II program?

Response: In accordance with test results conducted at the University of Tennessee for TVA, the stiffness properties of the anchor bolts are non-linear, and were input in the BASEPLATE II program in the form of a curve. The program will generate the prying forces if they exist.

However, for the majority of cases, the plates lift off the concrete surface at small loads and the prying forces are relieved. This is confirmed by test results.

Question 2: The factors of safety for anchor bolts as listed in Table 1 of the report to NRC are not consistent with the results of detail calculations. Please explain the reasons.

Response: TVA will mail to B&V the explanation of the apparent discrepancies.

Question 3: Is the use of "average" concrete strength justified, rather than the use of "minimum" value?

Response: TVA considers that the use of "average" strength is acceptable because all concrete specimens met their 28 day strength requirement of 3000 psi, and therefore, they are reasonably expected to reach the 5000 psi strength in about one year. Therefore, the use of 5000 psi is justified.

Question 4: Why was the elliptic interaction equation used, rather than the commonly accepted straight line equation?

Response: The elliptic equation was accepted previously by NRC on the Sequoyah evaluation, and therefore, it should be acceptable also for Watts Bar.

RECEIVED B & V
JAN 16 1984
PROJECT # <u>10520</u>



10520DINZ137  
10520.15.1000

500

TELEPHONE MEMORANDUM

DATE 1/17/84

(TO) ~~(FROM)~~ H. E. McConnell TELEPHONE 615-632-4450 TIME 1:22 ~~AM~~ PM

COMPANY Tennessee Valley Authority CC: H.E. McConnell  
R.E. Blaisdell  
PDCA/File

RECORDED BY W. J. Zidziunas *WJZ*

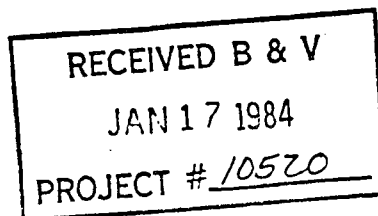
PROJECT WBNP - Independent Review PROJ. NO. 10520

SUBJECT General Information FILE NO. 15.1000

I returned the telephone call that I had missed earlier this afternoon. The items discussed were as follows:

1. Homer asked if I had received any transmittals recently. I indicated that one had arrived today.
2. We discussed the proper form for transmitting additional information on Finding F511. I indicated that since the information was additional data rather than a game plan for resolving the issue, the form 3 was appropriate.
3. Homer indicated that he had received input on Finding F508 and would be forwarding that along shortly.
4. Homer advised that TVA was providing a letter defining the number of copies of the report and providing the shipping addresses. He also indicated that the NRC has been made aware of the late February target date for a meeting.

jmd



TENNESSEE VALLEY AUTHORITY  
KNOXVILLE, TENNESSEE 37902  
400 West Summit Hill Drive, W10C126 C-K

JAN 19 1984

Black and Veatch  
11401 Lamar Avenue  
Overland Park, Kansas 66211

Attention: Mr. W. J. Zidziunas

Gentlemen:

PERSONAL SERVICES CONTRACT NO. TV-60052A

In response to your telephone request to H. E. McConnell, we are providing additional information for the following finding:

F-508

Enclosed is an explanation of the discrepancies between TVA's current calculations and those contained in the Bulletin 79-02 report.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

*H. E. McConnell*

for John A. Raulston, Chief  
Nuclear Engineering Support Branch

Enclosures

*WTZ*

RECEIVED B & V  
JAN 24 1984  
PROJECT # 10520

Enclosure

F-508

EXPLANATION OF DISCREPANCIES BETWEEN  
CALCULATIONS AND WBN UNIT 1 BULLETIN 79-02 FINAL REPORT

Table 1 gives the revised factors of safety for the baseplate sample for OIE Bulletin 79-02 for WBN unit 1. The factors of safety were revised because a review of the calculation revealed that some of the drawings on which the calculations were based had been revised. Also, some hangers were reanalyzed using the "Baseplate II" program in lieu of a less accurate method.

We are presently evaluating the need to revise the final report. The revised factors of safety would not affect the report conclusions.

Table 1

<u>Support Number</u>	<u>Anchor Size</u>	<u>Factor of Safety</u>
1-01B-108	1/2"	125.0
47A450-2-83	"	6.4
47A450-3-150	"	41.3
47A450-3-151	"	6.3
47A450-21-7	"	18.0
47A464-2-14	"	9.3
47A491-40-13	"	13.9
70-1CC-R146	"	7.3
26-1FP-R166	"	9.0
47A492-1-35	"	13.7
47A450-4-43	"	8.7
1-03B-39	5/8"	5.5
1-03B-71	"	4.6
17A586-1-2	"	8.7
17A586-1-12	"	5.7
17A586-1-13	"	13.8
47A450-2-102	"	8.9
47A450-3-75	"	4.0
47A450-3-162	"	6.8
17A586-1-7	3/4"	8.2
17A586-1-18	"	5.7
17A586-1-100	"	5.6
47A431-9-29	"	N/A
47A450-3-110	"	4.2
1-03A-453	"	21.4
1-03B-25	"	5.8
1-63-496	"	4.6
47A450-3-107	"	5.0
47A450-3-107A	"	6.0
47A450-3-104	"	13.1
47A450-3-100	"	4.2
47A450-2-108	7/8"	38.9
47A450-3-76	"	4.4
47A450-3-105	"	4.7
47A450-3-103	"	5.7
47A450-3-159	"	5.6
47A450-3-160	"	4.1
17A586-1-14	"	9.9
1-03A-402	"	32.2
1-87-004	"	8.6
70-1CC-R85	"	8.6

E54017.01



504

Evaluation of the TVA Form 3 Comments  
F508

The TVA information, relative to base plate design, that was reviewed, consisted of the following items.

1. The initial Form 3 for F508
2. The calculation and information forwarded in response to our telephone request of January 3, 1984 (10520DIN2129). The attached tabulation provides a list of the documents.
3. The clarification obtained via our telephone conversation of January 13, 1984 (10520DIN2134).
4. The supplementary information provided by the TVA letter dated January 19, 1984 (10520DIN1074).

The review indicated that the factor of safety for the anchor bolts was a nominal 4, as reported to the NRC in NRC-OIE Bulletin No. 79-02, "Pipe Support Base Plates Design Using Concrete Expansion Anchors-Final Report," when the calculated values are corrected by a factor of 1.419. This factor adjusts for the difference in concrete strength and a margin that TVA reports is contained in their Design standard. No information was supplied which indicates that the NRC has accepted a change from the define factor of safety of 5.

Examination of the calculations indicates that prying forces were excluded in the manual calculation and appear to be neglected in the computerized calculation. TVA, in a telephone response, indicated that their test data suggests that the anchor bolt stiffness allows lift-off which prevent the development of significant prying forces. Data or test results were not provided which permits verifying this characteristic.

This finding, therefore, remains open.

506

Document List  
F508

1. Memorandum - John A. Raulston to R. O. Barnett dated May 2, 1983,  
Subject: Watts Bar Nuclear Plant Unit 1 - NRC-OIE Bulletin  
79-02 - Final Responses with attachment.
  
2. Computer Calculations - BASEPLATE II
  - A) 3 WBNP Flexible Plate 47A450-21-7, 83/11/30, 11.03.01
  - B) 3 WBNP 79-02 Flexible Plate Evaluation Support # 1-87-004, 83/06/27,  
16.22.07
  - C) 3 WBNP 79-02 Flexible Plate Evaluation # 17A586-1-12, 83/08/09,  
13.09.29
  - D) 3 WBNP Flexible Plate Support No. 17A586-1-13, 83/12/12, 13.18.43
  - E) 3 WBNP Flexible Plate 1-03B-39, 83/11/28, 08.21.38
  - F) 3 WBNP 79-02 Flexible Plate Evaluation Support # 1-03B-71, 83/03/08,  
16.13.11
  - G) 3 WBNP Flexible Plate Support No. 47A450-3-75, 83/12/05, 10.23.19
  - H) 3 79-02 Flexible Plate Evaluation Support # 47A450-3-76, 83/01/22,  
10.36.41
  - I) 3 WBNP 79-02 Flexible Plate Evaluation Support #70-1CC-R85,  
83/07/15, 15.09.48
  - J) 3 WBNP 79-02 Flexible Plate Evaluation Support # 47A450-3-100,  
83/06/29, 15.54.20
  - K) 3 WBNP 79-02 Flexible Plate 47A450-3-105, 83/12/20, 12.52.37
  - L) 3 WBNP 79-02 Flexible Plate Evaluation Support # 47A450-3-107A,  
83/06/15, 09.51.15
  - M) 3 WBNP 79-02 Flexible Plate Support # 47A450-2-108, 83/12/08,  
09.16.50
  - O) 3 WBNP 79-02 Flexible Plate Evaluation Support 47A450-3-110,  
83/07/08, 13.41.20
  - P) 3 WBNP 79-02 Flexible Plate Evaluation Support # 47A450-3-160,  
83/07/14, 15.37.13
  - Q) 3 WBNP 79-02 Flexible Plate Evaluation Support # 1-63-496, 83/06/15,  
12.41.03
  
3. Manual Calculations
  - A) Watts Bar Nuclear Plant 79-02 Flexible Plate Evaluation Volume 1,  
CEB 79021
  - B) Watts Bar Nuclear Plant 79-02 Flexible Plate Evaluation Volume 2,  
CEB 79022

INDEX OF DOCUMENTATION RECEIVED WITH TVA LETTER

10520DIN1069, December 30, 1983

Item 3 - Finding F508 Computation for the 41 Base Plates

1. TVA Memo with attachments, NRC-01E Bulletin 79-02 Final Responses 5-2-83
2. EN DES Calculations Watts Bar Nuclear Plant 79-02 Flexible Plate Evaluation Volume 1
3. EN DES Calculations Watts Bar Nuclear Plant 79-02 Flexible Plate Evaluation Volume 2
4. Computer Print-outs - Baseplate II Version 1.0 Feb. 82 Release 82/06/27. 16.22.07.
5. 83/11/30 11.03.01.
6. 83/08/09 13.09.29.
7. 83/12/12 13.18.43.
8. 83/11/28 08.21.38.
9. 83/03/08 16.13.11.
10. 83/12/05 10.23.10.
11. 83/01/22 10.36.41.
12. 83/07/15 15.09.48.
13. 83/06/29 15.54.20.
14. 83/12/20 12.52.37.
15. 83/06/15 09.51.15.
16. 83/12/08 09.15.50.
17. 83/07/08 13.41.20.
18. 83/07/14 15.37.3.
19. 83/06/15 12.41.03.

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F/5/1/1/

Comments pertinent to finding:

Comments are on attached sheet.

John A Ellis  
Program Team Member

11-17-83  
ite

James E McConnell  
OEDC Program Manager

11-17-83  
Date

E Gray Beasley  
Chairman, OEDC Policy Committee

11/22/83  
Date

Black & Veatch *See attached evaluation*

Classification: Type 0 Category A

W. J. Zilziman  
Black & Veatch Project Manager

1/30/84  
Date

R E Blandell  
Black & Veatch Senior Review Team Chairman

1/31/84  
Date

FORM 3

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F511

Comments Pertinent To Finding

The FSAR section 3.7.2.9 requirements for peak broadening are correct as written.

TVA has completed its review of peak broadening discrepancies and has concluded that no corrective action is required. Nonconformance WBNCEB8206 was written to address errors found in peak broadening prior to the Black and Veatch finding. As stated in the corrective action of the nonconformance, all of the WBN spectra curve data has been studied and the severest deviation was less than 8 percent. Due to the overall accuracy of seismic analyses, 10 percent was judged acceptable. Therefore, there was no need to correct any of the spectra data since the deviations were within the acceptance criteria.

It is not necessary to reanalyze the piping to determine the maximum effect of the error in peak broadening on piping responses (and stresses). The nonconformance review that the maximum deviation from a theoretically correct broadened peak value of acceleration was approximately 8 percent. For discussion purposes, assume the maximum deviation of 8 percent occurs for each peak of a given response spectrum. One can then make the following illustrative points:

1. Assume the piping system under review is a system with one significant natural frequency and that frequency corresponds to the point of maximum deviation (8-percent error) on the response spectrum. The maximum error in piping response will be 8 percent.
2. Now assume the piping system has several significant natural frequencies (i.e., the participation factors are significant), each occurs at a peak on the response spectrum (i.e., the spectrum has at least an equal number of peaks), and each occurs at the point of maximum peak error (8 percent). Again, the maximum error in responses and stresses is 8 percent.

In most cases, the natural frequencies will be distributed randomly with regard to the broadening errors. In addition, those errors are less than 8 percent. Therefore, the error in responses and stresses for piping systems will be less than 8 percent. As illustrated by example 2, the maximum error for an idealized, worst-case piping system will be 8 percent. This is within the 10-percent limit on peak broadening errors (and, consequently, in associated response errors) previously established.

Based on the above reevaluation, it is TVA's position that the spectra broadening is consistent with the FSAR section 3.7.2.9 and is technically acceptable.



10520DIN2131  
10520.15.1000

510

TELEPHONE MEMORANDUM

DATE January 5, 1984

(TO) (XXXX) H. E. McConnell TELEPHONE (615) 632-4450 TIME 9:10 AM RM  
COMPANY Tennessee Valley Authority *wjz* cc: H. E. McConnell, T  
RECORDED BY William J. Zidziunas ✓ R. E. Blaisdell  
PROJECT WBNP - Independent Review PROJ. NO. 10520 M. J. Robinson  
SUBJECT Finding Report F511 FILE NO. 15.1000 PDCA/File

I called Homer to discuss F511 and to advise him that the data package from TVA for the DRR's and F508 had arrived yesterday. We discussed the need to return the material, and he indicated that the copies sent could be placed in the B&V files.

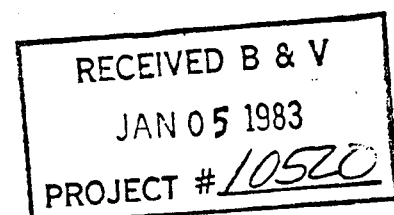
The discussion of F511 touched on two points, as follows:

1. The issue of peak broadening is a licensing issue and not a purely technical issue. Therefore, the NRC is the body which must rule on the acceptability of the approach.
2. B&V agrees that the arguments made by TVA relative to minimum error are valid. However, lacking NRC approval of what TVA has done, TVA has not gone far enough to demonstrate that there is sufficient margin in the piping design to accommodate a stress increase amounting to the maximum error.

Homer indicated that he felt the NRC was aware of the peak broadening issue and felt that some additional information could be provided.

I indicated that I would hold F511 until I heard from him.

bam





TELEPHONE MEMORANDUM

10520DIN2136  
10520.15.1000

511

DATE 1/12/84

(TO) (FROM) H. E. McConnell TELEPHONE 615-632-4450 TIME 1:54 ~~AM~~ PM

COMPANY Tennessee Valley Authority CC: H.E. McConnell,  
D. Denton, TVA  
R.E. Blaisdell

RECORDED BY William J. Zidziunas *WJZ* M.M. Moussa  
PDCA/File

PROJECT WBNP - Independent Review PROJ. NO. 10520

SUBJECT Findings Report FILE NO. 15.1000

I called Mr. McConnell in response to his earlier call and to discuss Finding F508.

Mr. McConnell indicated that he would like to have a conference call on F511. I indicated that I would be available any time this p.m. that was convenient for TVA.

I advised Homer that B&V had been reviewing the calculation that had been forwarded by TVA for F508. This review indicated that the finite element program that was utilized to analyze base plates assigned a ZERO flexibility to the bolt axial stiffness. This in effect produces a rigid plate analysis. The calculations used 6000 psi concrete and provided curves indicating average strength. This was considered suspect since minimum values would be more conservative. I indicated that our concern stems from IEB 79-02 and that the prying forces associated with flexible plate design did not appear to be adequately addressed, I suggested that someone at TVA, who has knowledge of what was done, contact Dr. Moussa at Est. 2954 and discuss the various issues. Homer indicated that he would look into setting something up.

2:06 PM

Mr. McConnell called back and a conference was held with Mr. Don Denton of TVA to discuss Finding F511. Mr. Denton provided some of the historical information about events which led up to a TVA in-house review of pipe stress analysis and related areas and information on a subsequent NRC audit. The TVA conference discussed the various actions taken and the various reports issued by TVA and the NRC audit teams.

Although it was clear that the NRC was aware of the problems uncovered during the review and it appears taht the NRC was aware of the maximum projected error associated with the improper peak broadening of response spectra, no information was presented which indicated that the NRC agreed that the error was considered to be inconsequential.

In view of the fact that this is a licensing issue, TVA was advised that lacking NRC acceptance of the deviation, some additional effort was considered to be needed to assess the impact of the error on the design of the piping.

It was ultimately agreed by all parties that the discussion had reached an impress and that further discussion should be delayed until the positions discussed could be further evaluated.

jmd

RECEIVED B & V  
JAN 17 1984  
PROJECT # 10520





TELEPHONE MEMORANDUM

1052001N2135  
10520.15.1000

512

DATE 1/13/84

(RE) (FROM) Don Denton TELEPHONE \_\_\_\_\_ TIME 8:38 AM PM

COMPANY Tennessee Valley Authority CC: H.E. McConnell, TVA  
Don Denton, TVA

RECORDED BY W. J. Zidziunas *WJZ* Doug Mysinger, TVA  
Bill Kagay, TVA

PROJECT WBNP - Independent Review PROJ. NO. 10520 R.E. Blaisdell  
PDCA/File

SUBJECT Finding F511 FILE NO. 15.1000

Mr. Denton called and a conference was held on F511 with Mr. Doug Mysinger, TVA staff engineer and Mr. Bill Kagay, TVA Section Supervisor.

Missers Kagay and Mysinger explained some on-going work in the areas of piping design and seismic design that the industry has undertaken. I indicated that I understand their position but advised that TVA's basic licensing position did not embrace later design techniques. The FSAR commitments were the standards against which the design must be judged. I reiterated that Black and Veatch could not forgive licensing commitments but could render an opinion of the technical adequacy of the design. Since there is an admitted error of known magnitude the impact of that error on the AFW system should be addressed.

Possible ways of screening the AFW calculation were discussed which could put the technical issue to bed. TVA requested and I agreed that I would take no further action on this item until they had a chance to further evaluate their position. A target of Monday, January 16, 1984 was set as a target.

jmd

RECEIVED B & V  
JAN 17 1984  
PROJECT # 10520



TELEPHONE MEMORANDUM

10520DIN2137  
10520.15.1000

513

DATE 1/17/84

(TO) ~~FROM~~ H. E. McConnell TELEPHONE 615-632-4450 TIME 1:22 ~~AM~~ PM

COMPANY Tennessee Valley Authority CC: H.E. McConnell  
R.E. Blaisdell  
PDCA/File

RECORDED BY W. J. Zidziunas *WJZ*

PROJECT WBNP - Independent Review PROJ. NO. 10520

SUBJECT General Information FILE NO. 15.1000

I returned the telephone call that I had missed earlier this afternoon. The items discussed were as follows:

1. Homer asked if I had received any transmittals recently. I indicated that one had arrived today.
2. We discussed the proper form for transmitting additional information on Finding F511. I indicated that since the information was additional data rather than a game plan for resolving the issue, the form 3 was appropriate.
3. Homer indicated that he had received input on Finding F508 and would be forwarding that along shortly.
4. Homer advised that TVA was providing a letter defining the number of copies of the report and providing the shipping addresses. He also indicated that the NRC has been made aware of the late February target date for a meeting.

jmd

RECEIVED B & V  
JAN 17 1984  
PROJECT # 10520

TENNESSEE VALLEY AUTHORITY  
KNOXVILLE, TENNESSEE 37902  
400 West Summit Hill Drive, W10C126 C-K

514

JAN 19 1984

Black and Veatch  
11401 Lamar Avenue  
Overland Park, Kansas 66211

Attention: Mr. W. J. Zidziunas

Gentlemen:

PERSONAL SERVICES CONTRACT NO. TV-60052A

In accordance with my letter to Dr. John Robinson dated October 3, 1983 (NEB 831004 251), enclosed for your review is additional information concerning finding F-511. Please attach this to the form 3 submitted with our letter dated November 25, 1983 (NEB 831125 251)

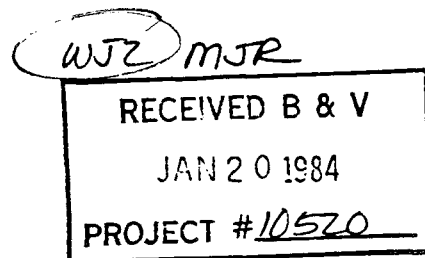
Very truly yours,

TENNESSEE VALLEY AUTHORITY

*H E McConnell*

to John A. Raulston, Chief  
Nuclear Engineering Support Branch

Enclosures



Peak broadening of the acceleration response spectra used in piping analysis at WBN was done with in-house computer programs. The broadened spectra peaks were not level (horizontal) but had a slight "slope" due to a program user error in one of these computer programs. The vertical response spectra was not effected--only the horizontal.

A 100-percent review of all spectra broadened using this program was performed. It was found that the maximum error that could possibly occur was 7.8 percent in the seismic response and this could occur only under a set of conditions that is highly unlikely to occur in nuclear piping systems. Furthermore, piping is not designed for earthquake loads alone but is combined with several other loadings to form load combinations, and the stresses for the load combination are required to meet design allowables. It is TVA's position, based on engineering judgment, that the error in total combined stress from horizontal peak broadening is less than 2 to 3 percent.

The error described by Black and Veatch finding F511 was identified by a significant NCR, WBNCEB8206, dated April 13, 1982. This significant NCR was reviewed by TVA using the procedures for determining reportability. It was concluded that the finding was not reportable.

This and other NCRs related to piping analysis were also addressed in a report prepared by a TVA review team. Furthermore, the review team report and NCR WBNCEB806 were reviewed as part of a special safety assessment of WBN conducted by Region II NRC inspectors from July 27 through August 6, 1982, and a follow-up inspection in September 1983.

TVA considers this NCR to have been resolved in accordance with our license application.

817

Evaluation of the TVA Form 3 Comments  
F511

Background:

The basic issue raised in Finding F511 was that the response spectra used in the T PIPE analysis was not properly peak broadened in accordance with section 3.7.2.9 of the FSAR.

TVA, in subsequent responses, indicated that the noted deficiency was known to have existed and that an investigation had shown that the maximum error was under eight per cent. TVA concluded that the deviation was less than ten per cent and therefore there was no need to modify or correct the spectra.

The original item was classified as an open Safety Related issue and it was recommended that TVA reexamine areas in which the finding applied and determine its effect.

The TVA form 3 information reiterated the position taken in response to the original finding and reinforced the original argument that an error of no more than eight per cent existed.

During subsequent telephone conversations (copies attached) it was determined that the NRC was aware of the peak broadening issue and that TVA was of the opinion that no further action was required. It was explained that Black and Veatch did not feel that it had the authority to accept a percentage deviation from a licensing commitment and that the close out of the issue would require an evaluation of the effects of the error on the system. Supplementary information was forwarded via TVA letter dated January 19, 1984 (10520DIN1073) indicating that in their engineering judgement, the error in combined stress would be less than two or three per cent.

518

Conclusion:

Black & Veatch does not question TVA's engineering judgement concerning the magnitude of the potential error that could be introduced. However, no documentation was submitted that Black & Veatch could rely on to confirm this judgement. In addition, no documentation was submitted that demonstrated that the NRC has accepted this deviation from the licensing commitment.

TVA and Black & Veatch have reached an apparent impasse in resolving this issue. The Finding remains classified as open.

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEWFinding Number /F/5/1/3/

## Comments pertinent to finding:

TVA's corrective action is complete for WBN. NCR GENCEB8215 was written to document resolution of this condition. The corrective action, which is complete, was to change FSAR section 3.7.3 to allow multiple support zone response spectra. The initiating documentation, NCR GENCEB8215, is still open due to the NCR affecting other units and plants. The responses below marked (\*) show corrective action complete.

TVA References (ECN, NCR, CTR, etc.):

NCR GENCEB8215

\*Memorandum NEB 830809 252

John A. Ellis  
Program Team Member

11-16-83  
ate

Thomas E. Mc Connell  
OEDC Program Manager

11-16-83  
Date

M.S. Martin for E.G. Beasley  
Chairman, OEDC Policy Committee

11/18/83  
Date

Black &amp; Veatch

*The use of multi-response spectra is technically acceptable in the analysis of piping systems. The FSAR change is considered to be appropriate. Close out is assumed because program is monitored via the front NCR program*

Classification: Type

R

Category

A

W.J. Zdzienas  
Black & Veatch Project Manager

12/29/83  
Date

R.E. Blandell  
Black & Veatch Senior Review Team Chairman

12/30/83  
Date



DIVISION OF ENGINEERING DESIGN  
NONCONFORMANCE REPORT

CEB '82 1130 0

1 REPORT NO. GENCEB8215

2 PLANT SQN, WBN, BLN 3 UNIT ALL

4 PREPARER/ORGANIZATION/DATE K. A. Brune/CEB/11-24-82 YAB

5 DESCRIPTION OF CONDITION  
Piping stress analysis problems have used multiple support zone response spectra excitation to apply different response spectrum to different support zones within an individual analysis problem while performing seismic analysis. The FSAR only provides for applying the worst spectrum to the entire analysis problem. Use of multiple support zone excitation is not in compliance with the FSAR commitments.

6 DATE OF OCCURRENCE EST ( x ), ACT. ( ) 1980

9 SIGNIFICANT CONDITION ADVERSE TO QUALITY  
YES  NO

METHOD OF DISCOVERY Black and Veatch  
Independent Review

10 \*BRANCH CHIEF/DATE  
JAE WAB 11/26/82

7 UNID CODE (EN DES-EP 8.01)

8 CORRECTIVE ACTION:

Revise SQN, WBN, & BLN FSARs, Section 3.7.3 to allow multiple support zone response spectra for piping analysis.

CORRECTIVE ACTION DEVIATES FROM A DESIGN CRITERIA REQUIREMENT YES  NO

DESIGN CRITERIA DOCUMENT NO.

EXCEPTION REQUEST NO.

ECN REQUIRED  YES  NO ECN NO.

15 SCHEDULE IMPACT  P  A  N

NONCONFORMANCE REPORT

1 REPORT NO. GENCEB8215 <sup>521</sup>

16 ASSIGNABLE CAUSE: (REQUIRED IF SIGNIFICANT)

The TPIPE computer program for piping analysis had been upgraded to the state of the art in response spectra analysis, but the respective FSARs had not been upgraded to allow for the state of the art in analysis.

17 THIS IS A GENERIC CONDITION YES  NO

18 ACTION REQUIRED TO PREVENT RECURRENCE: (REQUIRED IF SIGNIFICANT)

The Civil Engineering Support Branch, Engineering Mechanics Group, accepts responsibility for all piping analysis related FSAR changes, as stated in the memorandum from W. A. English to R. O. Barnett dated October 25, 1982 (CEB 821025 011). This commitment insures that modifications to TPIPE affecting the FSAR are incorporated into the FSAR.

19 ~~QA ENGINEER REVIEW AND CONCURRENCE~~ INDEPENDENT REVIEW: *J. David Lawrence* <sup>JDH</sup> *WS 7/8/83*

20 LABOR EST. ( ) , ACT. ( ) MH 21 SCHEDULE EST. ( ) , ACT. ( ) DAYS  
 22 ACTIVITY NO. 23 TASK DESCRIPTION 24 DATE INITIATED

25 REMARKS:

27 DISTRIBUTION:  
 CONST PROJECT MANAGER  
 EN DES PROJECT MANAGER  
 QAB  
 OEDC QA  
 NEB (for Significant NCR's)\*\*  
 MEDS  
 NSRS (for Significant NCR's)  
 \* DISTRIBUTE AFTER THIS SIGNATURE  
 \*\* HANDCARRY COPY TO NEB-NLS

26 ALL EN DES ACTION COMPLETE:  
 \_\_\_\_\_  
 \*BRANCH CHIEF/ORG. DATE

522

TVA 10753 (ENCL-10-66)  
UNITED STATES GOVERNMENT

# Memorandum

TENNESSEE VALLEY AUTHORITY

NEB '830809 252

TO : L. M. Mills, Manager of Nuclear Licensing, 400 CST2-C

FROM : John A. Reulston, Chief, Nuclear Engineering Support Branch,  
W10C126 C-K

DATE : AUG 9 1983

830822K0128

(21)

SUBJECT: Watts Run Nuclear Plant - PSAR REVISION PACKAGE NO. 382

Attached is PSAR Revision Package No. 382. The package contains approved OECD design input in accordance with ANSI N5.2.11 for incorporation into the PSAR. As such, the material should not be changed substantially without the prior written approval of NEB-NLS.

If you have any questions on this matter, contact Steve Stout at extension 7171.

*John A. Reulston*  
John A. Reulston

VAS  
8/8/83

JAR:JRW  
Attachment  
cc: WEDS, W5B63 C-K, w/all attachments except figures  
K.M. Pursey 104 05/8/83  
J. L. Stoddy, 200 08/83

Principally prepared by Steve Stout extension 7171

DEOS;PSAR.R



Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

REPLACE WITH INSERT 3.7-25 (A) 7

After the frequency is determined for each mode, the corresponding spectral acceleration for the direction being analyzed is obtained from the appropriate response spectrum for the pipe. Using these spectral accelerations, the response for each mode is found by solving the following equation:

$$(Y_n)_j = \frac{P_n S_{a_{nj}} D}{M_n W_n}$$

- where:
- $(Y_n)_j$  = Generalized displacement of the  $n$  mode for the earthquake in the  $j$ th direction
  - $P_n$  = Participation factor for the  $n$ th mode =  $\frac{M_1}{M_n}$
  - $S_{a_{nj}}$  = Spectral acceleration for the  $n$ th mode for earthquake in the  $j$ th direction
  - $D$  = Earthquake direction matrix
  - $M_n$  = Generalized mass matrix for the  $n$ th mode =  $\sum_{i=1}^{NZ} M_i \phi_{in}^2$

Using these results, the maximum displacements for each mode are calculated for each mass point in accordance with the following equation:

$$(V_{in})_j = \frac{D_{jn} (Y_n)_j}{W_n} + \left[ \sum_{k=1}^{NZ} (V_{in})_{jk}^2 \right]^{1/2}$$

- where:
- $(V_{in})_j$  = Displacement of mass  $i$  for mode  $n$  for an earthquake in the  $j$ th direction
  - $NZ$  = Number of support zones used for the pipe loop
- The maximum displacements for each mode for the combined two dimensional earthquake are calculated as follows:

$$V_{in} = \sqrt{(V_{in})_x^2 + (V_{in})_y^2}$$

- where:  $V_{in}$  = maximum displacement of mass  $i$  for mode  $n$ .

The total displacement for each mass is determined by combining the maximum deflection for each mode by the method described in Section 3.7.3.7:

$$V_1 = \sqrt{V_{11}^2 + (V_{12} + V_{13} + V_{14})^2 + \dots + V_{1n}^2}$$

4

P513

INSERT 3.7-25 (A)

AFTER the frequency is determined for each mode, the participation factors can be calculated by the following equation:

$$\Gamma_{njK} = \frac{\Phi_n^T M \Gamma_{jk}}{\Phi_n^T M \Phi_n}$$

where:  $\Gamma_{njK}$  = Participation factor for mode  $n$  in the  $j$ th direction of support zone  $K$ .

$\Gamma_{jk}$  = Displacement matrix of all nodes due to a unit displacement of the  $j$ th direction restrained degrees of freedom in zone  $K$ .

Support zone = A set of restrained nodes which move together during a dynamic event.

USING these results and the corresponding spectral accelerations of the mode for the direction and support zone being excited, the response for each mode is determined by the following equation:

$$(V_{in})_{jk} = \frac{\Gamma_{njK} \phi_{in} S_{anjk}}{\omega_n^2}$$

where:  $(V_{in})_{jk}$  = Displacement of mass  $i$  for mode  $n$  for an earthquake in the  $j$ th direction of zone  $K$ .

$\phi_{in}$  = value of mass  $i$  in  $\phi_n$

$S_{anjk}$  = Spectral acceleration for mode  $n$  for an earthquake in the  $j$ th direction of zone  $K$ .

383

525

No separate evaluation was made for the stress requirement of the Faulted Condition because it is covered by the stress requirement of the Upset Condition considered as they were in the subject analysis. For the Faulted Condition, only the seismic (SSE) contribution to the total stress is increased over the seismic (OPE) contribution to the total stress for the Upset Condition with the gravity and pressure stresses being equivalent for both design conditions. For conservatism and simplicity, the stress (displacement, reaction) effect of an SSE is normally taken to be twice that of the corresponding OPE. Since the allowable stress for the Faulted Condition is double that of the Upset Condition, the evaluation of the earthquake stress limit was based on the Upset Condition only.

- d. For the different pipe sizes/schedules, deadweight load cases and spectra load cases, recommended maximum seismic lateral support spacings and corresponding horizontal and vertical pipe support reactions (for both OPE and SSE) were determined based on the Upset Condition and tabulated for use in support placement and design.

3.7.3.8.4 Seismic Analysis of Piping Systems That Span Two or More Floors

For seismic analysis of a piping system that spans two or more floors, the worst floor response spectra, to which any portion of the pipe is subjected, is used to represent the input motion.

3.7.3.8.5 Seismic Analysis of Piping Systems That <sup>SPAN</sup> Interconnect Two or More ~~Components~~ SEISMIC SUPPORT ZONES SUCH AS BUILDINGS, PORTIONS OF BUILDINGS, OR PRIMARY COMPONENTS

For the evaluation of relative support motions in the seismic analysis of piping systems interconnecting two or more ~~primary components~~ <sup>SEISMIC SUPPORT ZONES</sup>, the maximum relative movement between component supports is assumed and the piping system is subjected to movements through the piping system supports and restraints. Separate cases for building north-south earthquake and building east-west earthquake are considered. Support movements are based on the maximum of the floor movements immediately above and below the support location.

3.7.3.9 Multiply Supported Equipment and Components with Distinct Input

EACH BUILDING, PORTION OF BUILDING, OR PRIMARY COMPONENT MAY BE CONSIDERED A SEPARATE SUPPORT ZONE. THE WORST ENVELOPED RESPONSE SPECTRUM TO WHICH ANY PORTION OF THE PIPE IN THAT ZONE IS SUBJECTED IS USED TO REPRESENT THE

3.7-28  
INPUT MOTION IN THAT ZONE.

303

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

ref: 10520DIN4038

Finding Number F1710101

## Comments pertinent to finding:

At the Black and Veatch inspection, construction of hanger number 03B-1AFW-R200 was not complete. The hanger was being tracked as incomplete by the construction accountability program. Installation of the hanger has now been completed in accordance with the existing Quality Assurance Program and tracked with the site accountability program. Attached is a copy of any additional field change requests, Quality Assurance inspection documentation, and accountability print out.

<u>Rand C. McKay</u> Program Team Member	<u>11/2/83</u> Date
<u>Thomas E. McConnell</u> OEDC Program Manager	<u>11/4/83</u> Date
<u>E. Gray Beasley</u> Chairman, OEDC Policy Committee	<u>11/8/83</u> Date

Black & Veatch *Completion records document installation*Classification: Type R Category A

<u>W. J. Zideman</u> Black & Veatch Project Manager	<u>11/16/83</u> Date
<u>BE Blandell</u> Black & Veatch Senior Review Team Chairman	<u>12/1/83</u> Date

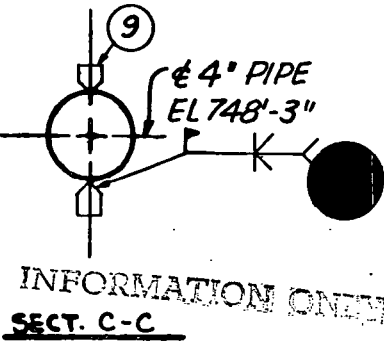
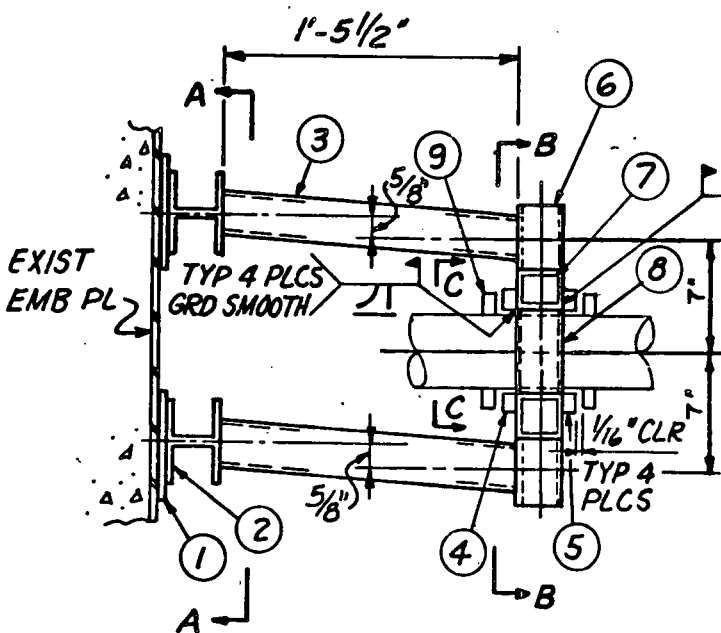
7365 R904

ITEM	QUAN	PART NO.	SIZE	DESCRIPTION	WGT.				
1	4		PL 1/2 x 5 x 0'-5" LG						
2	2		W4 x 13 x 4'-9" LG						
3	2		TS 2 x 2 x 1/4 x (LG AS REQD)						
4	2		BAR 1 x 3/4 x 0'-3" LG						
5	2		BAR 1 x 1/4 x 0'-3" LG						
6	2		TS 2 x 2 x 1/4 x 0'-6" LG						
7	2		TS 2 x 2 x 1/4 x 1'-0" LG						
8	2		TS 2 x 2 x 1/4 x 0'-4 7/8" LG						
9	4		SHEAR LUG 1 x 1/2 x 0-1" LG						

905 3985 8-1-83 42p 42p 104 104 P J W - J M S  
 REV SECT A-A PER ECN CALLS "WBP 830801006"  
 Rev No. ECN No. Date Dsgn Drwn Chkd Supv Engr Insp Subm Recm Appr

SEE TVA DWG. # 47A050-1E1A

ISO. 47W427-200-R3  
 JOINT: 40  
 DIRECTION: X  
 TYPE: RR  
 + 660 #  
 DESIGN LOAD: 780 #



ELEVATION LOOKING SOUTH

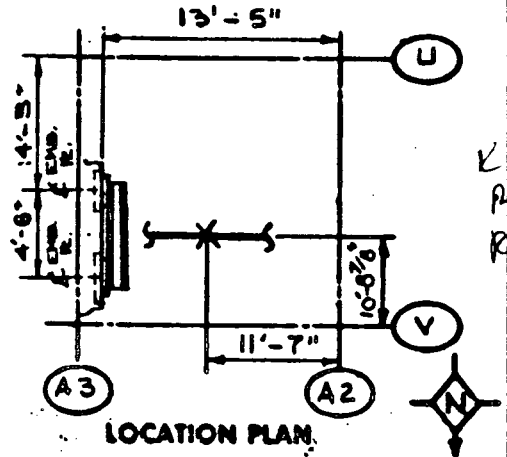
NUCLEAR T. V. A. CLASS C 4" PIPE SIZE

ELEV. LOOKING SOUTH

1	2620	2-10-81	LA	JRC	JSP	JLM	JLM	JLM	JLM
---	------	---------	----	-----	-----	-----	-----	-----	-----

REVISED LOADS PER ECN
Rev No. ECN No. Date Dsgn Drwn Chkd Supv Engr Insp Subm Recm Appr

PROJECT WBNP CONTRACT 74C-38-83015  
 DRAWING # 03B-1AFW-R200  
 SHEET 1 of 3 REV 905 UNIT 1  
 DRAWING ISO E-2879-IC-4



LOCATION PLAN

904 SI	330 X3	12/11/83	HA	TRW	FR	W8	-	W8	8307	DOT	(I.C.)
903 SI	7 1/2 X 3	12/11/83	RL	ER	W8	7ZA	-	W8	8307	DOT	(I.C.)

2 SI	12 1/2 X 8	12/16/81	KL	KL	KL	KL	KL	KL	KL	KL	KL
------	------------	----------	----	----	----	----	----	----	----	----	----

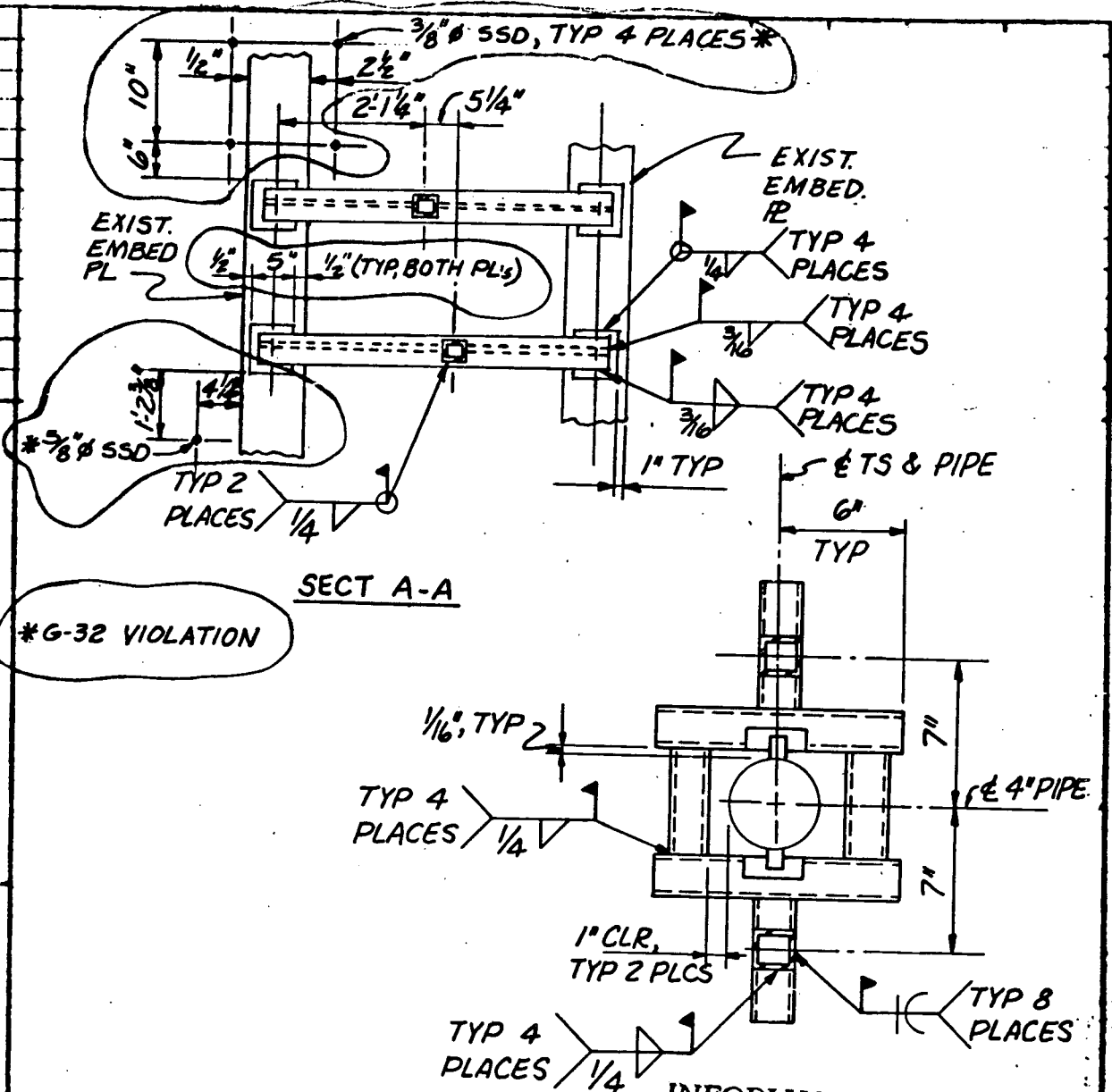
DRACO CORPORATION P.O. #E-2879-  
 T. V. A. CONTRACT #74 E 38-83015  
 WATTS BAR NUCLEAR PLANT - UNIT #1

BERGEN-PATERSON PIPESUPPORT CORP.			
PIPING SYSTEM	AUXILIARY FEEDWATER		
REF. DWGS.	PIPING 47W427-3-10	STRUCTURAL	48N223-2-
JOB NO.	3604	FAB NO.	009
MARK & DWG. NO.	03B-1AFW-R200		SHEET 1 of 3
DATE	10-31-77	REV	905



7365 R 904

904	SI	3-30-83	01	TR	MS	-	98M	83	986
REV PER FCR H-7887 CALCS MEDS SWP 89 0307 007 (I.C.)									
903	SI	7-8-83	MST	RL	BE	VAL	RA	740	3547
REV. PER FCR H-6629 "IC"									
Rev. No.	ECN No.	Date	Design	Drawn	Checked	Supv. Engr.	Insp.	Subm. Exam.	Appr.



**\*G-32 VIOLATION**

PROJECT WRNP CONTRACT 74C-38-83015  
 DRAWING # 03B-1AFW-R200  
 SHEET 2 of 3 REV 905, UNIT 1

**NUCLEAR  
CLASS C**

TVA R900 VENDOR RO  
 DRAVO ISO E-2879-IC-4

**DRAVO CORPORATION P.O. # E-2879-  
 T.V.A. CONTRACT # 74C38-83015  
 WAITS BAR NUCLEAR PLANT - UNIT # 1**

905	3985	8-1-83	9/16	9/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REV SECT A-A PER ECN																			
1	2620	2-10-81	LA	RC	35	PA	PLA	TR	2	AF	0	0	0	0	0	0	0	0	0
REVISED LOADS PER ECN																			
Rev. No.	ECN No.	Date	Design	Drawn	Checked	Supv. Engr.	Insp.	Subm. Exam.	Appr.										

<b>BERGEN-PATERSON PIPESUPPORT CORP.</b>			
PIPING SYSTEM <b>AUXILIARY FEEDWATER</b>			
REF. DWGS. 47W427-3-10	STRUCTURAL 48N223-2-10		
JOB NO. 3604	FAB NO. 009	NO. REQD. 1	
MARK & DWS. NO. 03B-1AFW-R200	SHEET 2 of 3	REV 905	

2	SI	12-16-81	PL	PL	PL	PL	PL	PL	PL
REV PER FCR H-6047									
Rev. No.	ECN No.	Date	Design	Drawn	Checked	Supv. Engr.	Insp.	Subm. Exam.	Appr.

DES. R.G. | DRAWN E.P. | CHECKED Y.M.B. | DATE 10-31-77

M= 0  
 R2  
 R3  
 R4

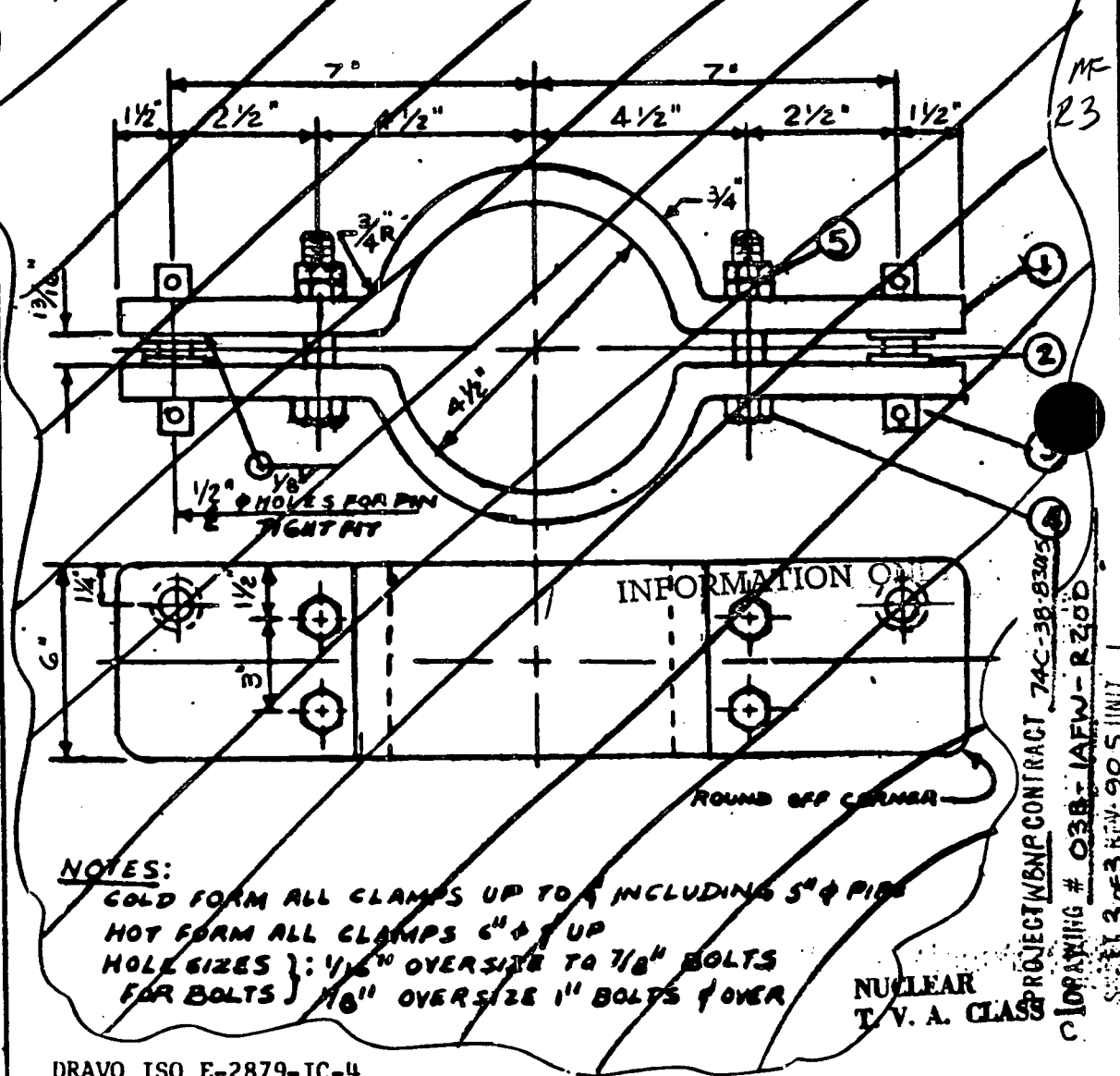
ITEM	QUAN.	PART NO.	SIZE	DESCRIPTION	WGT.	REV.
1	2	CS	6" x 3/4"	CLAMP HALVES	46	
2	4	CS	1 1/16" x 3/16" THK.	WASHER	1	
3	2	AS	1/2" x 3 3/8" LG. PIN W/ (2) 1/8" x 1" LG. DOT.		1	A193-87
4	4	CS	3/4" x 5" LG. HEX. HD. BOLT		3	A307-6A
5	8	CS	3/4" LOCK NUT		2	A307-6A-8
TOTAL					53	

905 3985 8-1-83  
 REV SECT A-A PER ECN  
 Rev No. ECN No. Date Dsgn Drwn Chkd Supv Engr Insp Subm Recm Appr

7365 R904

904 S1 3-30-83  
 REV PER FCR H-7887 CALCS MEDS SWP B3 0507 007 (I.C.)  
 2 S1 12-16-81  
 DETAILS DELETED PER FCR H-6047  
 Rev No. ECN No. Date Dsgn Drwn Chkd Supv Engr Insp Subm Recm Appr

903 S1 7-8-82  
 REV. PER FCR H-6629  
 1 2620 2-10-81  
 REVISED LOADS PER ECN  
 Rev No. ECN No. Date Dsgn Drwn Chkd Supv Engr Insp Subm Recm Appr



**NOTES:**  
 COLD FORM ALL CLAMPS UP TO 4" INCLUDING 5" PIPE  
 HOT FORM ALL CLAMPS 6" & UP  
 HOLE SIZES: 1/16" OVERSIZE TO 7/8" BOLTS  
 FOR BOLTS 1/8" OVERSIZE 1" BOLTS OVER

DRAVO ISO E-2879-IC-4

DRAVO CORPORATION P.O. #E-2879  
 T. V. A. CONTRACT #74 C 38-83015  
 WATTS BAR NUCLEAR PLANT - UNIT #1

<b>BERGEN-PATERSON PIPESUPPORT CORR.</b>	
PIPING SYSTEM	AUXILIARY FEEDWATER
ESP. DWG. NO.	47W427-3-10
STRUCTURAL	48N223-2
JOB NO.	3604
TAB NO.	009
MARK #	03B-IAFW-R200
DWG. NO.	343
REV.	905

TVA R900 = VENDOR RO

LOP

ENGINEERING EVALUATION  
QCI 1.8

INDENT 1003B-03B-1AFW-R200

PROC/RECORD N/A

CURRENT PROC. 4.23-8 R3

TEST NO. 08B

EVALUATION REV. 905 IS DUE

TO ECN 3785 WHICH

REVISED SEC. A-A TO

CORRECTLY INCORPORATE

FCH H-7887 PER NCR

4887. REV. 904 INCOMM-

ECTLY INCORPORATED FCH

H-7887. SUPPORT DOCUMENT

Former documentation meets the current  
VAMP-QCP requirements. (\*)

Engineer Ray Reth

Date 8-24-83

TO REV. 903 AND FCH H-7887.

NO REWORK REQUIRED

SUPPLEMENTAL DOCUMENTATION

✓

PROJECT NO. 1100-0-20-100-1-100  
 CONTRACT NO. 1100-0-20-100-1-100  
 DATE 11/1/57  
 ACCEPTED (C. J. H.)  
 Inspector [Signature]  
 Location [Signature]  
 Description [Signature]  
 Remarks [Signature]  
 Material [Signature]  
 Method of Construction [Signature]  
 Notes [Signature]  
 Construction [Signature]  
 Contractor [Signature]  
 Date [Signature]  
 Inspector [Signature]

ITEM NO.	PCS	PCN	PCN DRAWING	REV	DESCRIPTION	STA	TEST	SEQUENCE OF TESTS
10038-038-1A7-A182	2003-2	9752	1-47W427-207	903		HA 018° 02A° 03C° 04C° 06C° 09A°		
10038-038-1A7-A182	2003-2		1-47W427-207	901		HA 01A° 02A° 03A° 04A° 06A°		
10038-038-1A7-A182	2003-2		1-47W427-207	901	M-4553 NCR 4494B RL	HA 01A° 02A° 03A° 04A° 06A° 08A°		
10038-038-1A7-A182	2003-2		1-47W427-207	901	M-7786	HA 01A° 02A° 03A° 04A° 06A° 08A°		
10038-038-1A7-A182	2003-2		1-47W427-207	901	NCR 4434R R1	HE 01A° 02B° 03A° 04A° 06A° 08C°		
10038-038-1A7-A182	2003-2		1-47W427-207	901		HA 01A° 02A° 03A° 04A° 06A° 08A°		
10038-038-1A7-A182	2003-2	9471	1-47W427-207	904		HA 08C°		
10038-038-1A7-A182	2003-2		1-47W427-207	901		VOID		
10038-038-1A7-A182	2003-2		1-47W427-207	901	M-9928	HA 08A°		
10038-038-1A7-A182	2003-2		1-47W427-207	901		HA 01A° 02A° 03A° 04A° 06A°		
10038-038-1A7-A182	2003-2	9752	1-47W427-207	902		HA 08A°		
10038-038-1A7-A182	2003-2		1-47W427-207	900	M-10572/NCR 4495R	HA 018° 02B° 03B° 04B° 06C°		
10038-038-1A7-A182	2003-2		1-47W427-207	901		HA 018° 02A° 03A° 04A° 06A° 08A°		
10038-038-1A7-A182	2003-2		1-47W427-207	902		HA 01A° 02A° 03A° 04A° 06A° 08A°		
10038-038-1A7-A182	2003-2		1-47W427-207	900		HA 018° 02A° 03A° 04A° 06A° 08A°		
10038-038-1A7-A182	2003-2		1-47W427-207	900		HA 018° 02A° 03A° 04A° 06A° 08A°		
10038-038-1A7-A182	2003-2	9752	1-47W427-207	903		HA 01A° 02A° 03A° 04A° 06A° 08A°		
10038-038-1A7-A22	2003-2		1-47W427-208	904		HA 01A° 02A° 03A° 04A° 06A°		
10038-038-1A7-A20	2003-77		1-47W427-208	901	M-9924	HA 01A° 02A° 03A° 04A° 06A°		
10038-038-1A7-A201	2003-2		1-47W427-208	905	M-10577H-4686	HA 01A° 02A° 03A° 04A° 06A°		
10038-038-1A7-A202	2003-2		1-47W427-208	901	M-7506	HA 01A° 02A° 03A° 04A° 06A°		
10038-038-1A7-A203	2003-2		1-47W427-208	903	M-4667H-4706	HA 03A° 04A° 06A° 08A°		
10038-038-1A7-A204	2003-2	9871	1-47W427-208	901	M-8767H-423	HA 02A° 03A° 04A° 06A° 08A°		
10038-038-1A7-A205	2003-2		1-47W427-208	902		HA 08A°		
10038-038-1A7-A206	2003-2		1-47W427-208	904		HA 01A° 02A° 03A° 04A° 06A° 08A° 09A°		
10038-038-1A7-A208	2003-2	9871	1-47W427-208	902	M-9024	HA 01A° 02A° 03A° 04A° 06A° 08C°		
10038-038-1A7-A209	2003-2		1-47W427-208	901	M-8789	HA 01A° 02A° 03A° 04A° 06A° 08A°		
10038-038-1A7-A210	2003-2		1-47W427-208	904		HA 03A° 04B° 06C° 08A°		
10038-038-1A7-A211	2003-2		1-47W427-208	903		HA 01A° 02A° 03A° 04A° 06C° 08A°		
10038-038-1A7-A212	2003-2	9872	1-47W427-208	902		HA 01A° 02A° 03A° 04A° 06A° 08A°		
10038-038-1A7-A213	2001-6		1-47W427-208	903		HE 01A° 02A° 03C° 04A° 06A° 08C° 09A°		
10038-038-1A7-A214	2001-6	9452	1-47W427-208	901	M-10525	HA 01A° 02A° 03C° 04A° 06A° 08A°		
10038-038-1A7-A215	2001-6		1-47W427-208	902		HA 01A° 02A° 03A° 04A° 06A° 08A°		
10038-038-1A7-A216	2001-6		1-47W427-208	903		HA 01A° 02A° 03A° 04A° 06A° 08A°		
10038-038-1A7-A217	2001-6		1-47W427-208	903		HA 01A° 02A° 03A° 04A° 06A° 08A°		
10038-038-1A7-A218	2001-6		1-47W427-208	903		HA 01A° 02A° 03A° 04A° 06A° 08A°		
10038-038-1A7-A219	2001-6		1-47W427-208	903		HA 01A° 02A° 03A° 04A° 06A° 08A°		
10038-038-1A7-A220	2001-6		1-47W427-208	903		HA 01A° 02A° 03A° 04A° 06A° 08A°		

ANB014 F-700

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

ref: 10520DIN4039

Finding Number F1710111

## Comments pertinent to finding:

At the Black and Veatch inspection, construction of hanger number 47A427-4-1 was not complete. The hanger was being tracked as incomplete by the construction accountability program. Installation of the hanger has now been completed in accordance with the existing Quality Assurance Program and tracked with the site accountability program. Attached is a copy of any additional field change requests, Quality Assurance inspection documentation, and accountability print out.

Robert C. McKay  
Program Team Member

11/2/80  
Date

Thomas E. McConnell  
OEDC Program Manager

11/9/83  
Date

E. Gray Beasley  
Chairman, OEDC Policy Committee

11/8/83  
Date

Black & Veatch Records indicate installation complete

Classification: Type R Category A

W. J. Zimmerman  
Black & Veatch Project Manager

11/16/83  
Date

R. E. Blawie  
Black & Veatch Senior Review Team Chairman

12/1/83  
Date

Shaw Creek - 0163

TEST NO. 9  
Attachment A (LOP)

SUPPORT FINAL INSPECTION

REPORT ID

MA-1472-47

Reference Number

MA-1472-47

Rev. 0  
Accepted  
(Check)

Unique Identifier

Fabrication

Installation

Top Bottom Lateral

1/2" 1/2" 1/2" 54, SIOB

Seamless Pipe Protection

Support Attachment

Support Attachment Legs

Support Pipe Circumference

Support Connections

Support Pins

Remarks: as per report with

inspected in accordance with

2. of code 2-1

10/19/82

[Signature]

[Signature]

DATE 8 10 83

REPORT FULL-SCALE OF SYSTEMS UNDER TEST

IDENTIFIER	CL REFR	PAW/PLN DRAWING	REV DESCRIPTION	STAT	TEST LIT & SEQUENCE OF TESTS
1003-A427-3-2	1003-2	1-47W427-207	001 H-9319	*	HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-3-3	1003-2	1-47W427-207	001 H-7317/3842R	*	HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-3-4	1003-2	1-47W427-207	000 H-8632	*	HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-3-5	1003-2	1-47W427-207	001 H-1295	*	HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-3-6	7	1-47W427-207	001	VGID	HE 08A*
1003-A427-3-7	1003-2	1-47W427-207	002		HE 01A* 02A* 03C* 04A* 05H* 08C*
1003-A427-3-8	1003-2	1-47W427-207	000		HE 01A* 02B* 03B* 04A* 05A* 08B*
2003-A427-3-7	2003-00	J003802 2-47W427-207		01	HH 01A* 02A* 03A* 04A* 05A* 08A*
1003-A427-4-2	H 1003-2	1-47W427-208	003 H-7498	*	HL 03A* 04A* 07A* 08A*
2003-A427-4-1	2003-00	J003802 2-47W427-208		01	HK 01A* 02A* 03A* 04A* 07A* 08A*
2003-A427-4-4	2003-00	J003802 2-47W427-208		03	HL 03A* 04A* 07A* 08A*
1003-A427-4-3	1	5871 1-47W427-207	000 H-10717	03	HA 03AP 04AP 08AP
1003-A427-5-1	1	95 88 1-47W427-218	001 H-9176	*	HO 03A* 04A* 08B*
1003-A427-6-1	H 1003-2	1-47W427-219	000 H-9110	*	HE 03A* 04A* 05A* 08A*
1003-A427-7-3a	1	95 88 1-47W427-221	000 H-9908	*	HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-7-3b	1	95 88 1-47W427-221	000 H-10102 EP 409C	*	HA 01A* 02A* 03A* 04A* 08A*
1003-A427-7-3f	1	95 88 1-47W427-221	000 EP 4039	*	HA 03A* 04A* 08A*
2003-A427-7-1	2003-00	1-47W427-214		01	HE 01A* 02A* 03A* 04A* 05A* 08A*
2003-A427-7-2	2003-00	2-47W427-214		01	HH 01A* 02A* 03A* 04A* 06A* 08A*
1003-A427-7-3	1003-6	1-47W427-204	000 H-10917	*	HA 01A* 02A* 03A* 04A* 08A*
1003-A427-7-5	1	95 88 1-47W427-221	000 H-9881	*	HA 01A* 02B* 03A* 04A* 08A*
1003-A427-7-3	1	95 88 1-47W427-204	000 H-9896	*	HE 01A* 02A* 03A* 04A* 05A* 08A*
1003-A427-8-31	1	95 88 1-47W427-221	001	*	HE 01A* 02A* 03A* 04A* 05A* 08A*
1003-A427-8-32	1	95 88 1-47W427-221	000	*	HE 01A* 02A* 03A* 04A* 05A* 08A*
1003-A427-8-33	1	95 88 1-47W427-221	000 H-10068	*	HE 01A* 02A* 03A* 04A* 05A* 08A*
1003-A427-8-34	1	95 93 1-47W427-221	000 H-9848	*	HH 01A* 02A* 03A* 04A* 06A* 08A*
1003-A427-8-35	1	95 93 1-47W427-221	001	*	HH 01A* 02A* 03A* 04A* 06A* 08A*
1003-A427-8-36	1	95 88 1-47W427-221	001	*	HO 01A* 04A* 08B*
1003-A427-8-37	1	95 88 1-47W427-221	000 H-9894	*	HA 01A* 02A* 03A* 04A* 05A*
1003-A427-8-12	1	95 93 1-47W427-220	000 H-10243	*	HH 03A* 04A* 06A* 08A*
1003-A427-8-13	1	95 93 1-47W427-220	000	*	HH 01A* 02A* 03A* 04A* 07B* 08A*
1003-A427-8-14	1	95 93 1-47W427-220	000 H-9970	*	HH 01A* 02A* 03A* 04A* 06A* 07A* 08A*
1003-A427-8-15	1	95 93 1-47W427-220	000 H-9862	*	HH 01A* 02A* 03A* 04A* 08A*
1003-A427-8-16	1	95 88 1-47W427-220	000 H-9862	*	HE 01A* 02A* 03A* 04A* 05A* 08A*

DIMSOLIS f-701



WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEWFinding Number F171021

## Comments pertinent to finding:

At the Black and Veatch inspection, construction of hanger number 47A427-4-2 was not complete. The hanger was being tracked as incomplete by the construction accountability program. Installation of the hanger has now been completed in accordance with the existing Quality Assurance Program and tracked with the site accountability program. Attached is a copy of any additional field change requests, Quality Assurance inspection documentation, and accountability print out.

Robert C. McKay  
Program Team Member

11/2/83  
Date

Thomas E. McConnell  
OEDC Program Manager

11/4/83  
Date

E. Bruce Beasley  
Chairman, OEDC Policy Committee

11/8/83  
Date

Black &amp; Veatch

*attached documentation confirms installation of the hanger*

Classification: Type

R

Category

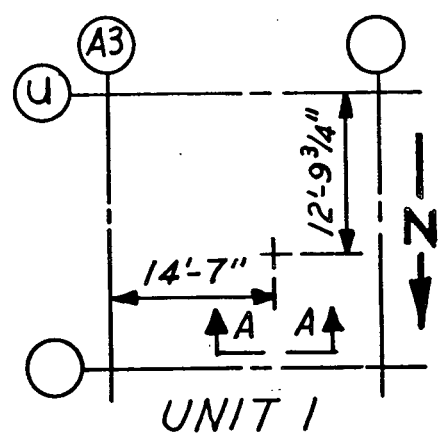
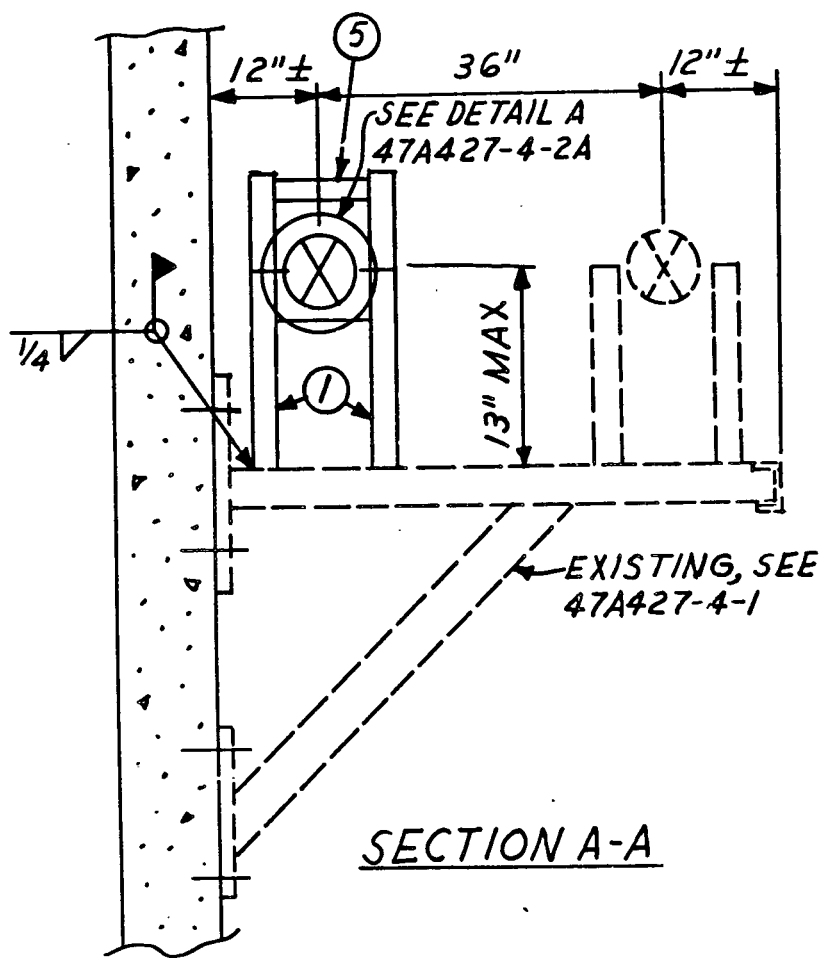
A

W. J. Zilzuman  
Black & Veatch Project Manager

12/1/83  
Date

R. E. Blawie  
Black & Veatch Senior Review Team Chairman

12/15/83  
Date



SECTION A-A

LCV 3-174

FCR-  
A-7498  
M-7115

REF. ANALYSIS NO.  
N3-3-3A (JT45)  
REF. DRAWINGS  
47W427-200  
47W427-4

DESIGN LOADS  
R<sub>H</sub> = ± 6384#  
R<sub>V</sub> = +210, -2210#

COMP DWG. 47A427-4-2A

INFORMATION ONLY

ITEM	QTY	MATERIAL DESCRIPTION FOR ONE SUPPORT
5	1	TS 2 x 2 x 1/4 x AS REQUIRED
4	4	7/8" φ x 6 3/4 MIN ASTM 193 RODS W/NUTS
3	1	CS R 9 1/16 x 6 x 1/2
2	2	L 2 x 2 x 1/4 x 6
1	3	TS 5 x 5 x 1/2 x AS REQUIRED

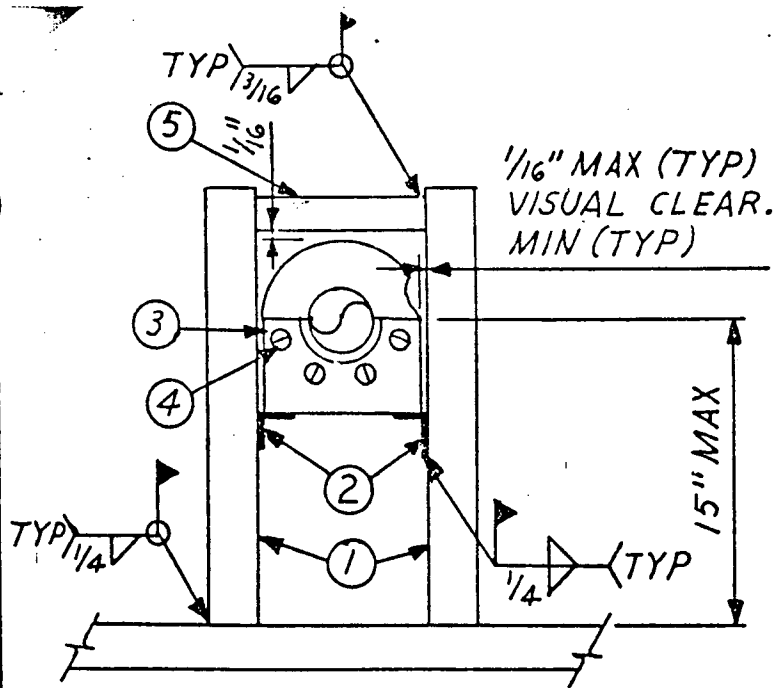
PER ECN 2620

SEISMIC CLASS I STRUCTURE  
MECHANICAL  
SEISMIC RESTRAINT FOR  
AUXILIARY FEED WATER LINES

REV NO.	ECN NO.	DATE	DESIGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBMITTALS	APPRO	
OSGN	J.C. Carter						INSP				
DRWN	R.F. CARTER						ENGINEER	J. W. Carter			
CHKD	R. Carter										
APPV	J.A. Warrick										

WATTS BAR NUCLEAR PLANT  
TENNESSEE VALLEY AUTHORITY  
DIVISION OF ENGINEERING DESIGN

DESIGNED	RECOMMENDED	APPROVED
J. W. Carter	J. W. Carter	R. W. Cantrell
KNOXVILLE	2-10-85	47A427-4-2



DETAIL A

# MASTER FILE

**NOTES:**

1. ITEM ③ IS TO BE FABRICATED TO ALLOW A MIN OF 1/16" CLEARANCE BETWEEN ITEM ③ AND PIPE, BOLT HOLES ARE TO BE 1" φ. ITEM ④ IS TO BE TORQUED TO FLANGE TORQUE REQUIREMENTS.
2. IF FLANGES ARE ROTATED FROM HORIZ. & VERT. & ITEM ③ MAY BE EXTENDED AS REQUIRED PROVIDED THERE IS A MIN EDGE DISTANCE OF 1" FROM BOLT HOLE TO EDGE OF ITEM ③.
3. L SURFACE TO BE COATED WITH MOLYCOTE 321 OR NEOLUBE.
4. IF FLANGES ARE ROTATED FROM HORIZ. OR VERT., ITEM ② MAY BE MITERED TO MATCH VALVE BRACKET FLANGE PLATE.

INFORMATION ONLY

RECEIVED  
WATTS BAR

MAR 2 - 1991

Div. of Const.

PER ECN 2620

RECEIVED  
WATTS BAR  
DEC 02 1982  
DIV. OF CONSTR.

COMP DWG 47A427-4-2

SEISMIC CLASS I STRUCTURES  
MECHANICAL  
SEISMIC RESTRAINT FOR  
AUXILIARY FEEDWATER LINES

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD
			J.C. Chambliss	RE CARLIS							
							ENGINEER	J. Busby			

WATTS BAR NUCLEAR PLANT  
TENNESSEE VALLEY AUTHORITY  
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
KNORVILLE	ESM 47A427-4	

INCORP DRAWING AS CONSTR

TENNESSEE VALLEY AUTHORITY  
FIELD CHANGE REQUEST  
REPLY MEMORANDUM

WRKP-001-1.19 R9  
Attachment A  
FCR H-7498  
MOC

J. C. Standifer, Sequoyah and Watts Bar Design Projects Manager, 204 GB-K (3)

Mr. Guenter Wadewitz, Project Manager, Watts Bar Nuclear Plant CONST

Mr. WEN 83 0609 301

Attention: J. J. NASH (EN DES ON SITE)

SECTION I - CONST REQUEST

Reason for Change:

Status Point:

System No. 03

Work Package No. N/A

Work Plan No. 9528

Drawing Discrepancy  Prior to Fuel Loading

Facilitate Construction  After Fuel Loading but prior to Closing Capitalized Accounts

Additional Design Information  After Closing Capitalized Accounts for the Entire Plant

INFORMATION ONLY

Documents Affected 47A427-4-2 R/O

Marked documents required and attached  Yes  No

Document revision required  Yes  No

Change Description: REVISE PER ATTACHED SKETCH.

Change requested by:

James W. Helay  
(CONST Engineer)

<sup>204</sup> 4-18-83

Tao I Chao  
for (Unit Supervisor)

4-26-83

Change approved by:

Clyde K. Bush  
(EN DES Engineer) (As Noted)

CAS  
DUJ

5/18/83  
(Date)

Approval obtained by:

Telephone

Memo

Other

Approved for transmittal to EN DES:

Bill E. Huffaker  
(Construction Engineer)

Shouab R. Brown  
(Project Manager)

SECTION II - EN DES REPLY/RESOLUTION

EN No. \_\_\_\_\_

Date Issued \_\_\_\_\_

Change Nos: \_\_\_\_\_

Change Complete

\_\_\_\_\_  
(EN DES Engineer)

\_\_\_\_\_  
(Design Project Manager)

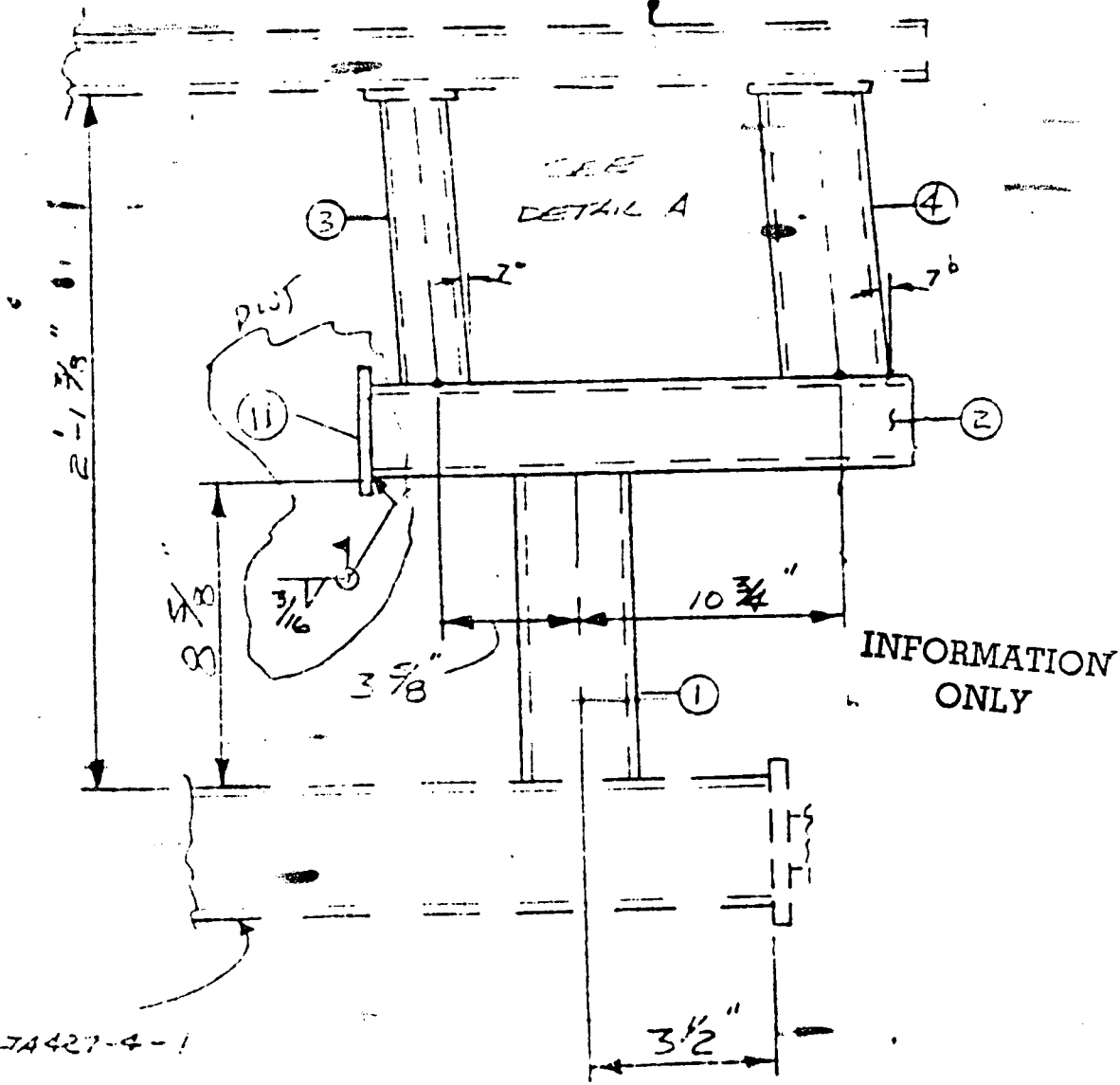
\_\_\_\_\_  
(Date)

Original - Return to CONST by EN DES

Copy 3 - Retained by CONST until original is returned

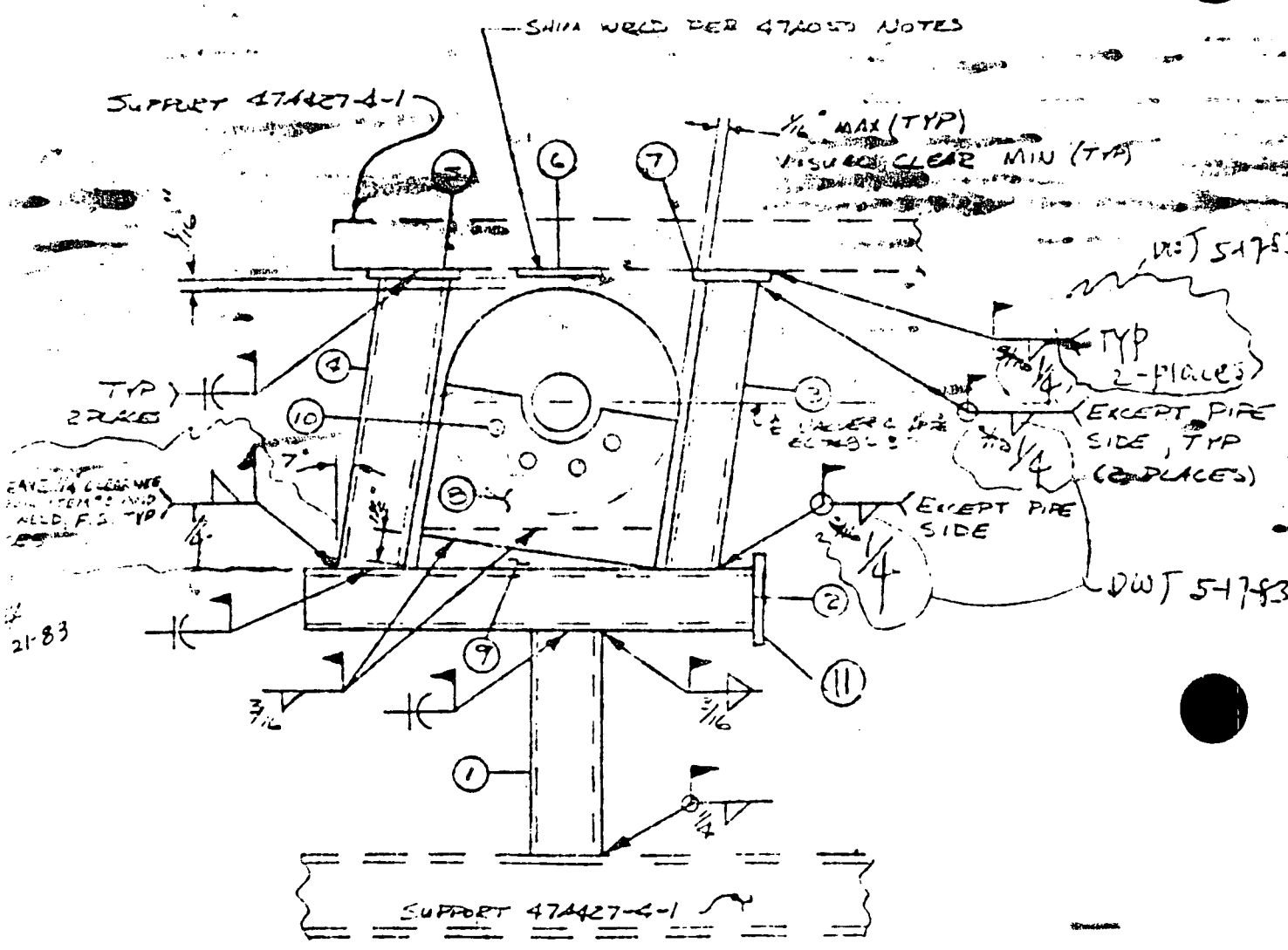
DWG 474427-4-2 FOR H-7498 ATTACH 1 OF 3
-----------------------------------------------

474427-4-1



SUPPORT 474427-4-1

ELEVATION FACING NORTH



DETAIL A

FACING SOUTH

INFORMATION ONLY

<p>DWG 47427-4-2          FOR H-7498          ATTACH. 2 OF 3</p>
--------------------------------------------------------------------------

DWG 47A427-42  
 FCR H-7498  
 ATTACH 3 OF 3

ITEM	QTY	DESCRIPTION
1	1	TS 5" x 5" x 1/2" x LG AS REQ'D
2	1	TS 5" x 5" x 1/2" x LG AS REQ'D
3	1	TS 3" x 3" x 1/4" x LG AS REQ'D
4	1	TS 5" x 5" x 1/2" x LG AS REQ'D
5	1	PL 1/2" x 6" x 0'-6" LG
6	1	PL 1/2" x 2" x 0'-4" LG
7	1	PL 1/2" x 4" x 0'-4" LG
8	1	PL 1/2" (CUT AS REQ'D)
9	1	PL 1/2" (CUT AS REQ'D)
10	4	7/8" φ x 6 3/4" MIN SA 193 RODS W/ NUTS
11	1	PL 1/2" x 6" x 0'-6"

DWT 5-17-83

INFORMATION  
 ONLY

\*SUPPLEMENT PER "AN" FOR  
H-7448 *Rennie A. Baird*  
5-30-83

WENP QCR-1 23-8 TEST NO. 8  
Attachment-A (I.G.P)

SUPPORT FINAL INSPECTION

Sup. 15

1003-4427-4-2

422427-4-2 0  
(M/S with lgn 1003) Accepted  
4427-4-1 (Check)

Installation   
Top  External

Good 0 Yes 3/2 total  
Sidings 1/2  
Graft 1/2  
Integrating 1/2  
Insulation 1/2  
Straps 1/2  
Batten Connections 1/2  
Cutter Pins 1/2

Remarks: Insulation 1-2-8,

EGR-H-2-978

Inspected in accordance with  
Rev. 2 of QCR-4-23-8

*Rennie A. Baird* 5-31-83  
Inspector Date



DATE 01 20 63

REPORT FULL FILE OF TESTS UNDER OF TESTS

IDENTIFIER	CL	OPER	PAW/PLN	DRAWING	REV	DESCRIPTION	STAY	TEST LIT & SEQUENCE OF TESTS
1003-A427-3-2		1003-2		1-47W427-207	001	H-9319		HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-3-3		1003-2		1-47W427-207	002	H-731773B42R		HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-3-4		1003-2		1-47W427-207	000	H-8602		HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-3-5		1003-2		1-47W427-207	001	H-13295		HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-3-6		1		1-47W427-207	001		VG10	HE 03A*
1003-A427-3-7		1003-2		1-47W427-207	002			HE 01A* 02A* 03C* 04A* 05B* 06C*
1003-A427-3-8		1003-2		1-47W427-207	003			HE 01A* 02B* 03B* 04A* 05A* 06B*
1003-A427-3-9		1003-00	J003B02	2-47W427-205	01			HE 01A* 02A* 03A* 04A* 06A* 08A*
1003-A427-4-1	H	1003-2	7528	1-47W427-209	003	H-7497		HE 01A* 02A* 03A* 04A* 07A* 08A*
1003-A427-4-3		1003-00	J003B02	2-47W427-208				HE 01A* 02A* 03A* 04A* 07A* 08A*
1003-A427-4-4		1003-00	J003B02	2-47W427-208				HE 01A* 02A* 03A* 04A* 07A* 08A*
1003-A427-4-5		1	5871	1-47W427-207	000	H-10717		HA 03AP 04AP 08AP
1003-A427-5-1		1	9588	1-47W427-218	007	H-9176		HE 03A* 04A* 08A*
1003-A427-6-1	H	1003-2		1-47W427-219	003	H-9113		HE 03A* 04A* 05A* 08A*
1003-A427-7-2		1	9588	1-47W427-221	000	H-7908		HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-7-30		1	9588	1-47W427-221	000	H-10152 EX 400		HE 01A* 02A* 03A* 04A* 05A*
1003-A427-7-31		1	9588	1-47W427-221	000	EP-4034		HA 07A* 08A* 08A*
1003-A427-7-1		1003-00		1-47W427-214	01			HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-7-2		1003-00		2-47W427-214	01			HE 01A* 02A* 03A* 04A* 06A* 08A*
1003-A427-7-3		1001-0		1-47W427-205	003	H-13017		HA 01A* 02A* 03A* 04A* 08A*
1003-A427-7-5		1	9588	1-47W427-221	003	H-9881		HA 01A* 02B* 03A* 04A* 06A*
1003-A427-7-7		1	9588	1-47W427-209	001	H-9396		HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-8-31		1	9588	1-47W427-221	001			HE 01A* 02A* 03A* 04A* 05B* 06A*
1003-A427-8-32		1	9588	1-47W427-221	000			HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-8-33		1	9588	1-47W427-221	001	H-13269		HE 01A* 02A* 03A* 04A* 05B* 06A*
1003-A427-8-34		1	9593	1-47W427-221	000	H-9348		HE 01A* 02A* 03A* 04A* 06A* 08A*
1003-A427-8-35		1	9593	1-47W427-221	001			HE 01A* 02A* 03A* 04B* 06A* 08A*
1003-A427-8-36		1	9588	1-47W427-221	001			HE 01A* 02A* 03A* 04A* 05B*
1003-A427-8-37		1	9588	1-47W427-221	003	H-9896		HA 01A* 02A* 03A* 04A* 05A*
1003-A427-8-12		1	9593	1-47W427-222	000	H-13243		HE 03A* 04A* 06A* 08A*
1003-A427-8-13		1	9593	1-47W427-222	001			HE 01A* 02A* 03A* 04A* 07B* 08A*
1003-A427-8-14		1	9593	1-47W427-222	007	H-9873		HE 01A* 02A* 03A* 04A* 06A* 07A* 08A*
1003-A427-8-15		1	9593	1-47W427-222	007	H-9882		HE 01A* 02A* 03A* 04A* 08A*
1003-A427-8-16		1	9588	1-47W427-222	000	H-9883		HE 01A* 02B* 03A* 04A* 05B* 06A*

DIN 5008 F-702

544

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F 7 / 0 / 4 / 1

Comments pertinent to finding:

Finding number F704 is being resolved with NCR 4455R. Hanger 03B-1AFW-R100 is being tracked by the accountability program and will be inspected when NCR 4455R is closed. Attached is a copy of NCR 4455R and hanger accountability program print-out. The print-out is a Quality Assurance document and will be retained as life of plant documentation.

Ronald C. McRyst  
Program Team Member

11/18/83  
Date

Edward E. McConnell  
OEDC Program Manager

11/18/83  
Date

MS Martin for E.A. Beasley  
Chairman, OEDC Policy Committee

11/21/83  
Date

*The initial disposition of this hanger item was re-evaluated Black & Veatch and the 'use as-is' disposition changed (see attached June 10, 1983 memo). The print out indicates several tests are pending*

Classification: Type R Category A

W.J. Zibjenski  
Black & Veatch Project Manager

12/21/83  
Date

RE Blairbell  
Black & Veatch Senior Review Team Chairman

12/27/83  
Date

WBN '821126

135 DIVISION OF CONSTRUCTION  
NONCONFORMING CONDITION REPORT

WBNP-QC1-1.02 R5  
Attachment A  
LOP  
Page 1 of 2

1A. Item and CAQ Description, and Apparent Cause.

The identification of the following nonconforming conditions of previously inspected and documented pipe supports resulted from the System 03 review by Black and Veatch:

- Findings F 718: Hanger 03B-LAFW-R231 is not welded to embedment in accordance with the current revision of the drawing;
- Findings F 726: Item 1 of Hanger 03B-LAFW-R232 is installed 6°52' with the horizontal; it is shown as horizontal on the drawing;
- Findings F 736: Item 1 of Hanger 03B-LAFW-R150 is installed 8°21' with the vertical; it is shown as vertical on the drawing;
- Findings F 772: The angle of the Riser Clamp of Hanger 03B-2AFW-R219 is specified as 30° with the vertical; it is installed at 22°45' with the vertical;
- Findings F 776: The end attachments of Hanger 03B-LAFW-R191 are rotated 90° from where specified on the drawing, and cotter pins are missing;
- Findings F 704: Hanger 03B-LAFW-R100 is distorted in the vicinity of the weld between the W4 brace and W4 vertical member. The specified 4'-10" dimension is actually 2'-11";
- Findings F 742: Hanger 47A427-2-2 was not installed in accordance with FCR H-83

1B. NCR No.: 4455R Rev. 0

1C. REF. NR or AUDIT No.: N/A

1D. PLANT: WBNP

1E. UNIT: 1 & 2

1F. SYSTEM: 03

1G. ASME CODE:  Yes  No

1H. CONTRACT No.: N/A

1I. INITIATING UNIT: HEU

1J. Vendor Name N/A Address (City and State) N/A

2. Initiator R. Chambers Date 11-12-82 Approved Thomas R. Brown Date 11/17/82

3A. Significant CAQ:  Yes  No Construction Engineer Ed Burke Date 11-17-82

Signature \_\_\_\_\_  
Authorization to Upgrade NCR to Significant \_\_\_\_\_ Title & Organization \_\_\_\_\_ Date \_\_\_\_\_  
If Significant, NEB-NLS Contact \_\_\_\_\_ Date: \_\_\_\_\_ By \_\_\_\_\_

3B. For Significant CAQ:

- 1. Describe Root Cause
- 2. This is a Generic CAQ:  Yes  No (if yes, describe)



Prepared by: \_\_\_\_\_ Date \_\_\_\_\_ Supervisor \_\_\_\_\_ Date \_\_\_\_\_

LOP

Nuclear Project: WATTS BAR NUCLEAR PLANT	NONCONFORMING CONDITION REPORT CONTINUATION PAGE	NCR: 4455R R 0
Item No.	REMARKS	
4A.	<p>Finding F718: Use as is. Revise weld symbols to reflect installed condition. See attachment 1.</p> <p>Finding F726: Rework to locate clamp at 748'-0½" elevation. Reinspect and document support in accordance with QCP 4.23-3 and QCP 4.23-8.</p> <p>Finding F736: Use as is. Revise drawing to reflect installed condition as identified on attachment 2.</p> <p>Finding F772: Use as is. Revise drawing to reflect installed condition as identified on attachments 3 and 4.</p> <p>Finding F776: Rework hanger to the current revision of the drawing. Reinspect and document support in accordance with QCP 1.14, QCP 1.42-2, and the QCP 4.23 series.</p> <p>Finding F704: Use as is. The distortion is not in the vicinity of the weld between tube and "W" section; it is in the vicinity of the weld between the "W4" brace and "W4" vertical member.</p> <p>Finding F742: Rework hanger in accordance with FCR H-8382. As a result of site inspection, it has been concluded that the 6'-9½" dimension is correct. Reinspect and document support in accordance with the QCP 4.23 series.</p>	

NCR 4455R

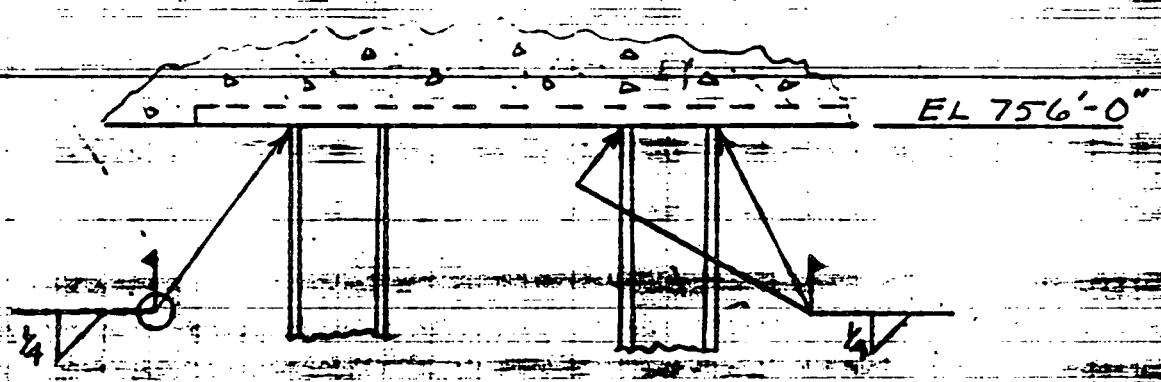
DESIGNED BY

DATE

CHECKED BY

DATE

Finding: F718  
Hanger: 03B-1AFW-R231



ELEV. LOOKING EAST

NCR 4455R  
ATTACHMENT 1 of 4









STATES GOVERNMENT

# Memo

TENNESSEE VALLEY AUTHORITY

WBP '83 0610 020

TO : G. Wadewitz, Project Manager, Watts Bar Nuclear Plant, CONST (3)

FROM : J. C. Standifer, Project Manager, Watts Bar Design Project, 204 GB-K

DATE : JUN 10 1983

SUBJECT: WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - NONCONFORMANCE REPORT 4455R RO

Reference: Your memo to me dated May 12, 1983 (WBN 830512 007) transmitting subject NCR 4455R RO (WBN 821126 135)

Your recommended disposition of the Black and Veatch findings addressed in subject NCR is as follows:

- Finding F718: (03B-1AFW-R231) Use-as-is. This is acceptable because of small loads on the support structure.
- Finding F726: (03B-1AFW-R232) Relocating clamp to elevation 748'-1/2" is acceptable and will bring support within installation tolerance of  $\pm 6^{\circ}$ .
- Finding F736: (03B-1AFW-R150) Use-as-is. This is acceptable because small load induces minimal stress into the pipe.
- Finding F772: (03B-2AFW-R219) Use-as-is. This is acceptable because installation of the riser clamp at 22<sup>o</sup>45' has no affect on the integrity of the support. The shear lugs still make sufficient contact with the clamp.
- Finding F776: (03B-1AFW-R191) Reworking support is acceptable and will bring support into compliance with the design drawing.
- Finding F742: (47A427-2-2) Reworking support in accordance with FCR H-8382 is acceptable and will bring the support into compliance with the design drawing.
- Finding F704: (03B-1AFW-R100) This is not acceptable because the over-heated and distorted weld connection between the column and brace could cause the support to fail. We recommend that CONST replace the support and ensure that the proper weld is made. EN DES will revise the drawing to change 4'-10" dimension to 2'-11" under ECN 3511.

*G. D. Collins*  
 for J. C. Standifer

*CHEN 6/15*

WBNP PROJECT MANAGER		
JUN 15 '83		
Title	Distribution	Noted
	AAPC	
<input checked="" type="checkbox"/>	CEO	CEO
	CSO	
	PMS	
<input checked="" type="checkbox"/>	QM	
	SE	
RETURN TO MASTER FILE		

*RST*

GLP:LB  
 Attachment  
 cc (Attachment):  
 C. Bonine, E7B24 C-K  
 L. J. Cooney, W6D224 C-K  
 R. A. Costner, M173 MIB-K

MEDS, W5B63 C-K  
 R. M. Pierce, 104 ESTA-K  
 M. N. Sprouse, W11A9 C-K

Principally Prepared By: C. J. Pennington Extension 2764



PROGRAM: Z5520  
DATE: 11 15 83

WBP HANGER INFORMATION AND TRACKING  
REPORT: FULL-FILE BY SYSTEM, HANGER ID <BREAK ON: SYSTEM>

SYSTEM:  
033

PAGE 07

IDENTIFIER	CL NFR	PAG/PLN	DRAWING	REV	DESCRIPTION	STAT	TEST LIB & SEQUENCE OF TESTS
Z003A-2-03A-564	Z003-00	JC03A01	200-02-12			01	HE 01A 02A 03A 04A 05A 06A
Z003A-2-03A-565	Z003-00	JC03A01	3600200-02-12			01	HE 01A 02A 03A 04A 05A 06A
Z003A-2-03A-566	Z003-00	JC03A01	200-02-12			01	HK 01A 02A 03A 04A 07A 08A
Z003A-2-03A-567	Z003-00	JC03A01	200-02-12			03	HG 03A 04A 05A 08A
Z003A-2-03A-568	Z003-00	JC03A01	200-02-12			01	HE 01A 02A 03A 04A 05A 06A
Z003A-2-03A-569	Z003-00	JC03A01	200-02-12			01	HK 01A 02A 03A 04A 07A 08A
Z003B-03B-1AFW-K1	X003-2		1-47W427-206	000		*	HA 01A* 02A* 03A* 04A* 06A*
Z003B-03B-1AFW-K2	X003-2		1-47W427-206	002		*	HA 01A* 02A* 03A* 04A* 06A* 09A*
Z003B-03B-1AFW-K101	X003-2	9526	1-47W427-203	902		*	HA 01A* 02A* 03A* 04A* 06A* 09A*
Z003B-03B-1AFW-K102	X003-2		1-47W427-203	904		*	HD 03A* 04A* 06A* 09A*
Z003B-03B-1AFW-K103	X003-2		1-47W427-203	901		*	HD 03H* 04C* 08C* 09A*
Z003B-03B-1AFW-K104	X003-2	9526	1-47W427-203	903	H-10249	*	HA 01B* 02B* 03E* 04B* 08E* 09A*
Z003B-03B-1AFW-K105	X003-2		1-47W427-203	901		*	HD 03B* 04E* 08C* 09A*
Z003B-03B-1AFW-K106	X003-2		1-47W427-203	902		CH	HB 02A* 03A* 04A* 08C* 09A*
Z003B-03B-1AFW-K107	X003-2		1-47W427-203	901		*	HA 01A* 02A* 03E* 04A* 08E*
Z003B-03B-1AFW-K108	X003-2		1-47W427-203	901		CS	HA 01A* 02A* 03A* 04A* 08B* 09A*
Z003B-03B-1AFW-K109	X003-2		1-47W427-203	901		CS	HA 01A* 02A* 03E* 04A* 08C* 09A*
Z003B-03B-1AFW-K110	X003-2		1-47W427-206	902		CS	HA 01A* 02A* 03E* 04A* 08C* 09A*
Z003B-03B-1AFW-K111	X003-2		1-47W427-203	900		*	HA 01A* 02A* 03E* 04A* 08C* 09A*
Z003B-03B-1AFW-K112	X003-2		1-47W427-203	900		*	HA 01A* 02A* 03A* 04A* 08A*
Z003B-03B-1AFW-K113	X003-2		1-47W427-201	901	HCR 4454R1	*	HD 02A* 03B* 04A* 08C* 09A*
Z003B-03B-1AFW-K114	X003-2		1-47W427-201	901		*	HA 01A* 02A* 03A* 04A* 08B* 09A*
Z003B-03B-1AFW-K115	X003-2		1-47W427-201	901	H-4752	*	HD 03A* 04A* 08A* 09A*
Z003B-03B-1AFW-K116	X003-2		1-47W427-201	903		*	HA 01A* 02A* 03A* 04A* 08E* 09A*
Z003B-03B-1AFW-K117	X003-2		1-47W427-201	901	H-4603	*	HD 03A* 04A* 08A*
Z003B-03B-1AFW-K118	X003-2		1-47W427-201	901	H-5991	*	HA 01A* 02A* 03A* 04A* 08A* 09A*
Z003B-03B-1AFW-K119	X003-2		1-47W427-201	901	H-4083	*	HA 01A* 02A* 03A* 04A* 08A* 09A*
Z003B-03B-1AFW-K120	X003-2		1-47W427-206	901	H-4922	*	HA 01A* 02A* 03A* 04A* 08A*
Z003B-03B-1AFW-K120	X003-2		1-47W427-201	901		*	HD 03A* 04A* 06A* 09A*

DINS24 F-704

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEWFinding Number F/7/1/4/

## Comments pertinent to finding:

Field located instrumentation supports are tracked in the Instrumentation Sub-assembly Report and are documented in the Quality Assurance Accountability Program when completed by use of Support Installation Operation Sheets (QCP-3.11, test code 52 in the accountability program print-out) for each sub-assembly within a given system. Sub-assemblies are identified on IOS sketches which show the supports and reference the typical support drawing used to construct the supports. Attached are copies of Support Installation Operation Sheets, IOS sketches, and the accountability program print-out for instrumentation piping from auxiliary feedwater motor driven pump 1A to local panel 1-L-222 A & B.

<u><i>Rand McKay</i></u> Program Team Member	<u>11/9/82</u> Date
<u><i>Thomas E McConnell</i></u> OEDC Program Manager	<u>11/18/83</u> Date
<u><i>M.S. Martin for E.A. Beasley</i></u> Chairman, OEDC Policy Committee	<u>11/21/83</u> Date

*The attached documentation demonstrates that TVA has Black & Veatch a formal program for certifying completion of instrumentation ranges.*

Classification: Type R Category A

<u><i>W. J. Zidzunas</i></u> Black & Veatch Project Manager	<u>12/21/83</u> Date
<u><i>R.E. Blandell</i></u> Black & Veatch Senior Review Team Chairman	<u>12/27/83</u> Date

# UNIQUE IDENTIFIER

4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	-	0	0	3	-	2	2	2	A	-	0	0	0	1		

WBNP-OCP-3.11 R9  
Attachment B  
LOP

## SUPPORT INSTALLATION OPERATION SHEET

Test No. 52 Level A

IOS 1402

RE John M. Campbell  
RE Signature denotes approved location

STEP	OPERATION DESCRIPTION	CONT. DOC. & REV.	HOLD POINT	SIGNATURE & DATE
1	Bolt Anchor Testing Verified	WBNP-OCP-1.14, R <u>11</u> Lot No. _____	IIU	N/A
2	Welding Inspection <u>Q</u> MT PT	WBNP-OCP-4.13, R <u>10</u>	IIU	<u>Stg Mill</u> 2-4-83
3	Verify Installation Correct		IIU	
	a. FOS Number Affixed	47A050 - SERIES	IIU	<u>Stg Mill</u> 1-5-83
	b. Maximum Span Not Exceeded	47A050 - SERIES	IIU	<u>Stg Mill</u> 1-5-83
	c. Bolt Material & Installation for Support Correct (Visual/Torqued)	WBNP-OCP-1.42-2, R <u>3</u>	IIU	<u>Stg Mill</u> 1-5-83
	d. Correct Hardware Properly Installed for Attachment of Lines & Supports	47B001-11 R <u>A</u> 47A05 <u>1-12</u> R <u>1</u> <u>2-24</u> R <u>2</u>	IIU IIU	<u>Stg Mill</u> 1-5-83
	e. Quantity & Size of Lines Acceptable	47A050 Series of Dwgs.	IIU	<u>Stg Mill</u> 1-5-83
	f. Sense Line Slope Acceptable	47W600-0-4, R <u>7</u>	IIU	<u>Stg Mill</u> 1-5-83
4	Isometric Sketch Approved	WBNP-OCP-3.11 R9	IIU	<u>Stg Mill</u> 2-4-83

Isometric Drawing No. IOS 1402 SKISIRZ  
NA gmc Support Variance Sheet No. NA  
2-4-83

Support FOS No.	QTY	Support FOS No.	QTY	Support FOS No.	QTY
NA	NA	NA	NA	NA	NA
↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓

QC3R  
MAR 22 1983

UNIQUE IDENTIFIER

*attach to files with 1-003-L222A-0001*

4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	0	0	3	-	L	2	2	2	A	-	0	0	0	2

WBNP-OCP-3.11 R9  
Attachment B  
LOP

SUPPORT INSTALLATION OPERATION SHEET

Test No. 52 Level A

IOS 1402

RE John M. Campbell  
RE Signature denotes approved location

STEP	OPERATION DESCRIPTION	CONT. DOC. & REV.	HOLD POINT	SIGNATURE & DATE
1	Bolt Anchor Testing Verified	WBNP-OCP-1.14, R <u>11</u> Lot No. _____	IIU	N/A
2	Welding Inspection <u>MT PT</u>	WBNP-OCP-4.13, R <u>10</u>	IIU	<u>Stg Mill 2-4-83</u>
3	Verify Installation Correct		IIU	
	a. FOS Number Affixed	47A050 - SERIES	IIU	<u>Stg Mill 1-5-83</u>
	b. Maximum Span Not Exceeded	47A050 - SERIES	IIU	<u>Stg Mill 1-5-83</u>
	c. Bolt Material & Installation for Support Correct (Visual/Torqued)	WBNP-OCP-1.42-2, R <u>3</u>	IIU	<u>Stg Mill 1-5-83</u>
	d. Correct Hardware Properly Installed for Attachment of Lines & Supports	47B001-11 R <u>A</u> 47A05 <u>1-12</u> R <u>1</u> <u>2-24</u> R <u>2</u>	IIU IIU	<u>Stg Mill 1-5-83</u>
	e. Quantity & Size of Lines Acceptable	47A050 Series of Dwg.	IIU	<u>Stg Mill 1-5-83</u>
f. Sense Line Slope Acceptable	47W600-0-4, R <u>7</u>	IIU	<u>Stg Mill 1-5-83</u>	
4	Isometric Sketch Approved	WBNP-OCP-3.11 R9	IIU	<u>Stg Mill 2-4-83</u>

Isometric Drawing No. FOS 1402 SKISIRZ  
NA Jmc 2-4-83 Support Variance Sheet No. NA

Support FOS No.	QTY	Support FOS No.	QTY	Support FOS No.	QTY
NA	NA	NA	NA	NA	NA
↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓

MAR 10 1983

# I003F01 UNIQUE IDENTIFIER

X3(2)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	-	0	0	3	-	2	2	2	2	A	-	0	0	0	4				

## SUPPORT INSTALLATION OPERATION SHEET

Test No. 52 Level A

IOS 1403

RE John M. Campbell  
 RE Signature denotes approved location

STEP	OPERATION DESCRIPTION	CONT. DOC. & REV.	HOLD POINT	SIGNATURE & DATE
1	Bolt Anchor Testing Verified	WBNP-OCP-1.14, R <u>11</u> Lot No. <u>1403-431</u> <u>5360</u>	IIIU	<u>Stacy Mill</u> 12-15-82
2	Welding Inspection <u>(V)</u> MT PT	WBNP-OCP-4.13, R <u>6</u>	IIU	<u>Stacy Mill</u> 1-5-83
3	Verify Installation Correct		IIU	
	a. FOS Number Affixed	<u>47A050</u> - SERIES	IIU	<u>Stacy Mill</u> 1-5-83
	b. Maximum Span Not Exceeded	<u>47A050</u> - SERIES	IIU	<u>Stacy Mill</u> 1-5-83
	c. Bolt Material & Installation for Support Correct (Visual/Torqued)	WBNP-OCP-1.42-2, R <u>2</u>	IIU	<u>Stacy Mill</u> 1-5-83
	d. Correct Hardware Properly Installed for Attachment of Lines & Supports	47B001-11 R <u>4</u> 47A05 <u>1</u> - <u>19</u> R <u>2</u> 47A05 <u>1</u> - <u>35</u> <u>4</u>	IIU IIU	<u>Stacy Mill</u> 1-5-83
	e. Quantity & Size of Lines Acceptable	47A050 Series of Dwg.	IIU	<u>Stacy Mill</u> 1-5-83
f. Sense Line Slope Acceptable	47W600-0-4, R <u>7</u>	IIU	<u>Stacy Mill</u> 1-5-83	
4	Isometric Sketch Approved	WBNP-OCP-3.11 R9	IIU	<u>Stacy Mill</u> 1-5-83

Isometric Drawing No. I05-1403 R3

Support Variance Sheet No. I-51-35-1537

Support FOS No.	QTY	Support FOS No.	QTY	Support FOS No.	QTY
2671	1				
4353-14	1				
2669	1				
4353-22	1				
4525 R1	1				

**CCAR**  
 APR 28 1983

**CCAR**  
 MAR 22 1983

\* Pending approval of SVS I-51-35-1537

UNIQUE IDENTIFIER

550

4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
1-003-4222A-0007																				Attachment P		LCP		WRNP-OCP-3.11 R9		1-3-4-222A-7	

*in vault*

SUPPORT INSTALLATION OPERATION SHEET

Test No. 52 Level A B  
 9<sup>th</sup> C  
 3-21-83

IOS 1608

RE John M. Campbell  
 RE Signature denotes approved location

STEP	OPERATION DESCRIPTION	CONT. DOC. & REV.	HOLD POINT	SIGNATURE & DATE
1	Bolt Anchor Testing Verified	WRNP-OCP-1.14, R <u>11</u> Lot No. <u>I-1270</u>	IIU	<i>St. G. Miller 1-4-83</i>
2	Welding Inspection V MT PT	WRNP-OCP-4.13, R <u>6</u>	IIU	<i>N/A</i>
3	Verify Installation Correct a. FOS Number Affixed	<u>47A050 - SERIES</u>	IIU	<i>St. G. Miller 1-4-83</i>
	b. Maximum Span Not Exceeded	<u>47A051 - SERIES</u>	IIU	<i>St. G. Miller 1-4-83</i>
	c. Bolt Material & Installation for Support Correct (Visual/Torqued)	WRNP-OCP-1.42-2, R <u>3</u>	IIU	<i>St. G. Miller 1-4-83</i>
	d. Correct Hardware Properly Installed for Attachment of Lines & Supports	47B001-11 R <u>4</u> 47A05 <u>1</u> - <u>35</u> R <u>4</u> <u>1</u> <u>42</u> R <u>2</u>	IIU IIU	<i>St. G. Miller 1-4-83</i>
	e. Quantity & Size of Lines Acceptable	47A050 Series of Dwg's.	IIU	<i>St. G. Miller 1-4-83</i>
	f. Sense Line Slope Acceptable	47W600-0-4, R <u>7</u>	IIU	<i>St. G. Miller 1-4-83</i>
4	Isometric Sketch Approved	WRNP-OCP-3.11 R9	IIU	<i>St. G. Miller 1-26-83</i>

Isometric Drawing No. 47W600-62 IOS-1608 SK448 Support Variance Sheet No. N/A

Support FOS No.	QTY	Support FOS No.	QTY	Support FOS No.	QTY
071	1	NA		NA	
269	1				
2679	1				
NA					

**QC&R**  
 APR 22 1983  
 APR 21 1983

59

WBNP-QCP-3.11 R5  
Attachment B  
IOS 1608  
RE DEAN SANDLIN  
LOP 1-3-L-222A-7

W.P. I003F-01  
WATTS BAR NUCLEAR PLANT  
SUPPORT INSTALLATION OPERATION SHEET

52A

STEP	OPERATION DESCRIPTION	CONT. DOC. & REV.	HOLD POINT	SIGNATURE & DATE
1	Location Approved for Installation (Allow for slope)	WBNP-QCP-3.11, R5	IE	John Campbell 2-15-82
2	Bolt Anchor Testing Verified	WBNP-QCP-1.14, R5	IE	JM 4-21-82
3	Welding Inspection V MT PT	WBNP-QCP-4.13, R4	WE	N/A
	Verify Installation Correct		Initial if Acceptable	
a.	FOS Number Affixed	47A051 SERIES	IE	JM 4-20-82
b.	Maximum Span Not Exceeded	WBNP-QCP-3.11, R5	IE	JM 4-20-82
c.	Bolt Material & Installation for Support Correct (Visual/Torqued)	WBNP-QCP-1.14, R5	IE	JM 4-20-82
d.	Lines Welded or Permanently Connected	N/A		JM 4-20-82
e.	Correct Hardware Properly Installed for Attachment of Lines & Supports	47B001 SERIES	IE	JM 4-20-82
f.	Quantity & Size of Lines Acceptable	47A05 SERIES	IE	JM 4-20-82
g.	Sense Line Slope Acceptable	47A051 SERIES	IE	JM 4-20-82
		47W600-0-4, R5	IE	JM 4-20-82
	Isometric Sketch Approved	WBNP-QCP-3.11, R5	IE	JM 4-21-82
	Documentation Complete	WBNP-QCP-3.11, R5	IE	JM 4-21-82

Isometric Drawing No. 205-1608 SK-448

Support Variance Sheet No. N/A

Support FOS Number	QTY	Support FOS Number	QTY
071	1		
269	1		
2679	1		

CC&R  
MAY 3 1982  
[Signature]

UNIQUE IDENTIFIER

4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	...
1	0	0	3	-	L	2	2	2	A	-	0	0	0	7	

CC&R  
MAR 23 1983



1003 Fol.

52 Test  
500.

IP-QCP-3.11 R5  
Attachment B  
IOS 1611 R0  
RE DEAN SANDLIN  
LOP 1-3-L-222A-8

WATTS BAR NUCLEAR PLANT  
SUPPORT INSTALLATION OPERATION SHEET

ITEM	OPERATION DESCRIPTION	CONT. DOC. & REV.	HOLD POINT	SIGNATURE & DATE
	Location Approved for Installation (Allow for slope)	WBNP-QCP-3.11, R5	IE	<i>[Signature]</i> 2-28-82
	Bolt Anchor Testing Verified	WBNP-QCP-1.14, R8	IE	N/A
	Welding Inspection V MT PT	WBNP-QCP-4.13, R4	WE	N/A
	Verify Installation Correct		Initial if Acceptable	
a.	FOS Number Affixed	47A051 SERIES	IE	<i>[Signature]</i> 9-21-82
b.	Maximum Span Not Exceeded	WBNP-QCP-3.11, R5	IE	<i>[Signature]</i> 9-21-82
c.	Bolt Material & Installation for Support Correct (Visual, Torqued)	WBNP-QCP-1.14, R8	IE	<i>[Signature]</i> 9-21-82
d.	Lines Welded or Permanently Connected	N/A		<i>[Signature]</i> 9-21-82
e.	Correct Hardware Properly Installed for Attachment of Lines & Supports	47B001 SERIES 47A05 SERIES	IE IE	<i>[Signature]</i> 9-21-82 <i>[Signature]</i> 9-21-82
f.	Quantity & Size of Lines Acceptable	47A051 SERIES	IE	<i>[Signature]</i> 9-21-82
	Sense Line Slope Acceptable	47W600-0-4, R5	IE	<i>[Signature]</i> 9-21-82
	Isometric Sketch Approved	WBNP-QCP-3.11, R5	IE	<i>[Signature]</i> 9-21-82
	Documentation Complete	WBNP-QCP-3.11, R5	IE	<i>[Signature]</i> 9-21-82

Isometric Drawing No. SK 449

Support Variance Sheet No. N/A

Support FOS Number	QTY	Support FOS Number	QTY
2679	1		
071	1		
269	1		

*[Signature]*  
QC&R  
MAY 1 1982

UNIQUE IDENTIFIER

1-003-2222A-0008

*[Signature]*  
MAY 19 1982

will file  
I003F01

WBNP-QCP-3.11 R5  
Attachment B  
IOS 1610  
RE DEAN SANDLIN  
LOP 1-3-L-222A-9

52A  
661

WATTS BAR NUCLEAR PLANT  
SUPPORT INSTALLATION OPERATION SHEET

STEP	OPERATION DESCRIPTION	CONT. DOC. & REV.	HOLD POINT	SIGNATURE & DATE
1	Location Approved for Installation (Allow for slope)	WBNP-QCP-3.11, R5	IE	<i>[Signature]</i> 4-21-82
2	Bolt Anchor Testing Verified	WBNP-QCP-1.14, R8	IE	N/A
3	Welding Inspection V MT PT	WBNP-QCP-4.13, R4	WE	N/A
4	Verify Installation Correct		Initial if Acceptable	
a.	FOS Number Affixed	47A051 SERIES	IE	JMM 4-21-82
b.	Maximum Span Not Exceeded	WBNP-QCP-3.11, R5	IE	JMM 4-21-82
c.	Bolt Material & Installation for Support Correct (Visual, Torqued)	WBNP-QCP-1.14, R5 <sup>M 9</sup>	IE	JMM 4-21-82
d.	Lines Welded or Permanently Connected	N/A		JMM 4-21-82
e.	Correct Hardware Properly Installed for Attachment of Lines & Supports	47B001 SERIES 47A05 SERIES	IE IE	JMM 4-21-82 JMM 4-21-82
f.	Quantity & Size of Lines Acceptable	47A051 SERIES	IE	JMM 4-21-82
g.	Sense Line Slope Acceptable	47W600-0-4, R5	IE	JMM 4-21-82
5	Isometric Sketch Approved	WBNP-QCP-3.11, R5	IE	JMM 4-21-82
6	Documentation Complete	WBNP-QCP-3.11, R5	IE	JMM 4-21-82

Isometric Drawing No. SK.450 Support Variance Sheet No. N/A

Support FOS Number	QTY	Support FOS Number	QTY
2679	1		
071	1		
269	1		

*[Handwritten: CC&P, MAY 1 1982]*

*[Handwritten: CC&P, MAY 1 1982]*

UNIQUE IDENTIFIER

4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	1	0	0	3	1	-	L	2	2	2	A	-	0	0	0	9				

UNIQUE IDENTIFIER

4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	-	0	0	3	-	2	2	2	2	A	-	0	0	0	9	

WBNP-OCP-3.11 R9  
Attachment B  
LOP

1-3-2-222 A-9  
X3(2) 562

*in vault*

SUPPORT INSTALLATION OPERATION SHEET

Test No. 52 Level A B

IOS 1610

RE John M. Campbell  
RE Signature denotes approved location  
3-2-83

STEP	OPERATION DESCRIPTION	CONT. DOC. & REV.	HOLD POINT	SIGNATURE & DATE
1	Bolt Anchor Testing Verified	WBNP-OCP-1.14, R <u>11</u> Lot No. <u>I-5570</u> <i>see IOS 1608</i>	IIU	<i>see IOS 1608</i>
2	Welding Inspection V MT PT	WBNP-OCP-4.13, R <u>4</u>	IIU	<i>N/A</i>
3	Verify Installation Correct		IIU	
	a. FOS Number Affixed	<u>47A050-SERIES</u>	IIU	<i>see IOS 1608</i>
	b. Maximum Span Not Exceeded	<u>47A051-SERIES</u>	IIU	<i>see Mill 1-4-83</i>
	c. Bolt Material & Installation for Support Correct (Visual/Torqued)	WBNP-OCP-1.42-2, R <u>3</u>	IIU	<i>see Mill 1-4-83</i>
	d. Correct Hardware Properly Installed for Attachment of Lines & Supports	47B001-11 R <u>4</u> <del>47A051-SERIES</del> <del>47A051-SERIES</del>	IIU	<i>see Mill 1-4-83</i> <i>see IOS SM 1-26-83</i>
	e. Quantity & Size of Lines Acceptable	47A050 Series of Dwg.	IIU	<i>see Mill 1-4-83</i>
f. Sense Line Slope Acceptable	47W600-0-4, R <u>2</u>	IIU	<i>see Mill 1-4-83</i>	
4	Isometric Sketch Approved	WBNP-OCP-3.11 R9	IIU	<i>see Mill 1-26-83</i>

Isometric Drawing No. 47W600-62 IOS 1610 31450 Support Variance Sheet No. N/A

Support FOS No.	QTY	Support FOS No.	QTY	Support FOS No.	QTY
<i>NA</i>		<i>NA</i>		<i>NA</i>	
<i>NA</i>		<i>NA</i>		<i>NA</i>	
<i>NA</i>		<i>NA</i>		<i>NA</i>	
<i>NA</i>		<i>NA</i>		<i>NA</i>	

*CCRP*  
*APR-6-1983*

UNIQUE IDENTIFIER

*Sketch is filed with 1-003-12228-0001*

4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	...
1	0	0	3	-	L	2	2	2	8	-	0	0	0	6			

WBNP-OCP-3.11 R9  
Attachment 2  
LOP

563

SUPPORT INSTALLATION OPERATION SHEET

Test No. 52 Level A

OS 1402

RE John M. Campbell  
RE Signature denotes approved location

STEP	OPERATION DESCRIPTION	CONT. DOC. & REV.	HOLD POINT	SIGNATURE & DATE
1	Bolt Anchor Testing Verified	WRNP-OCP-1.14, R <u>11</u> Loc No. _____	IIU	N/A
2	Welding Inspection <u>MT</u> PT	WRNP-OCP-4.13, R <u>10</u>	IIU	W.C. Mill 2-4-83
3	Verify Installation Correct		IIU	
	a. FOS Number Affixed	47A050 - SERIES	IIU	W.C. Mill 1-5-83
	b. Maximum Span Not Exceeded	47A050 - SERIES	IIU	W.C. Mill 1-5-83
	c. Bolt Material & Installation for Support Correct (Visual/Torqued)	WRNP-OCP-1.42-2, R <u>3</u>	IIU	W.C. Mill 1-5-83
	d. Correct Hardware Properly Installed for Attachment of Lines & Supports	47B001-11 R <u>A</u> 47A05 <u>1</u> - <u>12</u> R <u>1</u> <u>2</u> - <u>24</u> R <u>2</u>	IIU IIU	W.C. Mill 1-5-83
	e. Quantity & Size of Lines Acceptable	47A050 Series of Dvgs.	IIU	W.C. Mill 1-5-83
f. Sense Line Slope Acceptable	47W600-0-4, R <u>1</u>	IIU	W.C. Mill 1-5-83	
4	Isometric Sketch Approved	WBNP-OCP-3.11 R9	IIU	W.C. Mill 2-4-83

Isometric Drawing No. FOS 1402 SKISIR2  
NA jmc Support Variance Sheet No. NA  
2-4-83

Support FOS No.	QTY	Support FOS No.	QTY	Support FOS No.	QTY
NA	NA	NA	NA	NA	NA

W.C. Mill  
MAR 7 1983

1003 F01 UNIQUE IDENTIFIER

X3(2) sketch files with 1-003-42228-0009

564

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	-	0	0	3	-	4	2	2	2	8	-	0	0	0	9				

WRNP-OCP-3.11 R0  
Attachment P  
LOF

SUPPORT INSTALLATION OPERATION SHEET

Test No. 52 Level A

OS 1403

RE John M. Campbell  
RE Signature denotes approved location

STEP	OPERATION DESCRIPTION	CONT. DOC. & REV.	HOLD POINT	SIGNATURE & DATE
1	Bolt Anchor Testing Verified	WRNP-OCP-1.14, R <u>11</u> Lot No. <u>1403</u>	IIU	<u>Stg Mill</u> 12-15-82
2	Welding Inspection <input checked="" type="checkbox"/> MT PT	WRNP-OCP-4.13, R <u>6</u>	IIU	<u>Stg Mill</u> 1-5-83
3	Verify Installation Correct		IIU	
	a. FOS Number Affixed	<u>47A050 - SERIES</u>	IIU	<u>Stg Mill</u> 1-5-83
	b. Maximum Span Not Exceeded	<u>47A050 - SERIES</u>	IIU	<u>Stg Mill</u> 1-5-83
	c. Bolt Material & Installation for Support Correct (Visual/Torqued)	WRNP-OCP-1.42-2, R <u>2</u>	IIU	<u>Stg Mill</u> 1-5-83
	d. Correct Hardware Properly Installed for Attachment of Lines & Supports	47B001-11 R <u>4</u> 47A05 <u>1</u> - <u>19</u> R <u>2</u> 47A05 <u>1</u> - <u>35</u> R <u>4</u>	IIU IIU	<u>Stg Mill</u> 1-5-83
	e. Quantity & Size of Lines Acceptable	47A050 Series of Dwg.	IIU	<u>Stg Mill</u> 1-5-83
f. Sense Line Slope Acceptable	47W600-0-4, R <u>2</u>	IIU	<u>Stg Mill</u> 1-5-83	
4	Isometric Sketch Approved	WRNP-OCP-3.11 R9	IIU	<u>Stg Mill</u> 1-5-83

Isometric Drawing No. IOS-1403 R3

Support Variance Sheet No. I-51-35-1537

Support FOS No.	QTY	Support FOS No.	QTY	Support FOS No.	QTY
2671	1				
4353-14	1				
2669	1				
4353-22	1				
4525 R1	1				

*(Handwritten signature and stamp)*

\* Pending approval of SVS I-51-35-1537













IDENTIFIER	DEFINING	ACT	POS	POS	TEST LIBRARY & SEQUENCE OF TESTS
1-003-L214A-0006	47h600-062-809	103F02	C1326		1A 52A 54A 55C 56A 58A
1-003-L214A-0007	47h600-062	103F02	G1613		1A 52A 54A 55A 56A 58A
1-003-L214A-0008	47h600-062	103F02	G1614		1A 52A 54A 55A 56A 58A
1-003-L214A-0009	47h600-062-810	103F02	C1327		1A 52A 54A 55A 56A 58A
1-003-L214B-0006	47h600-062-809	103F02	C1326		1A 52A 54A 55C 56A 58A
1-003-L214B-0007	47h600-062-810	103F02	C1327		1A 52A 54A 55A 56A 58A
1-003-L214B-0009	47h600-062-810	103F02	C1327		1A 52A 54A 55A 56A 58A
1-003-L215A-0001	47h600-065-072	103F02	C1365		1A 52A 54A 55A 56A
1-003-L215A-0002	47h600-065-073	103F02	C1366		1A 52A 54A 55A 56A
1-003-L215A-0003	47h600-065-074	103F02	C1367		1A 52C 54A 55B 56B
1-003-L215A-0004	47h600-065-075	103F02	C1368		1A 52A 54A 55A 56A
1-003-L215B-0005	47h600-065-077	103F02	C1390		1A 52A 54A 55A 56A 58A
1-003-L215B-0006	47h600-065-076	103F02	C1391		1A 52A 55A 56A 58A
1-003-L215B-0007	47h600-065-077	103F02	C1392		1A 52A 55A 56A 58A
1-003-L215B-0008	47h600-065-322	103F02	C1393		1A 52A 55A 56A 58A 58A
1-003-L216-0001	47h600-065-966	103F02	8705		1A 52A 54A 55A 56A 58A
1-003-L216-0002	47h600-065-967	103F02	81975		1A 52A 54A 55A 56A
1-003-L216-0003	47h600-065-968	103F02	8706		1A 52A 54A 55A 56A 58A
1-003-L216-0008	47h600-065-969	103F02	81576		1A 52A 54A 55A 56A 58A
1-003-L217-0001	47h600-064-320	103F02	81394		1A 52A 54A 55A 56A 58A
1-003-L217-0002	47h600-064-321	103F02	81395		1A 52A 54A 55A 56A 58A
1-003-L217-0003	47h600-064-322	103F02	81396		1A 52A 54A 55A 56A
1-003-L217-0008	47h600-064-323	103F02	81397		1A 52A 54A 55A 56A 58A
1-003-L218-0001	47h600-64-165	103F02	C1398		1A 52A 54A 55A 56A
1-003-L218-0003	47h600-64-165	103F02	C1399		1A 52A 54A 55A 56A
1-003-L218-0007	47h600-64-166	103F02	C1400		1A 52A 54A 55A 56A
1-003-L218-0009	47h600-64-167	103F02	C1421		1A 52A 54A 55A 56A
[REDACTED SECTION]					
1-003-L361-0001	47h600-167-290	103F02	81404		1A 52A 54A 55A 56A 58A
1-003-L362-0001	47h600-167-291	103F02	81405		1A 52A 54A 55A 56A 58A
1-003-L364-0003	47h600-156	103F02	F		1F 55A 56A
1-003-L362-0001	47h600-130-951	103F02	8699		1A 52A 54A 55A 56A 58A
1-003-L362-0002	47h600-130-952	103F02	8700		1A 52A 54A 55A 56A 58A
1-003-L382-0001	47h600-130-953	103F02	8701		1A 52A 54A 55A 56A 58A
1-003-L383-0001	47h600-130-918	103F02	8702		1A 52A 54A 55A 56A 58A
1-003-L383-0002	47h600-130-919	103F02	8702		1A 52A 54A 55A 56A 58A

525

DIN5226 A-714

525

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F/7/1/8/

O-PL

Comments pertinent to finding:

Per disposition of CONST NCR 4455R (WBP 830610 020) the welds in question have been qualified as constructed. Support 03B-1AFW-R231 was revised and issued as revision R902 under ECN 3511 to reflect the weld changes on 3/24/83. This corrective action is complete.

References: ECN 3511  
NCR 4455R  
Drawing 03B-1AFW-R231 R902

<u>E.H. Cole</u> Program Team Member	<u>11/14/83</u> Date
<u>Thomas E. McConnell</u> OEDC Program Manager	<u>11/14/83</u> Date
<u>M.S. Martin for E.H. Beasley</u> Chairman, OEDC Policy Committee	<u>11/17/83</u> Date

Black & Veatch *The attached information confirms that appropriate corrective action is complete*

Classification: Type R Category A

<u>W.J. Zibunas</u> Black & Veatch Project Manager	<u>1/18/84</u> Date
<u>R.E. Blandell</u> Black & Veatch Senior Review Team Chairman	<u>1/20/84</u> Date

UNITED STATES GOVERNMENT

## Memorandum

*G. L. Pennington*  
 TENNESSEE VALLEY AUTHORITY  
 WBP '83 0610 020

571

TO : G. Wadewitz, Project Manager, Watts Bar Nuclear Plant, CONST (3)  
 FROM : J. C. Standifer, Project Manager, Watts Bar Design Project, 204 GB-K  
 DATE : JUN 10 1983  
 SUBJECT: WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - NONCONFORMANCE REPORT 4455R RO

Reference: Your memo to me dated May 12, 1983 (WBN 830512 007)  
 transmitting subject NCR 4455R RO (WBN 821126 135)

Your recommended disposition of the Black and Veatch findings addressed in subject NCR is as follows:

- Finding F718: (03B-1AFW-R231) Use-as-is. This is acceptable because of small loads on the support structure.
- Finding F726: (03B-1AFW-R232) Relocating clamp to elevation 748'-1/2" is acceptable and will bring support within installation tolerance of  $\pm 6^\circ$ .
- Finding F736: (03B-1AFW-R150) Use-as-is. This is acceptable because small load induces minimal stress into the pipe.
- Finding F772: (03B-2AFW-R219) Use-as-is. This is acceptable because installation of the riser clamp at 22°45' has no affect on the integrity of the support. The shear lugs still make sufficient contact with the clamp.
- Finding F776: (03B-1AFW-R191) Reworking support is acceptable and will bring support into compliance with the design drawing.
- Finding F742: (47A427-2-2) Reworking support in accordance with FCR H-8382 is acceptable and will bring the support into compliance with the design drawing.
- Finding F704: (03B-1AFW-R100) This is not acceptable because the overheated and distorted weld connection between the column and brace could cause the support to fail. We recommend that CONST replace the support and ensure that the proper weld is made. EN DES will revise the drawing to change 4'-10" dimension to 2'-11" under ECN 3511.

*J. C. Standifer*  
 J. C. Standifer

GLP:LB  
 Attachment  
 cc (Attachment):

C. Bonine, E7B24 C-K  
 L. J. Cooney, W6D224 C-K  
 R. A. Costner, M173 MIB-K

MEDS, W5B63 C-K  
 R. M. Pierce, 104 ESTA-K  
 M. N. Sprouse, W11A9 C-K

Principally Prepared By: G. L. Pennington, Extension 2764  
 Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan



WBN '821126

135

DIVISION OF CONSTRUCTION  
NONCONFORMING CONDITION REPORT

WBNP-QCI-1.02 R5  
Attachment A  
LOP

1A. Item and CAQ Description, and Apparent Cause:

The identification of the following nonconforming conditions of previously inspected and documented pipe supports resulted from the System 03 review by Black and Veatch:

Findings F 718: Hanger 03B-1AFW-R231 is not welded to embedment in accordance with the current revision of the drawing;

Findings F 726: Item 1 of Hanger 03B-1AFW-R232 is installed 6°52' with the horizontal; it is shown as horizontal on the drawing;

Findings F 736: Item 1 of Hanger 03B-1AFW-R150 is installed 8°21' with the vertical; it is shown as vertical on the drawing;

Findings F 772: The angle of the Riser Clamp of Hanger 03B-2AFW-R219 is specified as 30° with the vertical; it is installed at 22°45' with the vertical;

Findings F 776: The end attachments of Hanger 03B-1AFW-R191 are rotated 90° from where specified on the drawing, and cotter pins are missing;

Findings F 704: Hanger 03B-1AFW-R100 is distorted in the vicinity of the weld between the W4 brace and W4 vertical member. The specified 4'-10" dimension is actually 2'-11";

Findings F 742: Hanger 47A427-2-2 was not installed in accordance with FCR H-8382.

1B. NCR No.:	4455R	Rev.	0
1C. REF. NR or AUDIT No.:	N/A		
1D. PLANT:	WBNP		
1E. UNIT:	1 & 2		
1F. SYSTEM:	03		
1G. ASME CODE:	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
1H. CONTRACT No.:	N/A		
1I. INITIATING UNIT:	HEU		

1J. Vendor Name N/A Address (City and State) N/A

2. Initiator R. Chambers Date 11-12-82 Approved Thomas R. Brown Date 11/17/82

3A. Significant CAQ:  Yes  No Construction Engineer Ed Burke Date 11-17-82  
Signature \_\_\_\_\_ Title & Organization \_\_\_\_\_ Date \_\_\_\_\_  
If Significant, NEB-NLS Contact \_\_\_\_\_ Date: \_\_\_\_\_ By \_\_\_\_\_

3B. For Significant CAQ:  
1. Describe Root Cause  
2. This is a Generic CAQ:  Yes  No (If yes, describe)



Prepared by: \_\_\_\_\_ Date \_\_\_\_\_ Supervisor \_\_\_\_\_ Date \_\_\_\_\_

Nuclear Project: WATTS BAR  
NUCLEAR PLANT

NONCONFORMING CONDITION REPORT  
CONTINUATION PAGE

NCR: 4455R R

Item No.	REMARKS
4A.	<p>Finding F718: Use as is. Revise weld symbols to reflect installed condition. See attachment 1.</p> <p>Finding F726: Rework to locate clamp at 748'-0<math>\frac{1}{2}</math>" elevation. Reinspect and document support in accordance with QCP 4.23-3 and QCP 4.23-8.</p> <p>Finding F736: Use as is. Revise drawing to reflect installed condition as identified on attachment 2.</p> <p>Finding F772: Use as is. Revise drawing to reflect installed condition as identified on attachments 3 and 4.</p> <p>Finding F776: Rework hanger to the current revision of the drawing. Reinspect and document support in accordance with QCP 1.14, QCP 1.42-2, and the QCP 4.23 series.</p> <p>Finding F704: Use as is. The distortion is not in the vicinity of the weld between tube and "W" section; it is in the vicinity of the weld between the "W4" brace and "W4" vertical member.</p> <p>Finding F742: Rework hanger in accordance with FCR H-8382. As a result of site inspection, it has been concluded that the 6'-9<math>\frac{1}{2}</math>" dimension is correct. Reinspect and document support in accordance with the QCP 4.23 series.</p>

4A. Disposition:  Rework  Repair  Use-As-Is  Reject  Other  
(Check Block and Detail Below)

See continuation sheet for recommended disposition.

4B. Action Required to Prevent Recurrence: (For Significant CAO's Only)

4C. Date for Completion of all actions to close NCR (For Significant CAO's only)

Recommended By R. Chambers Date 11-12-82  
Thomas R. Brown 11/17/82

5.  Approved:  As Detailed in 4 above  Other (See Continuation Page)

Referred to Design Project Organization (DPO): DPO Coordination Contact Doug Shaffer

Construction Engineer Ed Burke Date 11-17-82

6. Concurrence of Designated QA Reviewer for Action Required to Prevent Recurrence \_\_\_\_\_ Date \_\_\_\_\_

7.  Approved:  As Detailed in 4 above  Other (See Continuation Page)

Design Project Organization: G. D. Collins Date 6-9-83  
See memo from JCS to GW dated 6/10/83 (WBP 830610 020) Signature

See Memo JCC TO  
GW MEDS  
(Attached) for

8. Approved Disposition Completed, and if applicable, Item released from Nonconforming Status

Responsible Individual \_\_\_\_\_ Date \_\_\_\_\_ Approved by \_\_\_\_\_ Date \_\_\_\_\_

9. NCR Closed (Includes completion of action required to prevent recurrence for significant NCR's)

Construction Engineer \_\_\_\_\_ Date \_\_\_\_\_

10. Reviewed and Accepted By:  
  
\_\_\_\_\_  
Authorized Nuclear Inspector Date \_\_\_\_\_

11. Distribution:  
Site QA Records File  
Construction Engineer  
CONST QA Branch  
QA Manager, OEDC  
MEDS  
Design Project Organization  
EN DES NEB - Codes, Standards,  
and Materials Section (Code Items Only)

**E. J. COONEY W6D224**  
NRC Resident Inspector  
(Significant NCR's Only)  
ANI (Code Items Only)  
EN DES NEB-NLS  
(Significant NCR's Only)  
NSRS (Significant NCR's Only)



# ENGINEERING CHANGE NOTICE

COVER SHEET

SWP '83 0314 506

(BEFORE ISSUANCE OF OPERATING LICENSE)

TENNESSEE VALLEY AUTHORITY  
DIVISION OF ENGINEERING DESIGN

ECN NO. 3511

To: Construction Project Manager Watts Bar Nuclear Plant, Spring City, TN

From: Design Project Manager

SWP 204 GB-K

DATE MAR 14 1983

Budget Item: 211

Was IJ Analysis Required: Yes  No

G.L. PENNINGTON

SWP WIMG-2

J.J. Nash  
Section Leader

Prepared by

Section

Section Leader

Project Engineer

Released:

Design Project Manager

Date

SCOPE

Project WATTS BAR NUCLEAR PLANT

Affected Unit(s) 1

System or Feature AUXILIARY FEEDWATER - SYS 3B (NCR WBN SWP 8301, WBN SWP 8309, WBN SWP 8302, WBN SWP 8372, WBN SWP 8307)

Reference & Description of Change ENDES CHANGES, EXCEPT ELECTRICAL DUE TO BLACK AND VEATCH INDEPENDENT REVIEW FINDINGS. REF NEB 82 1006 220 (ATTACH 1)

DRAWINGS OR B/M'S INVOLVED: (Data Sheets Required) Yes or No Date Branch Data Sheet Available

ENGINEERING SUPPORT BRANCHES

Civil YES  
Electrical NO  
Mechanical NO  
Nuclear NO

NUCLEAR PROJECTS DESIGN GROUPS

Civil 1,2 YES  
Electrical 4 YES  
Mech 2 YES

FOSSIL, HYDRO & SPECIAL PROJECTS DESIGN

SPECIAL DESIGN PROJECTS NO  
ARCHITECTURAL SUPPORT BRANCH NO

ENGINEERING SUPPORT BRANCHES Approval Required	Yes or No <u>YES</u>
ECN is ready for branch review: <u>R.D. Barnett</u> Design Project Manager	<u>2-9-83</u> Date
Approved: <u>R.D. Barnett</u> ENB CIVIL BR. CHIEF	<u>2/23/83</u> Date
<u>NA/MB</u> ENB ELECTRICAL BR. CHIEF	<u>        </u> Date
<u>Davidson for</u> ENB MECHANICAL BR. CHIEF	<u>2-24-83</u> Date
<u>A.J. Wilder for</u> Chief Nuclear Engineer	<u>3-7-83</u> Date

Required for PSAR or FSAR  
Required for Preoperational Test:  
If Yes, Test No.

Yes or No VAB  
NO YES 3-7-8  
YES NO 3-7-8  
NO

Vendor Backcharges Involved NO  
Seismic Analysis Required YES  
Nonconformance Report Required YES  
QA Applies YES  
Security System Modified NO  
Vendor(s) involved:          NO

PHYSICAL WORK MUST BE DONE BEFORE:

	Pre-Op Test	1st Fuel Load	1%Therm Power	Comm'l Oper'n	1st Refuel
Unit <u>1</u>		<input checked="" type="checkbox"/>			
Unit(s):					

CC (Attachments): NO Yes 5

CHIEF, ARCHITECTURAL SUPPORT BRANCH, WNC126 C-K  
CHIEF, CIVIL ENGINEERING BRANCH, W9D224 C-K  
CHIEF, ELECTRICAL ENGINEERING BRANCH, W8C126 C-K  
CHIEF, MECHANICAL ENGINEERING BRANCH, W7C126 C-K  
CHIEF, NUCLEAR ENGINEER, W10C126 C-K  
CHIEF, QUALITY ASSURANCE BRANCH, 5100 H1B-K

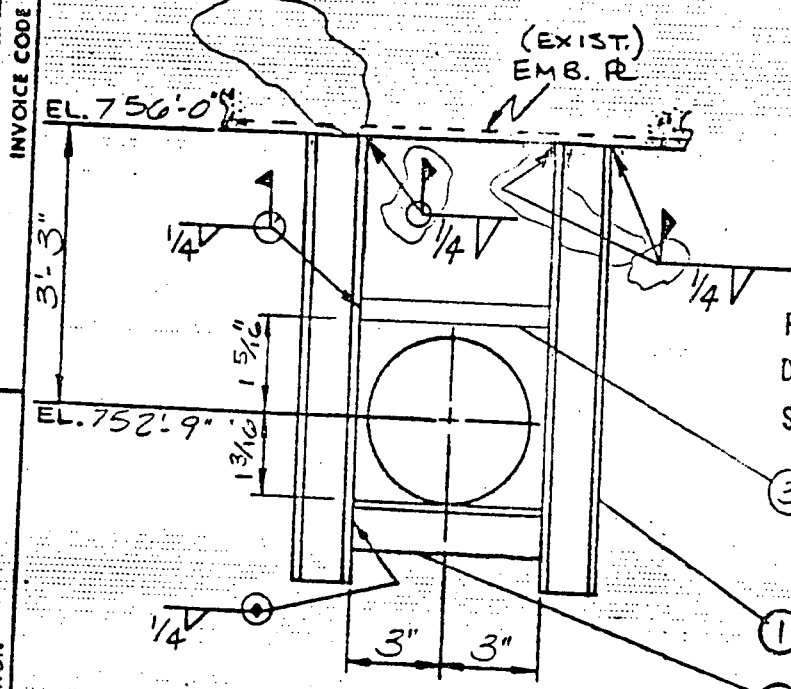
CHIEF, COST PLANNING AND CONTROL STAFF, W62C78 C-K  
CHIEF, SPECIAL DESIGN PROJECTS, W20224 C-K  
MANAGER OF CONSTRUCTION, E7024 C-K  
PLANT SUPERINTENDENT  
HEDS, W6M63 C-K

ITEM	QUAN	PART NO	SIZE	DESCRIPTION	WGT.
10	2	-	W4 x 13 x 3'-7" L		
20	1	-	2" x 2" x 3/8" ANGLE x LG.		BYTVA
30	1	-	3" x 42" H x 6" LG.		BYTVA
					BYTVA
-	1	SDE	( 3 ) HRS.		
-	1	SDD			
-	1	BET			

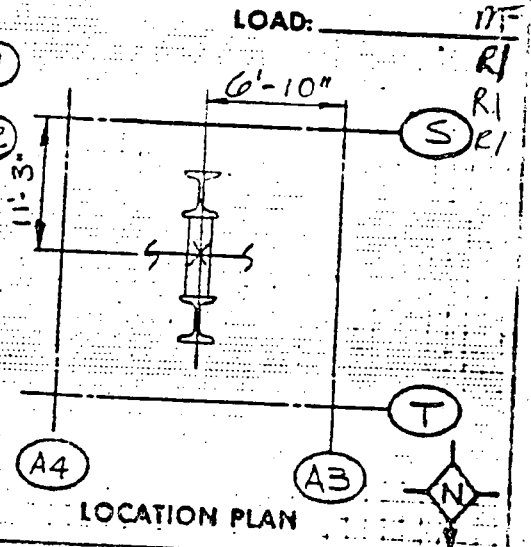
902 3  
 324 B 9/4 P RW JCC/RJ/JV - 9/11/78  
 REV 1  
 ECN, NCR 4455A, B & V F-718

SEE TVA DWG. 47A050-1E1A  
 1 51 11-1881 LS Bmp WSH WJSL SUP JRM Rndc  
 REV PER FOR H-4562

47W427-215 R0  
 UNIT: 601  
 DIRECTING: Y  
 TYPE: RR  
 + 250  
 DESIGN LOAD: 360



PROJECT WENP CONTRACT 74C38-8301  
 DRAWING # 03B-1AFW-R231  
 SHEET 1/1 REV 902 UNIT 1



2" PIPE SIZE  
 ELEV. LOOKING EAST

NUCLEAR  
 T. V. A. CLASS C TYA 900 = VENDOR RD  
 DRAVO ISO E-2879-IC-16-1  
 DRAVO CORPORATION P. O. #E-2879  
 T. V. A. CONTRACT # 74C38-83015  
 WATTS BAR NUCLEAR PLANT-UNIT #1

BERGEN-PATERSON PIPESUPPORT CORP.			
PIPING SYSTEM	AUX. FEEDWATER	STRUCTURAL	48N1225-2-3
REF. DWGS.	PIPING 47W427-3-10	STRUCTURAL	48N1225-2-3
JOB NO.	3604	FAB NO.	009
NO. REQ'D	1	NO. REQ'D	1
MARK & DWG. NO.	03B-1AFW-R231	SHEET	1 of 1
REV	902		

REV DES EP DRN DW CHK SD APP SM DATE 1-31-78

INVOICE CODE  
 DESCRIPTION  
 BY CHK APP  
 DATE



TELEPHONE MEMORANDUM

DATE December 2,

FROM (FROM) Homer E. McConnell TELEPHONE 615-632-4450

TIME 8:30 AM ~~PM~~

COMPANY Tennessee Valley Authority

CC: H. E. McConnell, TV

RECORDED BY William J. Zidziunas *WJZ*

R. E. Blaisdell

PROJECT WBNP-Independent Review PROJ. NO. 10520

PDCA

SUBJECT Finding Report Responses FILE NO. 15.1000

MJR

Mr. McConnell returned my call of earlier this a.m., and we discussed the following.

F506. This Finding concerned clustered loads. Additional information is needed to put part of the TVA action into perspective.

B&V does not have a problem with the action designed to prevent the recurrence of the problem by promulgating a construction specification. We concur that this is appropriate.

We do have a concern over how representative the statistical sample is of the population of embedments in question. It is our opinion that a random sampling of 69 plates would not be adequate, since only those with clustered or edge loads are of concern.

If TVA has attempted to screen the embedments in order to assure that those analyzed are representative of the worst case likely to be encountered, then the approach is probably valid.

If no attempt has been made to screen the embedment candidates, then the analysis of the sample embedments cannot be judged representative.

B&V requests that you provide additional information on how the sample was selected and recommends that the details be made part of the NCR or calculation record.

F718. This item concerned welding of a hanger. TVA submitted ECN 3511, which we assume was supposed to reflect the acceptance of the as-built condition. The differences noted are:

- (1) Upper Left attachment was found to be welded on three sides, in accordance with the drawing. The ECN required welding all around.
- (2) Upper Right attachment was found to be welded on three sides. The ECN indicates single fillet on two sides.
- (3) The weld on the top of the lower angle to the support legs was found to be missing; however, the ECN still indicates weld all around.

Additional clarification is considered to be required.

F803. This is a field item. During the B&V inspection, the relay was found to be wired up. TVA was to affirm that the wiring was, in fact, disconnected. F115 was issued to handle paper work.

Additional response is required.



TELEPHONE MEMORANDUM

2

DATE December 2, 1983

(TO) (FROM) Homer E. McConnell TELEPHONE \_\_\_\_\_ TIME 8:30 AM  PM

COMPANY \_\_\_\_\_ CC. \_\_\_\_\_

RECORDED BY \_\_\_\_\_

PROJECT \_\_\_\_\_ PROJ. NO. \_\_\_\_\_

SUBJECT \_\_\_\_\_ FILE NO. \_\_\_\_\_

Homer indicated he would look into the matters and respond.

We also briefly discussed the status of the submittals.

bam

RECEIVED B & V  
 DEC 06 1983  
 PROJECT # 10520

TENNESSEE VALLEY AUTHORITY

KNOXVILLE, TENNESSEE 37902

400 West Summit Hill Drive, W10C126

DEC 16 1983

Black & Veatch  
11401 Lamar Avenue  
Overland Park, Kansas 66211

Attention: Mr. W. J. Zidziunas

Gentlemen:

WSZ MJR  
RECEIVED B & V  
DEC 16 1983  
PROJECT # 10520

PERSONAL SERVICES CONTRACT NO. TV-60052A

In response to your telephone request to H. E. McConnell, we are providing the following additional information:

*DIN5011*  
F-129 - TVA has verified that the field installation is complete for unit 1 and is in accordance with the design information provided with Form 3. Installation records are available at the site.

*DIN5097*  
F-506 - Enclosed is a description of the screening program TVA used to assure that the sample program was adequate to be representative of the worst case likely to be encountered. This information is included in the NCR documentation.

*DIN5099*  
F-718 - Enclosed are the field inspection records associated with this finding.

*DIN5103*  
F-803 - TVA has verified that the field installation is complete for unit 1 and is in accordance with the design information provided with Form 3. Installation records are available at the site.

*DIN5121*  
F-808 - Calibration and testing of the instrumentation and controls is required before system preoperational tests are conducted. This calibration and testing is done using written procedures and the records are reviewed and filed in accordance with TVA's Quality Assurance Plan. These records are available at the site for review.

*DIN5122*  
F-856 - Enclosed is a reproducible copy of the computer printout for this finding.

*DIN5124*  
F-863 - Enclosed is a reproducible copy of the computer printout for this finding.

*DIN5132*  
F-932 - Enclosed are copies of drawings 47W427-204 R3, 47W427-220 R2, and 47W221 R1.

*DIN5134*  
F-935 - Drawing 85M47W427-204 has been redrawn. The new drawings are enclosed (see F-932).

*DIN5137*  
F-948 - Enclosed is a reproducible copy of the computer printout for this finding.

2

Black & Veatch

DEC 16 1983  
DINSZ01

F-960 - Enclosed is a reproducible copy of the computer printout for this finding.

DINS173

F-818 - Enclosed is a reproducible copy of the computer printout for this finding.

5233 5171 5172

F-815, F-816, F-817 - Enclosed are copies of 85M45W427-205 and 45W427-206.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

*L E McConnell*

for John A. Raulston  
Chief Nuclear Engineer

Enclosures

F-718

WTR 0034  
Attachment Level C

TEST NO. 0  
Level C

SUPPORT INTEGRAL INSPECTION

Support ID

1003B-03B-1AFW-R231

Reference Drawing

03B-1AFW-R231 Rev. 903

N/A Rev. N/A

N/A Rev. N/A

Accepted (Check)

Unique Identifier

Fabrication

Installation

Caps 

Top	Bottom	Lateral
<u>1/16</u>	<u>0</u>	<u>1 7/8, 1 1/2</u>

Stainless Pipe Protection NA

Integral Attachments

Insulation Scaffolding

Stainless Pipe Cleaners

Bolted Connections

Cotter Pins

Remarks: 1R03-77W727-215/264

Inspected in accordance with Rev. 3 of OCP-4.23.8.

Lee Roy Daniel 9-8-83  
Inspector Date

SUPPLEMENTAL DOCUMENTATION

WBNP-QCP-4.23-9 TEST NO. 8  
Attachment A (LOP)

SUPPORT FINAL INSPECTION

Support ID  
1003B-03B-IAFW-R231

Reference Drawing  
03B-IAFW-R231 Rev. 902

	Accepted (Check)
Unique Identifier	<input checked="" type="checkbox"/>
Fabrication	<u>N/A</u>
Installation	<input checked="" type="checkbox"/>

	Top	Bottom	Lateral
Core	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Strips	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Crust	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Internal	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Insulation	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
St. Insulation	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Bolted Connections	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Cutter Pins	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

Remarks: \_\_\_\_\_

**SUPPLEMENTAL DOCUMENTATION**

Insp. \_\_\_\_\_  
Rev. 2

*Jonathan M. Haddad* 5-31-83  
Date





## TELEPHONE MEMORANDUM

10520DIN2124  
10520.15.1000

583

DATE 12/21/83 & 12/22/83TOX (FROM) H. E. McConnell TELEPHONE (615) 632-4450TIME 2:30 ~~XX~~ PMCOMPANY Tennessee Valley Authoritycc: H. E. McConnell, TVARECORDED BY William J. Zidziunas *WJZ*R. E. BlaisdellPROJECT WBNP-Independent Review PROJ. NO. 10520PDCA/FileSUBJECT Findings Reports & General FILE NO. 15.1000

12/21/83

Mr. McConnell called to advise B&V of his schedule for next week and generally determine the status of the project. I advised that information copies of approximately 180 Findings have been or are in the process of being returned to TVA. Item requiring additional clarification are as follows.

1. B&V received your letter dated December 15, 1983 which forwarded information for Findings F821 and F962. Our examination of this information has raised the following questions.
  - a. The information (i.e., partial isometric drawing 47W427-221 and the computer printout of 79-14 Discrepancy Report dated 11/15/83, time 8:32:45, pages 344 through 352) does not appear to relate to the F821. Please determine if the material has been applied properly and provide instructions (See TVA Form 3 and our telephone memorandum DIN2116 dated 12/9/83).
  - b. The information sent for F962 is satisfactory. However, what disposition should be made of the data forwarded by TVA Form 3 for joints 1-03B-FB-F0007, -F0008, -F-015-013?
2. The data forwarded by your letter dated December 16, 1983 forwarded additional information on several Findings. Our review of this data indicates the following issues that are not yet resolved.
  - a. F718 - Our telephone conversation on 12/2/83 (10520DIN2113) outlined three specific areas in which welding was different between the hanger drawing and actual construction drawing. In view of the "use-as-is" disposition made of the Finding, the difference in welding must be addressed. The inspection records forwarded by your letter did not cover welding. Please review the issue and provide additional information.
3. F875 - This item concerned installation of a missing hanger, but your response indicates that the hanger has been redesigned. Information supporting installation is complete or at least that the work remaining is required.
4. F892 - This item concerns loose flange bolting that happens to be in the area of a hanger. Your response indicates that you are tracking the hanger but information on the flange bolting is what is needed. Please provide additional information.
5. F894 - Our records indicate that the valve in question is a 6-inch check vs. 4-inch check cited in your response. Please provide a current copy of drawing 47W803-2.



TELEPHONE MEMORANDUM

584

2

DATE 12/21/83 & 12/22/83

(TO) (FROM) H. E. McConnell TELEPHONE \_\_\_\_\_ TIME \_\_\_\_\_ AM PM

COMPANY \_\_\_\_\_ CC: \_\_\_\_\_

RECORDED BY \_\_\_\_\_

PROJECT \_\_\_\_\_ PROJ. NO. \_\_\_\_\_

SUBJECT \_\_\_\_\_ FILE NO. \_\_\_\_\_

9:40 a.m., 12/22/83

Homer called back with the following answers to the questions raised on the December 15, 1983 letter.

- a. The complete copy of 47W427-221 was provided in response to F932. The temporary hanger was located at node 23, and that has been circled on the partial drawing for reference purposes. The computer printout was forwarded to confirm that the temporary hanger is not currently installed.
- b. The original response to F962 was intended to be a generic response to flange bolting documentation. The December 15, 1983 information was for the specific flange. The data submitted with the original Form 3 can be deleted.

I advised Homer that I would take appropriate action.

I also set up a discussion for later today for R. Gross of our offices to discuss F140 on Environmental Qualification with TVA.

bam

RECEIVED B & V  
 DEC 27 1983  
 PROJECT # 10520



## TELEPHONE MEMORANDUM

DATE January 3, 1984

(TO) ~~(Name)~~ H.E. McConnell TELEPHONE 615-632-4450 TIME 9:15 AM ~~PM~~

COMPANY Tennessee Valley Authority CC: H.E. McConnell, 1

RECORDED BY W.J. Zidziunas *wjz* R.F. Blaisdell

PROJECT WBNP - Independent Review PROJ. NO. 10520 PDCA/File

SUBJECT Finding Report Responses FILE NO. 15.1000

I called Mr. McConnell to discuss the following findings:

1. F300 - The original finding was issued against drawing 47W854-1 Rev. 8. The form 3 cites other drawings which have been modified. Since BSV does not have a copy of the 854-1 drawing and the response forwarded only partial drawing copies, we are unable to relate the information. Please provide copies of drawing 47W354-1 Rev. 8 and the current revision of the drawing which shows the changes. Also, provide copies of the 47W803-1, 47W401-7, and 47W401-9 drawings which show the area where the changes have been made.
2. F502 - TVA submitted internal memoranda indicating that the FSAR change had been requested, but did not indicate that it had been placed in the Commitment Trading System or if the change had already been made. Additional information is requested.
3. F925 - There are still some discrepancies in time that are unexplained. This may be do to delays in communication between the site and office. Please look into this and provide input.
4. F976 - The partial drawing forwarded by form 3 does not contain sufficient drawing area to show the change. Please provide a copy of the full drawing.

Homer indicated that he would be sending a revision for F894 concerning the check valve size.

I advised Homer that I had been in contact with Mr. G. Beasley late last week and had made arrangements to review calculations for the F508 response. Copies of the calculation were to be sent to BSV along with data in support of actions taken on the DRR items.

I informed Homer that as of this AM, fifteen findings are still outstanding and a brief status of each was provided.

I made arrangements for R. Gross to call him to discuss G901 at or about 1:00 pm KC time.

12:15 pm

I returned Homer's call of about 10:15 am and we briefly discussed F718 and the information needed to put the response into perspective.

Homer advised that progress on F502 had passed the point of processing requiring a CTR. The information provided was that which was sent to those who actually do the FSAR updating.

B&V FINDING F718

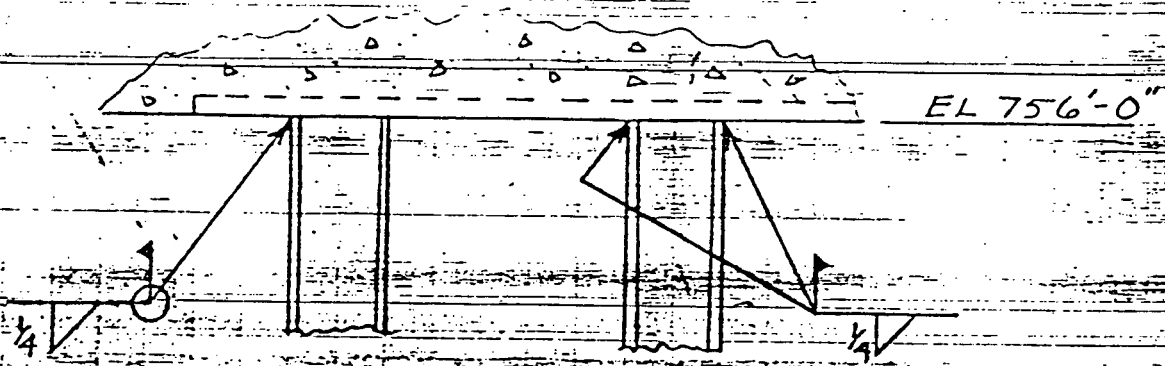
B&V Finding F718 identified missing welds for hanger 03B-1AFW-R231. These missing welds were identified by B&V on DIN 3490.

TVA agreed that the missing weld for item 1 existed and that the configuration did not match drawing 03B-1AFW-R231 Rev 0 for the welds for item 1. This was documented by TVA on Construction NCR 4455R (copy attached). The NCR did not address the missing welds for item 2. EN DES dispositioned the NCR use-as-is and drawing 03B-1AFW-R231 was revised on Rev 902 (copy attached) to agree with the as-installed configuration of the hanger. The NCR and the Rev 902 of the drawing shows the upper left attachment welded all around and the upper right attachment welded on two sides (not welded on the east and west sides).

The missing weld for item 2 was not initially responded to by TVA, but subsequently drawing 03B-1AFW-R231 was revised on Rev 903 (copy attached) to reflect that the welds identified by B&V as missing are not required. This was discovered during a 79-14 review and the drawing was revised.

NO. OF DATE CORNER OF DATE

Finding: F718  
Hanger: 03B-1AFW-R231



ELEV. LOOKING EAST

NCR 4455R  
ATTACHMENT 1 of 4

70797  
K 702

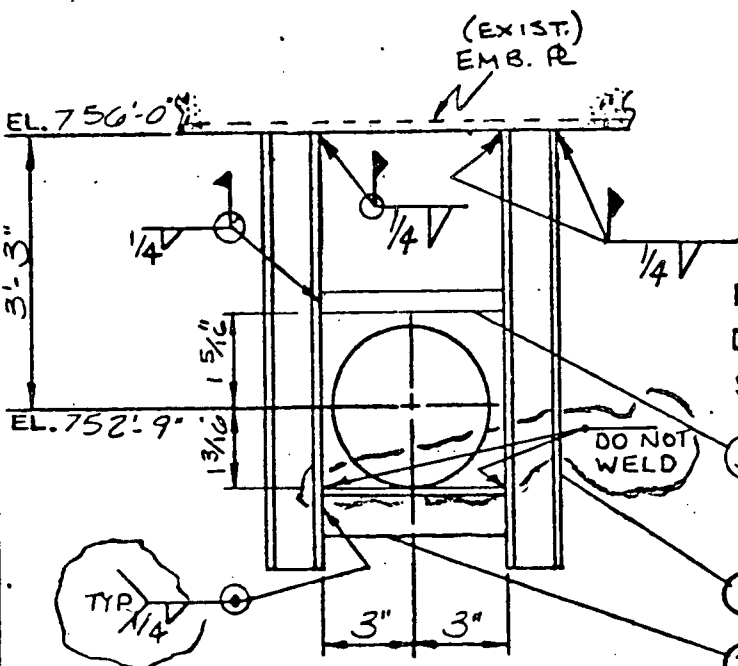
ITEM	QUAN	PART NO.	SIZE	DESCRIPTION	WGT.
10	2	-	W4 x 13 x 3-7 LG.		BYTVA
20	1	-	2" x 2" x 3/8" ANGLE x 6" LG.		BYTVA
30	1	-	3" x 42" R x 6" LG.		BYTVA
-	1	SDE	( 3 ) HRS.		
-	1	SDD			
-	1	BET			

902 3511 3248 90p RW ICCS RUN - JM  
 REV PER ECN, NCR 4455A, B & V F-718

SEE TVA DWG. 47A050-1E1A  
 1 | SI | 11-18-81 | LS | Bmp | WSH | JWS | JWS | Rude  
 REV PER FCR H-4562

47W427-215 R0  
 JOINT: 001  
 DIRECTION: Y  
 TYPE: RR  
 + 250  
 DESIGN LOAD: 360

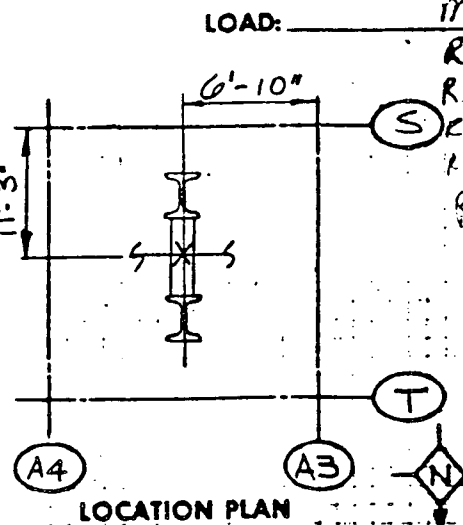
INVOICE CODE



PROJECT WBNP CONTRACT 74C38-830  
 DRAWING # 03B-1AFW-R231  
 SHEET 1/1 REV 903 UNIT

DESCRIPTION

2" PIPE SIZE  
 ELEV. LOOKING EAST



NUCLEAR  
 T. V. A. CLASS C TVA 900 - VENDOR R0  
 DRAVO ISO E-2879-IC-16-1

DRAVO CORPORATION P. O. #E-2879  
 T. V. A. CONTRACT # 74C38-83015  
 WATTS BAR NUCLEAR PLANT-UNIT #1

BERGEN-PATERSON PIPESUPPORT CORP

PIPING SYSTEM	AUX. FEEDWATER
REF. DWGS.	PIPING 47W427-3-10 STRUCTURAL 48N1225-2-3
JOB NO.	3604
FAB NO.	009
MARK & DWG. NO.	03B-1AFW-R231
SHEET	1 of 1
REV	90

REV	DES	EP	ORN	DW	CHK	SD	APP	SM	DATE	1-31-78
-----	-----	----	-----	----	-----	----	-----	----	------	---------

3100	8/1/83	JDN	JDN	TM	LS	JUN	-	JUN	1/15/84		
REV PER 79-19 DISC. #103-67H927-215/04H											
(NBP 183 0809 046)											
Rev No.	ECN No.	Date	Dsgn	Drwn	Chkd	Supv	Engr	Insp	Subm	Recm	Appr



WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEWFinding Number F/ 7/ 1/ 9/

## Comments pertinent to finding:

Finding number F719 was resolved by NCR 4535R. Attached is a copy of closed NCR 4535R, Quality Assurance inspection documentation and accountability print-out. The print-out is a Quality Assurance document and will be retained as life of plant documentation.

*Randy Massey*  
Program Team Manager

11/21/83  
Date

*Thomas E. McConnell*  
OEDC Program Manager

11/23/83  
Date

*E. Gray Beasley*  
Chairman, OEDC Policy Committee

11/23/83  
Date

Black & Veatch *The attached documentation indicates that the ground has been repaired & the Ranger certified.*

Classification: Type R Category A

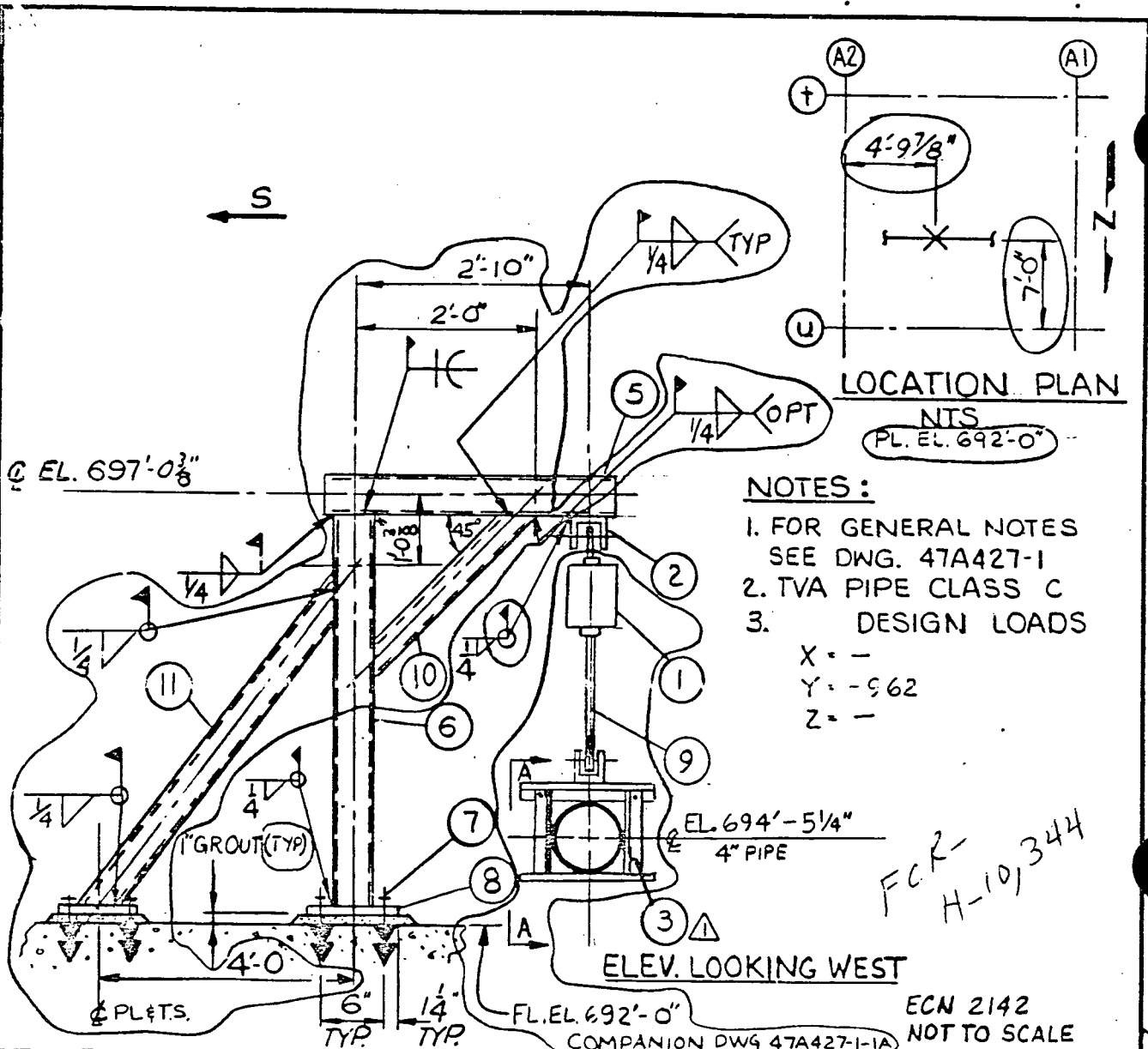
*W. J. Zitzman*  
Black & Veatch Project Manager

12/14/83  
Date

*R. E. Blandell*  
Black & Veatch Senior Review Team Chairman

12/27/83  
Date





NOTES:

1. FOR GENERAL NOTES SEE DWG. 47A427-1
2. TVA PIPE CLASS C
3. DESIGN LOADS  
 X = -  
 Y = -962  
 Z = -

FCR-H-10/344

ECN 2142  
NOT TO SCALE

ITEM	QTY	MATERIAL DESCRIPTION FOR ONE SUPPORT
1	1	BP 92 EYE ROD 3/4" X LG AS REQD
1	1	BP 3100 SPRING ; SIZE 10 ; TYPE (B) ; TOTAL TRAVEL = 1/16" ; LOAD = 962*
2	2	BPI13 SIZE 6 ; WELDED BEAM ATT. FOR 3/4" Ø ROD W/BOLT
3	(2)	L2X2X1/4 X LG AS REQD
4	1	1" X 2" CS PLATE X LG AS REQD
5	1	TS 4" X 4" X 1/2" X LG AS REQD
6	1	TS 4" X 4" X 1/2" X LG AS REQD
7	(3)	(1/2" Ø) ANCHOR BOLT ASSY. (SSD)
8	(2)	R. 8 1/2" X 8 1/2" X 1/2" W/ (4) 5/8" Ø HOLES

INFORMATION ONLY

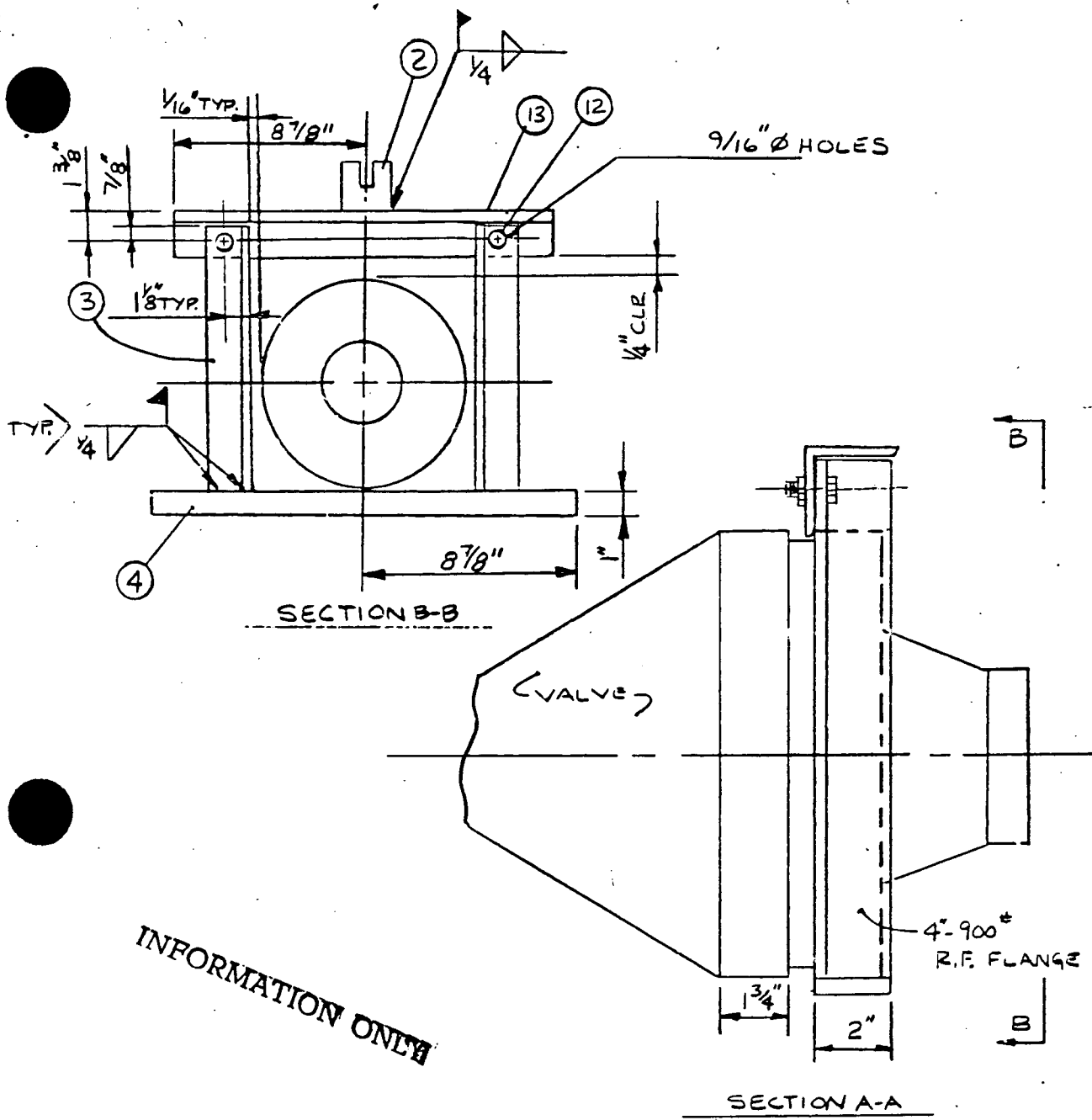
2	SI	4-16-83	JM	RC	AS	UR	WS	[Handwritten initials]			
REV. PER FCR H-6887 & H-8258											
1		7-23-80	SJ	SEM	FC	AN	JP	[Handwritten initials]			
REVISED PER FCR H-542											
REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPO
DSGN	[Handwritten signature]						INSP	[Handwritten signature]			
DRWN	[Handwritten signature]						ENGINEER	[Handwritten signature]			
CHKD	D. BRYAN										
SUPV	[Handwritten signature]										

SEISMIC CATEGORY I STRUCTURES  
MECHANICAL UNIT I  
PIPING SUPPORT-AFW

WATTS BAR NUCLEAR PLANT  
TENNESSEE VALLEY AUTHORITY  
DIVISION OF ENGINEERING DESIGN

SUBMITTED: [Handwritten signature]  
RECOMMENDED: [Handwritten signature]  
APPROVED: [Handwritten signature]

KNOXVILLE 5-28-78 351M 47A427-1-1  
RECORD DRAWING AS CONSTRUCTED



INFORMATION ONLY

ORIGINAL ISSUE PER FCR H-6887  
 COMPANION DWG 47A427-1-1

ITEM	QTY	MATERIAL DESCRIPTION FOR ONE SUPPORT
13	1	L 2 1/2" x 2 1/2" x 1/4" x LG AS REQ'D
12	2	1/2" $\phi$ x 1 1/4" LG A307 BOLT w/ NUT & WASHER
11	1	TS 3x3x1/4" x LG AS REQ'D (CUT AS SHOWN)
10	1	TS 3x3x1/4" x LG AS REQ'D (CUT AS SHOWN)

SEISMIC CATEGORY I STRUCTURES  
 MECHANICAL UNIT I  
 PIPING SUPPORT-AFW

NO.	DATE	DESIGNED	CHECKED	SUPV	ENGR	INSP	SUBMIT	REC'D	APPR
DESIGN		J. MOORE							
DRAWN		E. COLLINS							
CHECKED		A. LAMONS							
SUPV		C. RICHARDSON							

WATTS BAR NUCLEAR PLANT  
 TENNESSEE VALLEY AUTHORITY  
 DIVISION OF ENGINEERING DESIGN

SUBMITTED: *[Signature]* RECOMMENDED: *[Signature]* APPROVED: *[Signature]*  
 KNOXVILLE 4-13-83 85 W 47A427-1-1A

RECORD DRAWING AS CONSTRUCTED

# LOP

## ENGINEERING EVALUATION QCI 1.8

INDENT 1003-A427-1-1

PROC/RECORD N/A

CURRENT PROC 4.23-8 R2

TEST NO. 08B

EVALUATION REV. 2 IS DUE

TO INCORPORATION OF FCN'S

H-6887 AND H-8258

ALSO GROUT HAS BEEN

REPAIRED DUE TO NCR4535R

THIS IS EVIDENCED BY

THE SIGNING OF WORK

RELEASE 8987.

Current documentation meets the current

NP-QCP requirements (+)

Engineer Bruce Kelth

Date 5-23-83

SUPPORT DOCUMENTED TO

REV. 1 AND FCN H-6887 AND

FCN H-8258.

SUPPLEMENTAL DOCUMENTATION

SUPPLEMENTAL DOCUMENTATION  
SHOWN ON REVERSE SIDE

UNIQUE IDENTIFIER

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	0	0	3	-	A	4	2	7	-	1	-	1							

08B

CC&R  
MAY 27 1983

TENNESSEE VALLEY AUTHORITY  
FIELD CHANGE REQUEST  
REPLY MEMORANDUM

WRKP-OCT-1, 1983  
Attachment A  
FOR H-10,344  
DOC

TO : J. C. Standifer, Sequoyah and Watts Bar Design Projects Manager, 204 GB-K (3)

FROM: Guenter Wadewitz, Project Manager, Watts Bar Nuclear Plant CONST

DATE: WEN '83 0706 300

Attention: J. J. NASH (EN DES ON SITE)

SECTION I - CONST REQUEST

Reason for Change:

Status Point:

- |                                                                   |                                                                                       |                             |
|-------------------------------------------------------------------|---------------------------------------------------------------------------------------|-----------------------------|
| <input type="checkbox"/> Drawing Discrepancy                      | <input checked="" type="checkbox"/> Prior to Fuel Loading                             | System No. <u>03</u>        |
| <input checked="" type="checkbox"/> Facilitate Construction       | <input type="checkbox"/> After Fuel Loading but prior to Closing Capitalized Accounts | Work Package No. <u>N/A</u> |
| <input checked="" type="checkbox"/> Additional Design Information | <input type="checkbox"/> After Closing Capitalized Accounts for the Entire Plant      | Work Plan No. <u>N/A</u>    |

Documents Affected 47A427-1-1 (R/V) 2<sup>MTB</sup> 6-17-83

Marked documents required and attached  Yes  No

Drawings revision required  Yes  No

Change Description: To allow attachment of Instrumentation hangers Fos # 6728 and Fos # 6727. Ref. SVS I-51-35-2445 and I-51-19-2444.

Change requested by: Connie M. Golbert CHA 6/27/83  
(CONST Engineer)

Tao J Chao 6-16-83  
for (Unit Supervisor)

Change approved by: Clyde K. Bush STB  
(EN DES Engineer) MTB  
AS NOTED

6/22/83  
(Date)

Approval obtained by:  Telephone  Memo

Approved for transmittal to EN DES: Bill E. Hoffmann  
(Construction Engineer)

Guenter Wadewitz  
(Project Manager)  Other EN DES ON SITE

SECTION II - EN DES REPLY/RESOLUTION

ECN No. \_\_\_\_\_ Date Issued \_\_\_\_\_

Drawing Nos: \_\_\_\_\_

Change Complete \_\_\_\_\_  
(EN DES Engineer) (Design Project Manager) (Date)

- Original - Return to CONST by EN DES
- Copy 3 - Retained by CONST until original is returned
- Copy 2 - Retained by EN DES
- Copy 1 - Retained by OTEU



TEST NO. 8

Attachment A (LOP)

SUPPORT FINAL INSPECTION

Support ID

1003-A427-1-1

Reference Drawing

47A427-1-1

Rev. 2

Accepted (Check)

Unique Identifier

NA

Fabrication

✓

Installation

✓

Top Bottom Lateral

Gaps NA NA NA

Stainless Pipe Protection

Grout

Integral Attachments

Insulation Saddle or Lugs

Stainless Pipe Cleanliness

Bolted Connections

Cotter Pins

Remarks: FCR-H10344

WALL KICKER ONLY

Inspected in accordance with Rev. 3 of QCP-4.23-B.

Steven Mack 9-27-83

Inspector

Date

SUPPLEMENTAL DOCUMENTATION

QC&R

SEP 29 1983

JMD

1003-A060-3-22		Z003-00	47W427-207		01 HA 01A 02A 03A 04A 08A
1003-A060-3-23		Z003-00	2-47W427-207		01 HA 01A 02A 03A 04A 08A
1003-A060-3-24		Z003-00	2-47W427-207	004	* HA 01A* 02A* 03A* 04A* 08C* 09A*
1003-A060-3-3		X003-2	1-47W427-203		03 HD 05A 04A 08A
1003-A060-3-30		Z003-00	2-47W427-211		01 HA 01A 02A 03A 04A 08A
1003-A060-3-31		Z003-00	2-47W427-211		01 HA 01A 02A 03A 04A 08A
1003-A060-3-32		Z003-00	2-47W427-211		01 HA 01A 02A 03A 04A 08A
1003-A060-3-33		Z003-00	2-47W427-211		* HA 01A* 02A* 03A* 04A* 08A*
1003-A060-3-34		XC67-77	1-47W427-206	000 H-8449 EP-3768	* HA 01A* 02A* 03A* 04A* 08A*
1003-A060-3-35		I	1-47W427-220	002 H-2931	* HA 01A* 02A* 03A* 04A* 08A*
1003-A060-3-36		I	47W427-221	000 H-9947	
1003-A060-3-4		X003-2	1-47W427-203	001	* HA 01A* 02A* 03A* 04A* 08B* 09A*
1003-A060-3-5	RW	X003-2	1-47W427-202	000 H-8193	01 HA 01AP 02AP 03AP 04AP 08AP
1003-A060-3-6		X003-2	1-47W427-203	002 H-9127 EP-3968	* HA 01B* 02B* 03B* 04B* 08B* 09A*
1003-A060-3-7		X003-2	1-47W427-203	002	* HA 01A* 02A* 03A* 04A* 08B* 09A*
1003-A060-3-8		X003-2	1-47W427-207	001 H-8164/3E42R	01 HA 01B 02B 03B 04B 08B 09A*
1003-A060-3-9		X003-2	1-47W427-207	000 H-8408 H-10502	* HA 01A* 02A* 03B* 04A* 08B*
1003-A401-6-1		X003-3	1-47W401-213	003 H-9204	* HE 01A* 02A* 03A* 04A* 05A* 08A*
1003-A401-7-1	W	X003	1-47W401-219		03 HD 03A 04A 08A
1003-A401-7-2	W	I	1-47W401-212		03 HD 03A 04A 08A
1003-A401-7-4	W	I	1-47W401-215		03 HD 03A 04A 08A
1003-A401-7-8	W	I	1-47W401-213	000 H-8546	03 HE 01A* 02A* 03B* 04B 05B 08B
1003-A401-8-1	W	X003-3	1-47W401-213		
1003-A401-9-2		I	1-47W401-422	003 H-10944	03 HG 03AP 04AP 05AP 08AP
1003-A401-9-3	W	I	1-47W401-422		03 HD 03A 04A 08A
1003-A401-9-5	W	I	1-47W401-421		01 HE 01A 02A 03A 04A 05A 08A
1003-A401-9-6		X003	1-47W401-421		03 HD 02A 04A 08A
1003-A427-1-02		I	1-47W427-221	000 EP-4046 H-9939	* HE 01A* 02A* 03A* 04A* 05B* 08A*
1003-A427-1-03		I	1-47W427-221	000 H-9872 EP-4016	* HA 01A* 02A* 03A* 04A* 05A* 08A*
1003-A427-1-04		I	1-47W427-204	000 H-9847	* HE 01A* 02A* 03A* 04A* 05A* 08A*
1003-A427-1-05		I	1-47W427-204	000 H-10013	* HE 01A* 02A* 03A* 04A* 05A* 08A*
1003-A427-1-06		I	1-47W427-204	000 H-9997	* HE 01A* 02A* 03A* 04A* 05A* 08A*
1003-A427-1-07		I	1-47W427-204	000 H-10014	* HE 01A* 02A* 03A* 04A* 05A* 08A*
1003-A427-1-08		I	1-47W427-204	000 H-9946	* HE 01A* 02A* 03A* 04A* 05A* 08A*
1003-A427-1-09		I	1-47W427-221	000 EP-4013	* HC 03A* 04A* 05A* 08A*
1003-A427-1-1		X001-6	ALT	002 4535R H-10344	* HE 01B* 02B* 03A* 04B* 08C* 06A*
1003-A427-1-12		I	1-47W427-204	000 EP-4028 H-9945	* HE 03A* 04A* 05A* 08A*
1003-A427-2-1		Z003-00	ALT		01 HE 01A 02A 03A 04A 05A 08A
1003-A427-2 10A		X003-2	1-47W427-2	001 H-8273	* HA 01A* 02A* 03A* 04A* 08A*

DIM 5256 F-719

597

598

*closed*

DIVISION OF CONSTRUCTION  
NONCONFORMING CONDITION REPORT

30104 130

1A. Item and CAQ Description, and Apparent Cause:

Seismic pipe support 47A427-1-1

1B. WORK NO.	4535R	PLANT	0
1C. REF. NO.		AUDIT No	N/A
1D. PLANT	WBNP		
1E. UNIT	1		
1F. SYSTEM	03		
1G. ASME CODE:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
1H. CONTRACT No.:	N/A		
1I. INITIATING UNIT	HEU		

Cracked and chipped grout was found under the base plate of the above mentioned support during the system 03 review by Black and Veatch (Finding F 719).



1J. Vendor Name N/A Address (City and State) N/A

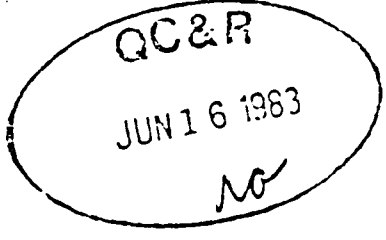
2. Initiator Randolph Chambers Date 12/16/82 Approved Edward P. Brown Date 12/17/82

3A. Significant CAQ:  Yes  No Construction Engineer Ed Burke Date 11-20-82

Signature \_\_\_\_\_ Title & Organization \_\_\_\_\_ Date \_\_\_\_\_  
If Significant, NEB-NLS Contact \_\_\_\_\_ Date \_\_\_\_\_ By \_\_\_\_\_

3B. For Significant CAQ:

- 1. Describe Root Cause
- 2. This is a Generic CAQ.  Yes  No (If yes, describe)





599

4A. Disposition:  Rework  Repair  Use-As-Is  Report  Other  
(Check Block in 1.D. and follow)

Rework in accordance with the following procedures: OCP 1.47, OCP 2.02, and, if required, QCI 1.07, QCP 1.42-2, and the OCP 4.23 series.

4B. Action Required to Prevent Recurrence: (For Significant CAO's Only)  
N/A

4C. Date for Completion of all actions to close NCR (For Significant CAO's only)  
Recommended By Randolph Chambers Date 12/16/82  
Thomas R. Brown 12/17/82

5.  Approved:  As Detailed in 4 above  Other (See Continuation Page)  
 Referred to Design Project Organization (DPO): DPO Coordination Contact N/A  
Construction Engineer Ed Burke Date 12-10-82

6. Concurrence of Designated QA Reviewer for Action Required to Prevent Recurrence \_\_\_\_\_ Date \_\_\_\_\_

7.  Approved:  As Detailed in 4 above  Other (See Continuation Page)  
Design Project Organization: \_\_\_\_\_ Date \_\_\_\_\_

8. Approved Disposition Completed, and if applicable, Item released from Nonconforming Status  
Responsible Individual M. Natter <sup>PER OCP 1.47</sup> QCP 2.02 Date 6-3-83 Approved by John M. Freeman Date 6-3-83  
For OCP 1.47 & OCP 2.02

9. NCR Closed (Includes completion of action required to prevent recurrence for significant NCR's)  
Construction Engineer E. J. Burke Date 6/14/83

10. Reviewed and Accepted By:  
WBN '830616 178  
\_\_\_\_\_  
Authorized Nuclear Inspector Date

11. Distribution:  
Site QA Records File  
Construction Engineer  
CONST QA Branch  
QA Manager, OEDC  
MEDS  
Design Project Organization  
EN DES NFB - Codes, Standards,  
and Materials Section (Code Items Only)  
NRC Resident Inspector  
(Significant NCR's Only)  
ANI (Code Items Only)  
EN DES NEB-NLS  
(Significant NCR's Only)  
NSRS (Significant NCR's Only)

10520DIN5117  
10520.92.0000  
ref: 10520DIN4041

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F/7/2/01

O=PL

Comments pertinent to finding:

Field located instrumentation supports are tracked in the Instrumentation Sub-assembly Report and are documented in the Quality Assurance Accountability Program when completed by use of Support Installation Operation Sheets (QCP-3.11, test code 52 in the accountability program print-out) for each sub-assembly within a given system. Sub-assemblies are identified on IOS sketches which show the supports and reference the typical support drawing used to construct the supports. Attached are copies of Support Installation Operation Sheets, IOS sketches, and the accountability program print-out for instrumentation piping from auxiliary feedwater motor driven pump 1A to local panel 1-L-222 A & B.

Ronald McKay  
Program Team Member

11/2/83  
Date

James E McConnell  
OEDC Program Manager

11/14/83  
Date

M.S. Martin for Ed Beasley  
Chairman, OEDC Policy Committee

11/18/83  
Date

Black & Veatch *See the attached evaluation*

Classification: Type \_\_\_\_\_ R Category A

W.J. Ziskunas  
Black & Veatch Project Manager

12/6/83  
Date

RE Blawiehl  
Black & Veatch Senior Review Team Chairman

12/19/83  
Date

X

601

Evaluation of the TVA Form 3 Comments

F720

Review of the information submitted by TVA in conjunction with the basic Findings Report and associated comments/responses and the information provided at the TVA/B&V meeting on October 25, 1983 indicates the following.

1. The basic Finding, though defining specific examples of supports, was general in nature.
2. The TVA Form 3 provided examples of how instrumentation supports are handled and documented.
3. The TVA Instruction QCI-1.22; "Transfer of Permanent Features to the Division of Nuclear Power," provided to B&V during the October meeting, provides for a final walk down and examination of the system and has provisions for an Outstanding Work Item List.

Based on the above, it is felt that the existing documented procedures are sufficient to assure that incomplete items such as those cited in this Finding will be recognized and corrective action taken.

# UNIQUE IDENTIFIER

4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1-003-2222A-0001																

WRNP-OCP-3.11 R0  
Attachment B  
LOP

602

## SUPPORT INSTALLATION OPERATION SHEET

Test No. 52 Level A

IOS 1402

RE John M. Campbell  
RE Signature denotes approved location

STEP	OPERATION DESCRIPTION	CONT. DOC. & REV.	HOLD POINT	SIGNATURE & DATE
1	Bolt Anchor Testing Verified	WRNP-OCP-1.14, R <u>11</u> Lot No. _____	IIU	N/A
2	Welding Inspection <u>MT PT</u>	WRNP-OCP-4.13, R <u>6</u>	IIU	<u>St. G. Mill 2-4-83</u>
3	Verify Installation Correct		IIU	
	a. FOS Number Affixed	47A050 - SERIES	IIU	<u>St. G. Mill 1-7-83</u>
	b. Maximum Span Not Exceeded	47A050 - SERIES	IIU	<u>St. G. Mill 1-3-83</u>
	c. Bolt Material & Installation for Support Correct (Visual/Torqued)	WRNP-OCP-1.42-2, R <u>3</u>	IIU	<u>St. G. Mill 1-5-83</u>
	d. Correct Hardware Properly Installed for Attachment of Lines & Supports	47B001-11 R <u>4</u> 47A05 <u>1-12</u> R <u>1</u> <u>2-24</u> R <u>2</u>	IIU IIU	<u>St. G. Mill 1-5-83</u>
	e. Quantity & Size of Lines Acceptable	47A050 Series of Dwgs.	IIU	<u>St. G. Mill 1-5-83</u>
f. Sense Line Slope Acceptable	47W600-0-4, R <u>7</u>	IIU	<u>St. G. Mill 1-5-83</u>	
4	Isometric Sketch Approved	WRNP-OCP-3.11 R9	IIU	<u>St. G. Mill 2-4-83</u>

Isometric Drawing No. IOS 1402 SKISIR2 Support Variance Sheet No. NA  
NA gmc 2-4-83

Support FOS No.	QTY	Support FOS No.	QTY	Support FOS No.	QTY
NA	NA	NA	NA	NA	NA
↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓

QCER  
 MAR 29 1983

UNIQUE IDENTIFIER

*Sketch & files with 1-003-L222A-0001*

4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	0	0	3	-	L	2	2	2	A	-	0	0	0	2

WBNP-OCP-3.11 R9  
Attachment 2  
LOP

603

SUPPORT INSTALLATION OPERATION SHEET

Test No. 52 Level A

DS 1402

RE John M. Campbell  
RE Signature denotes approved location

STEP	OPERATION DESCRIPTION	CONT. DOC. & REV.	HOLD POINT	SIGNATURE & DATE
1	Bolt Anchor Testing Verified	WBNP-OCP-1.14, R <u>11</u> Lot No. _____	IIU	<u>N/A</u>
2	Welding Inspection <u>MT PT</u>	WBNP-OCP-4.13, R <u>6</u>	IIU	<u>St. G. Mill 2-4-83</u>
3	Verify Installation Correct a. FOS Number Affixed	<u>47A050 - SERIES</u>	IIU	<u>St. G. Mill 1-5-83</u>
	b. Maximum Span Not Exceeded	<u>47A050 - SERIES</u>	IIU	<u>St. G. Mill 1-5-83</u>
	c. Bolt Material & Installation for Support Correct (Visual/Torqued)	WBNP-OCP-1.42-2, R <u>3</u>	IIU	<u>St. G. Mill 1-5-83</u>
	d. Correct Hardware Properly Installed for Attachment of Lines & Supports	47B001-11 R <u>4</u> 47A05 <u>1-12</u> R <u>1</u> <u>2-24</u> R <u>2</u>	IIU IIU	<u>St. G. Mill 1-5-83</u>
	e. Quantity & Size of Lines Acceptable	47A050 Series of Dwg.	IIU	<u>St. G. Mill 1-5-83</u>
	f. Sense Line Slope Acceptable	47W600-0-4, R <u>7</u>	IIU	<u>St. G. Mill 1-5-83</u>
4	Isometric Sketch Approved	WBNP-OCP-3.11 R9	IIU	<u>St. G. Mill 2-4-83</u>

Isometric Drawing No. FOS 1402 SKIS1 R2  
NA jmc Support Variance Sheet No. NA  
2-4-83

Support FOS No.	QTY	Support FOS No.	QTY	Support FOS No.	QTY
<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓

MAR 20 1983

I003F01 UNIQUE IDENTIFIER

X3(2)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	-	0	0	3	-	2	2	2	Z	A	-	0	0	0	4				

WBNP-OCP-3.11 R9

Attachment B  
LOP

604

SUPPORT INSTALLATION OPERATION SHEET

Test No. 52 Level A

FOS 1403

RE John M. Campbell  
RE Signature denotes approved location

STEP	OPERATION DESCRIPTION	CONT. DOC. & REV.	HOLD POINT	SIGNATURE & DATE
1	Bolt Anchor Testing Verified	WBNP-OCP-1.14, R <u>11</u> Lot No. <u>1403-5360</u>	III	<u>John M. Campbell</u> 1-5-83
2	Welding Inspection <input checked="" type="checkbox"/> MT PT	WBNP-OCP-4.13, R <u>6</u>	IIU	<u>John M. Campbell</u> 1-5-83
3	Verify Installation Correct			
	a. FOS Number Affixed	47A050 - SERIES	IIU	<u>John M. Campbell</u> 1-5-83
	b. Maximum Span Not Exceeded	47A050 - SERIES	IIU	<u>John M. Campbell</u> 1-5-83
	c. Bolt Material & Installation for Support Correct (Visual/Torqued)	WBNP-OCP-1.42-2, R <u>2</u>	IIU	<u>John M. Campbell</u> 1-5-83
	d. Correct Hardware Properly Installed for Attachment of Lines & Supports	47B001-11 R <u>4</u> 47A05 <u>1</u> - <u>19</u> R <u>2</u> 47A05 <u>1</u> - <u>35</u> <u>4</u>	IIU IIU	<u>John M. Campbell</u> 1-5-83
	e. Quantity & Size of Lines Acceptable	47A050 Series of Dwg.	IIU	<u>John M. Campbell</u> 1-5-83
f. Sense Line Slope Acceptable	47W600-0-4, R <u>7</u>	IIU	<u>John M. Campbell</u> 1-5-83	
4	Isometric Sketch Approved	WBNP-OCP-3.11 R9	III	* <u>John M. Campbell</u> 1-5-83

Isometric Drawing No. I05-1403 R3

Support Variance Sheet No. I-51-35-1537

Support FOS No.	QTY	Support FOS No.	QTY	Support FOS No.	QTY
2671	1				
4353-14	1				
2669	1				
4353-22	1				
4525 R1	1				

John M. Campbell  
MAR 28 1983  
QCER  
APP 28 1983

\* Pending approval of SVS I-51-35-1537

UNIQUE IDENTIFIER

4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	0	0	3	-	4	2	2	2	A	-	0	0	0	7		

WRNP-OCP-3.11 R9  
Attachment P  
LCP  
-3-2-222 A-7

606

*in vault*

SUPPORT INSTALLATION OPERATION SHEET

Test No. 52 Level A B  
7/3-21-83

IOS 1608

RE John M. Campbell  
RE Signature denotes approved location

STEP	OPERATION DESCRIPTION	CONT. DOC. & REV.	HOLD POINT	SIGNATURE & DATE
1	Bolt Anchor Testing Verified	WRNP-OCP-1.14, R <u>11</u> Lot No. <u>I-1270</u>	IIU	<i>St. L. Miller 1-4-83</i>
2	Welding Inspection V MT PT	WRNP-OCP-4.13, R <u>6</u>	IIU	<i>N/A</i>
3	a. FOS Number Affixed	47A050 - SERIES	IIU	<i>St. L. Miller 1-4-83</i>
	b. Maximum Span Not Exceeded	47A051 - SERIES	IIU	<i>St. L. Miller 1-4-83</i>
	c. Bolt Material & Installation for Support Correct (Visual/Torqued)	WRNP-OCP-1.42-2, R <u>3</u>	IIU	<i>St. L. Miller 1-4-83</i>
	d. Correct Hardware Properly Installed for Attachment of Lines & Supports	47B001-11 R <u>4</u> 47A05 <u>1</u> - <u>35</u> R <u>4</u> <u>1</u> <u>42</u> R <u>2</u>	IIU IIU	<i>St. L. Miller 1-4-83</i>
	e. Quantity & Size of Lines Acceptable	47A050 Series of Dwg's.	IIU	<i>St. L. Miller 1-4-83</i>
	f. Sense Line Slope Acceptable	47W600-0-4, R <u>7</u>	IIU	<i>St. L. Miller 1-4-83</i>
4	Isometric Sketch Approved	WBNP-QCP-3.11 R9	IIU	<i>St. L. Miller 1-26-83</i>

Isometric Drawing No. 77W600-62 IOS-1608 SK448 Support Variance Sheet No. N/A

Support FOS No.	QTY	Support FOS No.	QTY	Support FOS No.	QTY
071	1	NA		NA	
269	1				
2679	1				
NA					

QC&R  
APR 27 1983

APR 27 1983

606

W.P. E003F-01  
WATTS BAR NUCLEAR PLANT  
SUPPORT INSTALLATION OPERATION SHEET

WBNP-QCP-3.11 R5  
Attachment R  
IOS 1608  
RE DEAN SANDLIN  
LOP 1-3-L-222A-7  
52A

STEP	OPERATION DESCRIPTION	CONT. DOC. & REV.	HOLD POINT	SIGNATURE & DATE
	Location Approved for Installation (Allow for slope)	WBNP-QCP-3.11, R5	IE	John Langhelt 2-15-82
	Bolt Anchor Testing Verified	WBNP-QCP-1.14, R5	IE	JM 4-21-82
	Welding Inspection V NT PT	WBNP-QCP-4.13, R4	WE	N/A
	Verify Installation Correct		Initial if Acceptable	
a.	FOS Number Affixed	47A051 SERIES	IE	JM 4-20-82
b.	Maximum Span Not Exceeded	WBNP-QCP-3.11, R5	IE	JM 4-20-82
c.	Bolt Material & Installation for Support Correct (Visual/Torqued)	WBNP-QCP-1.14, R5	IE	JM 4-20-82
d.	Lines Welded or Permanently Connected	N/A		JM 4-20-82
e.	Correct Hardware Properly Installed for Attachment of Lines & Supports	47B001 SERIES	IE	JM 4-20-82
f.	Quantity & Size of Lines Acceptable	47A05 SERIES	IE	JM 4-20-82
g.	Sense Line Slope Acceptable	47A051 SERIES	IE	JM 4-20-82
		47W000-0-4, R5	IE	JM 4-20-82
	Isometric Sketch Approved	WBNP-QCP-3.11, R5	IE	JM 4-21-82
	Documentation Complete	WBNP-QCP-3.11, R5	IE	JM 4-21-82

Isometric Drawing No. 205-1608 SK-448 Support Variance Sheet No. N/A

Support FOS Number	QTY	Support FOS Number	QTY
071	1		
269	1		
2679	1		

CC&R  
MAY 3 1982  
aw

UNIQUE IDENTIFIER

4 5 6 7 8 9 10 11 12 13 14 15 16 17 18  
1-003-L222A-0007

CC&R  
MAR 23 1983



D003 F01

52 Jusi  
607

IP-QCP-3.11 R5  
Attachment B  
IOS 1611 R0  
RE DEAN SANDLIN\*  
LOP 1-3-L-222A-8

WATTS BAR NUCLEAR PLANT  
SUPPORT INSTALLATION OPERATION SHEET

OPERATION DESCRIPTION	CONT. DOC. & REV.	HOLD POINT	SIGNATURE & DATE
Location Approved for Installation (Allow for slope)	WBNP-QCP-3.11, R5	IE	<i>[Signature]</i> 2-21-82
Bolt Anchor Testing Verified	WBNP-QCP-1.14, R8	IE	N/A
Welding Inspection V MT PT	WBNP-QCP-4.13, R4	WE	N/A
Verify Installation Correct		Initial if Acceptable	
a. FOS Number Affixed	47A051 SERIES	IE	<i>[Signature]</i> 4-21-82
b. Maximum Span Not Exceeded	WBNP-QCP-3.11, R5	IE	<i>[Signature]</i> 4-21-82
c. Bolt Material & Installation for Support Correct (Visual/Torqued)	WBNP-QCP-1.14, R8 <sup>9/21/82</sup>	IE	<i>[Signature]</i> 4-21-82
d. Lines Welded or Permanently Connected	N/A		<i>[Signature]</i> 4-21-82
e. Correct Hardware Properly Installed for Attachment of Lines & Supports	47B001 SERIES 47A05 SERIES	IE IE	<i>[Signature]</i> 4-21-82 <i>[Signature]</i> 4-21-82
f. Quantity & Size of Lines Acceptable	47A051 SERIES	IE	<i>[Signature]</i> 4-21-82
g. Sense Line Slope Acceptable	47W600-0-4, R5	IE	<i>[Signature]</i> 4-21-82
Isometric Sketch Approved	WBNP-QCP-3.11, R5	IE	<i>[Signature]</i> 4-21-82
Documentation Complete	WBNP-QCP-3.11, R5	IE	<i>[Signature]</i> 4-21-82

Isometric Drawing No. SK 449 Support Variance Sheet No. N/A

Support FOS Number	QTY	Support FOS Number	QTY
2679	1		
071	1		
269	1		

QC&R  
MAY 1982

UNIQUE IDENTIFIER

4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	-	0	0	3	-	2	2	2	2	A	-	0	0	0	8				

MAY 1982

Will file  
I003F01

WNP-QCP-3.11 R5  
Attachment B  
IOS 1610  
RE DEAN SANDLIN  
LOP 1-3-L-222A-9

608  
52A

WATTS BAR NUCLEAR PLANT  
SUPPORT INSTALLATION OPERATION SHEET

STEP	OPERATION DESCRIPTION	CONT. DOC. & REV.	HOLD POINT	SIGNATURE & DATE
	Location Approved for Installation (Allow for slope)	WBNP-QCP-3.11, R5	IE	<i>[Signature]</i> 7-2-82
	Bolt Anchor Testing Verified	WBNP-QCP-1.14, R8	IE	N/A
	Welding Inspection V NT PT	WBNP-QCP-4.13, R4	WE	N/A
	Verify Installation Correct		Initial if Acceptable	
a.	FOS Number Affixed	47A051 SERIES	IE	JM 4-21-82
b.	Maximum Span Not Exceeded	WBNP-QCP-3.11, R5	IE	JM 4-21-8
c.	Bolt Material & Installation for Support Correct (Visual, Torqued)	WBNP-QCP-1.14, R8 <sup>TM 9</sup> <sub>4/22/82</sub>	IE	JM 4-21-8
d.	Lines Welded or Permanently Connected	N/A		JM 4-21-8
e.	Correct Hardware Properly Installed for Attachment of Lines & Supports	473001 SERIES	IE	JM 4-21-8
		47A05 SERIES	IE	JM 4-21-8
f.	Quantity & Size of Lines Acceptable	47A051 SERIES	IE	JM 4-21-82
	Sense Line Slope Acceptable	47W600-0-4, R5	IE	JM 4-21-8
	Isometric Sketch Approved	WBNP-QCP-3.11, R5	IE	JM 4-21-8
	Documentation Complete	WBNP-QCP-3.11, R5	IE	JM 4-21-8

Isometric Drawing No. SK.450

Support Variance Sheet No. N/A

Support FOS Number	QTY	Support FOS Number	QTY
2679	1		
071	1		
269	1		

QC&R  
MAY 1 1982

QC&R  
MAY 1 1982  
*[Signature]*

UNIQUE IDENTIFIER

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	1	0	0	3	-	1	2	2	2	A	-	0	0	0	9								

UNIQUE IDENTIFIER

4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	-	0	0	3	-	4	2	2	2	A	-	0	0	0	9

WBNP-OCP-3.11 R9  
Attachment B  
LOP

1-3-2-222 A-9  
X3(2)

*in vault*

SUPPORT INSTALLATION OPERATION SHEET

Test No. 52 Level A B

RE

*John M. Campbell*

*3-2-83*

RE Signature denotes approved location

OS 1610

STEP	OPERATION DESCRIPTION	CONT. DOC. & REV.	HOLD POINT	SIGNATURE & DATE
1	Bolt Anchor Testing Verified	WBNP-OCP-1.14, R <u>11</u> Lot No. <u>I-5570</u> <i>see IOS 1608</i>	IIU	<i>see IOS 1608</i>
2	Welding Inspection V MT PT	WBNP-OCP-4.13, R <u>6</u>	IIU	<i>N/A</i>
3	Verify Installation Correct a. FOS Number Affixed	<u>47A050-SERIES</u>	IIU	<i>see IOS 1608</i>
	b. Maximum Span Not Exceeded	<u>47A051-SERIES</u>	IIU	<i>St. L. Mill 1-4-83</i>
	c. Bolt Material & Installation for Support Correct (Visual/Torqued)	WBNP-OCP-1.42-2, R <u>3</u>	IIU	<i>St. L. Mill 1-4-83</i>
	d. Correct Hardware Properly Installed for Attachment of Lines & Supports	47B001-11 R <u>4</u> <del>47A051-SERIES</del> <u>47A051-SERIES</u>	IIU	<i>St. L. Mill 1-4-83</i> <i>see IOS SM 1-26-83</i>
	e. Quantity & Size of Lines Acceptable	47A050 Series of Dwg.	IIU	<i>St. L. Mill 1-4-83</i>
	f. Sense Line Slope Acceptable	47W600-0-4, R <u>7</u>	IIU	<i>St. L. Mill 1-4-83</i>
4	Isometric Sketch Approved	WBNP-OCP-3.11 R9	IIU	<i>St. L. Mill 1-26-83</i>

Isometric Drawing No. 47W600-62 FOS 1610 3K450 Support Variance Sheet No. N/A

Support FOS No.	QTY	Support FOS No.	QTY	Support FOS No.	QTY
<i>NA</i>		<i>NA</i>		<i>NA</i>	
<i>✓</i>		<i>✓</i>		<i>✓</i>	

*CC&P*  
*APR-6-1983*

UNIQUE IDENTIFIER

*sketch is filed with 1-003-22228-0006*

4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	0	0	3	-	2	2	2	8	-	0	0	0	6			

WBNP-OCP-3.11 R9  
Attachment B  
LOP

SUPPORT INSTALLATION OPERATION SHEET

Test No. 52 Level A

OS 1402

RE John M. Campbell  
RE Signature denotes approved location

STEP	OPERATION DESCRIPTION	CONT. DGC. & REV.	HOLD POINT	SIGNATURE & DATE
1	Bolt Anchor Testing Verified	WBNP-OCP-1.14, R <u>11</u> Lot No. _____	IIU	N/A
2	Welding Inspection <u>MT PT</u>	WBNP-OCP-4.13, R <u>6</u>	IIU	<u>St. G. Mill 2-4-83</u>
3	Verify Installation Correct			
	a. FOS Number Affixed	47A050 - SERIES	IIU	<u>St. G. Mill 1-5-83</u>
	b. Maximum Span Not Exceeded	47A050 - SERIES	IIU	<u>St. G. Mill 1-5-83</u>
	c. Bolt Material & Installation for Support Correct (Visual/Torqued)	WBNP-OCP-1.42-2, R <u>3</u>	IIU	<u>St. G. Mill 1-5-83</u>
	d. Correct Hardware Properly Installed for Attachment of Lines & Supports	47B001-11 R <u>A</u> 47A05 <u>1-12</u> R <u>1</u> <u>2-24</u> R <u>2</u>	IIU IIU	<u>St. G. Mill 1-5-83</u>
	e. Quantity & Size of Lines Acceptable	47A050 Series of Dwgs.	IIU	<u>St. G. Mill 1-5-83</u>
f. Sense Line Slope Acceptable	47W600-0-4, R <u>7</u>	IIU	<u>St. G. Mill 1-5-83</u>	
4	Isometric Sketch Approved	WBNP-OCP-3.11 R9	IIU	<u>St. G. Mill 2-4-83</u>

Isometric Drawing No. 2051402 SKISIRZ  
NA gmc Support Variance Sheet No. NA  
2-4-83

Support FOS No.	QTY	Support FOS No.	QTY	Support FOS No.	QTY
NA	NA	NA	NA	NA	NA
↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓

303R  
MAR 20 1983

1003 F01 UNIQUE IDENTIFIER

X3 (2) sketch filed with 1-003-2228-0009

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	-	0	0	3	-	2	2	2	8	-	0	0	0	9					

WRNP-OCP-3.11 R9  
Attachment B  
LOP

SUPPORT INSTALLATION OPERATION SHEET

Test No. 52 Level A

1403

RE John M. Campbell  
RE Signature denotes approved location

STEP	OPERATION DESCRIPTION	CONT. DOC. & REV.	HOLD POINT	SIGNATURE & DATE
1	Bolt Anchor Testing Verified	WRNP-OCP-1.14, R <u>11</u> Lot No. <u>1403</u>	IIU	<u>St. G. Mill</u> 12-15-82
2	Welding Inspection <input checked="" type="checkbox"/> HT PT	WRNP-OCP-4.13, R <u>6</u>	IIU	<u>St. G. Mill</u> 1-5-83
3	Verify Installation Correct		IIU	
	a. FOS Number Affixed	<u>47A050 - SERIES</u>	IIU	<u>St. G. Mill</u> 1-5-83
	b. Maximum Span Not Exceeded	<u>47A050 - SERIES</u>	IIU	<u>St. G. Mill</u> 1-5-83
	c. Bolt Material & Installation for Support Correct (Visual/Torqued)	WRNP-OCP-1.42-2, R <u>2</u>	IIU	<u>St. G. Mill</u> 1-5-83
	d. Correct Hardware Properly Installed for Attachment of Lines & Supports	47B001-11 R <u>4</u> 47A05 <u>1</u> - <u>19</u> R <u>2</u> 47A05 <u>1</u> - <u>35</u> R <u>4</u>	IIU IIU	<u>St. G. Mill</u> 1-5-83
	e. Quantity & Size of Lines Acceptable	47A050 Series of Dwg.	IIU	<u>St. G. Mill</u> 1-5-83
f. Sense Line Slope Acceptable	47W600-0-4, R <u>7</u>	IIU	<u>St. G. Mill</u> 1-5-83	
4	Isometric Sketch Approved	WRNP-OCP-3.11 R9	IIU	<u>St. G. Mill</u> 1-5-83

Isometric Drawing No. I-05-1403 R3 Support Variance Sheet No. I-51-35-1537

Support FOS No.	QTY	Support FOS No.	QTY	Support FOS No.	QTY
2671	1				
4353-14	1				
2669	1				
4353-22	1				
4525 R1	1				

\* Pending approval of SVS I-51-35-1537













DATE 10/31/73  
TIME 12:12:13

INSTA SUB-ASSEMBLY REPORT

IDENTIFIER	DRAWING	ACT	IOS	FQS	TEST LIBRARY & SEQUENCE OF TESTS
1-003-L214A-0006	47W600-042-809	103F02	C1326		IA 52A 54A 55C 56B 58A
1-003-L214A-0007	47W600-042	103F02	C1613		IA 52A 54A 55A 56A 58A
1-003-L214A-0008	47W600-042	103F02	C1614		IA 52A 54A 55B 56A 58A
1-003-L214A-0009	47W600-042-810	103F02	C1327		IA 52A 54A 55A 56A 58A
1-003-L214B-0006	47W600-042-809	103F02	C1326		IA 52A 54A 55C 56B 58A
1-003-L214B-0007	47W600-042-810	103F02	C1327		IA 52A 54A 55A 56A 58A
1-003-L214B-0009	47W600-042-810	103F02	C1327		IA 52A 54A 55A 56A 58A
1-003-L215A-0001	47W600-045-072	103F02	C1385		IA 52A 54A 55A 56A
1-003-L215A-0002	47W600-045-073	103F02	C1366		IA 52A 54A 55A 56A
1-003-L215A-0003	47W600-045-074	103F02	C1387		IA 52C 54A 55B 56B
1-003-L215A-0004	47W600-045-075	103F02	C1388		IA 52B 54A 55A 56A
1-003-L215B-0004	47W600-045-077	103F02	C1390		IA 52A 54A 55A 56A 58A
1-003-L215B-0006	47W600-045-078	103F02	C1391		IA 52A 55A 56A 58A
1-003-L215B-0008	47W600-045-079	103F02	C1392		IA 52A 55A 56A 58A
1-003-L215B-0009	47W600-045-322	103F02	C1393		IA 52B 55A 56A 58A 54A
1-003-L216-0002	47W600-045-966	103F02	B1705		IA 30A 52A 55B 56A 58A
1-003-L216-0004	47W600-045-967	103F02	B1575		IA 30A 52A 55A 56A
1-003-L216-0006	47W600-045-968	103F02	B1706		IA 30A 52A 55A 56A 58A
1-003-L216-0008	47W600-045-969	103F02	B1576		IA 30A 52A 55A 56A 58A
1-003-L217-0002	47W600-044-320	103F02	B1394		IA 30A 52A 55A 56A 58A
1-003-L217-0004	47W600-044-321	103F02	B1395		IA 30A 52A 55A 56A 58A
1-003-L217-0006	47W600-044-322	103F02	B1396		IA 30A 52A 55A 56A
1-003-L217-0008	47W600-044-323	103F02	B1397		IA 30A 52A 55A 56A 58A
1-003-L218-0001	47W600-64-165	103F02	C1398		IA 52A 54A 55A 56A
1-003-L218-0003	47W600-64-165	103F02	C1399		IA 52A 54A 55A 56A
1-003-L218-0007	47W600-64-166	103F02	C1400		IA 52A 54A 55A 56A
1-003-L218-0009	47W600-64-167	103F02	C1401		IA 52A 54A 55A 56A
1-003-L341-0001	47W600-167-292	103F02	B1404		IA 30A 52A 55A 56A 58A
1-003-L342-0001	47W600-167-291	103F02	B1405		IA 30A 52B 55A 56A
1-003-L344-0001	47W600-156	103F02	F		IE 55A 56A
1-003-L342-0003	47W600-130-951	103F02	B699		IA 52A 55A 56A 58A
1-003-L342-0002	47W600-130-952	103F02	B700		IA 30A 52B 55B 56B 58A
1-003-L342-0001	47W600-130-951	103F02	B701		IA 52A 55A 56A 58A
1-003-L343-0001	47W600-130-918	103F02	B702		IA 52A 55B 56A 58A
1-003-L343-0002	47W600-130-918	103F02	B702		IA 30A 52A 55A 56A 58A

DINSIIT F-720

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F/7/2/1/

Comments pertinent to finding:

Support number 03B-1AFW-R69 R902. Information given by Black and Veatch concerning walkdown findings were duplicated under finding number F828. For resolution of this finding, please refer to finding number F828.

Ray C. McKee  
Program Team Member

11/2/83  
Date

Thomas E. McConnell  
OEDC Program Manager

11/9/83  
Date

MS Marden for Ed Beasley  
Chairman, OEDC Policy Committee

11/21/83  
Date

Based on a review of the F828 form 3, the basis F828 finding, Black & Veatch the basis F721 Finding and Document Review Record 674, it was determined that the Range has been deleted and that the two findings were in fact against the same item.

Classification: Type R Category A

W. J. Fitzmaurice  
Black & Veatch Project Manager

12/7/83  
Date

RE Blairdell  
Black & Veatch Senior Review Team Chairman

12/15/83  
Date

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

ref: 10520DIN4193

Finding Number F7216

Comments pertinent to finding:

Hanger number 03B-1AFW-R232 was reworked according to  
NCR number 4455R attached is a copy of  
inspection documentation, accountability print-out and NCR number  
4455R.

Ronald C. McKay  
Program Team Member

11/2/83  
Date

Thomas E. McConnell  
OEDC Program Manager

11/9/83  
Date

B. Gray Beerley  
Chairman, OEDC Policy Committee

11/8/83  
Date

Black & Veatch *attached records indicate that the noted condition was evaluated, corrective measure defined and action taken to assure an acceptable condition.*

Classification: Type R Category A

W. J. Zidjeman  
Black & Veatch Project Manager

11/16/83  
Date

R. E. Blandell  
Black & Veatch Senior Review Team Chairman

12/1/83  
Date

Attachment A (LOP)

TEST NO. 8  
Level C

SUPPORT FINAL INSPECTION

Support ID

1003B-03A-1AFW-R232

Reference Drawing

03B-1AFW-R232 Rev. 909

N/A Rev. N/A  
1A Rev. 1A

Accepted  
(Check)

Unique Identifier ..... N/A

Fabrication ..... N/A

Installation ..... ✓

Gaps      Top      Bottom      Lateral  
NA      NA      NA

Stainless Pipe Protection ..... NA

Integral Attachments ..... ↓

Insulation Saddle or Lugs ..... ↓

Stainless Pipe Cleanliness ..... ✓

Bolted Connections ..... ✓

Cotter Pins ..... ✓

Remarks:

NCR # 9955R

1003-47W827-215/05A

Inspected in accordance with Rev. 3 ✓  
of OCP-423.8

LeRoy David      9-8-83  
Inspector      Date

08c

029



622

STATES GOVERNMENT

# Morandum

TENNESSEE VALLEY AUTHORITY  
WBP '83 0610 020

TO : G. Wadewitz, Project Manager, Watts Bar Nuclear Plant, CONST (3)

FROM : J. C. Standifer, Project Manager, Watts Bar Design Project, 204 GB-K

DATE : JUN 10 1983

SUBJECT: WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - NONCONFORMANCE REPORT 4455R RO

Reference: Your memo to me dated May 12, 1983 (WBN 830512 007) transmitting subject NCR 4455R RO (WBN 821126 135)

Your recommended disposition of the Black and Veatch findings addressed in subject NCR is as follows:

- Finding F718: (03B-1AFW-R231) Use-as-is. This is acceptable because of small loads on the support structure.
- Finding F726: (03B-1AFW-R232) Relocating clamp to elevation 748'-1/2" is acceptable and will bring support within installation tolerance of  $\pm 6^\circ$ .
- Finding F736: (03B-1AFW-R150) Use-as-is. This is acceptable because small load induces minimal stress into the pipe.
- Finding F772: (03B-2AFW-R219) Use-as-is. This is acceptable because installation of the riser clamp at 22°45' has no affect on the integrity of the support. The shear lugs still make sufficient contact with the clamp.
- Finding F776: (03B-1AFW-R191) Reworking support is acceptable and will bring support into compliance with the design drawing.
- Finding F742: (47A427-2-2) Reworking support in accordance with FCR H-8382 is acceptable and will bring the support into compliance with the design drawing.
- Finding F704: (03B-1AFW-R100) This is not acceptable because the over-heated and distorted weld connection between the column and brace could cause the support to fail. We recommend that CONST replace the support and ensure that the proper weld is made. EN DES will revise the drawing to change 4'-10" dimension to 2'-11" under ECN 3511.

*J. D. Collins*  
J. C. Standifer

*CHEN 6/15*

WBNP PROJECT MANAGER		
JUN 15 '83		
Date	Distribution	Method
	AAPC	
✓	CEO	CEO
	CSO	
	PMS	
✓	QM	
	SE	
RETURN TO MASTER FILE		

RST

GLP:LB  
 Attachment  
 cc (Attachment):  
 Bonine, E7B24 C-K  
 J. Cooney, W6D224 C-K  
 R. A. Costner, M173 MIB-K

MEDS, W5B63 C-K  
 R. M. Pierce, 104 ESTA-K  
 M. N. Sprouse, W11A9 C-K





623

WBN '821126

135 DIVISION OF CONSTRUCTION  
NONCONFORMING CONDITION REPORT

WBNP-QCI-1.02 R5  
Attachment A  
LOP  
Page 1 of 2

1A. Item and CAQ Description, and Apparent Cause:

The identification of the following nonconforming conditions of previously inspected and documented pipe supports resulted from the System 03 review by Black and Veatch:

- Findings F 718: Hanger 03B-1AFW-R231 is not welded to embedment in accordance with the current revision of the drawing;
- Findings F 726: Item 1 of Hanger 03B-1AFW-R232 is installed 6°52' with the horizontal; it is shown as horizontal on the drawing;
- Findings F 736: Item 1 of Hanger 03B-1AFW-R150 is installed 8°21' with the vertical; it is shown as vertical on the drawing;
- Findings F 772: The angle of the Riser Clamp of Hanger 03B-2AFW-R219 is specified as 30° with the vertical; it is installed at 22°45' with the vertical;
- Findings F 776: The end attachments of Hanger 03B-1AFW-R191 are rotated 90° from where specified on the drawing, and cotter pins are missing;
- Findings F 704: Hanger 03B-1AFW-R100 is distorted in the vicinity of the weld between the W4 brace and W4 vertical member. The specified 4'-10" dimension is actually 2'-11";
- Findings F 742: Hanger 47A427-2-2 was not installed in accordance with FCR H-8382.

1B. NCR No.: 4455R Rev. 0

1C. REF. NR or AUDIT No.: N/A

1D. PLANT: WBNP

1E. UNIT: 1 & 2

1F. SYSTEM: 03

1G. ASME CODE:  Yes  No

1H. CONTRACT No.: N/A

1I. INITIATING UNIT: HEU

1J. Vendor Name N/A Address (City and State) N/A

2. Initiator R. Chambers Date 11-12-82 Approved Thomas R. Blom Date 11/17/82

3A. Significant CAQ:  Yes  No Construction Engineer Ed Burke Date 11-17-82

Signature \_\_\_\_\_ Title & Organization \_\_\_\_\_ Date \_\_\_\_\_

Authorization to Upgrade NCR to Significant \_\_\_\_\_

If Significant, NEB-NLS Contact \_\_\_\_\_ Date \_\_\_\_\_ By \_\_\_\_\_

- 3B. For Significant CAQ:
1. Describe Root Cause
  2. This is a Generic CAQ:  Yes  No (if yes, describe)



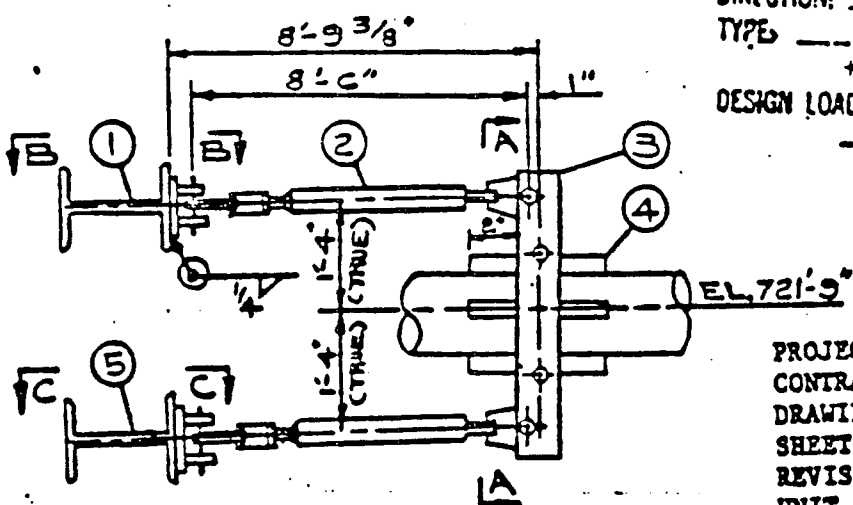
Prepared by: \_\_\_\_\_ Date \_\_\_\_\_ Supervisor: \_\_\_\_\_ Date \_\_\_\_\_

QUAN.	PART NO.	SIZE	DESCRIPTION	WGT.
1	-	W 4 X 13 X 2'-10" LG.	(A 3 G)	BTVA
2	2200	3-8'-6"-RSSA		
1	CS/AS	12" PIPE SIZE RISER CLAMP (SEE SHIT 3 OF 3)		125
8	-	1" X (5/8)" X 2" LG SHEAR LUG	(A 3 G)	BTVA
1	-	W 4 X 13 X 4'-2" LG.	(A 3 G)	BTVA
2	-	7" X 1/2" PL X 7" LG.	(A 3 G)	BTVA
1	-	3 X 3 X 3/4 ANGLE X 11-1/2" LG (CUT AS SHOWN)	(A 3 G)	BTVA
1	-	3 X 3 X 3/8 ANGLE X 3'-0 3/4" LG (CUT AS SHOWN)	(A 3 G)	BTVA

SEE TYA DWG # 47A050-151A

NO. 47W427-205-R1  
 JOINT: 41  
 DIRECTION: X  
 TYPE: SR  
 + 5000 #  
 DESIGN LOAD: - 4000 #

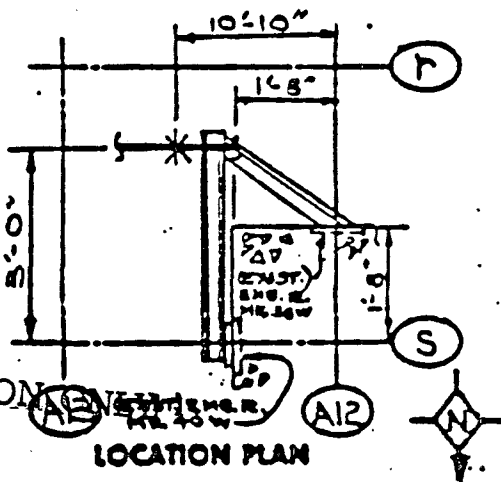
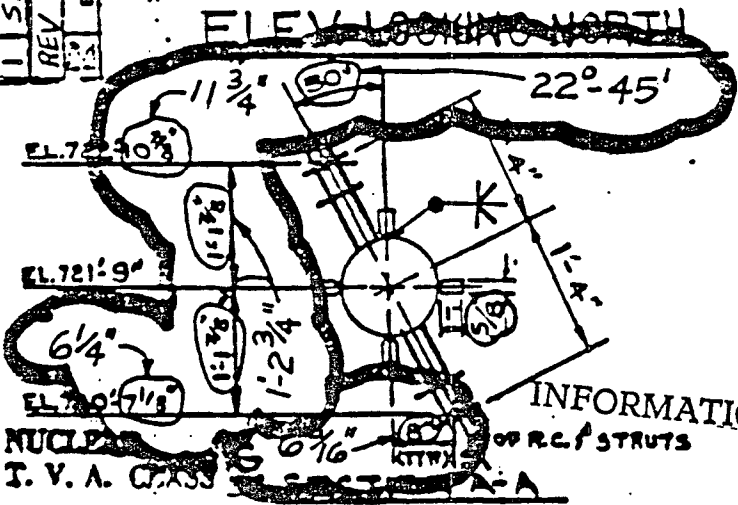
INVOICE CODE  
 1 51  
 REV PER FOR M-5389  
 DATE  
 DESCRIPTION



PROJECT  
 CONTRACT 8305  
 DRAWING # 03B-2AFW-1  
 SHEET 13  
 REVISION  
 UNIT 7

12" PIPE SIZE

LOAD: \_\_\_\_\_



INFORMATION  
 T. V. A. CONTRACT #74 C 38-83015  
 WATTS BAR NUCLEAR PLANT - UNIT #2

DRAVO CORPORATION P.O. #E2882  
 T. V. A. CONTRACT #74 C 38-83015  
 WATTS BAR NUCLEAR PLANT - UNIT #2

BERGEN-PATERSON PIPESUPPORT CORP.			
SYSTEM	AUX. FEEDWATER	STRUCTURAL	48N1223-1
PER DWG.	47W427-2-1		
JOB NO.	3605	PAB NO.	009
DATE	03B-2AFW-R219		

626

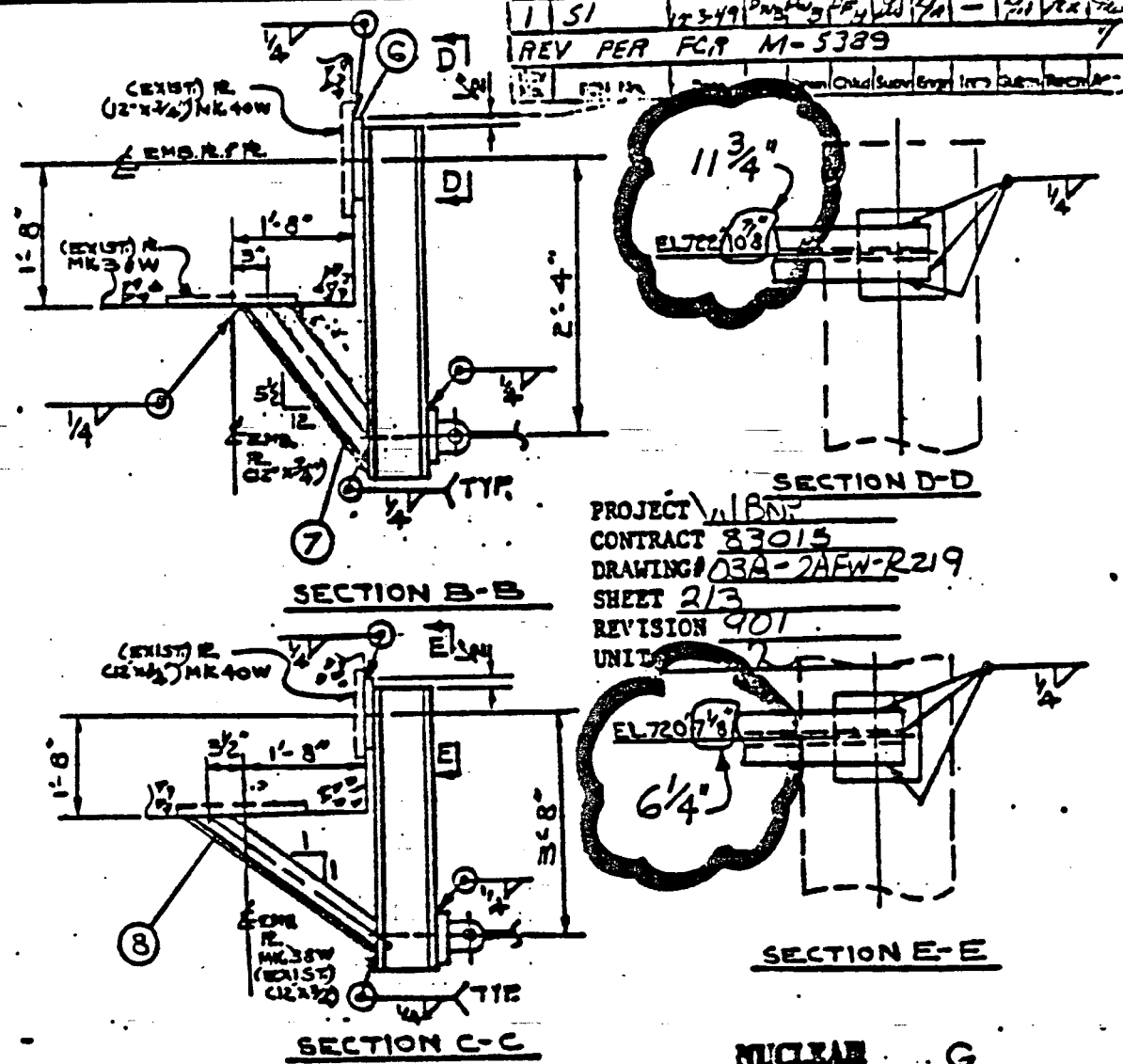
PART NO.	QTY	DESCRIPTION	WGT.
SDE	(5) HRS.		
SDD			
SB			
EZF	210-3 FOR STRUT ITEM #2 (PIN TO PIN)		
BFT			

INVOICE CODE

DESCRIPTION

DATE

BY CHK APP



1 51 12349  
 REV PER FOR M-5389

PROJECT BNP  
 CONTRACT 83015  
 DRAWING 03B-2AFW-R219  
 SHEET 2/3  
 REVISION 901  
 UNIT 2

NUCLEAR  
 T.V.A. CONTRACT #

INFORMATION ONLY

DRAVO CORPORATION P.O. # E-2852  
 T.V.A. CONTRACT # 74C38-83015  
 WATTS BAR NUCLEAR PLANT - UNIT # 2

BERGEN-PATERSON PIPESUPPORT CORP.			
PIPING SYSTEM	AUX. FEEDWATER	STRUCTURAL	
REF. DWG.	47W427-2-1	48N1223-1-3	
JOB NO.	3605	PAS NO.	009
MARK & DWG. NO.	03B-2AFW-R219		SHFT 2/3
			QTY 1

J.G. R.S. S.D. J.M. DATE 2-17-78

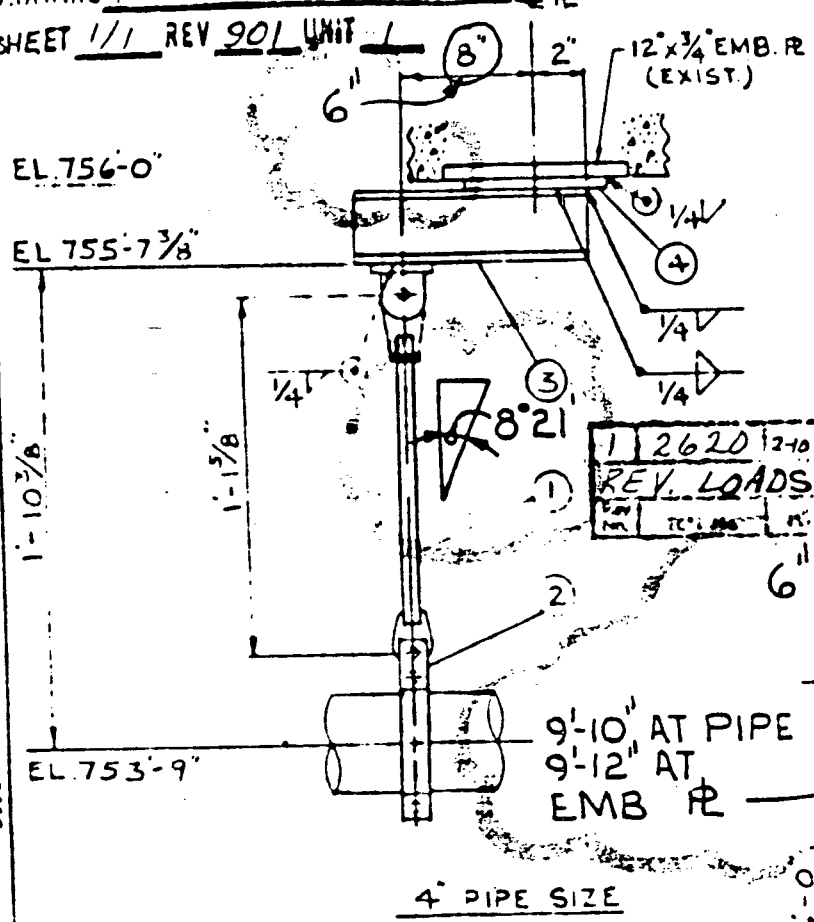
626

NO	DESCRIPTION	QTY	BY	DATE
000	R/O - 1.5 - 1-15/8"	11		
260015	4" PIPE CLAMP		BY TVA	
-	W 4 x 13 x 1-1"		BY TVA	
-	6" x 1/2 R x 6" LG.			
SDE	(2) HRS.			
SDD				
SB	210-3 FOR ITEM 1 (PIN TO PIN)			
EZP				
B&T				

SEE TVA DWG 47A05C 1A  
 PROJECT WBNP CONTRACT # 74C38-83015  
 DRAWING # 03B-1AFW-R150  
 SHEET 1/1 REV 901 UNIT 1

ISO 47W427-202-R-1  
 JOINT: 324  
 DIRECTION: Y  
 TYPE: RR  
 DESIGN LOAD: 200 #  
 430 #

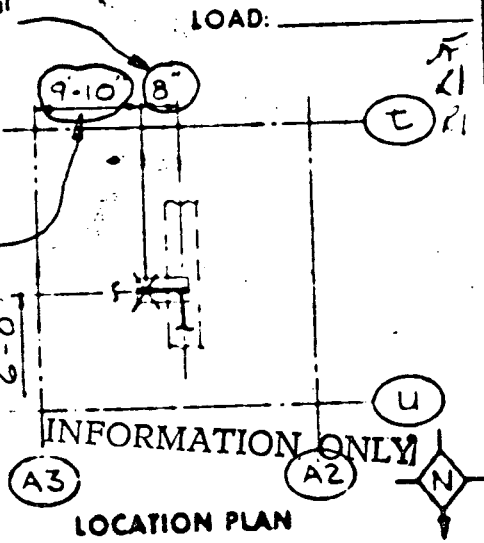
INVOICE CODE



1	26	20	2-10-81	20	FLB	JJP	WJU	JU
REV. LOADS PER ECM								

DESCRIPTION

ELEV. LOOKING SOUTH  
 NUCLEAR  
 T. V. A. CLASS C



DRAVO ISO#E-2879-IC-9-1  
 DRAVO CORPORATION P.O. #E-2879-  
 T.V.A. CONTRACT # 74C38-83015  
 WATTS BAR NUCLEAR PLANT - UNIT # 1

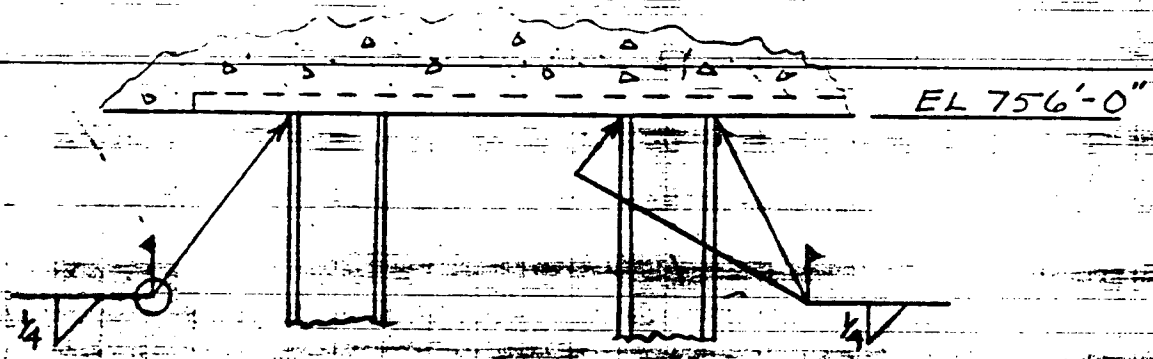
BERGEN-PATERSON PIPESUPPORT CORP.			
PIPING SYSTEM	AUX. FEEDWATER		
REP DWGS	PIPING 47W427-3-5	STRUCTURAL 48N1225-2-2	
JOB NO	3604	FAB NO	09
NO OF B		NO OF D	1
MARK #	03B-1AFW-R150	SHEET	REV

DATE

BY

COMPILED BY \_\_\_\_\_ DATE \_\_\_\_\_ CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_

Finding: F718  
Hanger: 03B-1AFW-R231



ELEV. LOOKING EAST

NCR 4455R  
ATTACHMENT 1 of 4

628

LOP

Nuclear Project: WATTS BAR  
NUCLEAR PLANT

NONCONFORMING CONDITION REPORT  
CONTINUATION PAGE

NCR: 4455R R 0

Item  
No.

REMARKS

4A.

- Finding F718: Use as is. Revise weld symbols to reflect installed condition. See attachment 1.
- Finding F726: Rework to locate clamp at 748'-0 $\frac{1}{2}$ " elevation. Reinspect and document support in accordance with QCP 4.23-3 and QCP 4.23-8.
- Finding F736: Use as is. Revise drawing to reflect installed condition as identified on attachment 2.
- Finding F772: Use as is. Revise drawing to reflect installed condition as identified on attachments 3 and 4.
- Finding F776: Rework hanger to the current revision of the drawing. Reinspect and document support in accordance with QCP 1.14, QCP 1.42-2, and the QCP 4.23 series.
- Finding F704: Use as is. The distortion is not in the vicinity of the weld between tube and "W" section; it is in the vicinity of the weld between the "W4" brace and "W4" vertical member.
- Finding F742: Rework hanger in accordance with FCR H-8382. As a result of site inspection, it has been concluded that the 6'-9 $\frac{1}{2}$ " dimension is correct. Reinspect and document support in accordance with the QCP 4.23 series.

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEWFinding Number IF1712171

## Comments pertinent to finding:

At the Black and Veatch inspection, construction of hanger number 03B-IAFW-R97 was not complete. The hanger was being tracked as incomplete by the construction accountability program. Installation of the hanger has now been completed in accordance with the existing Quality Assurance Program and tracked with the site accountability program. Attached is a copy of any additional field change requests, Quality Assurance inspection documentation, and accountability print out. The print-out is a Quality Assurance document and will be retained as life of plant documentation.

Paul C. McKee  
Program Team Member

11/18/83  
Date

Thomas E. McConnell  
OEDC Program Manager

11/18/83  
Date

MS. Martin Lee Est. Beasley  
Chairman, OEDC Policy Committee

11/21/83  
Date

Black &amp; Veatch

*The attached documentation indicates that this hanger has been reworked and certified*

Classification: Type R Category A

W. J. Fitzmaurice  
Black & Veatch Project Manager

12/14/83  
Date

R. E. Blandell  
Black & Veatch Senior Review Team Chairman

12/27/83  
Date







1003B-03B-1AFW-R97

WB, P-QCP-4.23-8 TEST NO. 8  
Attachment A (LOP)

SUPPORT FINAL INSPECTION

Support ID  
1003B-03B-1AFW-R97

Reference Drawing  
03B-1AFW-R97 Rev. 901

	Accepted (Check)						
Unique Identifier	<input checked="" type="checkbox"/>						
Fabrication	<input checked="" type="checkbox"/>						
Installation	<input checked="" type="checkbox"/>						
Gaps	<table border="0"> <tr> <td>Top</td> <td>Bottom</td> <td>Lateral</td> </tr> <tr> <td><u>1/32"</u></td> <td><u>NA</u></td> <td><u>1 1/2"</u></td> </tr> </table>	Top	Bottom	Lateral	<u>1/32"</u>	<u>NA</u>	<u>1 1/2"</u>
Top	Bottom	Lateral					
<u>1/32"</u>	<u>NA</u>	<u>1 1/2"</u>					
Stainless Pipe Protection	<u>NA</u>						
Grout	<input checked="" type="checkbox"/>						
Integral Attachments	<u>NA</u>						
Insulation Saddle or Lugs	<u>NA</u>						
Stainless Pipe Cleanliness	<u>NA</u>						
Bolted Connections	<u>NA</u>						
Cotter Pins	<u>NA</u>						

Remarks: ECR # H-9219  
WR # 6759

Inspected in accordance with  
Rev. 2 of QCP-4.23-8.  
Arnette W. Callman 4-30-83  
Inspector AC Date

Inspected 4  
2-3-83

OC&R  
MAX-4 1983

1032

1003B-C3B-1AFM-R59	XCC3-2	9567	1-47W421-204	903	VCID *	HA 08C*
1003B-C3B-1AFM-R60	XCC3-2	9568	1-47W421-206	902	VCID *	HF C8B*
1003B-C3B-1AFM-R61	XCC3-2		1-47W421-206	901		* HA 01A* 02A* 03A* C4A* 08B* 09A*
1003B-C3B-1AFM-R62	XCC3-2		1-47W421-221	902		* HA 01A* C2A* 03A* C4A* 08B*
1003B-C3B-1AFM-R63	XCC3-2	9567	1-47W421-204	901		* HA 01A* 02A* 03A* 04A* 08E* C9A*
1003B-C3B-1AFM-R65	XCC3-2	9567	1-47W421-204	902	VCID *	HA 08C*
1003B-C3B-1AFM-R66	XCC3-2		1-47W421-221	901	VCID *	HA 08C*
1003B-C3B-1AFM-R67	XCC3-2	9567	1-47W421-204	901	H-8846	* HA 01A* C2A* C3E* C4A* C6E*
1003B-C3B-1AFM-R68	XCC3-2	9567	1-47W421-204	901	VCID *	HA 08A*
1003B-C3B-1AFM-R69	XCC3-2	9567	1-47W421-204	902	VCID *	HA 08A*
1003B-C3B-1AFM-R7	XCC3-2		1-47W421-206	901	VCID *	HA 08E*
1003B-C3B-1AFM-R71	XCC3-2		1-47W421-204	901		* HA 01A* C2A* C3A* C4A* 08E* 09A*
1003B-C3B-1AFM-R72	XCC3-2	9567	1-47W421-204	901	VCID *	HA 08A*
1003B-C3B-1AFM-R74	XCC3-2		1-47W421-204	902	VCID *	HA 08A*
1003B-C3B-1AFM-R75	XCC3-2	9567	1-47W421-204	902	VCID *	HA 08A*
1003B-C3B-1AFM-R76	XCC3-2		1-47W421-204	902	VCID *	HA 08A*
1003B-C3B-1AFM-R77	I		1-47W421-204	901	VCID *	HA 08B*
1003B-C3B-1AFM-R78	XCC3-2		1-47W421-22C	903	H-6861/9526	* HA 01A* 02A* 03A* C4A* C6A*
1003B-C3B-1AFM-R8	I		1-47W421-206	905	VCID *	HE 08B*
1003B-C3B-1AFM-R81	I	9567	1-47W421-204	904	VCID *	HA 08A*
1003B-C3B-1AFM-R82	I	9567	1-47W421-204	902	VCID *	HA 08A*
1003B-C3B-1AFM-R83	XCC3-2		1-47W421-22C	905	H-10141	* HE 01C* 02A* C3A* C4A* C5A* C8A*
1003B-C3B-1AFM-R84	XCC3-2	9567	1-47W421-204	903	VCID *	HA 08A*
1003B-C3B-1AFM-R85	XCC1-6	9562	1-47W421-204	901		* HA 01B* 02C* 03C* C4C* 06C* 05A*
1003B-C3B-1AFM-R86	XCC1-6	9562	1-47W421-204	902	H-9674	* HE 01B* 02C* 03C* C4C* 05E* 08C*
1003B-C3B-1AFM-R87	XCC1-6	9567	1-47W421-204	904	VCID *	HA 08C*
1003B-C3B-1AFM-R89	XCC1-6		1-47W421-204	901		* HB 02A* 03C* 04A* C8C* 09A*
1003B-C3B-1AFM-R9	XCC3-2	9526	1-47W421-206	905	H-9283/ANCR-475960	* HA 01A* 02A* 03E* C4E* C8E* C9A*
1003B-C3B-1AFM-R91	XCC1-6	9562	1-47W421-204	902	H-10231	* HE 01A* C2A* 03E* C4E* 08E*
1003B-C3B-1AFM-R92	XCC1-6		1-47W421-204	904		* HB 02A* C3A* 04A* C6C* 04A*
			/CIN-H/C			
1003B-C3B-1AFM-R93	I		1-47W421-204	901	VCID *	HB 08B*
1003B-C3B-1AFM-R94	XCC1-6	9567	1-47W421-204	904	VCID *	HE 08C*
1003B-C3B-1AFM-R95	XCC3-2		1-47W421-203	904		* HA 01A* C2A* C3E* C4A* C6E*
1003B-C3B-1AFM-R96	XCC3-2		1-47W421-203	901		* HA 01A* 02A* 03A* C4A* C8E* 09A*
1003B-C3B-1AFM-R98	XCC3-2		1-47W421-203	902	H-5198 SF	* HA 01A* 02A* 03A* C4A* 08E* 09A*
1003B-C3B-1AFM-R99	XCC3-2		1-47W421-203	901		* HA 01A* C2A* C3E* C4A* C6C* 09A*
1003B-C3B-1AFM-V13	I		1-47W421-206	901	VCID *	HH 08A*
1003B-C3B-1AFM-V127	XCC3-2	9525	1-47W421-202	905		* HH 02A* C3A* C4A* C6B* 08B* 09A*
1003B-C3B-1AFM-V170	XCC3-2	9525	1-47W421-207	903		* HH 01A* 02A* 03A* C4A* 06E* 08A*
1003B-C3B-1AFM-V176	XCC3-2	9525	1-47W421-207	903		* HH 01A* C2A* 03A* C4A* C6B* 08A*
1003B-C3B-1AFM-V198	XCC3-2	9525	1-47W421-207	904		* HH 01A* 02A* 03A* C4A* C6E* 08E*
1003B-C3B-1AFM-V199	XCC3-2	9525	1-47W421-207	901	H-8651	* HJ 02A* C3A* C4A* C6A* C8A* C1A*
1003B-C3B-1AFM-V207	XCC3-2	9525	1-47W421-201	900	H-10175	* HJ 02A* C3A* 04A* C6E* 08E* 09A*
			/25E-H/C			
1003B-C3B-1AFM-V21	I		1-47W421-206	904	VCID *	HC 08A*

DINEB72 F-707

TENNESSEE VALLEY AUTHORITY  
WATTS BAR NUCLEAR PLANT  
AUXILIARY FEEDWATER SYSTEM  
INDEPENDENT REVIEW

SUPPLEMENTARY REPORT

APPENDIX A BOOK 3  
FOLLOW-UP DATA  
B&V PROJECT NO. 10520

Issued: February 7, 1984

TVA CONTRACT NO. TV-60052A

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

ref: 10520DIN41

Finding Number F17/3/2

## Comments pertinent to finding:

At the Black and Veatch inspection, construction of hanger number 03B-19FW-R109 was not complete. The hanger was being tracked as incomplete by the construction accountability program. Installation of the hanger has now been completed in accordance with the existing Quality Assurance Program and tracked with the site accountability program. Attached is a copy of Quality Assurance inspection documentation, and accountability print out.

Rand C Miley  
Program Team Member

11/2/83  
Date

Thomas E Mc Connell  
OEDC Program Manager

11/8/83  
Date

E Gray Beasley  
Chairman, OEDC Policy Committee

11/8/83  
Date

Black & Veatch *attached records indicate subsequent inspection to later revision of drawing noted in TVA form 1 response.*

Classification: Type R Category A

W. J. Zidzeman  
Black & Veatch Project Manager

11/16/83  
Date

RE Blandell  
Black & Veatch Senior Review Team Chairman

12/1/83  
Date

688

UNIQUE IDENTIFICATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	1	0	0	3	B	-	1	A	F	W	-	R	1	0	9								

088

QC&R  
 FEB 28 1983  
*Bill*

WESP-QCP-4.23-8 TEST NO. 8  
 Attachment A (LCP)

SUPPORT VIVAL INSPECTION

SUPPORT ID  
003B-03B-1AFW-R109  
 Reference Drawing  
03B-1AFW-R109 Rev 901  
 Accepted (Check)

- Unique Identifier
- Fabrication
- Installation
- Caps 

Top	Bottom	Lateral
<u>1/32"</u>	<u>N/A</u>	<u>1/2"</u>
- Stainless Pipe Protection N/A
- Coat
- Integral Attachments N/A
- Insulation Saddle or Lugs N/A
- Stainless Pipe Cleanliness N/A
- Bolted Connections N/A
- Cotter Pins N/A

Remarks: WR# 6793

Inspected in accordance with  
 Rev 2 of WESP-QCP-4.23-8  
*Annita M. Coleman* 2-3-83  
 Inspected 2-7-83 Date

686

UNIQUE -	18	19	20	21	22	23
03	05	06	07	08	09	10
1003B-03B-1AFW-R109						

08B

QC&R  
 FEB 28 1983  
*Real*

WEAP-QCP-4.23-8 TEST NO. 8  
 Attachment A (LOP)

SUPPORT VIAL INSPECTION

SUPPORT ID  
1003B-03B-1AFW-R109  
 Reference Drawing  
03B-1AFW-R109 Rev 901  
 Accepted (Check)

Unique Identifier ✓  
 Fabrication ✓  
 Installation ✓  
 Caps Top 1/32" Bottom N/A Lateral 1/2"  
 Stainless Pipe Protection N/A  
 Gasket ✓  
 Integral Attachments N/A  
 Insulation Saddle or Lugs N/A  
 Stainless Pipe Cleanliness N/A  
 Bolted Connections N/A  
 Cotter Pins N/A  
 Remarks: KUR# 6793

Inspected in accordance with  
 Rev 2 of QCP-4.23-8  
*Carroll* 2-3-83  
 Inspected 2-7-83 Date





WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F1713131

Comments pertinent to finding:

At the Black and Veatch inspection, construction of hanger number 03B-1AFW-R174 was not complete. The hanger was being tracked as incomplete by the construction accountability program. Installation of the hanger has now been completed in accordance with the existing Quality Assurance Program and tracked with the site accountability program. Attached is a copy of any additional field change requests, Quality Assurance inspection documentation, and accountability print out.

Robert C. McRy  
Program Team Member

11/3/83  
Date

Thomas E. McConnell  
OEDC Program Manager

11/4/83  
Date

E. Gray Beasley  
Chairman, OEDC Policy Committee

11/21/83  
Date

Black & Veatch *Based on review of Document Review Record 477 and this information the support Range was re designed & the resulting installation inspected*

Classification: Type R Category A

W. J. Zitzman  
Black & Veatch Project Manager

12/8/83  
Date

R. E. Blairdell  
Black & Veatch Senior Review Team Chairman

12/19/83  
Date

TEST NO. 8

Attachment (18)

SUPPORT FILE INSPECTION

SUPPORT FILE NO. 10038-038-1AFW-2174

DATE OF INSPECTION 038-1AFW-2174 ser. 2

Accepted

(OR SER)

Initials

File

Initials

NA NA NA

Initials

Initials

Initials

Initials

Initials

Initials

Initials

Initials

Initials

Initials

Initials

Initials

Initials

Initials

Initials

FOR # H-8604

10-7-84

1-19-85

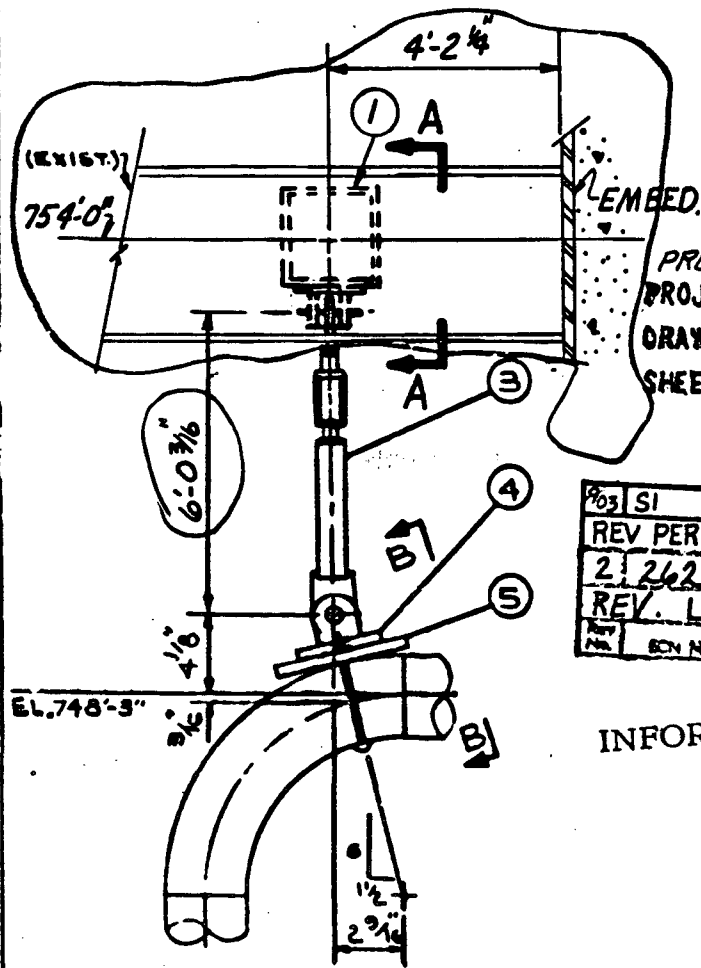
639

FORM BP-3, 10/75

No. 2141, Rev 903

ITEM	QUA.	PART NO.	SIZE	DESCRIPTION	WGT.
10	1	-	TS 4" x 4" x 3/8" x 2'-0" LG	(A36)	BY TVA
30	1	2200	1.5 - 4' - 2 1/8" - RSSA		BY TVA
40	1	200315	END ATTACHMENT FOR ITEM # 3		
50	1	-	6" x 1/2" R x 7/4 LG (SEE SECT B-B)	(A36)	BY TVA
60	1	283	4" PIPE SIZE U-BOLT		

SEE TVA DWG.# 47A050-1A1A

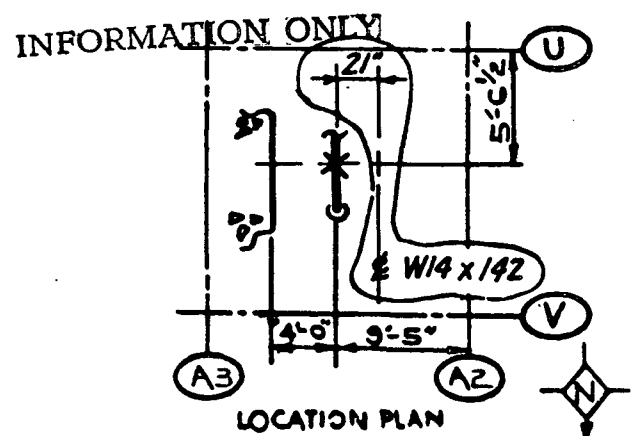


ISO. 47W427-202-R4  
 JOINT: 219  
 DIRECTION: Y  
 TYPE: RR  
 DESIGN LOAD: 890

PROBLEM N3-3-11A  
 PROJECT WBNP CONTRACT 74038-83015  
 DRAWING # 03B-IAFW-R174  
 SHEET 1/2 REV 903 UNIT 1  
 NUCLEAR  
 T. V. A. CLASS B

03	SI	E-16-83	CRB	TRN	WFB	E-Y	WIS	-	DN	PK	2/22/77
REV PER FCR H-8604 WBP 83051/002											
2 2620 2-10-81 DA BLB JSP WDL Supply Rev											
REV. LOADS PER ECN											

INVOICE CODE  
 7-78 Pcs DAH 1/2 2/2 2/2  
 REV PER FCR M-2409  
 ECN No. 1  
 CHK APP  
 DATE



DRAVO ISO E-2879-IC-10

DRAVO CORPORATION P.O. #E 2879.  
 T. V. A. CONTRACT #74 C 38-83015  
 WATTS BAR NUCLEAR PLANT - UNIT #1

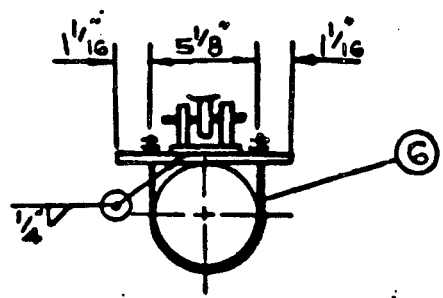
BERGEN-PATERSON PIPESUPPORT CORP.			
PIPING SYSTEM	AUXILIARY FEEDWATER		
REF. DWGS.	PIPING 47W427-3-10	STRUCTURAL 48N1223-2-10	
JOB NO.	3604	PAB NO.009	NO. 1
MARK & DWG. NO.	03B-IAFW-R174		SHEET 1 of 2 REV 903

REV 08 R.G. 2 R.S. 3 UMB 2 SM DATE 10-31-77

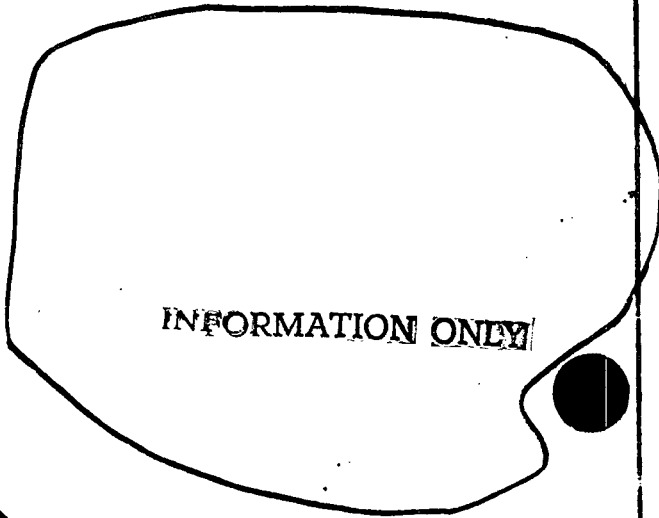
640

ITEM	QUAN.	PART NO.	SIZE	DESCRIPTION	WGT.
-	1	SDE	(5) HRS		
-	1	SDD			
-	1	SB			
-	1	EZP	210-3 FOR STRUT ITEM #3 (PIN TO PIN)		
-	1	B/T			

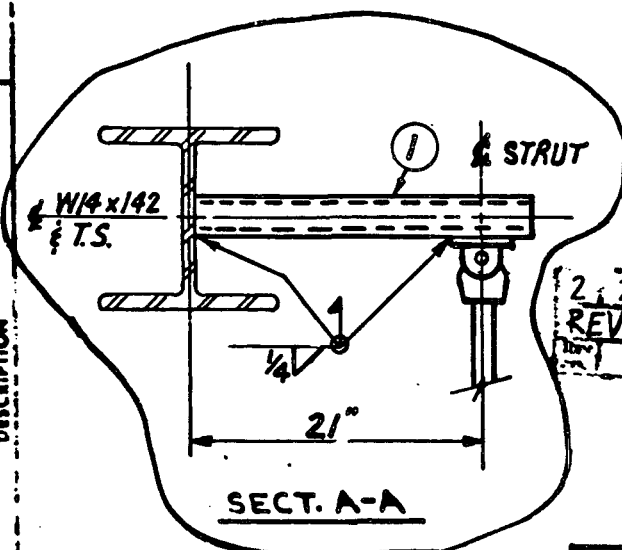
INVOICE CODE



SECT. B-B



DESCRIPTION



SECT. A-A

PROJECT WBNP CONTRACT 74C38-83015  
 DRAWING # 03B-IAFW-R174  
 SHEET 2/2 REV 903 UNIT 1

2, 2620' 2-10-81 PER J.P.P. [Signature]  
 REV. LOADS PER ECN [Signature]

NUCLEAR CLASS B  
 T. V. A. CLASS B

DRAVO ISO B-2879-IC-10

03	SI	5-16-83	GR	TRN	WBS	Fcy	WLS	-	9M	2879
REV PER FCR H-8604 WBP 830511002										
1	SI	7-78	Pod	DRW	TRG	OS	TRG	J.P.P.	J.P.P.	J.P.P.
REV PER FCR M-2409										
Rev No.	ECN No.	Date	Class	Drawn	Chkd	Sup	Engr	Insp	Subm	Recon

BY CHK APP

DRAVO CORPORATION P.O. #E-2879-  
 T. V. A. CONTRACT #74 C 38-83015  
 WATTS BAR NUCLEAR PLANT - UNIT #1

BERGEN-PATERSON PIPESUPPORT CORP.			
PIPING SYSTEM	AUXILIARY FEEDWATER		
REP. DWG.	PIPING 47W427-3-10	STRUCTURAL	48N1223-2-10
JOB NO.	3604	PAS NO.	009
MARK & DWG. NO.	03B-IAFW-R174		SHEET 2 of 2
REV	903		

REV BY R.G. DATE 10-31-77

1003B-03B-1AFW-1136	0003-2	1-47W427-201	901	* NO 03A* 04A* 081*
1003B-03B-1AFW-1137	0003-2	1-47W427-201	902	* HA 02A* 03A* 042* 08C* 09A*
		/15H		
1003B-03B-1AFW-1138	0003-2	1-47W427-201	901	* HD 03A* 14A* 081*
		/16H-H/C		
1003B-03B-1AFW-1139	0003-2	1-47W427-201	001 H-76562H 6938	* NO 03B* 04B* 082*
		/17H-H/C		
1003B-03B-1AFW-114	1	1-47W427-206	901	VCIB * HA 08A*
1003B-03B-1AFW-1140	0003-2	1-47W427-201	001 H-7844	* HA 01B* 02B* 03B* 04B* 08B* 09A*
		/18H-H/C		
1003B-03B-1AFW-1141	0003-2	1-47W427-201	001 H-67927H-7346	* NO 03A* 04A* 082*
		/19H-H/C		
1003B-03B-1AFW-1146	0003-2	1-47W427-202	001 H-7787	* HA 01A* 02A* 03A* 04A* 08A*
1003B-03B-1AFW-1147	0003-2	1-47W427-202	001 NCF 4454R R1	* HA 01A* 02A* 03A* 04A* 08B* 09A*
1003B-03B-1AFW-1148	0003-2	1-47W427-202	001	* NO 03A* 04A* 081* 09A*
1003B-03B-1AFW-1149	0003-2	1-47W427-202	904 4622R	* HA 01A* 02B* 03B* 04A* 08B*
1003B-03B-1AFW-115	0003-2	1-47W427-206	903	* HB 02A* 03A* 04A* 08B* 09A*
1003B-03B-1AFW-1150	0003-2	1-47W427-202	901	* HB 02A* 03C* 04A* 08C* 09A*
1003B-03B-1AFW-1151	0003-2	1-47W427-202		* HB 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-1152	0003-2	1-47W427-202	902	* HA 01A* 02A* 03A* 04A* 08B* 09A*
1003B-03B-1AFW-1153	0003-2	1-47W427-202	001	* HD 03A* 04A* 081* 09A*
1003B-03B-1AFW-1154	0003-2	1-47W427-202	001	* HB 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-1155	0003-2	1-47W427-202	001	* HB 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-1156	0003-2	1-47W427-202	001 H-4811	* HD 02A* 03A* 04A* 08A*
1003B-03B-1AFW-1157	0003-2	1-47W427-202	003 H-4510	* HB 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-1158	0003-2	1-47W427-202	901	* HD 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-1159	0003-2	1-47W427-202	001 NCF 4454R R1	* HB 03B* 04A* 08E*
1003B-03B-1AFW-116	1	1-47W427-206	901	VCIB * HE 08B*
1003B-03B-1AFW-1160	0003-2	1-47W427-202	001	* HB 02A* 03A* 04A* 08A*
1003B-03B-1AFW-1161	0003-2	1-47W427-202	001 H-5944	* HB 02A* 03A* 04A* 08A*
1003B-03B-1AFW-1162	0003-2	1-47W427-202	001 H-67927H-7346	* HA 01B* 02B* 03B* 04B* 08B*
1003B-03B-1AFW-1163	0003-2	1-47W427-202	002	* HB 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-1164	0003-2	1-47W427-202	001	* HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-1165	0003-2	1-47W427-202	001 H-4056	* HA 03A* 04A* 08A* 09A*
1003B-03B-1AFW-1166	0003-2	1-47W427-202	001 H-67927H-7346	* HB 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-1167	0003-2	1-47W427-202	901	* HB 02A* 03A* 04A* 08B* 09A*
1003B-03B-1AFW-1168	0003-2	1-47W427-202	902	* HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-1169	0003-2	1-47W427-202	901	* HB 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-117	0003-2	7528 1-47W427-202	901	* HA 01A* 02A* 03B* 04B* 08B* 09A*
1003B-03B-1AFW-1170	0003-2	1-47W427-202	001 H-7110	* HA 01A* 02A* 03A* 04A* 08A*
1003B-03B-1AFW-1171	0003-2	1-47W427-202	001	* HA 01A* 02A* 03A* 04A* 08B* 09A*
1003B-03B-1AFW-1172	0003-2	1-47W427-202	001	* HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-1173	0003-2	1-47W427-202	001 H-8484	* HA 01A* 02B* 03B* 04B* 08B* 09A*
1003B-03B-1AFW-1174	0003-2	1-47W427-202	001	* HA 01A* 02A* 03A* 04A* 08B* 09A*
1003B-03B-1AFW-1175	0003-2	1-47W427-202	001 H-9124	* HA 01B* 02B* 03B* 04B* 08B* 09A*
1003B-03B-1AFW-118	0003-2	1-47W427-206	901	* HA 01A* 02A* 03A* 04A* 08C* 09A*
1003B-03B-1AFW-1180	0003-2	9190 1-47W427-201	901	* HA 01A* 02A* 03A* 04A* 08C* 09A*
1003B-03B-1AFW-1181	0003-2	1-47W427-201		* HA 01A* 02A* 03A* 04A* 08C* 09A*

DINSLEY F-733

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

ref: 10520DIN4335

Finding Number F171314

Comments pertinent to finding:

Hanger number 03B-1AFW-R147 was reworked according to  
NCR number 4454R attached is a copy of  
inspection documentation, accountability print-out and NCR number  
4454R.

Ronald C. McRury  
Program Team Member

11/2/83  
Date

Thomas E. McConnell  
OEDC Program Manager

11/9/83  
Date

B. Gray Beasley  
Chairman, OEDC Policy Committee

11/7/83  
Date

Black & Veatch *attached records indicate corrective action completed*

Classification: Type R Category A

W. J. Zilzimas  
Black & Veatch Project Manager

11/16/83  
Date

R. E. Blawie  
Black & Veatch Senior Review Team Chairman

12/1/83  
Date

379

QC&R  
FEB 28 1983  
Ned

088

4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	0	0	3	B	-	0	3	B	-	1	A	F	W	-	R	197

UNIQUE IDENTIFIER

WBHT-CCP-4.23-8 TEST NO. 8  
Attachment A (LOP)

SUPPORT SERIAL INSPECTION

SUPPORT ID  
1003B-03B-IAFW-R1A7  
03B-IAFW-R1A7

- Plastic ... N/A
- Steel ... N/A
- Brass ... N/A
- Copper N/A N/A N/A
- Aluminum ... N/A
- Lead ... N/A
- Iron ... N/A
- Non-Ferrous ... N/A
- Stainless Steel ... N/A
- Polished Components N/A
- Copper Pins

Remarks NR\*W6E

NCR 445A R E/I  
Inspected in accordance with  
Rev 2 of QCP-4.23-8

Jimmy M. Huddy 14683  
Inspector Date

WBN 830122. 141

DIVISION OF CONSTRUCTION  
NONCONFORMING CONDITION REPORT

1A. Item, and CAQ Description, and Apparent Cause

The identification of the following nonconforming conditions of previously inspected and documented pipe supports resulted from the System 03 review by Black and Veatch:

- Finding F 734: Hanger 03B-IAFW-R147 has cotter pins missing at lower end attachment;
- Finding F 773: Hanger 03B-IAFW-R184 has cotter pins missing;
- Finding F 774: Hanger 03B-IAFW-R186 has a cotter pin missing; and
- Finding F 737: Hanger 03B-IAFW-R159 lacks a hanger rod.

See continuation sheet for revised item description.

18. NCR No. 4454R Rev. 1

19. REF. NR. or ADMIN. No. N/A

20. PLANT WBNP

21. UNIT 1

22. SYSTEM 03

23. ASME CODE Yes  No

24. CONTRACT NO. N/A

25. INITIATING UNIT HEC



1J. Vendor Name N/A Address, City, and State N/A

2. Initiator Samuel Chambers Date 12/20/82 Approver Thomas R. Palmer Date 12/20/82

3A. Significant CAQ:  Yes  No Construction Engineer Ed Burke Date 12-22-82

Signature \_\_\_\_\_ Date \_\_\_\_\_

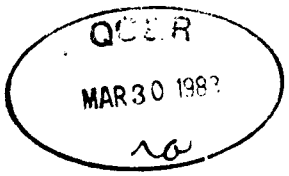
Authorization to Upgrade Not Significant \_\_\_\_\_ Date \_\_\_\_\_

If Significant, NEB-NLS Contact \_\_\_\_\_ Date \_\_\_\_\_

3B. For Significant CAQ:

1. Describe Root Cause \_\_\_\_\_

2. This is a Generic CAQ  Yes  No (If yes, describe) \_\_\_\_\_



Prepared by \_\_\_\_\_



645

4A. Disposition:  Closed (Check Block and Detail)

Finding F 734: Replace cotter pins, reinspect, and document support in accordance with OCP 4.23-8.

Finding F 773: Replace cotter pins, reinspect, and document support in accordance with OCP 4.23-8.

Finding F 774: Replace cotter pins, reinspect, and document support in accordance with OCP 4.23-8.

Finding F 737: Replace hanger rod, reinspect, and document support in accordance with OCP 4.23-3 and OCP 4.23-8.

See continuation sheet for revised disposition.

4B. Action Required to Prevent Recurrence (For Significant Items Only)

4C. Date for Completion of all actions to close this NCR (For Significant NCR's Only)

Recommended By: Harold L. Chambers Date: 12/10/82  
Thomas R. Brown 12/10/82

5.  Approved:  As Detailed in 4 above  Other (See Construction Permit)

Referred to Design Project Organization  Other (See Construction Permit)

Construction Engineer: Ed Puckett 12/10/82

6. Concurrence of Designated QA Reviewer for Action Required to Prevent Recurrence

7.  Approved:  As Detailed in 4 above  Other (See Construction Permit)

Design Project Organization \_\_\_\_\_ Date \_\_\_\_\_

8. Approved Disposition Completed, and if applicable, Item released from Nonperforming Status

Responsible Individual: Samuel D. Alley Date: 3-28-83 Approved by: James H. Harkin Date: 3-28-83

9. NCR Closed (Includes completion of action required to prevent recurrences for significant NCR's)

Construction Engineer: Thomas R. Brown Date: 3-24-83

10. Reviewed and Accepted By: \_\_\_\_\_ Date \_\_\_\_\_  
 Authorized Nuclear Inspector

11. Distribution

Site QA Records File	NRC Resident Inspector
Construction Engineer	(Significant NCR's Only)
CONST QA Branch	ANI (Code Items Only)
QA Manager, OLDC	EN DES NEB NLS
MEDS	(Significant NCR's Only)
Design Project Organization	NCRS (Significant NCR's Only)
EN DES NEB Codes, Standards, and Materials Section (Code Items Only)	

WBN '830350 122

646

TOP

100

Nuclear Project: SAFTS DIV. NONCONFORMING CONDITION REPORT, PUS: 4454R, P. 1  
NUCLEAR PLANT CONTINUATION PAGE

Item No.	REMARKS
1. A.	Revised item and CAQ description: Add finding F 749: Hanger 03B-1AFW-R112 has item 1 (RSSA) missing.
4. A.	Revised disposition: Add Finding F 749: Replace item 1, reinspect, and document in accordance with QCP 4.23-3 and QCP 4.23-8.

IDENTIFIER	CL	REFR	PAW/PLN	DRAWING	REV	DESCRIPTION	SPAT	TEST LTR	SEQUENCE	OF TESTS
1003B-03B-1AFW-4132		0003-2		1-47W421-201	001	H-7279		HD 03A* 04A* 0814 09A*		
1003B-03B-1AFW-4133		0003-2		1-47W421-201	001	H-7314		HD 03A* 04A* 0814 09A*		
1003B-03B-1AFW-4134		0003-2		1-47W421-201	001			HA 01A* 02A* 03A* 04A* 08A* 09A*		
1003B-03B-1AFW-4135		0003-2	9228	1-47W421-201 /14H H/C	001	H-0714 MCR 4645		HA 01B* 02B* 03B* 04B* 08B* 09B*		
1003B-03B-1AFW-4136		0003-2		1-47W421-201	001			HD 03A* 04A* 0814		
1003B-03B-1AFW-4137		0003-2		1-47W421-201	002			HA 02A* 03A* 04A* 78C* 09A*		
1003B-03B-1AFW-4138		0003-2		1-47W421-201	001			HD 03A* 04A* 0814		
1003B-03B-1AFW-4139		0003-2		1-47W421-201	001	H-7656EH-6938		HD 03B* 04B* 08B*		
1003B-03B-1AFW-4140		0003-2		1-47W421-201	003		VG10	HA 08A*		
1003B-03B-1AFW-4141		0003-2		1-47W421-201	001	H-7854		HA 01B* 02B* 03B* 04B* 08B* 09B*		
1003B-03B-1AFW-4142		0003-2		1-47W421-201	001	H-67927H-7346		HD 03A* 04A* 08A*		
1003B-03B-1AFW-4143		0003-2		1-47W421-201	001	H-7707		HA 01A* 02A* 03A* 04A* 08A*		
1003B-03B-1AFW-4144		0003-2		1-47W421-201	001			HA 01A* 02A* 03A* 04A* 08A*		
1003B-03B-1AFW-4145		0003-2		1-47W421-201	004	46726		HA 01A* 02A* 03A* 04A* 08A*		
1003B-03B-1AFW-4146		0003-2		1-47W421-201	001			HA 02A* 03A* 04A* 08B* 09A*		
1003B-03B-1AFW-4147		0003-2		1-47W421-201	001			HA 02A* 03A* 04A* 08B* 09A*		
1003B-03B-1AFW-4148		0003-2		1-47W421-201	001			HA 01A* 02A* 03A* 04A* 08B* 09A*		
1003B-03B-1AFW-4149		0003-2		1-47W421-201	001			HD 03A* 04A* 0814 09A*		
1003B-03B-1AFW-4150		0003-2		1-47W421-201	001			HA 01A* 02A* 03A* 04A* 08B* 09A*		
1003B-03B-1AFW-4151		0003-2		1-47W421-201	001			HA 01A* 02A* 03A* 04A* 08B* 09A*		
1003B-03B-1AFW-4152		0003-2		1-47W421-201	002			HA 01A* 02A* 03A* 04A* 08B* 09A*		
1003B-03B-1AFW-4153		0003-2		1-47W421-201	001			HD 03A* 04A* 0814 09A*		
1003B-03B-1AFW-4154		0003-2		1-47W421-201	001			HA 02A* 03A* 04A* 08B* 09A*		
1003B-03B-1AFW-4155		0003-2		1-47W421-201	001	H-4011		HA 02A* 03A* 04A* 08B* 09A*		
1003B-03B-1AFW-4156		0003-2		1-47W421-201	001	H-4511		HA 02A* 03A* 04A* 08B* 09A*		
1003B-03B-1AFW-4157		0003-2		1-47W421-201	001			HA 02A* 03A* 04A* 08B* 09A*		
1003B-03B-1AFW-4158		0003-2		1-47W421-201	001	MCR 4654R-PI		HA 03B* 04B* 08B*		
1003B-03B-1AFW-4159		0003-2		1-47W421-201	001		VC10	HA 02A* 03A* 04A* 08B*		
1003B-03B-1AFW-4160		0003-2		1-47W421-201	001	H-5944		HA 02A* 03A* 04A* 08B*		
1003B-03B-1AFW-4161		0003-2		1-47W421-201	001	H-7937/15797/6175/7834		HA 01B* 02B* 03B* 04B* 08B* 09B*		
1003B-03B-1AFW-4162		0003-2		1-47W421-201	002			HA 02A* 03A* 04A* 08B* 09A*		
1003B-03B-1AFW-4163		0003-2		1-47W421-201	001			HA 01A* 02A* 03A* 04A* 08B* 09A*		
1003B-03B-1AFW-4164		0003-2		1-47W421-201	001	H-4956		HA 03A* 04A* 08A* 09A*		
1003B-03B-1AFW-4165		0003-2		1-47W421-201	001	H-4990/3859R		HA 02A* 03A* 04A* 08B* 09A*		
1003B-03B-1AFW-4166		0003-2		1-47W421-201	001			HA 02A* 03A* 04A* 08B* 09A*		
1003B-03B-1AFW-4167		0003-2		1-47W421-201	001			HA 01A* 02A* 03A* 04A* 08B* 09A*		
1003B-03B-1AFW-4168		0003-2		1-47W421-201	001			HA 02A* 03A* 04A* 08B* 09A*		
1003B-03B-1AFW-4169		0003-2		1-47W421-201	001			HA 01A* 02A* 03A* 04A* 08B* 09A*		
1003B-03B-1AFW-4170		0003-2	9228	1-47W421-201	001			HA 01A* 02A* 03A* 04A* 08B* 09A*		

DIN 5018 F-734

648

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F/7/3/6/

O-PL

Comments pertinent to finding:

J. C. Standifer to G. Wadewitz memo dated 6/10/83 for disposition of NCR 4455R approves use as constructed. Support 03B-1AFW-R150 R902 was issued 8/10/83 under ECN 3511 to resolve this finding. This corrective action is complete.

References: J. C. Standifer to G. Wadewitz memo dated 6/10/83 (WBP 830610 020)  
NCR 4455R  
ECN 3511  
03B-1AFW-R150 R902

EUCh

Program Team Member

11/14/83

Date

Thomas E. McConnell

OEDC Program Manager

11/14/83

Date

M. J. Martin for E. L. Beasley  
Chairman, OEDC Policy Committee

11/17/83

Date

Black & Veatch

*attached documentation clear out this item*

Classification: Type

R

Category

A

W. J. Ziskman

Black & Veatch Project Manager

12/1/83

Date

RE Blairdell

Black & Veatch Senior Review Team Chairman

12/15/83

Date

UNITED STATES GOVERNMENT

## Memorandum

*G. L. Pennington*

TENNESSEE VALLEY AUTHORITY  
WBP '83 0610 020

TO : G. Wadewitz, Project Manager, Watts Bar Nuclear Plant, CONST (3)

FROM : J. C. Standifer, Project Manager, Watts Bar Design Project, 204 GB-K

DATE : JUN 10 1983

SUBJECT: WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - NONCONFORMANCE REPORT 4455R RO

Reference: Your memo to me dated May 12, 1983 (WBN 830512 007)  
transmitting subject NCR 4455R RO (WBN 821126 135)

Your recommended disposition of the Black and Veatch findings addressed in subject NCR is as follows:

- Finding F718: (03B-1AFW-R231) Use-as-is. This is acceptable because of small loads on the support structure.
- Finding F726: (03B-1AFW-R232) Relocating clamp to elevation 748'-1/2" is acceptable and will bring support within installation tolerance of  $\pm 6^\circ$ .
- Finding F736: (03B-1AFW-R150) Use-as-is. This is acceptable because small load induces minimal stress into the pipe.
- Finding F772: (03B-2AFW-R219) Use-as-is. This is acceptable because installation of the riser clamp at 22<sup>o</sup>45' has no affect on the integrity of the support. The shear lugs still make sufficient contact with the clamp.
- Finding F776: (03B-1AFW-R191) Reworking support is acceptable and will bring support into compliance with the design drawing.
- Finding F742: (47A427-2-2) Reworking support in accordance with FCR H-8382 is acceptable and will bring the support into compliance with the design drawing.
- Finding F704: (03B-1AFW-R100) This is not acceptable because the overheated and distorted weld connection between the column and brace could cause the support to fail. We recommend that CONST replace the support and ensure that the proper weld is made. EN DES will revise the drawing to change 4'-10" dimension to 2'-11" under ECN 3511.

*J. C. Standifer*

J. C. Standifer

GLP:LB

Attachment

cc (Attachment):

C. Bonine, E7B24 C-K

L. J. Cooney, W6D224 C-K

R. A. Costner, M173 MIB-K

MEDS, W5B63 C-K

R. M. Pierce, 104 ESTA-K

M. N. Sprouse, W11A9 C-K

Principally Prepared By: G. L. Pennington, Extension 2764

*G. L. Pennington*



WBN '821126

135 DIVISION OF CONSTRUCTION  
NONCONFORMING CONDITION REPORT

WBNP-QCI-1.02 R5  
Attachment A

1A. Item and CAQ Description, and Apparent Cause:

The identification of the following nonconforming conditions of previously inspected and documented pipe supports resulted from the System 03 review by Black and Veatch:

- Findings F 718: Hanger 03B-1AFW-R231 is not welded to embedment in accordance with the current revision of the drawing;
- Findings F 726: Item 1 of Hanger 03B-1AFW-R232 is installed 6°52' with the horizontal; it is shown as horizontal on the drawing;
- Findings F 736: Item 1 of Hanger 03B-1AFW-R150 is installed 8°21' with the vertical; it is shown as vertical on the drawing;
- Findings F 772: The angle of the Riser Clamp of Hanger 03B-2AFW-R219 is specified as 30° with the vertical; it is installed at 22°45' with the vertical;
- Findings F 776: The end attachments of Hanger 03B-1AFW-R191 are rotated 90° from where specified on the drawing, and cotter pins are missing;
- Findings F 704: Hanger 03B-1AFW-R100 is distorted in the vicinity of the weld between the W4 brace and W4 vertical member. The specified 4'-10" dimension is actually 2'-11";
- Findings F 742: Hanger 47A427-2-2 was not installed in accordance with FCR H-8382

1B. NCR No.: 4455R Rev. 0

1C. REF. NR or AUDIT No.: N/A

1D. PLANT: WBNP

1E. UNIT: 1 & 2

1F. SYSTEM: 03

1G. ASME CODE:  Yes  No

1H. CONTRACT No.: N/A

1I. INITIATING UNIT: HEU

1J. Vendor Name N/A Address (City and State) N/A

2. Initiator R. Chambers Date 11-12-82 Approver Thomas R. Brown Date 11/17/82

3A. Significant CAQ:  Yes  No Construction Engineer Ed Burke Date 11-17-82

Signature \_\_\_\_\_ Title & Organization \_\_\_\_\_ Date \_\_\_\_\_

If Significant, NEB-NLS Contact \_\_\_\_\_ Date \_\_\_\_\_ By \_\_\_\_\_

- 3B. For Significant CAQ:
1. Describe Root Cause
  2. This is a Generic CAQ:  Yes  No (If yes, describe)



Prepared by: \_\_\_\_\_ Date \_\_\_\_\_ Supervisor \_\_\_\_\_ Date \_\_\_\_\_

LOP

Item No.	REMARKS
4A.	<p>Finding F718: Use as is. Revise weld symbols to reflect installed condition. See attachment 1.</p> <p>Finding F726: Rework to locate clamp at 748'-0<math>\frac{1}{2}</math>" elevation. Reinspect and document support in accordance with QCP 4.23-3 and QCP 4.23-8.</p> <p>Finding F736: Use as is. Revise drawing to reflect installed condition as identified on attachment 2.</p> <p>Finding F772: Use as is. Revise drawing to reflect installed condition as identified on attachments 3 and 4.</p> <p>Finding F776: Rework hanger to the current revision of the drawing. Reinspect and document support in accordance with QCP 1.14, QCP 1.42-2, and the QCP 4.23 series.</p> <p>Finding F704: Use as is. The distortion is not in the vicinity of the weld between tube and "W" section; it is in the vicinity of the weld between the "W4" brace and "W4" vertical member.</p> <p>Finding F742: Rework hanger in accordance with FCR H-8382. As a result of site inspection, it has been concluded that the 6'-9<math>\frac{1}{2}</math>" dimension is correct. Reinspect and document support in accordance with the QCP 4.23 series.</p>

Nuclear Project: WATTS BAR  
NUCLEAR PLANTNONCONFORMING CONDITION REPORT  
CONTINUATION PAGE

NCR: 4455R R0

6524

4A. Disposition:  Rework  Repair  Use-As-Is  Reject  Other  
(Check Block and Detail Below)

See continuation sheet for recommended disposition.

4B. Action Required to Prevent Recurrence: (For Significant CAQ's Only)

4C. Date for Completion of all actions to close NCR (For Significant CAQ's only) \_\_\_\_\_

Recommended By R. Chambers Date 11-12-82  
Thomas R. Brown 11/17/82

5.  Approved:  As Detailed in 4 above  Other (See Continuation Page)

Referred to Design Project Organization (DPO): DPO Coordination Contact Doug Shaffer

Construction Engineer Ed Burke Date 11-17-82

6. Concurrence of Designated QA Reviewer for Action Required to Prevent Recurrence \_\_\_\_\_ Date \_\_\_\_\_

7.  Approved:  As Detailed in 4 above  Other (See Continuation Page)

Design Project Organization: g. D. Collins Date 6-9-83

See memo from JCS to GW dated 6/10/83 (WBP 830610 020)

See Memo JCC TO  
GW MEDS  
(Attached) for  
signature

8. Approved Disposition Completed, and if applicable, Item released from Nonconforming Status

Responsible Individual \_\_\_\_\_ Date \_\_\_\_\_ Approved by \_\_\_\_\_ Date \_\_\_\_\_

9. NCR Closed (Includes completion of action required to prevent recurrence for significant NCR's)

Construction Engineer \_\_\_\_\_ Date \_\_\_\_\_

10. Reviewed and Accepted By:

\_\_\_\_\_  
Authorized Nuclear Inspector Date

11. Distribution:

- Site QA Records File
- Construction Engineer
- CONST QA Branch
- QA Manager, OEDC
- MEDS
- Design Project Organization
- EN DES NEB - Codes, Standards,  
and Materials Section (Code Items Only)

**L. J. COONEY W6D224**  
NRC Resident Inspector  
(Significant NCR's Only)  
ANI (Code Items Only)  
EN DES NEB-NLS  
(Significant NCR's Only)  
NSRS (Significant NCR's Or



# ENGINEERING CHANGE NOTICE

COVER SHEET

SWP 83 0314 506

(BEFORE ISSUANCE OF OPERATING LICENSE)

TENNESSEE VALLEY AUTHORITY  
DIVISION OF ENGINEERING DESIGN

ECN NO. 3511

To: Construction Project Manager Watts Bar Nuclear Plant, Spring City, TN

From: Design Project Manager

SWP 204 GB-K

DATE MAR 14 1983

Budget Item: 211

Was IJ Analysis Required: Yes  No

G.L. PENNINGTON

SWP WMG-2

J.J. Nash

Prepared by

Section

Section Leader

Project Engineer

Released:

Design Project Manager

3/9/83

Date

SCOPE

Project WATTS BAR NUCLEAR PLANT

Affected Unit(s) 1

System or Feature AUXILIARY FEEDWATER - SYS 3B (NCR WBN SWP 8301, WBN SWP 8305, WBN SWP 8307, WBN SWP 8372, WBN SWP 8307 FINDINGS)

Reference & Description of Change ENDES CHANGES, EXCEPT ELECTRICAL, DUE TO BLACK AND VEATCH INDEPENDENT REVIEW FINDINGS. REF NEB 82 1006 220 (ATTACH 1)

DRAWINGS OR B/M'S INVOLVED: Yes or No Date Branch Data Sheet Available

(Data Sheets Required)

ENGINEERING SUPPORT BRANCHES

Civil YES  
Electrical NO  
Mechanical NO  
Nuclear NO

NUCLEAR PROJECTS DESIGN GROUPS

Civil 1,2 YES  
Electrical 4 YES  
Mech 2 YES

FOSSIL, HYDRO & SPECIAL PROJECTS DESIGN

SPECIAL DESIGN PROJECTS NO  
ARCHITECTURAL SUPPORT BRANCH NO

ENGINEERING SUPPORT BRANCHES Approval Required	Yes or No <u>YES</u>
ECN is ready for branch review:	
<u>R.W. Tolson</u> for Design Project Manager	<u>2-9-83</u> Date
Approved:	
<u>R.O. Barnett</u> ENS CIVIL BR. CHIEF	<u>2/23/83</u> Date
<u>NA/MB</u> ENS ELECTRICAL BR. CHIEF	 Date
<u>C.D. Davidson for</u> ENS MECHANICAL BR. CHIEF	<u>2-24-83</u> Date
<u>J.J. Wilder for</u> Chief Nuclear Engineer	<u>3-7-83</u> Date

Required for PSAR or FSAR YES Yes or No VAB  
 Required for Preoperational Test: YES NO YES 3-7-83  
 If Yes, Test No. FWA 22  
 Vendor Backcharges Involved NO  
 Seismic Analysis Required YES  
 Nonconformance Report Required YES  
 QA Applies YES  
 Security System Modified NO  
 Vendor(s) involved: NO

PHYSICAL WORK MUST BE DONE BEFORE:

	Pre-Op Test	1st Fuel Load	1% Therm Power	Comm'l Oper'n	1st Refuel
Unit <u>1</u>		✓			
Unit(s)					

CC (Attachments): 4 - Yes (6)

CHIEF, ARCHITECTURAL SUPPORT BRANCH, W0C126 C-K  
 CHIEF, CIVIL ENGINEERING BRANCH, W0D228 C-K  
 CHIEF, ELECTRICAL ENGINEERING BRANCH, W0C126 C-K  
 CHIEF, MECHANICAL ENGINEERING BRANCH, W7C126 C-K  
 CHIEF, NUCLEAR ENGINEER, W10C126 C-K  
 CHIEF, QUALITY ASSURANCE BRANCH, 3100 N10-K

CHIEF, COST PLANNING AND CONTROL STAFF, W12C78 C-E  
 CHIEF, SPECIAL DESIGN PROJECTS, W2D228 C-K  
 MANAGER OF CONSTRUCTION, E7024 C-K  
 PLANT SUPERINTENDENT  
 HEDS, W0063 C-K

653  
UJJK

654

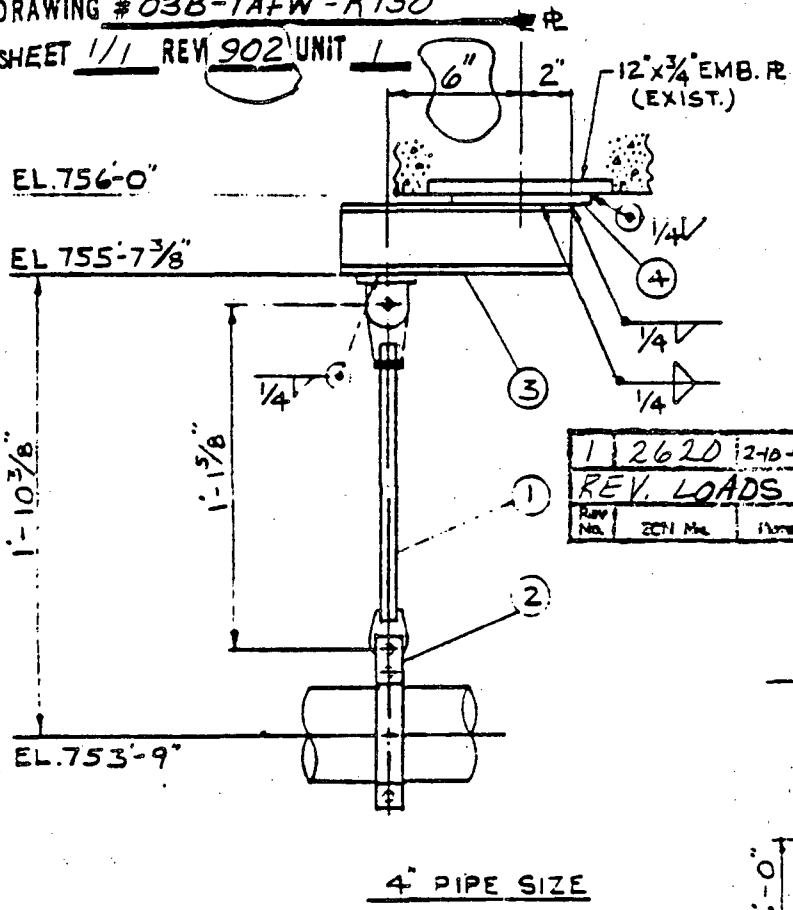
FORM BP 1-13-75

ITEM	QUAN.	PART NO	SIZE	DESCRIPTION	WT			
1	2000	R/O	-1.5 - 1-15/8"		11			
2	2600-1.5	4"	PIPE CLAMP					
30	-	W4	x 13 x 1-1"		BY TVA			
40	-	6"	x 1/2" R x 6" LG.		BY TVA			
-	-	SDE	(2) HRS					
-	-	SDD						
-	-	SB	210-3 FOR ITEM 1 (PIN TO PIN)					
-	-	EZP						
-	-	B&T						

SEE TVA DWG. 47A050-1A  
 PROJECT WBNP CONTRACT 74C38-83015  
 DRAWING # 03B-1AFW-R150  
 SHEET 1/1 REV 902 UNIT 1

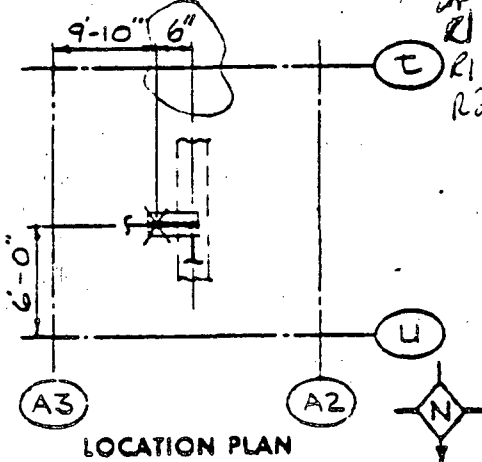
ISO. 47W427-202-R(6)  
 JOINT: 324  
 DIRECTION: Y  
 TYPE: RR  
 DESIGN LOAD: 430 #

INVOICE CODE



1	2620	2-10-81	DR PLB	JFP/WJS	JU
REV. LOADS PER ECN					
Rev No.	ECN No.	Date	Drawn	Checked	App'd

LOAD: \_\_\_\_\_



ELEV. LOOKING SOUTH

TVA R900 = VENDOR R0  
 DRAVO ISO#E-2879-IC-9-1  
 NUCLEAR  
 T. V. A. CLASS C

902	3511	8/10/81	8/10/81	8/10/81	8/10/81	8/10/81	8/10/81	8/10/81	8/10/81	8/10/81
Rev	ECN No.	Date	Drawn	Checked	Suppl	Engnr	Insp	Subm	Instm	App'd
REVISED PER ECN, B&V F736										

BY	CHK APP	DRAVO CORPORATION P. O. # E-2879- T. V. A. CONTRACT # 74C38-83015 WATTS BAR NUCLEAR PLANT - UNIT # 1	BERGEN-PATERSON PIPESUPPORT CORP. PIPING SYSTEM AUX. FEEDWATER REF. PIPING DWGS. 47W427-3-5 JOB NO 3604 MARK & DWG. NO. 03B-1AFW-R150	STRUCTURAL 48N1225-2- FAB NO. 09 NO REQ'D	SHEET 1 of 1 REV. 902
DATE	DATE	DATE 9-30-76			

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

ref: 10520DIN4203

Finding Number 1F1713171

Comments pertinent to finding:

Hanger number 03B-1AFW-R159 was reworked according to  
NCR number 4454R attached is a copy of  
inspection documentation, accountability print-out and NCR number  
4454R.

Robert C. McKay  
Program Team Member

11/2/83  
Date

Thomas E. McConnell  
OEDC Program Manager

11/9/83  
Date

E. Gray Beasley  
Chairman, OEDC Policy Committee

11/8/83  
Date

Black & Veatch *Inspection records indicate satisfactory installation of  
missing large rod*

Classification: Type R Category A

W. J. Fitzmaurice  
Black & Veatch Project Manager

11/16/83  
Date

R. E. Blawdell  
Black & Veatch Senior Review Team Chairman

12/1/83  
Date

650

WORMHOLE VISUAL INSPECTION

SUPPORT ID 1003B-03B-IAFW-R159

Reference Drawing 03B-IAFW-R159 Rev 1  
Accepted (Check)

Unique Identifier

Fabrication

Installation

Cap: Top NA Bottom NA Lateral NA

Stainless Pipe Protection NA

Grout NA

Integral Attachments NA

Insulation Saddle or Edge NA

Stainless Pipe Cleanliness NA

Bolted Connections

Cotter Pins

Remarks: Reinspection of stent only per.

NCR 4454 R7, WE#-6165, \*

Inspected in accordance with  
Rev 2 of QCP-4.23-8

Inspector J. Blumenthal Date 2-12-83

INSP. 2-10-83

\* welded to exist. HGR.

08B

UNIQUE IDENTIFIER																							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	0	0	3	B	-	0	3	B	-	I	A	F	W	-	R	1	5	9					

QC&R  
MAR 04 1983

IDENTIFIER	CL NFR	PKG/PLN DRAWING	REV DESCRIPTION	STAT	TEST LTR	SEQUENCE OF TESTS
1003B-03B-1AFW-4132	0003-2	1-47W421-201	001 H-7279			* HD 01A* 04A* 08A* 09A*
1003B-03B-1AFW-4133	0003-2	1-47W421-201	001 H-7279			* HD 01A* 04A* 08A* 09A*
1003B-03B-1AFW-4134	0003-2	1-47W421-201	001			* HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4135	0003-2	95 28 1-47W421-201 /14H H/C	001 H-9714 NCR 4645			* HA 010* 02B* 03B* 04B* 08B* 09B*
1003B-03B-1AFW-4136	0003-2	1-47W421-201	001			* HD 03A* 04A* 08A*
1003B-03B-1AFW-4137	0003-2	1-47W421-201	002			* HA 02A* 03A* 04B* 08C* 09A*
1003B-03B-1AFW-4138	0003-2	1-47W421-201 /15H	001			* HD 03A* 04A* 08A*
1003B-03B-1AFW-4139	0003-2	1-47W421-201 /16H H/C	001 H-7656EN-6938			* HD 03B* 04B* 08B*
1003B-03B-1AFW-4140	0003-2	1-47W421-201 /17H H/C	001 H-7656EN-6938			* HD 03B* 04B* 08B*
1003B-03B-1AFW-4141	1	1-47W421-200	903	VOID		* HB 08A*
1003B-03B-1AFW-4142	0003-2	1-47W421-201 /18H H/C	001 H-7844			* HA 01B* 02B* 03B* 04B* 08B* 09A*
1003B-03B-1AFW-4143	0003-2	1-47W421-201 /19H H/C	001 H-87927H-7346			* HD 03A* 04A* 08A*
1003B-03B-1AFW-4144	0003-2	1-47W421-202	001 H-7787			* HA 01A* 02A* 03A* 04A* 08A*
1003B-03B-1AFW-4145	0003-2	1-47W421-202	001 NCR 4454R R1			* HA 01A* 02A* 03A* 04A* 08B* 09A*
1003B-03B-1AFW-4146	0003-2	1-47W421-202	001			* HD 01A* 04A* 08A* 09A*
1003B-03B-1AFW-4147	0003-2	1-47W421-202	004 4622K			* HA 01A* 02B* 03B* 04A* 08B*
1003B-03B-1AFW-4148	0003-2	1-47W421-202	001			* HB 02A* 03A* 04A* 08B* 09A*
1003B-03B-1AFW-4149	0003-2	1-47W421-202	001			* HB 02A* 03C* 04A* 08C* 09A*
1003B-03B-1AFW-4150	0003-2	1-47W421-202	001			* HB 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4151	0003-2	1-47W421-202	001			* HA 01A* 02A* 03A* 04A* 08B* 09A*
1003B-03B-1AFW-4152	0003-2	1-47W421-202	001			* HD 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4153	0003-2	1-47W421-202	001			* HB 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4154	0003-2	1-47W421-202	001			* HB 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4155	0003-2	1-47W421-202	001 H-4811			* HB 02A* 03A* 04A* 08A*
1003B-03B-1AFW-4156	0003-2	1-47W421-202	001 H-4811			* HA 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4157	0003-2	1-47W421-202	001			* HB 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4158	0003-2	1-47W421-202	001			* HB 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4159	1	1-47W421-202	001	VOID		* HE 08B*
1003B-03B-1AFW-4160	0003-2	1-47W421-202	001			* HB 02A* 03A* 04A* 08A*
1003B-03B-1AFW-4161	0003-2	1-47W421-202	001 H-5944			* HB 02A* 03A* 04A* 08A*
1003B-03B-1AFW-4162	0003-2	1-47W421-202	001 H-6737/1579/4173/5935			* HA 010* 02B* 03B* 04B* 08B*
1003B-03B-1AFW-4163	0003-2	1-47W421-202	002			* HB 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4164	0003-2	1-47W421-202	001			* HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4165	0003-2	1-47W421-202	001 H-4956			* HA 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4166	0003-2	1-47W421-202	001 H-6990/3838			* HB 02A* 03A* 04A* 08B* 09A*
1003B-03B-1AFW-4167	0003-2	1-47W421-202	002			* HB 02A* 03A* 04A* 08B* 09A*
1003B-03B-1AFW-4168	0003-2	1-47W421-202	002			* HA 01A* 02A* 03B* 04A* 08B* 09A*
1003B-03B-1AFW-4169	0003-2	1-47W421-202	001			* HB 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4170	0003-2	70 28 1-47W421-202	001			* HA 01A* 02A* 03B* 04B* 08B* 09A*

DINSO19 F-737

658

WBN 830122. 141

DIVISION OF CONSTRUCTION  
NONCONFORMING CONDITION REPORT

1A. Item, of CAQ Description, and Apparent Cause

The identification of the following nonconforming conditions of previously inspected and documented pipe supports resulted from the System 03 review by Black and Veatch:

Finding F 734: Hanger 03B-IAFW-R147 has cotter pins missing at lower end attachment;

Finding F 773: Hanger 03B-IAFW-R184 has cotter pins missing;

Finding F 774: Hanger 03B-IAFW-R186 has a cotter pin missing; and

Finding F 737: Hanger 03B-IAFW-R159 lacks a hanger rod.

See continuation sheet for revised item description.

1B. NUMBER 4454R Rev. 1

1C. REFERENCE NUMBER N/A

1D. PLANT WBNP

1E. UNIT 1

1F. SYSTEM 03

1G. ASME CODE Yes  No

1H. CONTRACTOR N/A

1I. INITIATING UNIT HFI

1J. Vendor Name N/A Address, City, and State N/A

2. Initiator Randolph Chambers Date 12/20/82 Approver Thomas R. Palmer Date 12/20/82

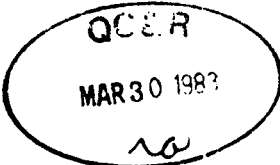
3A. Significant CAQ:  Yes  No Construction Engineer Ed Burke Date 12-21-82

Signature \_\_\_\_\_  
Authorization to Upgrade Non-Significant  
If Significant, NEB-NLS Contact

3B. For Significant CAQ

1. Describe Root Cause

2. This is a Generic CAQ  Yes  No (If yes, describe)



Prepared by

4A. Disposition of Material (Check Block and Detail as Applicable)

Finding F 734: Replace cotter pins, reinspect, and document support in accordance with QCP 4.23-8.

Finding F 773: Replace cotter pins, reinspect, and document support in accordance with QCP 4.23-8.

Finding F 774: Replace cotter pins, reinspect, and document support in accordance with QCP 4.23-8.

Finding F 737: Replace hanger rod, reinspect, and document support in accordance with QCP 4.23-3 and QCP 4.23-8.

See continuation sheet for revised disposition.

4B. Action Required to Prevent Recurrence (For Significant NCR's Only)

4C. Date for Completion of all actions to close NCR (For Significant NCR's Only)

Recommended By: *Randolph Chambers* Date: *12/20/82*  
*Thomas R. Brown* *12/20/82*

5.  Approved:  As Detailed in 4 above  Other (See Continuation Page)

Referred to Design Project Organization (DPO) UIC Coordination Control: *316*

Construction Engineer: *Ed Bucher* *12-27-82*

6. Concurrence of Designated QA Reviewer for Action Required to Prevent Recurrence Date

7.  Approved:  As Detailed in 4 above  Other (See Continuation Page)

Design Project Organization: \_\_\_\_\_ Date: \_\_\_\_\_

8. Approved Disposition Completed, and if applicable, Item Released from Non-conforming Status

Responsible Individual: *Carol Alley* Date: *3-28-83* Approved By: *James P. Hester* Date: *3-28-83*

9. NCR Closed (Includes completion of action required to prevent recurrence for significant NCR's)

Construction Engineer: *Thomas R. Brown* Date: *3-29-83*

10. Reviewed and Accepted By: \_\_\_\_\_  
Authorized Nuclear Inspector Date

11. Distribution
- Site QA Records File
  - Construction Engineer
  - CONST QA Branch
  - QA Manager, OIUC
  - MEDS
  - Design Project Organization
  - EN DES NEB - Codes, Standards, and Materials Section (Code Items Only)
  - NRC Resident Inspector (Significant NCR's Only)
  - ANI (Code Items Only)
  - EN DES NEB NLS (Significant NCR's Only)
  - NRS (Significant NCR's Only)

WBN '830350 122

600

Item No	REMARKS
1. A.	Revised Item and CAQ description: Add finding F 749: Hanger 03B-1AFW-R112 has item 1 (RSSA) missing.
4. A.	Revised disposition: Add Finding F 749: Replace item 1, reinspect, and document in accordance with QCP 4.23-3 and QCP 4.23-8.



WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F/7/4/1/

0

Comments pertinent to finding:

Support 03B-1AFW-R233 R902 will be revised to remove the 1'-11" dimension under ECN 3511. This dimension is no longer needed per incorporation of FCR H-8211 which removed part of the support structure. The support is now attached directly to the wall and the dimension is not needed. This work is scheduled to be completed by 12/9/83.

References: ECN 3511  
03B-1AFW-R233 R902

*EH Cole*  
\_\_\_\_\_  
Program Team Member

11/17/83  
Date

*Thomas E McConnell*  
\_\_\_\_\_  
OEDC Program Manager

11/18/83  
Date

*ms Martin for E H Basley*  
\_\_\_\_\_  
Chairman, OEDC Policy Committee

11/21/83  
Date

*The attached data indicates that the Range was redesigned in-part since the BSV review. The TVA Certification program should assume completion of the work*

Classification: Type \_\_\_\_\_ R Category A

*W.J. Filzianas*  
\_\_\_\_\_  
Black & Veatch Project Manager

12/21/83  
Date

*R.E. Blawdell*  
\_\_\_\_\_  
Black & Veatch Senior Review Team Chairman

12/27/83  
Date

# ENGINEERING CHANGE NOTICE

COVER SHEET

SWP 83 0314 506

(BEFORE ISSUANCE OF OPERATING LICENSE)

TENNESSEE VALLEY AUTHORITY  
DIVISION OF ENGINEERING DESIGN

ECN NO. 3511

To: Construction Project Manager Watts Bar Nuclear Plant, Spring City, TN

From: Design Project Manager

SWP 204 GB-K

DATE MAR 14 1983

Budget Item: 211

Was IJ Analysis Required: Yes  No

G.L. PENNINGTON

SWP WIMG-2

J.J. Nash  
Section Leader

Prepared by

Section

Date

1/16/83  
Project Engineer

Released:

J.C. Stordick  
Design Project Manager

3/9/83  
Date

SCOPE

Project WATTS BAR NUCLEAR PLANT

Affected Unit(s) 1

System or Feature AUXILIARY FEEDWATER - SYS 38 (NCR WBN SWP 8301, WBN SWP 8309, WBN SWP 8302)

Reference & Description of Change ENDES CHANGES, EXCEPT ELECTRICAL DUE TO BLACK AND

VEATCH INDEPENDENT REVIEW FINDINGS. REF NEB 82 1006 220 (ATTACH 1)

DRAWINGS OR B/M'S INVOLVED: Yes or No Date Branch Data Sheet Available

ENGINEERING SUPPORT BRANCHES

Civil YES  
Electrical NO  
Mechanical NO  
Nuclear NO

NUCLEAR PROJECTS DESIGN GROUPS

Civil 1,2 YES  
Electrical 4 YES  
Mech 2 YES

FOSSIL, HYDRO & SPECIAL PROJECTS DESIGN

SPECIAL DESIGN PROJECTS NO  
ARCHITECTURAL SUPPORT BRANCH NO

ENGINEERING SUPPORT BRANCHES Approval Required

Yes or No YES

ECN is ready for branch review:

R.W. Tolla  
Design Project Manager  
2-9-83  
Date

Approved:

R.O. Barnette  
ENB CIVIL BR. CHIEF  
2/23/83  
Date

NA/MS  
Date

C.D. Davidson for  
ENB ELECTRICAL BR. CHIEF  
2-24-83  
Date

A.J. Wilder for  
ENB MECHANICAL BR. CHIEF  
3-7-83  
Date

Required for PSAR or FSAR

Required for Preoperational Test:

If Yes, Test No.

Vendor Backcharges Involved

Seismic Analysis Required

Nonconformance Report Required

QA Applies

Security System Modified

Vendor(s) involved:

Yes or No NO YES 3-7-83  
YES NO 3-7-83  
NO  
YES  
YES  
NO  
NO

PHYSICAL WORK MUST BE DONE BEFORE:

	Pre-Op Test	1st Fuel Load	1% Therm Power	Comm'l Oper'n	1st Refuel
Unit <u>1</u>		<input checked="" type="checkbox"/>			
Unit(s)					

CC (Attachments): No - Yes (5)

CHIEF, ARCHITECTURAL SUPPORT BRANCH, W4C126 C-E  
CHIEF, CIVIL ENGINEERING BRANCH, W9D224 C-E  
CHIEF, ELECTRICAL ENGINEERING BRANCH, W8C126 C-E  
CHIEF, MECHANICAL ENGINEERING BRANCH, W7C126 C-E  
CHIEF, NUCLEAR ENGINEER, W10C126 C-E  
CHIEF, QUALITY ASSURANCE BRANCH, 5100 M18-E

CHIEF, COST PLANNING AND CONTROL STAFF, W12C74 C-E  
CHIEF, SPECIAL DESIGN PROJECTS, W20224 C-E  
MANAGER OF CONSTRUCTION, E7824 C-E  
PLANT SUPERINTENDENT  
NEDS, W6069 C-E

ITEM	QUAN.	PART NO.	SIZE	DESCRIPTION	WGT.
1	1	2200	1.5 - 6'-1 1/2" - RSGR		
1	1	210-15	2" PIPE CLAMP		
1	1		PL 1/2" X 8" X 0'-8"		
1	4		1/2" CONC FASTENERS		
-	1	SDE	( 3 ) HRS.		
-	1	SPD			
-	1	SB			
-	1	EZP	210-3 FOR STRUT, ITEM #1 (PIN TO PIN)		
-	1	BET			

SEE TVA DWG. 47A050-141A

1, 2620 2-10-81 DA BLR JJP (WJL) JY 24  
REV. LOADS PER ECN

ISO 47W427-215-RD

JOINT: 009

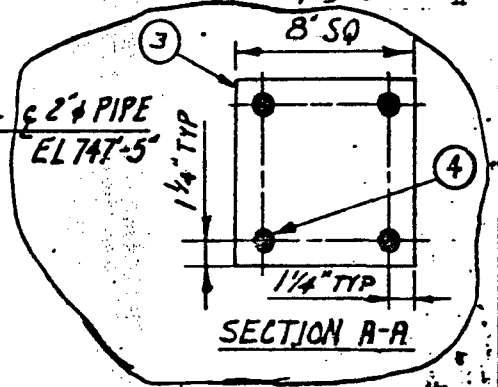
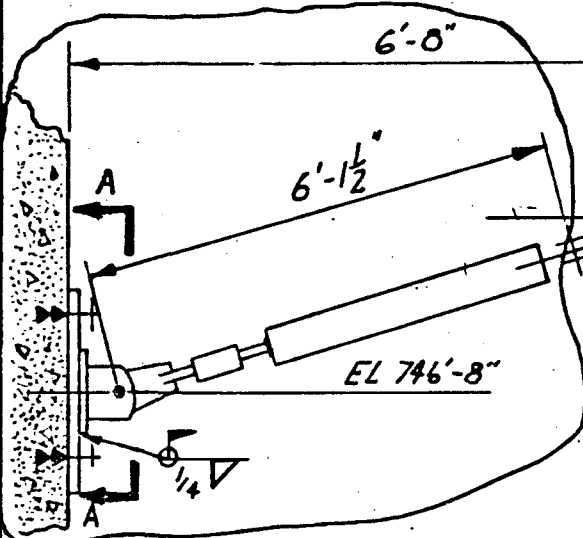
DIRECTION: SX

TYPE: RR

DESIGN LOAD: 740 #

790 #

INVOICE CODE



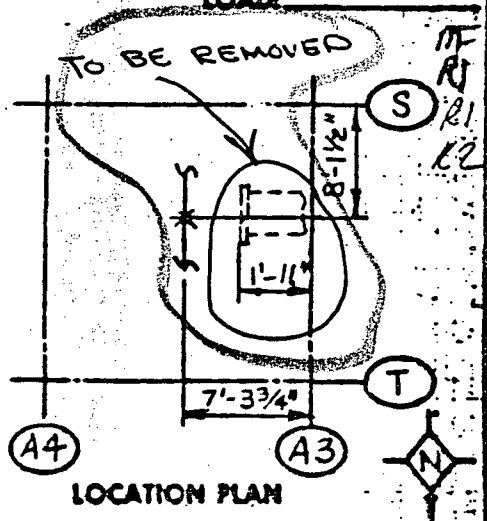
PROJECT W&P CONTRACT 74C38-83015

DRAWING #03B-1AFW-R233

SHEET 1/1 REV 902 UNIT 1

2" PIPE SIZE

ELEV. LOOKING NORTH



NUCLEAR  
T.V.A. CLASS C

DRAVO ISO E-2879-IC-16-1

DRAVO CORPORATION P.O. #E-2879-

T.V.A. CONTRACT #74C38-83015

WATTS BAR NUCLEAR PLANT-UNIT #1

BERGEN-PATERSON PIPESUPPORT CORR.

SYSTEM AUX. FEEDWATER

REP. PIPING STRUCTURAL

DWGS. 47W427-3-10 48N1210-723

JOB NO. 3604 FAB NO. 009

MARK 8

DWG. NO. 03B-1AFW-R233

REV EP DW SD SM DATE 1-31-73

KEY PER PER N-8211, CALC, MEDS SWP 82122 149

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number 1E1714121

Comments pertinent to finding:

At the Black and Veatch inspection, construction of hanger number 47A427-2-2A was not complete. The hanger was being tracked as incomplete by the construction accountability program. Installation of the hanger has now been completed in accordance with the existing Quality Assurance Program and tracked with the site accountability program. Attached is a copy of any additional field change requests, Quality Assurance inspection documentation, and accountability print out.

Rob C. McKay  
Program Team Member  
11/2/83  
Date

Thomas E. McConnell  
OEDC Program Manager  
11/9/83  
Date

E. Gray Beasley  
Chairman, OEDC Policy Committee  
11/21/83  
Date

Black & Veatch *Hanger has been re-analyzed and adjustments made in the design. The attached inspection record indicates that required action is complete.*

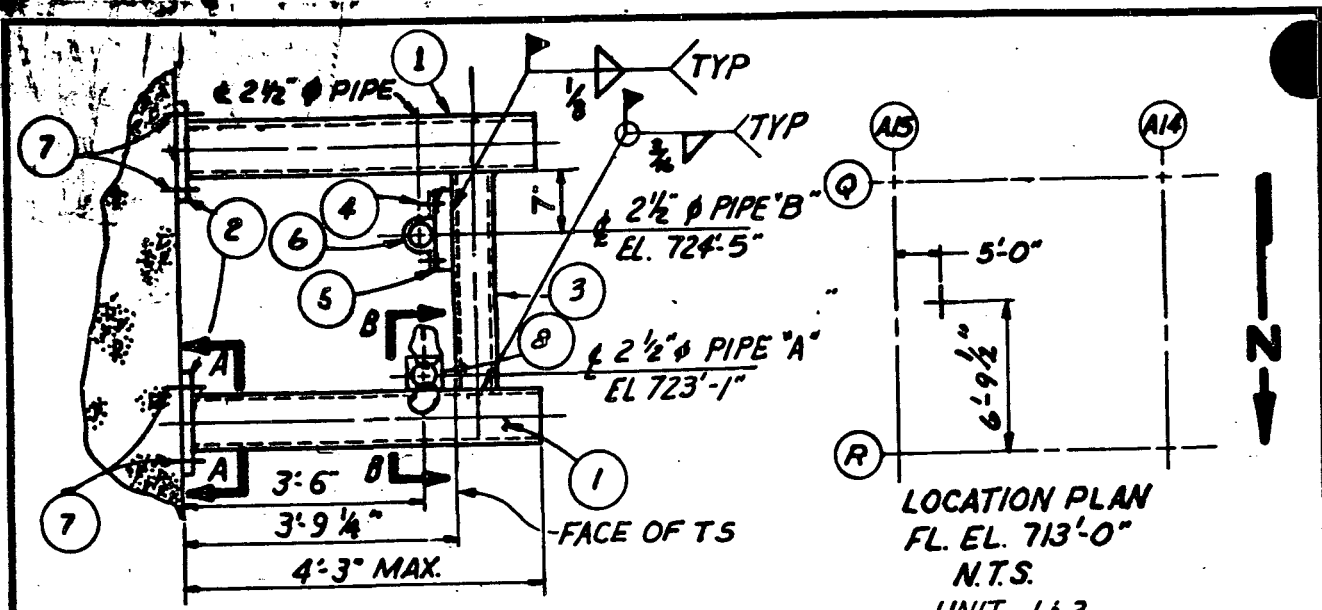
Classification: Type R Category A

W. J. Zidzeman  
Black & Veatch Project Manager  
12/8/83  
Date

R. E. Blairdell  
Black & Veatch Senior Review Team Chairman  
12/19/83  
Date

005

R3  
#10368



ELEVATION  
LOOKING SOUTH

LOCATION PLAN  
FL. EL. 713'-0"  
N.T.S.  
UNIT 1+2

NOTES:

- FOR GENERAL NOTES, SEE 47A427-1.
  - ALTERNATE ANAL. SSE DESIGN LOADS (PIPE B)  
R<sub>y</sub> = 181 #, R<sub>y</sub> = 366 #; RA 360 #
- ALT ANALYSIS PIPE "A"  
PROB NO: N3-3B-RO1A  
JT. NO: 510  
UN. NOR. LOADS:  
R<sub>H</sub> = 181 #  
R<sub>V</sub> = 366 #

COMPANION DWG # 47A427-2-2A

ITEM	QTY	MATERIAL DESCRIPTION FOR ONE SUPPORT
8	1	BENT PL 3/8 x 2 x LG AS REQ'D
7	8	5/8" Ø BOLT ANCHOR ASSEMBLY
6	1	2 1/2" STD PIPE STRAP UNISTRUT P255B-25
5	1	PI000 UNISTRUT x 7" LG.
4	2	3/8" Ø BOLT W/SPRING NUT (UNISTRUT)
3	1	T.S. 4 x 4 x 1/4 x LENGTH AS REQ'D
2	2	PL 1/2 x 11" x 0'-11"
1	2	T.S. 5 x 5 x 3/8 x LENGTH AS REQ'D

INFORMATION ONLY

1 SI 4218V JL JL EL. 713' TO 714' (NO CALCS.)  
REV 3/11/88 FCR H-7245 (NO CALCS.)

3	3213	5-9-83	EL. 713'	EL. 714'	EL. 715'	EL. 716'	EL. 717'	EL. 718'	EL. 719'	EL. 720'	EL. 721'	EL. 722'	EL. 723'	EL. 724'	EL. 725'	EL. 726'	EL. 727'	EL. 728'	EL. 729'	EL. 730'
REV. PER ECN																				
2	SI	1-24-83	REV	PER	ECN															
REV PER FCR H-8382 (CAL SWP 82 1217 013)																				
REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBS	RECH	APPO									
DSGN	P. J. PETTIE						INSP													
DRWN	D. L. LEADRICK						ENGINEER						J. R. BENTLEY							
CHKD	M. Dale																			
SUPV	L. R. CARSON																			

SEISMIC CATEGORY I STRUCTURES

MECHANICAL  
SEISMIC SUPPORT FOR  
AUX. FEEDWATER PIPING  
SUPPORT DETAIL 2-2

WATTS BAR NUCLEAR PLANT  
TENNESSEE VALLEY AUTHORITY  
DIVISION OF ENGINEERING DESIGN

DESIGNED BY: [Signature]  
RECOMMENDED BY: [Signature]  
APPROVED BY: [Signature]

KNOXVILLE 1223-B SUM 47A427-2-2

RECORD DRAWING AS CONSTRUCTED

R1  
R2  
R3

R3

606

WBNP-QCP-4.23-8 TEST NO. 8  
Attachment A (LOP)

SUPPORT FINAL INSPECTION

Support ID

1003-A427-2-2A

Reference Drawing

47A427-2-2 Rev. 2

Accepted  
(Check)

Unique Identifier ✓

Fabrication ✓

Installation ✓

	Top	Bottom	Lateral
Gaps	<u>1/32</u>	<u>N/A</u>	<u>3/32</u>

Stainless Pipe Protection N/A

Grout N/A

Integral Attachments N/A

Insulation Saddle or Lugs ✓

Stainless Pipe Cleanliness N/A

Bolted Connections N/A

Cotter Pins 2-21-83 N/A

Remarks: FOR H0387 NCR 44552

Inspected in accordance with WBM 2-25-83  
Rev. 2 of QCP-4.23-8. ✓

W. [Signature] 2-16-83  
Inspector Date

m/s 47A427-2-2B

PROGRAM: 155320  
DATE: 8 20 68

WARP HANGER INFORMATION AND TRACKING  
REPORTS FULL-FILE BY SYSTEM HANGER ID <BREAK UNI SYSTEM>

SYSTEM: 033

PAGE 52

IDENTIFIER	CL	IFER	PAG/PLN	DRAWING	REV	DESCRIPTION	STAY	TEST	SEQ	SEQUENCE OF TESTS
1003-A427-2-11A	1003-2			1-47H421-2	001	M-8291	0	HA	01A	02A 03A 04A 05A
1003-A427-2-11B	1003-00	J003	072	1-47H421-2			03	HA	03A	04A 05A 06A 07A
1003-A427-2-12A	1003-2			1-47H421-2	001	M-8247	0	HA	01A	02A 03A 04A 05A
1003-A427-2-12B	1003-00	J003	002	1-47H421-2			03	HA	03A	04A 05A 06A 07A
1003-A427-2-13	1003-2	9752		1-47H421-2	001	SP	0	HA	01A	02A 03A 04A 05A
1003-A427-2-15	1003-2			1-47H421-2	001	M-8243 SP	0	HA	01A	02A 03A 04A 05A
1003-A427-2-15	1003-2	9752		1-47H421-2	001	M-8243 SP	0	HA	01A	02A 03A 04A 05A
1003-A427-2-16	1003-2			1-47H421-2	000	M-8243	0	HA	01A	02A 03A 04A 05A
1003-A427-2-17	1003-2			1-47H421-2	000	M-8135	0	HA	01A	02A 03A 04A 05A
1003-A427-2-18	1003-2			1-47H421-2	000	M-8278	0	HA	01A	02A 03A 04A 05A
				/01HD						
1003-A427-2-19	1003-2			1-47H421-2	000		0	HA	01A	02A 03A 04A 05A
1003-A427-2-20	1003-00			1-47H421-2	003	4455R	0	HA	01A	02A 03A 04A 05A
				/03H						
1003-A427-2-21	1003-2			1-47H421-2	000		0	HA	01A	02A 03A 04A 05A
1003-A427-2-21	1003-2			1-47H421-2	001		0	HA	01A	02A 03A 04A 05A
				/03H						
1003-A427-2-22	1003-2	9752		1-47H421-2	001	SP	0	HA	01A	02A 03A 04A 05A
1003-A427-2-23	1003-2			1-47H421-2	000		0	HA	01A	02A 03A 04A 05A
1003-A427-2-24	1003-2			1-47H421-2	000		0	HA	01A	02A 03A 04A 05A
1003-A427-2-25	1003-2	9752		1-47H421-2	001	SP	0	HA	01A	02A 03A 04A 05A
1003-A427-2-26	1003-2			1-47H421-2	000		0	HA	01A	02A 03A 04A 05A
1003-A427-2-27	1003-2			1-47H421-2	000	M-8276	0	HA	01A	02A 03A 04A 05A
				/09HD						
1003-A427-2-28	1003-2			1-47H421-2	000	M-8268	0	HA	01A	02A 03A 04A 05A
				/09H						
1003-A427-2-29	1003-2	9752		1-47H421-2	002	M-8200 SP	0	HA	01A	02A 03A 04A 05A
1003-A427-2-30	1003-2			1-47H421-2	001	M-8389	0	HA	01A	02A 03A 04A 05A
1003-A427-2-31	1003-00			1-47H421-2	001	M-8309	0	HA	01A	02A 03A 04A 05A
1003-A427-2-32	1003-2			1-47H421-2	000	M-8174	0	HA	01A	02A 03A 04A 05A
1003-A427-2-33	1003-2			1-47H421-2	001		0	HA	01A	02A 03A 04A 05A
1003-A427-2-34	1	9617		2-47H421-20	000	M-9948	0	HA	01A	02A 03A 04A 05A
1003-A427-2-35	1	9617		2-47H421-20	000	M-9948	0	HA	01A	02A 03A 04A 05A
1003-A427-2-36	1	9617		1-47H421-20	000	M-9913	0	HA	01A	02A 03A 04A 05A
1003-A427-2-37	1003-2			1-47H421-2	000	M-8588	0	HA	01A	02A 03A 04A 05A

DIN5160 F-742

668

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F/7/4/6/

R-PL

Comments pertinent to finding:

Support 47A427-2-28 has been revised and Revision 1 issued per FCR H-8268 on 1/28/83. This revision makes the drawing agree with the as-constructed support. All corrective action is complete.

References: 47A427-2-28  
FCR H-8268

<u>EU Che</u> Program Team Member	<u>11/18/83</u> Date
<u>Thomas E McConnell</u> OEDC Program Manager	<u>11/18/83</u> Date
<u>Ms Martin Lee E. Beasley</u> Chairman, OEDC Policy Committee	<u>11/21/83</u> Date

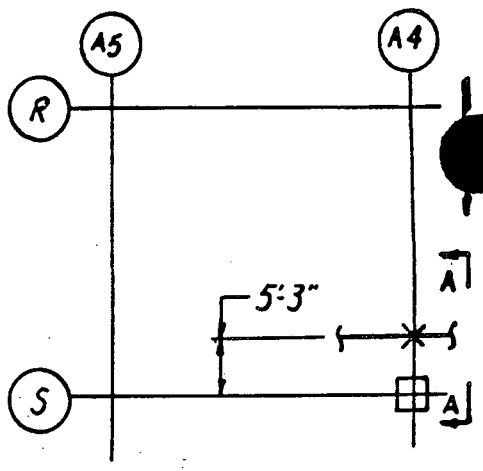
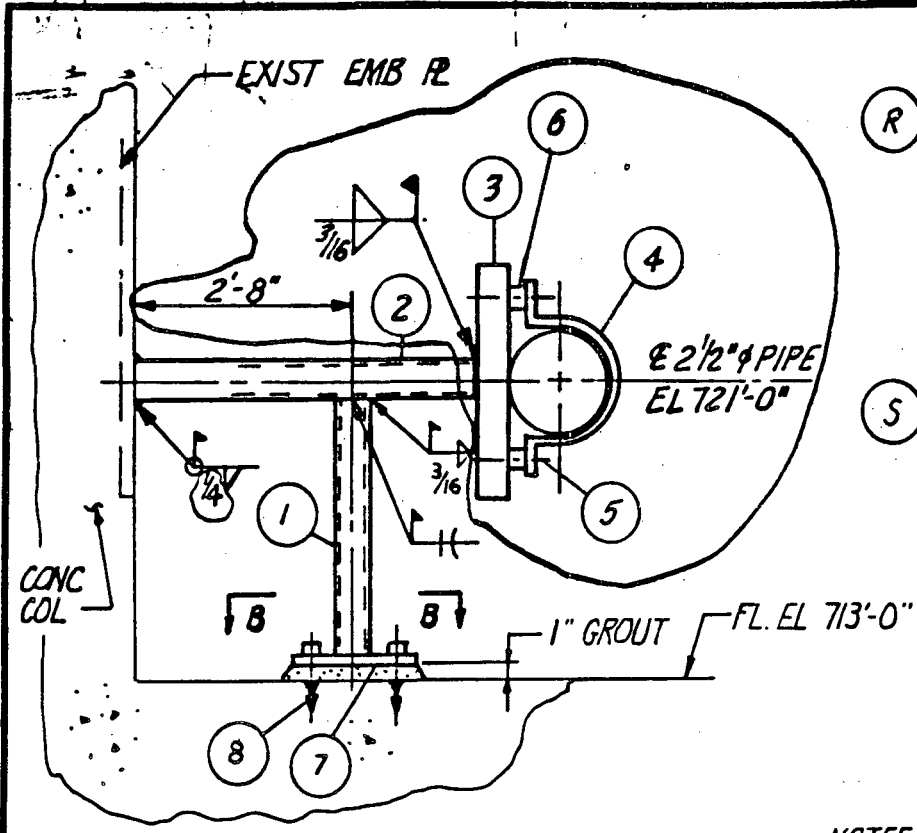
Black & Veatch *The attached documentation supports close out of this item*

Classification: Type \_\_\_\_\_ R Category A

W.J. Zidzuman  
Black & Veatch Project Manager 12/23/83  
Date

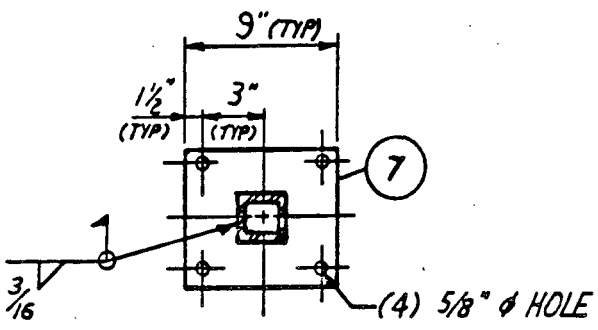
RE Blandell  
Black & Veatch Senior Review Team Chairman 12/27/83  
Date





LOCATION PLAN  
UNIT 1

A-A



B-B

NOTES:  
 1- FOR GENERAL NOTES  
 SEE 47A427-1  
 2. S.S.E. DESIGN LOADS  
 (ALT. ANAL)  
 $R_H = 181 \#$   
 $R_V = 366 \#$

ITEM	QTY	MAT'L DISCRPTION FOR ONE SUPPORT
8	4	1/2" $\phi$ BOLT ANCHOR ASSEMBLY
7	1	PL 1/2" x 9" x 0'-9"
6	2	AMERICAN STANDARD WASHER
5	2	3/8" $\phi$ BOLTS W/NUTS
4	1	UNISTRUT P2558-25 PIPE STRAP
3	1	PL 1/2" x 4" x 0'-7" LG.
2	1	TS 3 x 3 x 1/4 x LG AS REQ
1	1	TS 3 x 3 x 1/4 x LG AS REQ

SEISMIC CATEGORY I STRUCTURES

MECHANICAL  
 SEISMIC SUPPORT FOR  
 AUX FEEDWATER PIPING  
 SUPPORT DETAIL 2-28

REV PER FCR H-8268.CALC, MEDS SWP 82 1222 159

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBV	TECH	APPO	
1	SI	1-28-83	CK	HW	FCY	FCY	MS					
DSGN	M. Dale						INSP					
DRWN	L.A. HAMBY						ENGINEER	J. [Signature]				
CHKD	R.L. [Signature]											
SUPV	L.H. CHACON											

WATTS BAR NUCLEAR PLANT  
 TENNESSEE VALLEY AUTHORITY  
 DIVISION OF ENGINEERING DESIGN

QUALIFIED	RECOMMENDED	APPROVED
[Signature]	[Signature]	[Signature]
KNOXVILLE	222 N. [Signature]	474427-2-28 RI

TENNESSEE VALLEY AUTHORITY  
FIELD CHANGE REQUEST  
REPLY MEMORANDUM

WENP-QCI-1.13 R5 <sup>628</sup>  
Attachment A  
FCR H-8268  
DOC

TO: J. C. Standifer, Sequoyah and Watts Bar Design Projects Manager, 204 GB-K (3)

FROM: Guenter Wadewitz, Project Manager, Watts Bar Nuclear Plant CONST

DATE: WBN '82 0819 317

Attention: J. L. Purkey (Ends ONSITE)

SECTION I - CONST REQUEST

Reason for Change:

Status Point:

System No. 03  
Work Package No. H003F26  
Work Plan No. NIA

- Drawing Discrepancy
- Facilitate Construction
- Additional Design Information
- Prior to Fuel Loading
- After Fuel Loading but prior to Closing Capitalized Accounts
- After Closing Capitalized Accounts for the Entire Plant

Documents Affected 47A427-2-28 R/O

Marked documents required and attached  Yes  No

Document revision required  Yes  No

Change Description: Revise According to ATTACHED SKETCH

Change requested by: Willard A. Snyder (CONST Engineer) <sup>wag</sup> THOMAS R. BROWN (Unit Supervisor) <sup>TJB</sup>

Change approved by: Clyde K. Buck (EN DES Engineer) <sup>ckr</sup> 8/5/82 (Date)

Approval obtained by: \_\_\_\_\_ Telephone \_\_\_\_\_ Memo \_\_\_\_\_ Other  Ends field  
Approved for transmittal to EN DES: Thomas R. Brown (Construction Engineer) Ed Buck (Project Manager)

SWF '83 0208 067

SECTION II - EN DES REPLY/RESOLUTION

FCN No. 51 Date Issued 1/27/83

Drawing Nos: 47A427-2-28R1

Change Complete M. J. [Signature] (EN DES Engineer) [Signature] (Design Project Manager) 1/27/83 (Date)

Original - Return to CONST by EN DES  
Copy 1 - Retained by CONST until original is returned  
Copy 1 - Retained by EN DES  
Copy 1 - Retained by QC&R  
cc: Hanger Inspection Unit  
MDS, 100 UB-K

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEWFinding Number F/7/4/77

0

## Comments pertinent to finding:

47A060-3-3 was revised under ECN 3511, Revision 4, on 3/24/83 to clarify location of stiffener plates on plan and section view 47A060-3-3A R1 shows stiffener plate details. See also comments pertinent to Finding F859. This corrective action is complete.

References: ECN 3511  
47A060-3-3 R4  
47A060-3-3A R1

EK Cole  
Program Team Member

11/17/83  
Date

Thomas E McConnell  
OEDC Program Manager

11/18/83  
Date

MS Mansfield & J Beasley  
Chairman, OEDC Policy Committee

11/21/83  
Date

In accordance with the date and discussion noted on Black & Veatch Jan 3 of F859 this item will be considered closed. This action is suggested since TVA actions have not been able to confirm the finding and it is assumed a measurement error was made by B&V

Classification: Type \_\_\_\_\_ R Category \_\_\_\_\_ A

W.J. Zidzuma  
Black & Veatch Project Manager

12/23/83  
Date

R.E. Blasdell  
Black & Veatch Senior Review Team Chairman

12/27/83  
Date

# ENGINEERING CHANGE NOTICE

COVER SHEET

SWP 83 0314 506

(BEFORE ISSUANCE OF OPERATING LICENSE)

ECN NO. 3511

TENNESSEE VALLEY AUTHORITY  
DIVISION OF ENGINEERING DESIGN

To: Construction Project Manager Watts Bar Nuclear Plant, Spring City, TN

From: Design Project Manager

SWP 204 GB-K

DATE MAR 14 1983

Budget Item: 211

Was IJ Analysis Required: Yes  No

Prepared by: G.L. PENNINGTON Section: SWP WMG-2 Section Leader: JJ Nash  
Project Engineer: [Signature] Released: JC Standke Design Project Manager: [Signature] Date: 3/9/83

SCOPE

Project WATTS BAR NUCLEAR PLANT Affected Unit(s) 1  
System or Feature AUXILIARY FEEDWATER - SYS 38 (NCR WBN SWP 8301, WBN SWP 8309, WBN SWP 8307)  
Reference & Description of Change ENDES CHANGES, EXCEPT ELECTRICAL DUE TO BLACK AND VEATCH INDEPENDENT REVIEW FINDINGS. REF NEB 82 1006 220 (ATTACH 1)

DRAWINGS OR B/M'S INVOLVED: (Data Sheets Required)	Yes or No	Date Branch Data Sheet Available
ENGINEERING SUPPORT BRANCHES		
Civil	<u>YES</u>	
Electrical	<u>No</u>	
Mechanical	<u>No</u>	
Nuclear	<u>No</u>	
NUCLEAR PROJECTS DESIGN GROUPS		
Civil 1,2	<u>YES</u>	
Electrical 4	<u>YES</u>	
Mech 2	<u>YES</u>	
FOSSIL, HYDRO & SPECIAL PROJECTS DESIGN		
SPECIAL DESIGN PROJECTS	<u>No</u>	
ARCHITECTURAL SUPPORT BRANCH	<u>No</u>	

ENGINEERING SUPPORT BRANCHES Approval Required	Yes or No
ECN is ready for branch review: <u>[Signature]</u> Design Project Manager	<u>2-9-83</u> Date
Approved: <u>R.O. Barneth</u> ENB CIVIL BR. CHIEF	<u>2/23/83</u> Date
<u>NA/NA</u> ENB ELECTRICAL BR. CHIEF	<u>                    </u> Date
<u>[Signature] for</u> ENB MECHANICAL BR. CHIEF	<u>2-24-83</u> Date
<u>[Signature] for</u> Chief Nuclear Engineer	<u>3-7-83</u> Date

	Yes or No	VAB
Required for PSAR or FSAR	<u>No</u>	<u>3-7-8</u>
Required for Preoperational Test:	<u>YES</u>	<u>NO 3-7-8</u>
If Yes, Test No.	<u>FWA 22</u>	
Vendor Backcharges Involved	<u>No</u>	
Seismic Analysis Required	<u>YES</u>	
Nonconformance Report Required	<u>YES</u>	
QA Applies	<u>YES</u>	
Security System Modified	<u>No</u>	
Vendor(s) involved:	<u>No</u>	

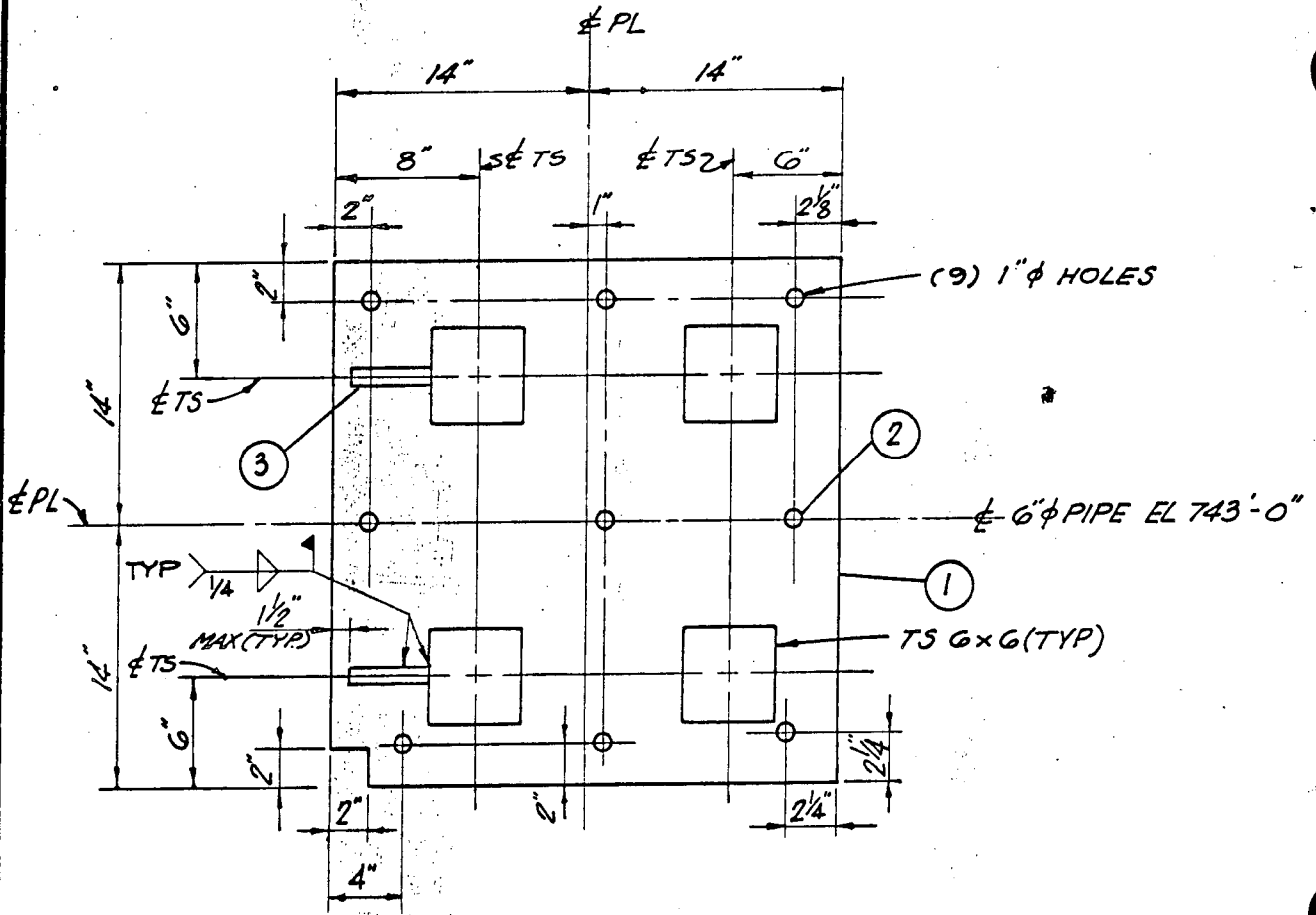
PHYSICAL WORK MUST BE DONE BEFORE:						
	Pre-Op Test	1st Fuel Load	1's Therm Power	Comm'l Oper'n	1st Refuel	
Unit <u>1</u>		<u>✓</u>				
Unit(s)						

CC (Attachments): no - Yes (5)

CHIEF, ARCHITECTURAL SUPPORT BRANCH, W4C126 C-K  
CHIEF, CIVIL ENGINEERING BRANCH, W9D224 C-K  
CHIEF, ELECTRICAL ENGINEERING BRANCH, W8C126 C-K  
CHIEF, MECHANICAL ENGINEERING BRANCH, W7C126 C-K  
CHIEF, NUCLEAR ENGINEER, W10C126 C-K  
CHIEF, QUALITY ASSURANCE BRANCH, 5100 M18-K

CHIEF, COST PLANNING AND CONTROL STAFF, W12C74 C-K  
CHIEF, SPECIAL DESIGN PROJECTS, W2D224 C-K  
MANAGER OF CONSTRUCTION, E7B26 C-K  
PLANT SUPERINTENDENT  
MEDS, W5B63 C-K





DETAIL

COMPANION DWG. 47A060-3-3  
 INITIAL ISSUE PER FCR H-5117

ITEM	QTY	MATERIAL DESCRIPTION FOR ONE SUPPORT
3	2	PL 1/2 x 3" x LENGTH AS REQ'D.
2	9	7/8" φ SSD ANCR. BOLTS
1	1	PL 7/8" x 28" x 2'-4" (CUT AS SHOWN)

1	SI	12/19/81	W.R.	DC	W.R.	Sup	W.R.	Rev	W.R.
REV PER FCR H-6502									
DESIGN	K. BAGHUVEER REDDY				INSP				
DRWN	John P. Cullum Sr.				ENGINEER	J. Cullum			
CHKD	DR. WAYNE BOWMAN								
SUPV	Luis Chacon								

SEISMIC CATEGORY I STRUCTURES		
MECHANICAL BOX ANCHOR FOR THE AFW SYSTEM UNIT (1)		
WATTS BAR NUCLEAR PLANT TENNESSEE VALLEY AUTHORITY DIVISION OF ENGINEERING DESIGN		
SUBMITTED	RECOMMENDED	APPROVED
W.R.	J. Cullum	R.W. Cantrell
KNOXVILLE	10-19-81	85 M 47A060-3-3A RI

MF  
RO  
RI

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEWFinding Number F1714181

## Comments pertinent to finding:

At the Black and Veatch inspection, construction of hanger number 47A060-3-6 was not complete. The hanger was being tracked as incomplete by the construction accountability program. Installation of the hanger has now been completed in accordance with the existing Quality Assurance Program and tracked with the site accountability program. Attached is a copy of Quality Assurance inspection documentation, and accountability print out.

Rand C. McKay  
Program Team Member

11/2/83  
Date

Thomas E. McConnell  
OEDC Program Manager

11/4/83  
Date

E. Gray Beasley  
Chairman, OEDC Policy Committee

11/8/83  
Date

Black & Veatch *Submitted documentation indicates completion of work*

Classification: Type R Category A

W. J. Zilzeman  
Black & Veatch Project Manager

11/21/83  
Date

RE Blandell  
Black & Veatch Senior Review Team Chairman

12/1/83  
Date

6710

WSP-CY-4.23-8 TEST NO. 0  
Attachment A (LOP)

SUPPORT FINAL INSPECTION

SUPPORT ID  
1003-A060-3-6

Reference Drawing  
47A060-3-6 Rev 2  
Accepted  
(Check)

Unique Identifier ✓

Fabrication ✓

Installation ✓

Caps NA Bottom NA Latch NA

Stainless Pipe Protection NA

Grout NA

Integral Attachments NA

Insulation Saddle or Legs NA

Stainless Pipe Cleanliness NA

Bolted Connections NA

Cotter Pins NA

EXEMPTIONS OF HANGER  
ADDITION PER PCL-P-9127 WE-8840  
Inspected in accordance with  
Rev 21 1/1/83

J. B. [Signature] 6-15-83  
Inspector

INSP. 4/15/83

2-83 R-3968

SUPPLEMENTAL DOCUMENTATION

1003-A060-3-6

480



PROGRAM: 195020  
DATE: 1 10 26 83

WHP HANGER INFORMATION AND TRACKING SYSTEM  
REPORT: FULL-FILE BY SYSTEM, HANGER ID <BREAK ON: SYSTEM> 003

PAGE 51

IDENTIFIER	CL	SPEN	PLN	ORASING	REV	DESCRIPTION	STAT	TEST	CLG	W	INDICATOR	BY	TESTS
1003-A060-3-1	M	1003-2	1-47W427-200		001	H-0102	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-10	M	1003-2	1-47W427-201		003		1	HA	03A*	04A*	05A*	06A*	07A*
1003-A060-3-11		1003-2	1-47W427-207		002	H-8526 H-7100A	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-2		1003-2	1-47W427-200		001	H-978 H-2083	1	HA	01A*	02A*	03A*	04A*	05A*
2003-A060-3-21		1003-00	47W427-207				1	HA	01A*	02A*	03A*	04A*	05A*
2003-A060-3-22		1003-00	47W427-207				1	HA	01A*	02A*	03A*	04A*	05A*
2003-A060-3-23		1003-00	47W427-207				1	HA	01A*	02A*	03A*	04A*	05A*
2003-A060-3-24		1003-00	47W427-207				1	HA	01A*	02A*	03A*	04A*	05A*
2003-A060-3-25	M	1003-2	1-47W427-208		004		1	HA	01A*	02A*	03A*	04A*	05A*
2003-A060-3-26		1003-00	47W427-211				1	HA	01A*	02A*	03A*	04A*	05A*
2003-A060-3-27		1003-00	47W427-211				1	HA	01A*	02A*	03A*	04A*	05A*
2003-A060-3-28		1003-00	47W427-211				1	HA	01A*	02A*	03A*	04A*	05A*
2003-A060-3-29		1003-00	47W427-211				1	HA	01A*	02A*	03A*	04A*	05A*
2003-A060-3-30		1003-00	47W427-211				1	HA	01A*	02A*	03A*	04A*	05A*
2003-A060-3-31		1003-00	47W427-211				1	HA	01A*	02A*	03A*	04A*	05A*
2003-A060-3-32		1003-00	47W427-211				1	HA	01A*	02A*	03A*	04A*	05A*
2003-A060-3-33		1003-00	47W427-211				1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-34	M	1003-2	1-47W427-206		000	H-8449 ER-3768	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-35			47W427-200		003	H-978	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-36			47W427-211		000	H-9647	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-37			47W427-211				1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-38			47W427-211				1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-39	M	1003-2	1-47W427-202		001		1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-40	M	1003-2	1-47W427-202		000	H-0103	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-1	M	1003-2	1-47W427-202		002		1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-2		1003-2	1-47W427-203		001	H-8164/3862R	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-3		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-4		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-5		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-6		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-7		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-8		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-9		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-10		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-11		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-12		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-13		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-14		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-15		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-16		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-17		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-18		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-19		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-20		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-21		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-22		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-23		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-24		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-25		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-26		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-27		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-28		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-29		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-30		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-31		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-32		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-33		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-34		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-35		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-36		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-37		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-38		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-39		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*
1003-A060-3-40		1003-2	1-47W427-207		000	H-8408 H-10502	1	HA	01A*	02A*	03A*	04A*	05A*

DN5020 16-748

107

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number E1714191

Comments pertinent to finding:

Hanger number 03B-IAEW-R112 was reworked according to  
NCR number 4454R RI attached is a copy of  
inspection documentation, accountability print-out and NCR number  
4454R RI

Ronald C. McKay  
Program Team Member

11/21/83  
Date

Thomas E. McConnell  
OEDC Program Manager

11/9/83  
Date

E. Gray Beasley  
Chairman, OEDC Policy Committee

11/21/83  
Date

Black & Veatch The attached documentation supports close out of this item

Classification: Type R Category A

W. J. Ziberman  
Black & Veatch Project Manager

12/8/83  
Date

R. E. Blaidell  
Black & Veatch Senior Review Team Chairman

12/19/83  
Date

67A

WSP-OP-4723-8 TEST NO. 8  
Attachment A (LOP)

SUPPORT FINAL INSPECTION

SUPPORT ID  
1003B-03B-1AFW-R112

Reference Drawing  
03B-1AFW-R112 Rev 1

Accepted  
(Check)

Unique Identifier

Fabrication

Installation

Cap  Top  Lateral

Stainless Pipe Protection NA

Grout

Integral Attachments

Insulation Saddle or Lugs

Stainless Pipe Cleanliness

Bolted Connections

Cotter Pins

Remarks: NA

NR 6166 NCR 4454R #1

Inspected in accordance with  
Rev 2 of WSP-4.23-8

David R. Dwyer 2-4-83  
Inspector Date

QC&R  
MAR 07 1983  
*Dev*

1003B-03B-1AFW-R112

WBN 830122 141

DIVISION OF CONSTRUCTION  
NONCONFORMING CONDITION REPORT

1. Item on CAQ Description and Approval:

The identification of the following nonconforming conditions of previously inspected and documented pipe supports resulted from the System 03 review by Black and Veatch:

Finding F 734: Hanger 03B-IAFW-R147 has corroded pins missing at lower end attachment;

Finding F 773: Hanger 03B-IAFW-R184 has corroded pins missing;

Finding F 774: Hanger 03B-IAFW-R186 has corroded pin missing; and

Finding F 717: Hanger 03B-IAFW-R159 lacks a hanger rod.

See continuation sheet for revised item description.

2. Vendor Name N/A Address, City, and State N/A

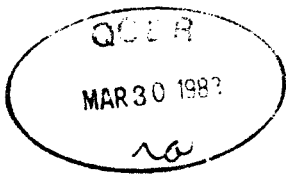
3. Initiator Randolph Chambers Date 12/20/82 Approved Thomas R. Peterson Date 12/20/82

3A. Significant CAQ  Yes  No Construction Engineer Ed B. White Date 12-21-82

Signature \_\_\_\_\_  
 Authorization to initiate report to significant  Significant  Non-Significant  Other \_\_\_\_\_  
 If Significant, NEB/NLS Contact \_\_\_\_\_

3B. For Significant CAQ

- Describe Root Cause
- This is a Generic CAQ  Yes  No (If yes, detail)



Prepared by

4A. Disposition of Recommendations (Check Block as Directed)

Finding F 734: Replace cotter pins, reinspect, and document support in accordance with OCP 4.23-8.

Finding F 773: Replace cotter pins, reinspect, and document support in accordance with OCP 4.23-8.

Finding F 774: Replace cotter pins, reinspect, and document support in accordance with OCP 4.23-8.

Finding F 737: Replace hanger rod, reinspect, and document support in accordance with OCP 4.23-3 and OCP 4.23-8.

See continuation sheet for revised disposition.

4B. Action Required to Prevent Recurrence (If Applicable)

4C. Date for Completion of all actions to close this NCR (If Applicable)

Recommended By Randolph Chambers

*Handwritten signature: Howard Brown*

12/10/82

5.  Approved  As Directed in Part  Other (See Construction Permit)

Referred to Design Project Organization (If Applicable)

Construction Engineer *Ed Cuck* 11/22/82

6. Concurrence of Designated QA Reviewer for Action Required to Prevent Recurrence

7.  Approved  As Directed in Part  Other (See Construction Permit)

Design Project Organization \_\_\_\_\_ Date \_\_\_\_\_

8. Approved Disposition Completed (and if applicable, as indicated from Non-compliance Status)

Responsible Individual *Arnold Alley* Date *3-28-83* Approved by *George A. Davis* Date *3-28-83*

*Handwritten note: NCR Closed*

NCR Closed (Includes completion of action required to prevent recurrence for significant NCR's)

Construction Engineer *Howard Brown* Date *3-29-83*

10. Reviewed and Accepted By \_\_\_\_\_ Date \_\_\_\_\_

Authorized Nuclear Inspector \_\_\_\_\_ Date \_\_\_\_\_

11. Distribution

- Site QA Records File
- Construction Engineer
- CONST. Div. Branch
- QA Manager (LEOC)
- MFDS
- Design Project Organization
- EN DES NCR - Codes, Standards, and Materials Section (Code Items Only)
- NRC Resident Inspector (Significant NCR's Only)
- ANI (Code Items Only)
- EN DES NEB NLS (Significant NCR's Only)
- NGRS (Significant NCR's Only)

LOP

Nuclear Project: SAFES NUCLEAR PLANT	NONCONFORMING CONDITION REPORT CONTINUATION PAGE	NO: 4454R
Item No.	REMARKS	
1. A.	Revised Item and CAO description: Add finding F 749: Hanger 03B-IAFW-R112 has item 1 (RSSA) missing.	
4. A.	Revised disposition: Add Finding F 749: Replace item 1, reinspect, and document in accordance with QCP 4.23-3 and QCP 4.23-8.	



684

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F/7/5/1/

R-PL

Comments pertinent to finding:

03B-1AFW-R116 was revised under ECN 3511, revision 903, on 3/24/83 to clarify elevation view. This corrective action is complete.

References: ECN 3511  
Drawing 03B1AFW-R116 R903

WJM

E. H. Cole

Program Team Member

11/11/83

Date

Thomas E. McConnell

OEDC Program Manager

11/14/83

Date

M. S. Martin for E. H. Beasley  
Chairman, OEDC Policy Committee

11/17/83

Date

Black & Veatch

*Required corrective action completed*

Classification: Type \_\_\_\_\_

R

Category \_\_\_\_\_

A

W. J. Zidziunas

Black & Veatch Project Manager

12/6/83

Date

R. E. Blawiehl

Black & Veatch Senior Review Team Chairman

12/19/83

Date



# ENGINEERING CHANGE NOTICE

COVER SHEET

SWP 83 0314 506

(BEFORE ISSUANCE OF OPERATING LICENSE)

TENNESSEE VALLEY AUTHORITY  
DIVISION OF ENGINEERING DESIGN

ECN NO. 3511

To: Construction Project Manager Watts Bar Nuclear Plant, Spring City, IN

From: Design Project Manager SWP 204 GB-K

DATE MAR 14 1983

Budget Item: 211

Was IJ Analysis Required: Yes  No

G.L. PENNINGTON

SWP WIMG-2

J.J. Nash

Prepared by  
[Signature]  
Project Engineer

Released: [Signature]  
Design Project Manager

3/9/83  
Date

SCOPE

Project WATTS BAR NUCLEAR PLANT

Affected Unit(s) 1

System or Feature AUXILIARY FEEDWATER - SYS 3B (NCR WBN5WP8301, WBN5WP8305, WBN5WP8307)

Reference & Description of Change ENDES CHANGES, EXCEPT ELECTRICAL, DUE TO BLACK AND VEATCH INDEPENDENT REVIEW FINDINGS. REF NEB 82 1006 220 (ATTACH 1)

DRAWINGS OR B/M'S INVOLVED: Yes or No Date Branch Data Sheet Available

**ENGINEERING SUPPORT BRANCHES**

Civil YES  
Electrical NO  
Mechanical NO  
Nuclear NO

**NUCLEAR PROJECTS DESIGN GROUPS**

Civil 1,2 YES  
Electrical 4 YES  
Mech 2 YES

**FOSSIL, HYDRO & SPECIAL PROJECTS DESIGN**

SPECIAL DESIGN PROJECTS NO  
ARCHITECTURAL SUPPORT BRANCH NO

ENGINEERING SUPPORT BRANCHES Approval Required Yes or YES

ECN is ready for branch review: [Signature] 2-9-83  
Design Project Manager Date

Approved: [Signature] 2/23/83  
ENS CIVIL BR. CHIEF Date

NA/178 \_\_\_\_\_  
ENS ELECTRICAL BR. CHIEF Date

[Signature] 2-24-83  
ENS MECHANICAL BR. CHIEF Date

[Signature] 3-7-83  
Chief Nuclear Engineer Date

Required for PSAR or FSAR Yes or No YES  
Required for Preoperational Test: Yes NO No YES

If Yes, Test No. 1

Vendor Backcharges Involved NO

Seismic Analysis Required YES

Nonconformance Report Required YES

QA Applies YES

Security System Modified NO

Vendor(s) involved: NO

**PHYSICAL WORK MUST BE DONE BEFORE:**

	Pre-Op Test	1st Fuel Load	1%Therm Power	Comm'l Oper'n	1st Refuel
Unit(s) <u>1</u>		<input checked="" type="checkbox"/>			
Unit(s)					

CC (Attachments): NO Yes (5)

CHIEF, ARCHITECTURAL SUPPORT BRANCH, W8C126 C-K  
CHIEF, CIVIL ENGINEERING BRANCH, W9D224 C-K  
CHIEF, ELECTRICAL ENGINEERING BRANCH, W8C126 C-K  
CHIEF, MECHANICAL ENGINEERING BRANCH, W7C126 C-K  
CHIEF, NUCLEAR ENGINEER, W10C126 C-K  
CHIEF, QUALITY ASSURANCE BRANCH, 5100 MIB-K

CHIEF, COST PLANNING AND CONTROL STAFF, W12C76 C-K  
CHIEF, SPECIAL DESIGN PROJECTS, W2D224 C-K  
MANAGER OF CONSTRUCTION, E7B24 C-K  
PLANT SUPERINTENDENT  
MEDS, W8M63 C-K

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	QTY.			
5	4		1/2" $\phi$ SSD CONCRETE FASTENERS (PHILLIPS RD HEAD)				
4	1		PL 1/2" x 10 1/2" x 10 1/2" w 4 5/8" $\phi$ HOLES				
	1		PL 1/4" x 2 1/2" x 0'-9 1/4" LG.				
	2		TS 2 x 2 x .25 x 0'-6 1/2" LG.				
	1		TS 3 x 3 x .25 x 4'-7 1/2" LG				

686

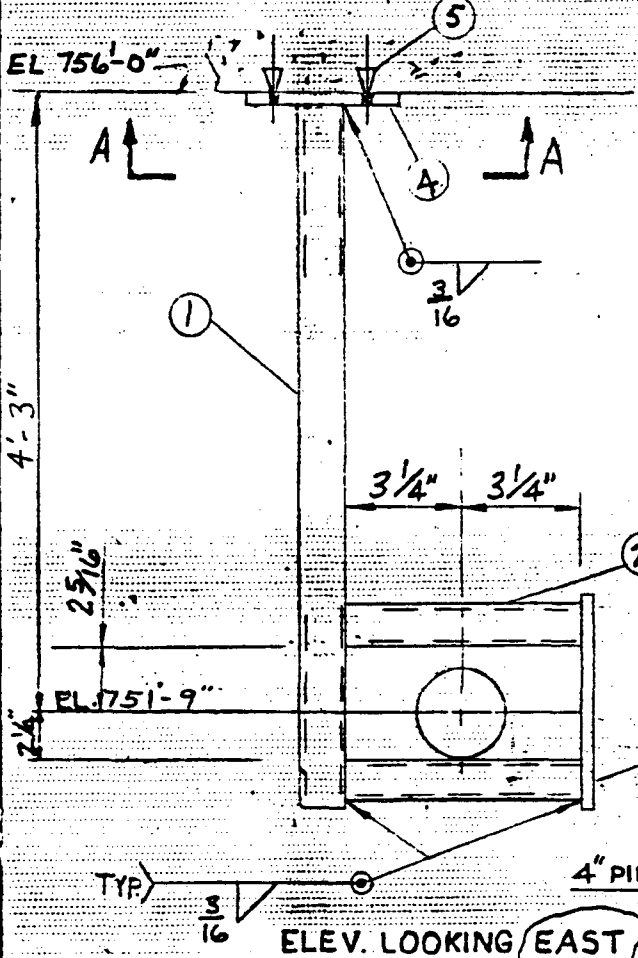
DRAWN BY WBNP LUXINAG - 74C38-83015  
 03B-1AFW-R116  
 SHEET 1/2 REV 903 UNIT 1

APP.	
INVOICE CODE	
DESCRIPTION	
DATE	

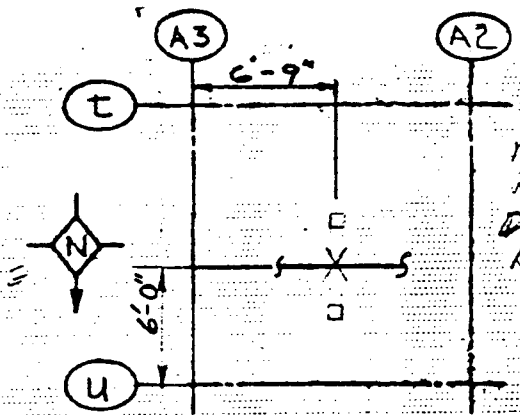
SEE TVA DWG 47A050-1A

203 3511	32483	6/2/79	JCC	JPL	W	-	03B-1AFW-R116
REV. ELEV. DIRECTION PER ECN, BAVF751							
Rev No.	ECN No.	Date	Dsgn	Drwn	Chkd	Supv	Engr
			Insp	Subm	Recm	App	

ISO	47W427-201-R5
JOINT:	177
DIRECTION:	Y
TYPE:	RR
	170 #
DESIGN LOAD:	410 #



2 2620	2409	LA SM	7/2/79	JPL	JCC
REV. PER ECN					
1	S1	12-18-79	JPL	JCC	W
REVISED PER FCR NO. 2568					



DRAVO ISO #E-2879-IC-7-1 TVA R900-VENDOR RO

DRAVO CORPORATION P.O. #E-2879-

CUSTOMER: V.A. CONTRACT # 74C38-83015

ENGINEER: WATTS BAR NUCLEAR PLANT - UNIT #1

CONSUMER:

NUCLEAR T. V. A. CLASS C LOAD:

PIPING SYSTEM: AUX. FEEDWATER

REFERENCE DWG: 47W427-3-5 (Pipe)  
48N1225-2-2 (St 1)

MARK NO. 03B-1AFW-R116 NO. REQ'D. 1

**BERGEN-PATERSON PIPESUPPORT CORP.**

BOSTON, MASS. WOOD-RIDGE, N.J. SAN FRANCISCO, CALIF.  
 PITTSBURGH, PA. CHEMPEYAD, N.Y. CHICAGO, ILL.

DRAWN	CHK'D	APP'VD.	DATE
LR	ASL	HT	9-30-76
JOB NO. 3604			(R 903)
DWG. NO. 03B-1AFW-R116			





WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEWFinding Number F/7/5/3/

R-PL

## Comments pertinent to finding:

There is no problem with this hanger, 03B-1AFW-R120. It is identified more than once on the hanger drawing as R120. The B120 that B&V questioned was apparently because their work print was of poor quality. No action is required.

References: 03B-1AFW-R120 R901

*EH Cole*

Program Team Member

*11/17/83*

Date

*Thomas E McConnell*

OEDC Program Manager

*11/17/83*

Date

*Ms. Marilyn Lee Ed Beasley*

Chairman, OEDC Policy Committee

*11/21/83*

Date

*Based on the above statement that the attached revision is 901 which Black & Veatch is the one referenced in the original Finding it is concluded that the original TVA Response was in error. This item is considered closed*

Classification: Type

R

Category

B*W.J. Zidzeman*

Black &amp; Veatch Project Manager

*12/23/83*

Date

*RE Blansell*

Black &amp; Veatch Senior Review Team Chairman

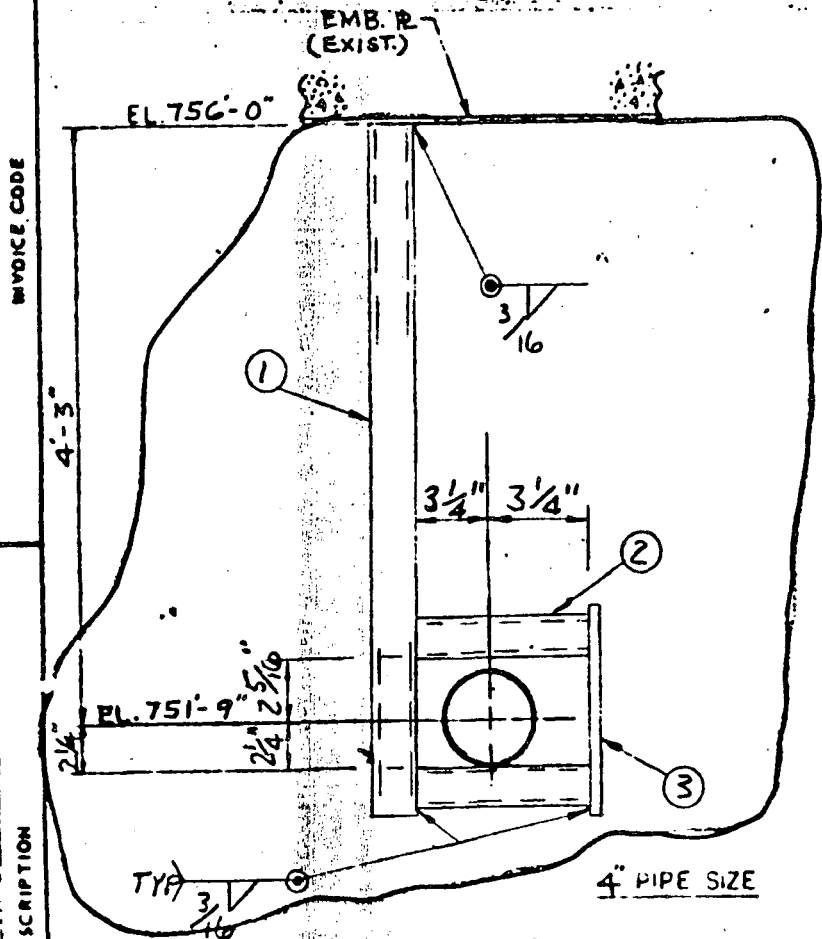
*12/27/83*

Date

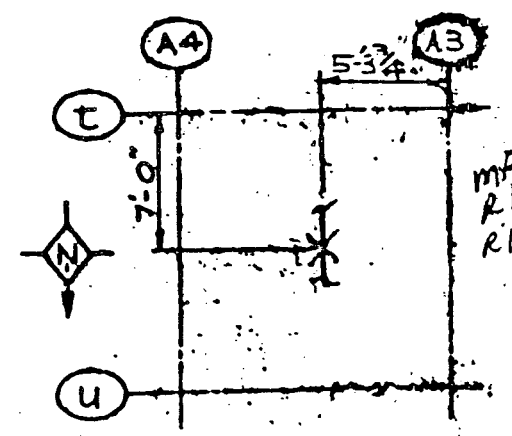
ITEM NO.	NO. REQ'D	PART NO.	SIZE	DESCRIPTION	WGT.		
1	1		TS 3x3x.25x4'-7 1/2" LG				
2	2		TS 2x2x.25x0'-6 1/2" LG				
3	1		R 1/4" x 2 1/2" x 0'-9 1/4" LG				

SEE TVA DWG. 47A050-1A  
 1 2620 2-10-81 LA SM *W. J. J. Jul 24/81*  
 REV. PER ECN

ISO. 47W427-201-RO  
 JOINT: 184  
 DIRECTION:  
 TYPE: RR  
 + 540  
 DESIGN LOAD: 1000



WBNP  
 03B-1AFW-R120  
 901  
 74C38-83015



ELEV. LOOKING SOUTH NUCLEAR T. V. A. CLASS C

LOCATION PLAN  
 LOAD:

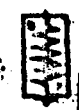
DRAWN ISO #E-2879-IC-7-1  
 DRAWN CORPORATION P.O. #E-2879-  
 CUSTOMER CONTRACT #74C38-83015  
 ENGINEER WANTS BAR NUCLEAR PLANT-UNIT #1  
 CONSUMER

PIPING SYSTEM AUX. FEEDWATER  
 REFERENCE DWG. 47W427-3-5 (PIPE)  
 47W427-2-2 (STEEL)  
 MARK NO. 03B-1AFW-R120 NO. REQ'D

REV. DATE



**BERGEN-PATERSON PIPESUPPORT CORP.**  
 BOSTON, MASS. WOODBRIDGE, N.J. SAN FRANCISCO, CALIF.  
 PITTSBURGH, PA. HEMPSTEAD, N.Y. CHICAGO, ILL.



DRYER CIRC. 2  
 LR ASL 9-30%  
 JOB NO. 3111  
 03B-1AFW-R120

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEWFinding Number F/7/5/6/

C

## Comments pertinent to finding:

See F371 for comments.

E H Cole

Program Team Member

11/17/83

Date

Howard E. McConnell

OEDC Program Manager

11/17/83

Date

E Grey Beasley

Chairman, OEDC Policy Committee

11/21/83

Date

Black &amp; Veatch

*Examination of the form 3 information provided for F 371 indicates that action has been initiated. Since the item is being tracked via a formalized program the issue is considered to be resolved.*

Classification: Type

R

Category

AW. J. Zideman

Black &amp; Veatch Project Manager

12/8/83

Date

R. E. Blaisdell

Black &amp; Veatch Senior Review Team Chairman

12/19/83

Date

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEWFinding Number F1715171

## Comments pertinent to finding:

At the Black and Veatch inspection, construction of hanger number 03B-IAFW-2227 was not complete. The hanger was being tracked as incomplete by the construction accountability program. Installation of the hanger has now been completed in accordance with the existing Quality Assurance Program and tracked with the site accountability program. Attached is a copy of any additional field change requests, Quality Assurance inspection documentation, and accountability print out. The print-out is a Quality Assurance document and will be retained as life of plant documentation.

Paul C. McRae  
Program Team Member

11/18/83  
Date

Howard E. McConnell  
OEDC Program Manager

11/18/83  
Date

E. Gray Beasley  
Chairman, OEDC Policy Committee

11/23/83  
Date

Black &amp; Veatch

*The attached inspection information coupled with the clarification received via letter 10520 DIN 1072 (attached) indicates that appropriate action has been completed*

Classification: Type

R

Category

A

W. J. Zidzener  
Black & Veatch Project Manager

1/19/84  
Date

R. E. Blandell  
Black & Veatch Senior Review Team Chairman

1/20/84  
Date

692

The B&V project managers expressed a concern that there was a conflict between F757 and F366 since the two hangers have interaction. Both supports 03B-1AFW-R225 Rev. 904 (F366) and 03B-1AFW-R227 Rev. 904 have been reanalyzed and all interaction between the supports addressed. The calculations are WBP 830822 054 and WBP 830810 026.



703

# EN DES CALCULATIONS

TITLE <b>AUXILIARY FEEDWATER SUPPORT 058-1AFW-R227</b>		UNID SYSTEMS	PLANT UNIT <b>R03 UNIT 1</b>
PREPARING ORGANIZATION <b>WMS #2</b>		REV (FOR MEDS USE)	MEDS ACCESSION NUMBER
APPLICABLE DESIGN DOCUMENTS <b>03-02-40-319</b>	BRANCH/PROJECT IDENTIFIERS <b>WMS 21048</b>	R0 <b>821214C0051 (12)</b>	SYP <b>82 1203 079</b>
		R1 <b>831104D0068 (2)</b>	BP <b>83 0810 026</b>
KEY WORDS <b>DESIGNS, SUPPORTS</b>		R2	
		R3	
REV	R0	R1	R2
DATE PREPARED <b>R. Henderson</b>	<b>1/1/82</b>		
CHECKED <b>McAndrews</b>	<b>J.D. WERRMAN</b>		
APPROVED <i>[Signature]</i>	<i>[Signature]</i>		
ATTACHMENTS MICROFILMED:			
LIST ALL PAGES * ADDED BY THIS REV:			
LIST ALL PAGES * DELETED BY THIS REV:			
LIST ALL PAGES * CHANGED BY THIS REV:			
STATEMENT OF PROBLEM <b>DOCUMENT DESIGN CALCULATIONS PER FCR H-8237 FOR AUXILIARY FEEDWATER SUPPORT 058-1AFW-R227.</b>			
ABSTRACT <b>R0/ REVISION 903 OF SUPPORT MEETS APPLICABLE CRITERIA AND IS SATISFACTORY.</b>			
<b>R1/ REVISION 909 OF SUPPORT MEETS ALL APPLICABLE DESIGN REQUIREMENTS</b>			
<b>RETURN ORIGINALS TO J.J. NASH, 3106 GB-K</b>			

694

# EN DES CALCULATIONS

<input checked="" type="radio"/> AUXILIARY FEEDWATER SUPPORT 03B-IAFW-R225		UNID SYSTEM(S) WA UNIT 1	PART UNIT BAR SECTION(S)
WORKS ORGANIZATION <b>WMC # 2</b>	REV (FOR MEDS USE)	MEDS ACCESSION NUMBER	
APPLICABLE DESIGN DOCUMENTS W3-DC-40-31.9	BRANCH/PROJECT IDENTIFIERS WMC-21148 03BIAFWR225	R0 *830201A0005 (40) SWP '83 0103 081	R1 830914D0018 (75) WBP '83 0822 054
KEY WORDS HANGERS, SUPPORTS	R2 R3	R2 R3	
REV R0 DATE 9-18-77 BY ARWINE	R1 <i>S. White</i>	R2 R3	STATEMENT OF PROBLEM DOCUMENT DESIGN CALCULATIONS PER FOR H-8296 FOR AUXILIARY FEEDWATER SUPPORT 03B-IAFW-R225.
CHECKED CKB	<i>S. White</i>	R2 R3	STATEMENT OF PROBLEM DOCUMENT DESIGN CALCULATIONS PER FOR H-8296 FOR AUXILIARY FEEDWATER SUPPORT 03B-IAFW-R225.
APPROVED <i>S. White</i>	<i>S. White</i>	R2 R3	
ATTACHMENTS MICROFILMED	<i>S. White</i>	R2 R3	
LIST ALL PAGES * CHANGED BY THIS REV.	R2 R3	R2 R3	
LIST ALL PAGES * CHANGED BY THIS REV.	R2 R3	R2 R3	LIST ALL PAGES * CHANGED BY THIS REV.
ABSTRACT REVISION 903 OF SUPPORT MEETS APPLICABLE CRITERIA AND IS SATISFACTORY.			
ABSTRACT /R1 REVISION 904 OF SUBJECT SUPPORT IS ACCEPTED AS PER ATTACHED CALC.			

695

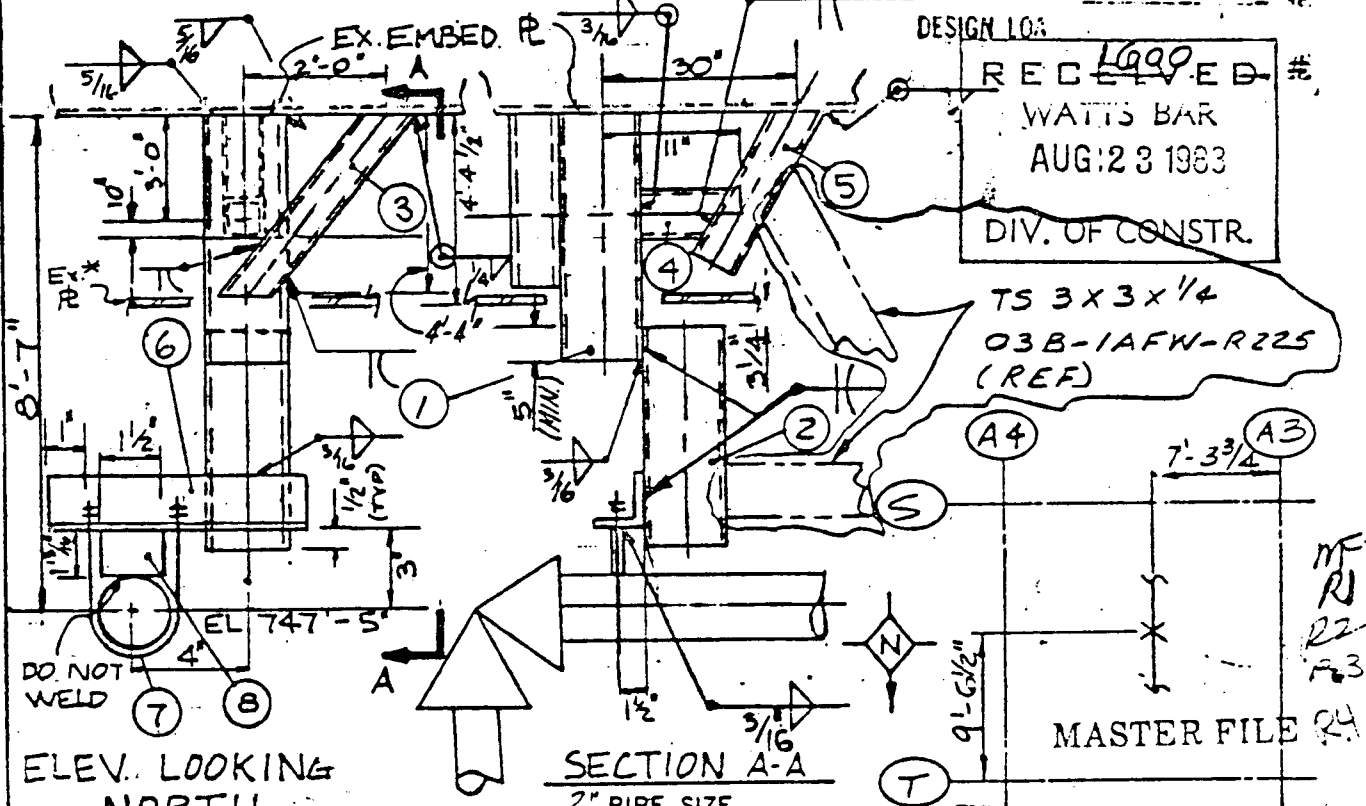
ITEM NO.	NO. REQ'D	PART NO.	SIZE	DESCRIPTION	WGT.		
1	1		TS 5X5X.50 X LG. AS REQ'D				
2	1		TS 5X5X.50 X LG. AS REQ'D				
3	1		TS 3X3X.25 X LG. AS REQ'D (CUT AS SHOWN)				
4	1		TS 3X3X.25 X LG. AS REQ'D (CUT AS SHOWN)				
5	1		TS 3X3X.25 X LG. AS REQ'D (CUT AS SHOWN)				
6	1		ANGLE 3X3X.50 X LG AS REQ'D, W/2-1/16" HOLES CUT				
7	1	283A	B.P. U-BOLT FOR 2" PIPE, A=5/16" Ø ROD, D=5 3/4"			PROJECT	WB N P
8	1		R 1/2" X 1 1/2" X 1 13/16"			CONTRACT	*74C38-83015
						DRAWING#	03B-1AFW-R227
						SHEET	1
		CHA				REVISION	904
		BET				UNIT	1

904 2100  
 REV P. 79-14 DISCREPANCY NO. 10083081004  
 LRO 427-212-227  
 H-8237 (CAL-SWP 821203079)  
 12-28-82  
 REVISIONS  
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SEE TVA DWG. 47A050-121A

902	SI	4-24-72	TWA	TWA	SK	INT	INT	TURK	100
REV. PER FCR 46559 (INACTIVE CONTRACT)									
1	2620	240-81	LA	SEN	AD	FW	JM	JL	100
REV. PER ECN									
NO.	ECN No.	Date	Desgn	Drwn	Chkd	Supv	Ernt	Insp	Subm

ISO. 47W427-212 RO  
 JOINT: 640  
 DIRECTION: SY  
 TYPE: RB  
 730



DESIGN LOG  
 RECEIVED  
 WATTS BAR  
 AUG 23 1983  
 DIV. OF CONSTR.

TS 3 X 3 X 1/4  
 03B-1AFW-R225  
 (REF)

MASTER FILE

INFORMATION ONLY  
 LOCATION PLAN

ELEV. LOOKING NORTH

SECTION A-A  
 2" PIPE SIZE

\*(CUT EXISTING PLATFORM)  
 (TO ALLOW INSTALLATION)

NUCLEAR  
 T. V. A. CLASS C

DRAVO ISO E-2879-IC-16-1

LOAD:

DRAVO CORPORATION P.O. # E-2579	PIPING SYSTEM	AUX. FEEDWATER
CUSTOMER T. V. A. CONTRACT # 74 C38 83015	REFERENCE DWG.	47W427-3-10 (Pipe) 48N1225-2-3 (St 1)
ENGINEER WATTS BAR NUCLEAR PLANT UNIT # 1	MARK NO.	03B-1AFW-R227 NO. REQ'D. 1
CONSUMER		



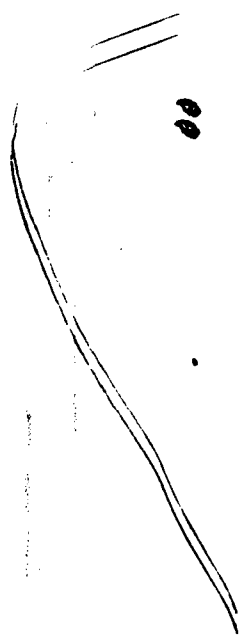
BERGEN-PATERSON PIPESUPPORT CORP.

BOSTON, MASS. WOOD-RIDGE, N.J. SAN FRANCISCO, CALIF.  
 PITTSBURGH, PA. HEMPSTEAD, N.Y. CHICAGO, ILL.

TVA 900 = VENDOR RO

DRAWN	CHK'D	APPVD.	DATE
DW	SD	SM	1-31-78
JOB NO. 3604			
DWG. NO. 03B-1AFW-R227 R904			





OSB

1003B-03B-1AFW-R227

UNIQUE IDENTIFIER

SEP 06 1983  
OCC&R  
JMS

WBNP-QCP-4.23-3 TEST NO. J  
Attachment A (LCP) Level B

SUPPORT FINAL INSPECTION

Support ID  
1003B-03B-1AFW-R227

Reference Drawing  
03B-1AFW-R227 Rev. 904  
Rev. N/A  
Rev. N/A

- Accepted (Check)
- Unique Identifier
- Fabrication
- Installation
- Gaps 

Top	Bottom	Lateral
<u>N/A</u>	<u>N/A</u>	
- Stainless Pipe Protection
- Integral Attachments
- Insulation Saddle or Lug
- Stainless Pipe Cleanliness
- Bolted Connections
- Cotter Pins

Remarks: 79-14 DTS NO.  
1803-42W427-212/103H  
N/A

Inspected in accordance with Rev. 2  
PI QCP-4  
Joseph L. Ferguson 8-26-83  
Date

107

ITEM	QUAN.	PART NO.	SIZE	DESCRIPTION	WGT.		
1	1	-	T.S. 4" x 4" x 1/4" x 6'-2 1/2"	BY TVA			
2	1	-	PL 1/2" x 5" x 0'-5" LG	BY TVA			
3	1	-	T.S. 4" x 4" x 1/4" x 0'-7 1/2" LG	BY TVA			
4	2	-	T.S. 2" x 2" x 1/4" x LG AS REQD	BY TVA			
5	1	-	T.S. 2" x 2" x 1/4" x LG AS REQD	BY TVA			
6	1	-	PL 1/2" x 1 3/8" x 2 1/2"	BY TVA			

RECEIVED  
WATTS BAR

PROJECT WORK CONTROL SEP 23 1983  
DRAWING # 03B-1AFW-R225

- 1 SDE ( 6 ) HRS.  
- 1 SDD

SEE TVA DWG. 47A050-1 & 1A

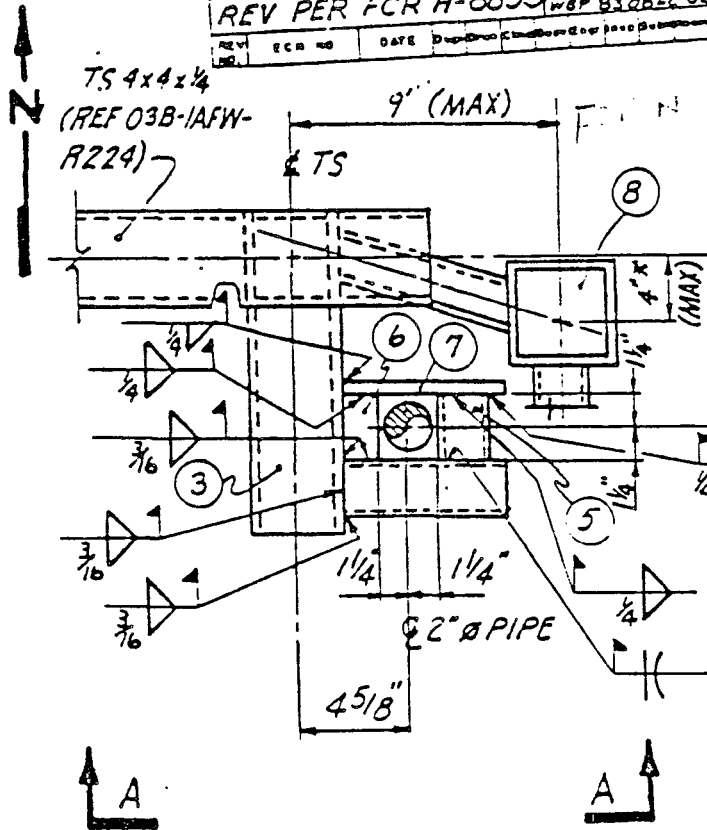
112620 2-10-81-A JDD...  
REVISED PER ECN

REV	ECN NO	DATE	BY	CHKD	APP'D
1	47-83	10/12/83	JDD		

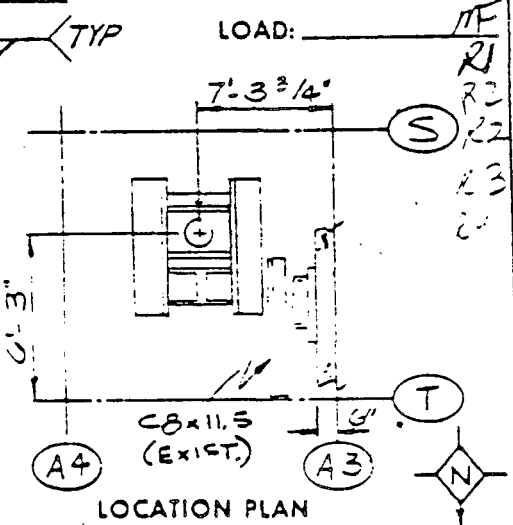
REV PER FCR H-8893  
MEDI CALCS  
WSP B3QB22 054

ISO 47W427-212-RO  
POINT 041  
DIRECTION X  
TYPE RR  
160  
SECTION 190

INVOICE CODE



ISO 47W427-212-RO  
POINT 041  
DIRECTION Z  
TYPE RR  
550  
SECTION 580



NUCLEAR T.V.A. CLASS C  
PLAN  
N.T.S.

DRAVO ISO E-2879-IC-16-1  
DRAVO CORPORATION P O # E-2879  
T.V.A. CONTRACT # 74C38-83015  
WATTS BAR NUCLEAR PLANT UNIT #1

BERGEN-PATERSON PIPESUPPORT CORP.			
PIPING SYSTEM	ALX. FEEDWATER		
REF. DWGS.	PIPING 47W427-3-10	STRUCTURAL 48N1210-7-3	
JOB NO.	3604	FAB NO.	009
NO. REQ'D			
MARK & DWG. NO.	03B-1AFW-R225		SHEET 1 of 3
			REV 904

DES EP DRZ DW CHK SD R P & SM DATE 1-31-78

TVARO = VENDOR RO

2151 1-11-81 x 20 22-11-74  
REV PER FCR H-5941

REV PER FCR H-8893  
CALC. MEDS SINP 83 0103 081  
IS 1008

ITEM	QJAN.	PART NO.	SIZE	DESCRIPTION	WGT.
7	1		R 3/4 x 2 3/8 x 0-6 3/8"		
8	1		TS 4 x 4 x 1/2 x LG AS REQ'D		
9	2		TS 6 x 2 x 1/4 x LG AS REQ'D		
10	1		TS 3 x 3 x 1/4 x LG AS REQ'D		
11	1		TS 3 x 3 x 1/4 LG AS REQ'D		

74C38-83015

03B-1AFW-R225

2/3 904

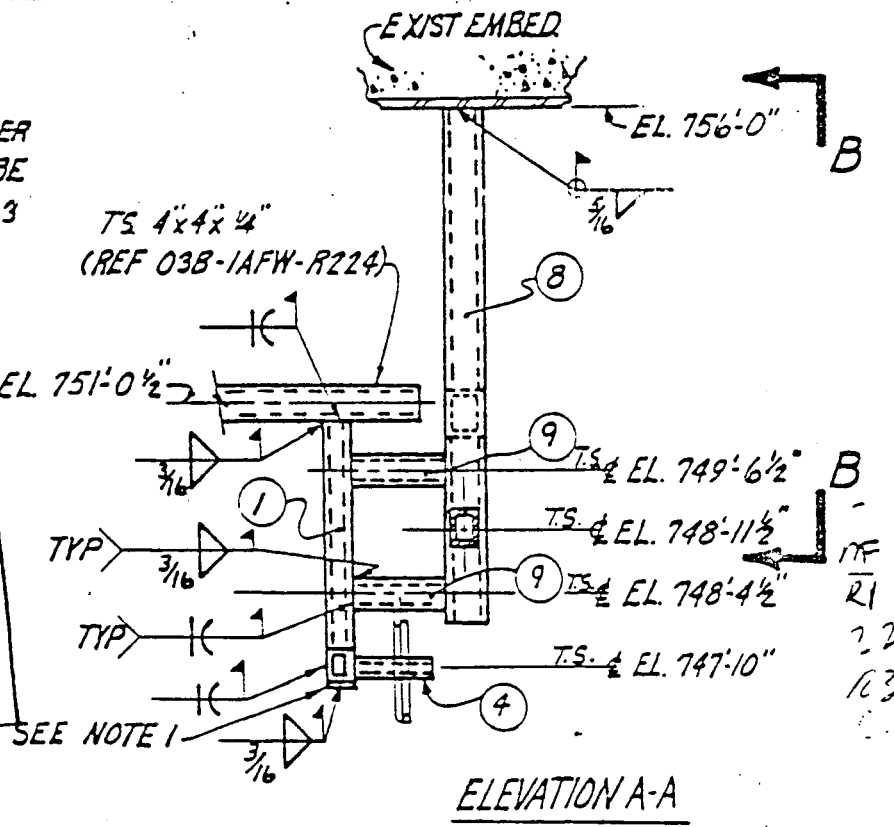
90A S 1	9-7-83	M. J. ...
REV PER FCR H-8893 (MDS CALCS WBP 83 0822 054)		
REV NO.	ECR NO.	DATE

INVOICE CODE

NOTES:  
ITEM 1 OF THE HANGER BUILT IN THE FIELD IS TO BE CUT OFF 1" BELOW ITEM 3 AND REMOVED FROM EXIST C. 8 x 11.5.

TS 4x4x 1/2" (REF 03B-1AFW-R224)

RECEIVED  
WATTS BAR  
SEP: 23 1983  
DIV. OF CONSTR.



ELEVATION A-A

905 SI	...	...
REV PER FCR H-8296, CALC, MDS SWP 83 0103 081		
1	2620	...
REVISED PER ECN		

NUCLEAR T.V.A. CLASS C

DRAVO ISO E-2879-IC-16-1  
DRAVO CORPORATION P.O. # E-2879  
T.V.A. CONTRACT # 74C38-83015  
WATTS BAR NUCLEAR PLANT - UNIT # 1

BERGEN-PATERSON PIPESUPPORT CORP.	
PIPING SYSTEM	ALX. FEEDWATER
REF. DWGS.	47W427-3-10 48N1210-7-3
JOB NO.	3604
FAB NO.	009
NO. REQ'D	1
MARK & DWG. NO.	03B-1AFW-R225
SHEET	2 of 3
REV	904

VIA RO = VENDOR RO

2.151 REV 1482-4 20 to 60 2.151 2.151 2.151 CR H-5941







WBNP-QCP-4.23-8 TEST NO. 8  
Attachment A (LOP)

SUPPORT FINAL INSPECTION

Support ID  
1003B-03B-1AFW-R225

Reference Drawing  
03B-1AFW-R225 Rev. 2

Accepted  
(Check)

Unique Identifier  NA  
Fabrication  NA  
Installation  NA

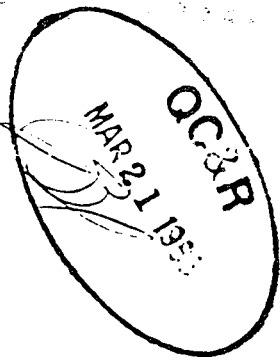
Top Bottom General  
Gaps NA NA NA  
Stainless Pipe Protection NA  
Grout NA  
Integral Attachments NA  
Insulation Saddle or Legs NA  
Stainless Pipe Cleanliness NA  
Bolted Connections NA  
Cotter Pins NA

Remarks: Inspected on 1-16-83 per  
QR 6570 & FCR H-8893 only

Inspected in accordance with  
Rev. 2 of QCP 4.23-8.

Thomas E. [Signature] 2-23-83  
Inspector Date

Ref HG-1073



SUPPLEMENTAL DOCUMENTATION

1-47W427-201	X003-2	9752	1-47W427-207	901 H-8923	* HA 01A* 02A* 02A* 04A* 08A*
1-47W427-202	X003-2		1-47W427-207	902	* HA 02A*
1-47W427-203	X003-2		1-47W427-207	900 H-10572/MCF 4455K	VGID * HA 01B* 02B* 03B* 04B* 08C*
1-47W427-204	X003-2		1-47W427-207	901	* HA 01A* 02A* 03A* 04A* 05A* 09A*
1-47W427-205	X003-2		1-47W427-207	902	* HA 01A* 02A* 03A* 04A* 05A* 09A*
1-47W427-206	X003-2		1-47W427-207	903	* HA 01A* 02A* 03A* 04A* 05A* 09A*
1-47W427-207	X003-2		1-47W427-207	904	* HA 01A* 02A* 03A* 04A* 05A* 09A*
1-47W427-208	X003-2		1-47W427-206	905	* HA 01A* 02A* 03A* 04A* 05A* 09A*
1-47W427-209	X003-2		1-47W427-206	901 H-8924	* HA 01A* 02A* 03A* 04A* 08B*
1-47W427-210	X003-2		1-47W427-206	902	* HA 01A* 02A* 03A* 04A* 08B*
1-47W427-211	X003-2		1-47W427-206	903 H-4705/H-4686	* HB 03A* 04A* 08E*
1-47W427-212	X003-2		1-47W427-200	901 H-7506	* HD 03A* 04A* 08A* 09A*
1-47W427-213	X003-2		1-47W427-200		* HA 01A* 02A* 03A* 04A* 08B*
1-47W427-214	X003-2		1-47W427-200		
1-47W427-215	X003-2	9871	1-47W427-200	903 H-4687/H-4736	* HD 03A* 04A* 08A* 09A*
1-47W427-216	X003-2		1-47W427-200	901 H-676/H-423	C3 * HB 02A* 03B 04A* 08C 09A*
1-47W427-217	X003-2		1-47W427-201	902	VGID * HA 08A*
1-47W427-218	X003-2		1-47W427-201	904	* HE 01A* 02B* 02A* 04A* 05B* 08A* 09A*
1-47W427-219	X003-2	9617	1-47W427-201	903 H-9024	* HA 01A* 02A* 03A* 06C* 08C*
1-47W427-220	X003-2		1-47W427-202		
1-47W427-221	X003-2		1-47W427-202	901 H-6769	* HA 01A* 02A* 03A* 04A* 08A* 09A*
1-47W427-222	X003-2		1-47W427-201	904	* HD 03A* 04B* 08C* 09A*
1-47W427-223	X003-2		1-47W427-201	903	* HA 01A* 02A* 03A* 04A* 08C* 09A*
1-47W427-224	X003-2		1-47W427-202		
1-47W427-225	X001-6	9752	1-47W427-204	902	* HA 01A* 02A* 03B* 04A* 08B* 09A*
1-47W427-226	X001-6		1-47W427-204	903	* HE 01A* 02A* 03C* 04U* 04U* 08C* 09A*
1-47W427-227	X001-6		1-47W427-204	902	C3 * HE 01A* 02A* 03E 04B 05C 08U
1-47W427-228	X003-2		1-47W427-204	903	* HE 01A* 02A* 03A* 04A* 05A* 08B*
1-47W427-229	X003-2		1-47W427-206	902 H-9543	* HE 01A* 02A* 03A* 04A* 05A* 08A* 09A*
1-47W427-230	X003-2	9617	1-47W427-212	903	* HD 03A* 04A* 08A* 09A*
1-47W427-231	X003-2		1-47W427-212	904 H-9912	* HA 01A* 02A* 03B* 04A* 08B* 09A*
1-47W427-232	X003-2		1-47W427-212	901	* HA 01A* 02A* 03A* 04A* 08C 09A*
1-47W427-233	X003-2		1-47W427-212		
1-47W427-234	X003-2		1-47W427-212	904	* HA 01A* 02A* 03A* 04B* 09E* 09A*
1-47W427-235	X003-2	9528	1-47W427-212	902	
1-47W427-236	X003-2		1-47W427-212	903 H-8693	* HD 03A* 04A* 08E*
1-47W427-237	X003-2		1-47W427-212		* HD 03A* 04A* 08E*
1-47W427-238	X003-2		1-47W427-212	904 H-8237 SP	* HR 02A* 03A* 04A* 05A* 09A*
1-47W427-239	X003-2		1-47W427-212		* HD 03A* 04A* 08E*
1-47W427-240	X003-2		1-47W427-215	902 H-9906	C3 * HA 01A* 02A* 03A* 04A* 08B 09A*
1-47W427-241	X003-2		1-47W427-215		

DIN 5257 F-757



TELEPHONE MEMORANDUM

10520DIN2118  
10520.15.1000

704

DATE 12/14/83

(TO) ~~(FROM)~~ H. E. McConnell TELEPHONE (615) 632-4450

TIME 12:53 ~~XX~~ PM

COMPANY Tennessee Valley Suthority

CC: H. E. McConnell, TV

RECORDED BY W. J. Zidziunas *wjz*

R. E. Blaisdell

PROJECT WBNP-Independent Review PROJ. NO. 10520

PDCA/File

SUBJECT Finding Report Responses FILE NO. 15.1000

I called Mr. McConnell to discuss Findings as follows.

F757 (F366) - The inspection tickets for hanger 03B-1AFW-R225 Rev. 904 appear to be against an earlier revision of the drawing and pre-date the hanger drawing by almost one year, in one case, and by seven months in another. Re-examination of F366 data revealed a similar situation. An explanation and/or revised data for these two findings is needed.

F782 - The TVA submittal addresses certification of the hanger to FCR 7598, but the changes defined in Form 1 do not appear to have been made; and the hanger drawing 03B-2AFW-R222, which was forwarded by Form 3, still shows the brace. Please clarify the submittal.

F807 - Please verify the cable designation 1A3913 has been color-coded properly. The Form 3 certifies Cable 1A3193. Refer to DRR 727 and F807 basis.

F847 - The computer printout is not legible, let alone reproducible. A readable copy is needed to verify that the outstanding work is, in fact, listed.

Data Sheet 4 references Drawing 47A060-3-8 and 47A060-3-8A against F319 but does not mention this Finding; in fact, no mention of F847 can be found in the ECN 3511 data that was submitted. Clarification and/or additional data is needed before B&V can process this Finding.

F881 - Please provide a replacement printout since the one provided will not adequately reproduce.

Homer indicated he would look into these items.

I advised him that B&V will probably come to Knoxville to review the information that supports the DRR matrix.

bam

RECEIVED B & V  
DEC 15 1983  
PROJECT # 10520

TENNESSEE VALLEY AUTHORITY  
KNOXVILLE, TENNESSEE 37902

400 West Summit Hill Drive, W10C126 C-K

JAN 17 1984

Black and Veatch  
11401 Lamar Avenue  
Overland Park, Kansas 66211

Attention: Mr. W. J. Zidziunas

Gentlemen:

PERSONAL SERVICES CONTRACT NO. TV-60052A

In response to your telephone request to H. E. McConnell, we are providing additional information for the following findings:

F-366, F757, and F-825

The inspection records provided for these findings do predate the drawing issue dates. Installation and inspection was accomplished using the field marked drawings which were then sent to engineering for analysis and final drawing issue. Final acceptance of the hangers in these cases was accomplished when the as-built drawings were approved and issued by engineering design.

F-875

Enclosed are the inspection records for hanger 1-08A-447.

F-140

Enclosed is our revised Form 3 and analysis that is intended to respond to the concerns of R. S. Gross.

G-901

Enclosed is our Form 4 for this finding that describes the additional studies that TVA will make in addition to the material furnished with our Form 3.

Document Review Records (DRR)

Enclosed are revised pages 1, 6, 7, and 10 for the DRR table and backup information for DIN No. 3135, 3471, 3476, 3489, 3619, 3879, and drawing 47W427-203, R6.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

*H E McConnell*  
for John A. Raulston, Chief  
Nuclear Engineering Support Branch

Enclosures

*WJZ MJR*  
RECEIVED B & V  
JAN 18 1984  
PROJECT # 10520

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEWFinding Number F/7/5/8/

## Comments pertinent to finding:

At the time of 79-14 walkdown for hanger 1-03B-27 R405, the deficiencies identified by Black and Veatch F758 had been corrected. Attached is 79-14 inspection document which verifies the hanger is installed per latest revision of drawing and no damage or outstanding work remains on surrounding concrete surface.

Rand C McKay  
Program Team Member

11/3/83  
Date

Harold E McConnell  
OEDC Program Manager

11/4/83  
Date

E Gray Beasley  
Chairman, OEDC Policy Committee

11/4/83  
Date

*The Test 3 card has no bearing on the noted condition. Black & Veatch however, the IE 79-14 form dated 4/8/83 indicates satisfactory construction.*

Classification: Type R Category A

W. J. Zidunas  
Black & Veatch Project Manager

11/21/83  
Date

RE Plausdell  
Black & Veatch Senior Review Team Chairman

12/1/83  
Date



1003B-1-038-10	3003-2	1-47W427-218	903	• HM 03A* 04A* 07A* 08B* 09A*
1003B-1-038-11	3003-2	1-47W427-218	903 H-9710	• HM 03A* 04A* 07A* 08A* 09A*
1003B-1-038-12	3003-2	1-47W427-218	903	• HM 03A* 04A* 07A* 08B* 09A*
1003B-1-038-13	3003-2	1-47W427-218	903	• HM 03A* 04A* 07A* 08B* 09A*
1003B-1-038-14	3003-2	1-47W427-218	903	• HM 03A* 04A* 07A* 08B* 09A*
1003B-1-038-15	3003-2	1-47W427-218	903	• HM 03A* 04A* 07A* 08B* 09A*
1003B-1-038-16	3003-2	1-47W427-218	903	• HM 03A* 04A* 07A* 08B* 09A*
1003B-1-038-17	3003-2	1-47W427-218	903	• HM 03A* 04A* 07A* 08B* 09A*
1003B-1-038-18	3003-2	1-47W427-218	903	• HM 03A* 04A* 07A* 08B* 09A*
1003B-1-038-19	3003-2	1-47W427-218	903	• HM 03A* 04A* 07A* 08B* 09A*
1003B-1-038-2	1	1-47W427-218	901	VCID • HD 09A*
1003B-1-038-20	3003-2	1-47W427-218	903	• HM 03A* 04A* 07A* 08B* 09A*
1003B-1-038-21	3003-2	1-47W427-218	903	• HM 03A* 04B* 07A* 08B* 09A*
1003B-1-038-22	3003-2	1-47W427-218	903	• HM 03A* 04B* 07A* 08B*
1003B-1-038-23	3003-2	1-47W427-218	903	• HM 03A* 04A* 07A* 08B* 09A*
1003B-1-038-24	1	1-47W427-218	901	VCID • HD 09A*
1003B-1-038-25	3003-2	1-47W427-218	903	• HM 01A* 02A* 03A* 04A* 07A* 09A*
1003B-1-038-26	1	1-47W427-218	901	VCID • HD 09A*
1003B-1-038-27	1	1-47W427-218	901	VCID • HD 09A*
1003B-1-038-28	1	1-47W427-218	901	VCID • HD 09A*
1003B-1-038-29	1	1-47W427-218	901	VCID • HD 09A*
1003B-1-038-3	3003-2 9871	1-47W427-218	903 MCP 8089R	• HK 03A* 04B* 08B* 09A*
1003B-1-038-10	1	1-47W427-218	901	VCID • HD 09A*
1003B-1-038-31	1	1-47W427-218	901	VCID • HD 09A*
1003B-1-038-32	1	1-47W427-218	901	VCID • HD 09A*
1003B-1-038-33	1	1-47W427-218	901	VCID • HD 09A*
1003B-1-038-34	3003-2	1-47W427-218	902	• HM 03A* 04A* 07A* 08B*
1003B-1-038-35	3003-2	1-47W427-218	902 37787H-7916	OR HF 01A* 02A* 03A* 04A* 05A* 08C
1003B-1-038-36	1	1-47W427-218	901	VCID • HK 09A*
1003B-1-038-17	3003-2	1-47W427-218	901	• HM 03A* 04A* 07A* 08B*
1003B-1-038-38	H 3003-2	1-47W427-218	902	• HK 03A* 08A* 07A* 08A*
1003B-1-038-39	H 3003-2	1-47W427-218	902 H-6937/H-9272	• HK 01A* 02A* 03A* 04A* 07A* 08A* 09A*
1003B-1-038-4	1	1-47W427-218	901	VCID • HD 09A*
1003B-1-038-5	H 3003-2	1-47W427-218	903 H-8605	• HM 03A* 04A* 07A* 08A*
1003B-1-038-31	1	1-47W427-218	901	VCID • HD 09A*
1003B-1-038-52	1	1-47W427-218	901	VCID • HD 09A*
1003B-1-038-53	3003-2	1-47W427-218	903	• HK 03A* 04A* 08B*
1003B-1-038-54	1	1-47W427-218	901	VCID • HD 09A*
1003B-1-038-55	3003-2	1-47W427-218	901 H-8606	• HM 03A* 04A* 07A* 08B*
1003B-1-038-56	3003-2	1-47W427-218	901	• HM 03A* 04A* 07A* 08B* 09A*
1003B-1-038-37	3003-2	1-47W427-218	902 H-10311	OR HM 01A* 04A* 07A* 08B* 09A*
1003B-1-038-38	H 3003-2	1-47W427-218	904 H-10312/H-9272	• HM 03A* 04A* 07A* 08B* 09A*
1003B-1-038-57	H 3003-2	1-47W427-218	904 H-10313	• HM 03A* 04B* 07A* 08B* 09A*

DIN5021 F-758



IE-79-14 Individual Support Inspection Data Sheet

Inspection Package Computer ID. 1R03-47W427-218

Inspection Drawing No. and Rev. 47W427-218 R0

Support Identifier (WBNP-OCP-1.40) 1003B-1-03B-27

Support Drawing No. and Rev. 1-03B-27 R-905

Discrepancy Tracking No. N/A

1. Support Inspection Checklist

Support Relative Location Correct: Yes  No

Restraint Installed Direction Correct: Yes  No

Support Type Correct: Yes  No

Structural Members/Parts Installed: Yes  No

Major Structural Member Size/Length: Size W4X13 Length 2'-9 1/2"

Specified Welds made: Yes  No

Anchor Bolts Installed: Yes  No  N/A

Bolted Connections Acceptable: Yes  No  N/A

Snubber Size/Setting Correct: Yes  No  N/A

Spring Can Size Correct: Yes  No  N/A

Cotter Keys Installed: Yes  No  N/A

Component Standard Support Sizes Correct: Yes  No  N/A

Lug Size Correct: Yes  No  N/A

Clearances Correct: Yes  No  N/A

Record Actual Clearance: Vertical: Top 0" in., Bottom 1/16" in.

Axial: N/A in., Lateral: Total Gap 1/8 in.

Support Damaged: Yes  No

Additional Attachments(s) To Support: Yes  No  N/A

Miscellaneous (Describe): N/A

IF-79-14 Individual Support Inspection Data Sheet

Inspection Package Computer ID. 1R03-47W427-218  
Inspection Drawing No. and Rev. 47W427 218 R0  
Support Identifier (WBNP-OCI-1.40) 1003B-1-03B-27  
Discrepancy Tracking No. N/A

2. Describe below each discrepant condition on this support.

~~N/A~~

3. Describe below corrective action required to rectify each discrepant condition. Specify inspection test number(s) and test level update requirements for the support identifier.

~~N/A~~

N/A  
Engineer Date

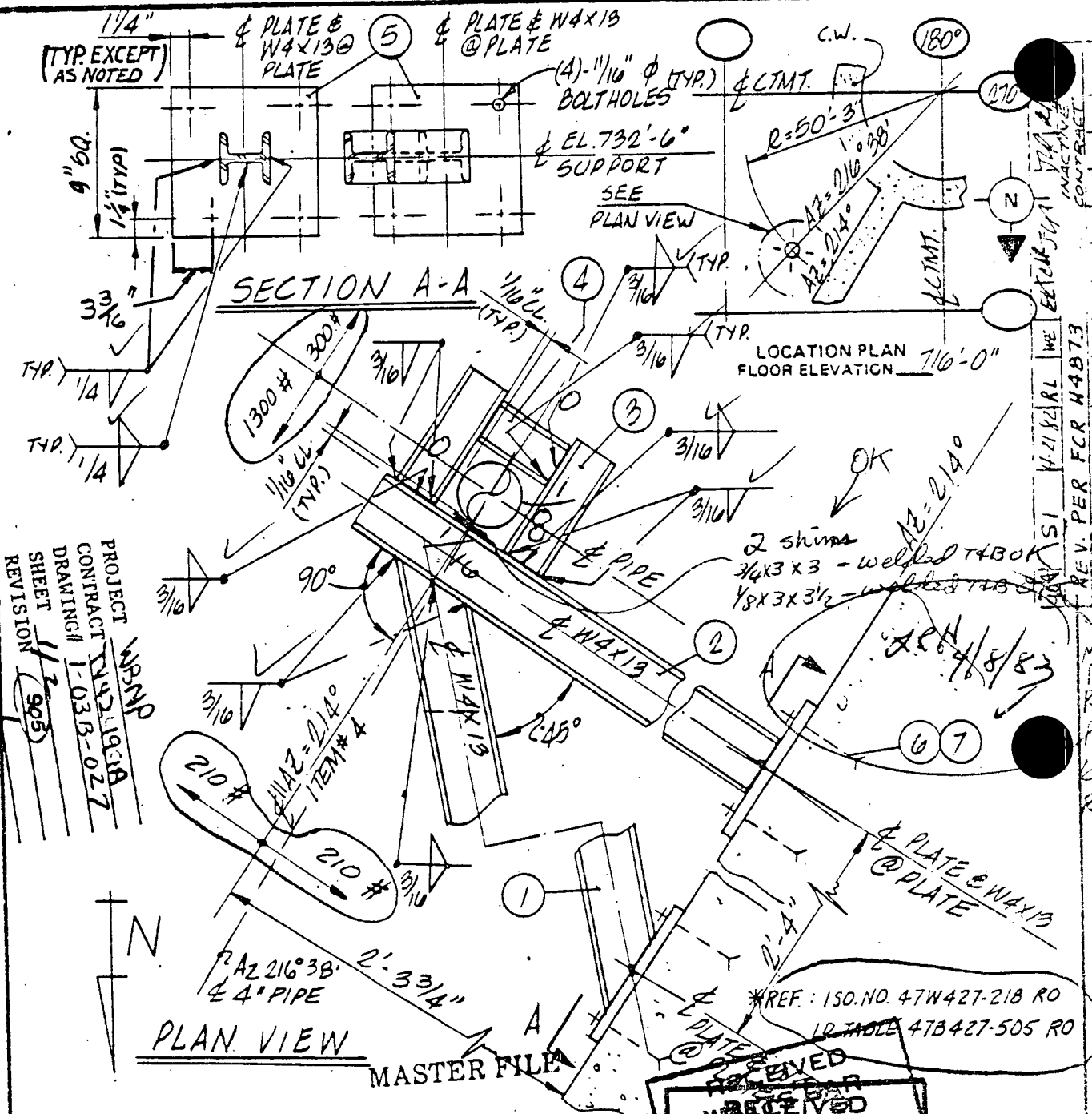
4. Corrective Action Complete and Acceptable.

N/A  
Inspector Date

5. Final Acceptance

Inspection performed in accordance with Rev. 4 of WBNP-OCP-4.56 and was acceptable.

Inspector Larry L. Haysen Date 4/8/83



PROJECT: TVA 900  
 CONTRACT: 1-03B-02Z  
 DRAWING: 1-03B-02Z  
 SHEET: 1/2  
 REVISION: 905

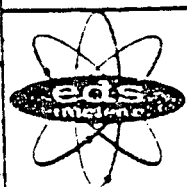
TVA 900 = VENDOR R1

SERVICE:	AUXILIARY FEEDWATER
AREA:	1C5 TVA NUC. CLASS: B
LOAD SOURCE:	*05-01 PT. 59D
DESIGN LOAD (FORCES: LBS. MOMENTS: FT.-LBS.)	
FL	210 210 (LOCAL) Mx
FV	
FM	1300 300 (LOCAL) My
MOVEMENTS, IF ANY, SHOWN ON DETAIL	
REF. DWGS	
PIPE	47W427-5R4 STEEL
ISO	THEIR

REV	DATE	DESCRIPTION	DR	CHK	APP
1	02/11/82	REDESIGN OF CONSTR			
		CONSTR			

**EDS NUCLEAR INC.**

SAN FRANCISCO, CALIFORNIA



TENNESSEE VALLEY AUTHORITY WATTS BAR NUCLEAR PLANT UNIT NO. 1			
CUST NO. TVA 42299A	MARK NO. 1-03B-27	SHT'S	REV.
JOB NO. 00000207	SKETCH NO. 1-03B-27	1/2	905

TVA 900 = VENDOR R1

ITEM NO.	FIG. NO.	SIZE	DESCRIPTION	NO. REQ'D	
1		✓ W4 x 13	3'-7" LG. (CUT TO SUIT) 3'-4"	1	⊙ □
2		✓ W4 x 13	2'-9 5/8" LG. (CUT TO SUIT)	1	⊙ □ 2'-9 1/2"
3		✓ S3 x 5.7	8 5/8" LG. 8 1/2"	2	⊙ □
4		✓ S3 x 5.7	4 5/8" LG. 4 5/8"	1	⊙ □
5		✓ 5/8" x 9" C.S. PLATE	9" LG.	2	⊙ □
6		✓ 5/8" Ø MACHINE BOLT	1 1/2" LG.	8	⊙ □
7		✓ 5/8" PHILLIPS CONCRETE ANCHOR	(S-58)	8	⊙ □

2 RL 4/8/83 ✓

REV PER FOR H-2  
 ECN No. 421  
 Date 4/21/83  
 Insp. Eng. Supv. Encl. Desgn. Drawn. Chkd. Supv. Encl. Insp.

904 51 421 83 RL WE EDC/MLA  
 REV. PER FOR H 4873  
 INACTIVE CONTRACT

PROJECT WPNP  
 CONTRACT TV42489A  
 DRAWING # I-038-027  
 SHEET 2/21  
 REVISION (905)  
 UNIT 1

RECEIVED  
 WATTS BAR  
 SEP 23 1982  
 DIV. OF CONSTR.

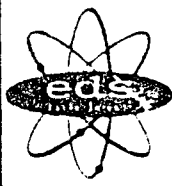
RECEIVED  
 WATTS BAR

NOV 9 1982

REVISED LOADS PER ECN'S "INACTIVE CONTRACT"  
 ECN No. 1 Date 9-17-82 Desgn. PWA JCC - C-02A  
 DIV. OF CONSTR.

**NOTES:**  
 NOTE: FOR SYMBOL DEFINITIONS  
 SEE 47A050 DRAWING SERIES  
 NOTE: APPLY MOLYKOTE 321 TO  
 ALL SLIDING SURFACES

**EDS NUCLEAR INC.**  
 SAN FRANCISCO, CALIFORNIA



TENNESSEE VALLEY AUTHORITY  
 WATTS BAR NUCLEAR PLANT  
 UNIT NO. 1

CUST. NO. TV42489A	MARK NO. 1-038-27	SMT'S	REV.
JOB NO. 0000207	SKETCH NO. 1-038-27	2/2	905

TVH 900 = VENDOR RI ✓

REVISED  
 ECN No. 1857

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEWFinding Number F/7/5/9/

0

## Comments pertinent to finding:

The piping changes addressed in this finding have been incorporated on drawings 47W427-2 R8 and 47W427-7 R14, Detail A7, and issued on 11/3/82. The design configuration of the pipe has been checked against B&V sketch attached to DRR761 (10520DIN3801) and agrees. Construction has removed temporary supports. All corrective action is complete.

References: FCR M-6891  
47W427-2 R8  
47W427-7 R14

EH Cole

Program Team Member

11/18/83

Date

Thomas E McConnell

OEDC Program Manager

11/18/83

Date

MS Martin for E.H. Beasley

Chairman, OEDC Policy Committee

11/21/83

Date

*The discussion above and attached data indicates appropriate*  
Black & Veatch *action has been completed.*

Classification: Type R Category AW.J. Zikunas

Black &amp; Veatch Project Manager

12/23/83

Date

R E Blandell

Black &amp; Veatch Senior Review Team Chairman

12/27/83

Date

TENNESSEE VALLEY AUTHORITY  
FIELD CHANGE REQUEST  
REPLY MEMORANDUM

714  
WBNP-QCI-1.13 R3  
Attachment 1  
FCR M-6891  
DOC

TO: R. W. Cantrell, Sequoyah and Watts Bar Design Projects Manager, 204 GB-K (3) PAGE

FROM: J. E. Wilkins, Project Manager, Watts Bar Nuclear Plant CONST

DATE: 04/20/82 WBN 82 0426 322  
4-26-82

Attention: J. L. PURKEY, 123 GB-K

SECTION I - CONST REQUEST

- Reason for Change: Status Point:
- Drawing Discrepancy
  - Facilitate Construction
  - Additional Design Information
  - Prior to Fuel Loading
  - After Fuel Loading but prior to Closing Capitalized Accounts
  - After Closing Capitalized Accounts for the Entire Plant

System/W.P. No. 03B/M003F25 R3

Drawings Affected 47W427-2, R7 ; 47W427-7, R13

Marked drawings/sketches required and attached  Yes  No

Change Description: REVISE AFFECTED DRAWINGS AS SHOWN ON ATTACHED SKETCHES: TO ELIMINATE UNVENTED HIGH POINT, RESOLVE INTERFERENCES, AND RESOLVE DRAWING DISCREPANCIES. NO ENGINEERED HANGERS AFFECTED

Change requested by: J. L. Purkey x436 (CONST Engineer) John J. Dawkins (Unit Supervisor)

Change approved by: B. HARRIS x2410 (EN DES Engineer) 04/19/82 (Date)

Approval obtained by:  Telephone  Memo  Other

Approved for transmittal to EN DES: V. J. Lowell (Construction Engineer) Charles O. Christopher (Project Manager)

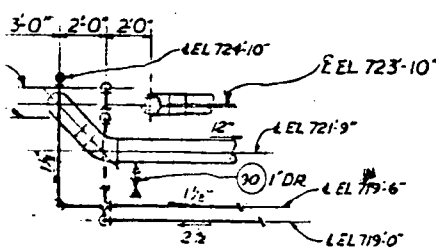
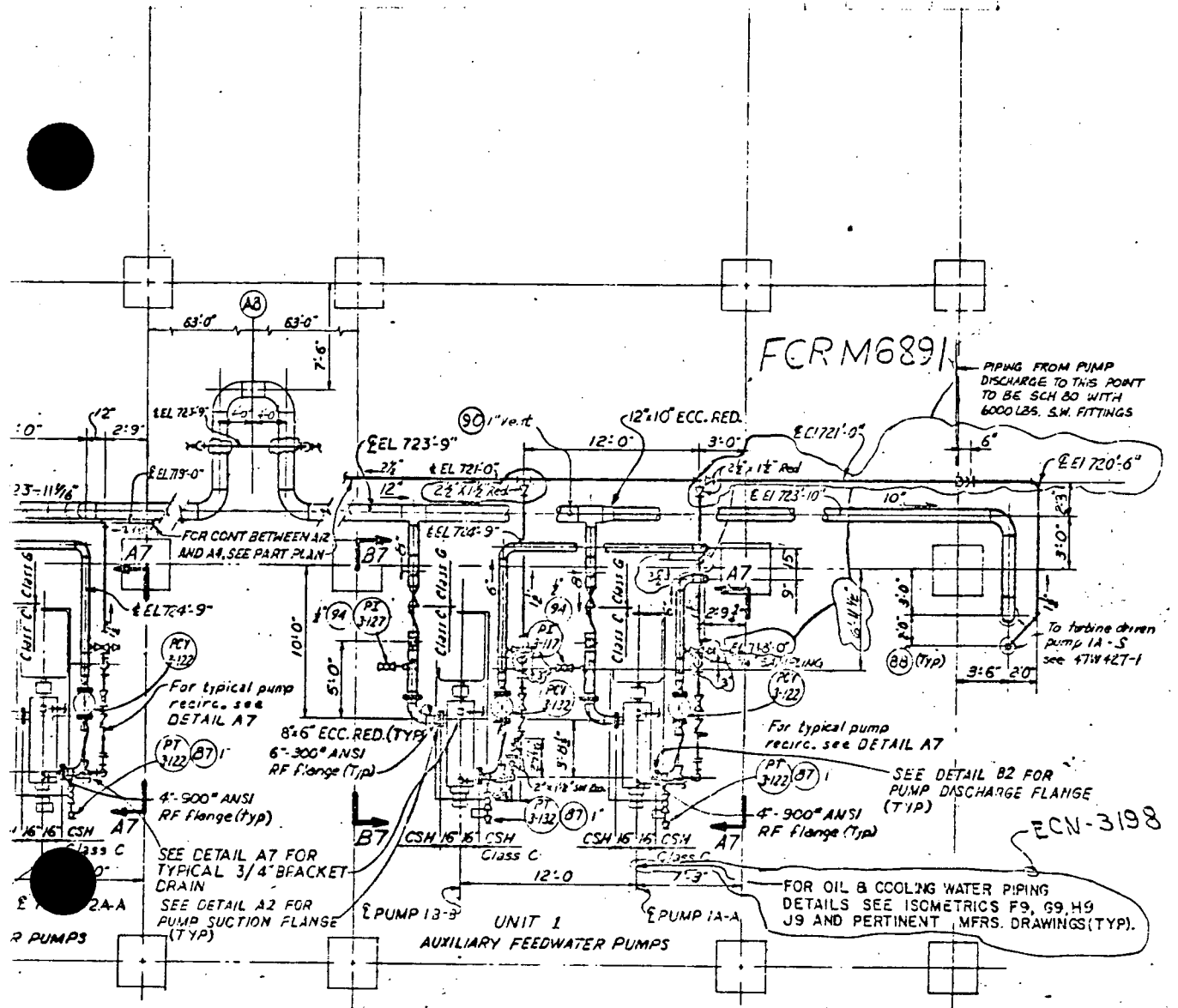
SECTION II - EN DES REPLY/RESOLUTION

ECH No. 51 Date Issued 11-16-82

Drawing Nos: 47W427-2 R8 & 47W427-7 R14

Change Complete Douglas D. Steffer (EN DES Engineer) J. Standifer/c (Design Project Manager) 11-23-82 (Date)

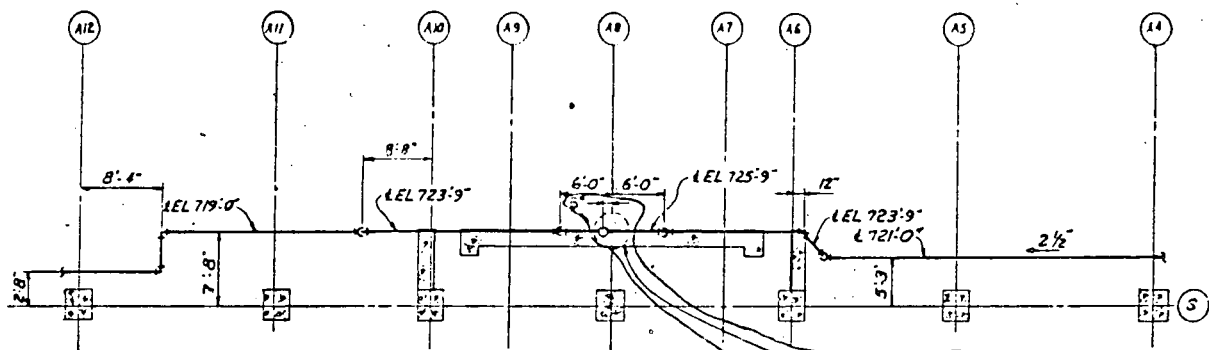
- Original - Return to CONST by EN DES
  - Copy 3 - Retained by CONST until original is returned
  - Copy 2 - Retained by EN DES
  - Copy 1 - Retained by QC&R
- WEDS, 100 UB-K



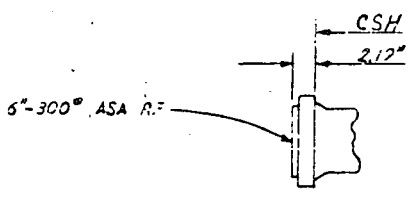
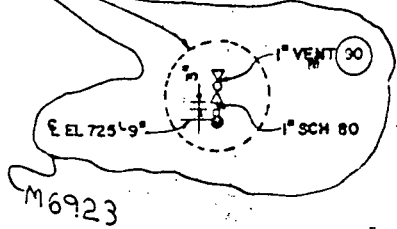
NUCLEAR PLANT DRAWING  
INSTALLATIONS ON TO OF THIS  
ON THE AS ISORE ARE BEHOLDMAN  
BY 231-04, AND ENGINEERED  
SATISFY DESIGN REQUIREMENTS.

SCALE: 1/2" = 1'-0"  
EXCEPT AS NOTED  
COMPANION DRAWINGS: 47W427-1 PART 2

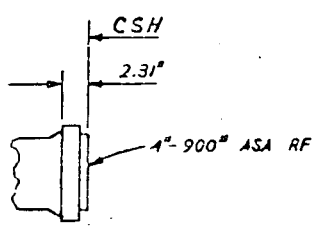
6	1955 & 1956	19-20-31	19-20-31	19-20-31	19-20-31	19-20-31	19-20-31	19-20-31	19-20-31
5	SI	19-20-31	19-20-31	19-20-31	19-20-31	19-20-31	19-20-31	19-20-31	19-20-31
4	SI	19-20-31	19-20-31	19-20-31	19-20-31	19-20-31	19-20-31	19-20-31	19-20-31
3	SI	19-20-31	19-20-31	19-20-31	19-20-31	19-20-31	19-20-31	19-20-31	19-20-31
2	SI	19-20-31	19-20-31	19-20-31	19-20-31	19-20-31	19-20-31	19-20-31	19-20-31
1	SI	19-20-31	19-20-31	19-20-31	19-20-31	19-20-31	19-20-31	19-20-31	19-20-31
REV.	ECN NO.	DATE	DESCRIPTION	BY	CHKD	APPD	ENGR	INSPE	DATE
3538	19-20-31	19-20-31	19-20-31	19-20-31	19-20-31	19-20-31	19-20-31	19-20-31	19-20-31
<p align="center"><b>POWERHOUSE AUXILIARY BUILDING UNITS 1&amp;2</b></p> <p align="center"><b>MECHANICAL AUXILIARY FEEDWATER PIPING</b></p> <p align="center"><b>WATTS BAR NUCLEAR PLANT TENNESSEE VALLEY AUTHORITY</b> DIVISION OF ENGINEERING DESIGN</p>									
SUBMITTED			RECOMMENDED			APPROVED			
<i>P. B. Clark</i>			<i>L. J. ...</i>			<i>P. B. Clark</i>			
KNOXVILLE			45			47W427-2 R3			



PART PLAN EL 713'-0"  
SCALE 1/2" = 1'-0"



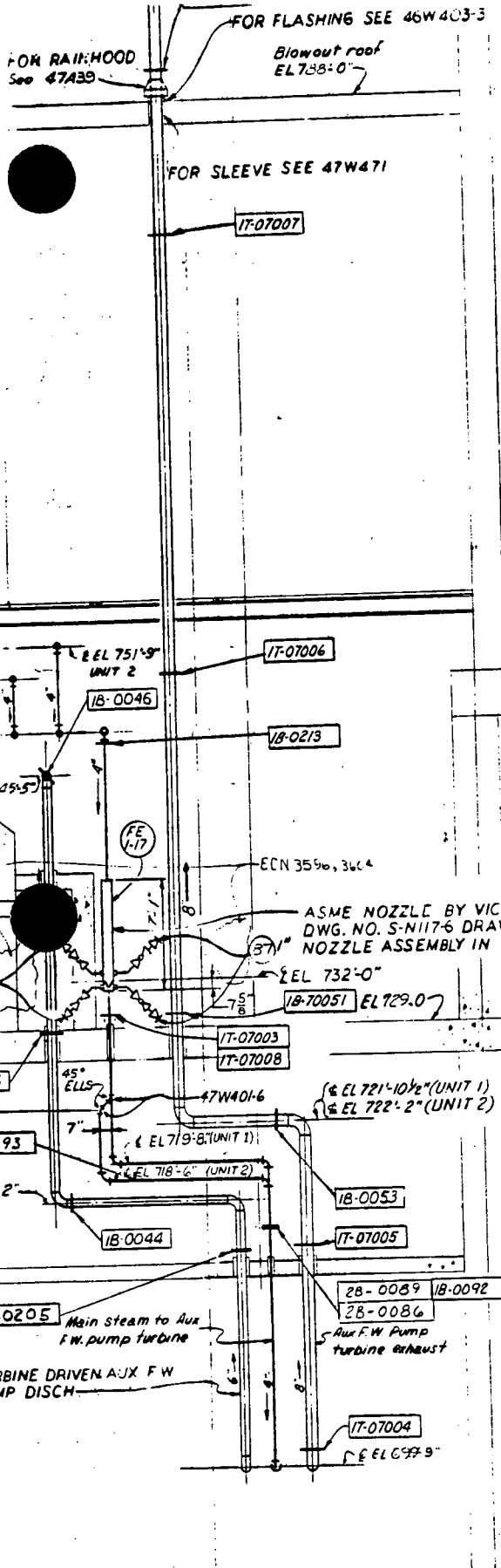
DETAIL A2  
PUMP SUCTION FLANGE FOR MOTOR  
DRIVEN AUXILIARY FEEDWATER PUMP  
TYP  
NTS



DETAIL B2  
PUMP DISCHARGE FLANGE FOR MOTOR  
DRIVEN AUXILIARY FEEDWATER PUMP  
TYP  
NTS

11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100





22. ALL TEMPORARY NIPPLES WHICH ARE INSTALLED ON DRAIN LINES TO BE USED FOR CHEMICAL CLEANING MAY REMAIN AS INSTALLED FOR USE BY NUC POWER.
23. ALL CLASS G PIPING IS SEISMICALLY SUPPORTED TO MAINTAIN PRESSURE BOUNDARY AND THE HYDROSTATIC TEST IS WITHIN THE QA PROGRAM.
24. FOR INSULATION EXCEPT MIRROR SEE 47W427-4XX SERIES, WHERE XX = SHEET NO. OF PHYSICAL PIPING SERIES.
25. FOR REFERENCE LIST OF CONTRACTOR SUPPLIED MIRROR INSULATION DRAWINGS, SEE TABLE BELOW.
26. ANALYSIS BOUNDARY IS INDICATED AS FOLLOWS
- YY-XX
- PT OF ANALYSIS PROBLEM BOUNDARY  
 @ ANCHORS, EQUIP AND ETC.
- WHERE: YY = TYPE OF ANALYSIS - 1) RA = RIGOROUS 2) AA = ALTERNATE  
 3) TA = THERMAL & DEADWEIGHT  
 4) DA = DEADWEIGHT USING TYP. HANGERS FROM 30W615 SERIES
- XX = NUMBER CORRESPONDING TO ANAL PROBLEMS AS IDENTIFIED IN TABLE I SHOWN ON DWG NO 47W427-1
- ( ) = APPLICABLE UNIT NUMBER 1) U1 = UNIT ONE  
 2) U2 = UNIT TWO  
 3) BLANK = COMMON TO BOTH UNITS

\*TVA CONTRACT 72061-92750  
 \*\*SHEET NO. ON TVA PHYSICAL DWG PIPING PRIMARILY APPEARS ON

MIRROR INSULATION DWG REFERENCE LIST

CONTRACT	DWG NO.	REV.	SH. NO.	**
590009	079C		1	
590009	063C		1	
590009	063C	A	2	

ECN 3721

REV. NO.	DATE	BY	CHKD	APPV	DESCRIPTION
16	3/16/70	J.S. BERRY	J.S. BERRY	J.S. BERRY	REV. PER ECN 3721 ANALYSIS BOUNDARY ADDED (15716, 30W BREKED PIPING)
15	3/20/69	J.S. BERRY	J.S. BERRY	J.S. BERRY	ADDED NOTE 24 IS ADDED TO NOTE 13 RE UNIT 1 SUPPORTS
14	11/17/68	J.S. BERRY	J.S. BERRY	J.S. BERRY	RELOCATE DRAIN LINE DUE TO FANAL RELOCATION & ADD NOTE PER ECN'S
13	11/17/68	J.S. BERRY	J.S. BERRY	J.S. BERRY	RELOCATED PER F.C.R. M-5844
12	11/17/68	J.S. BERRY	J.S. BERRY	J.S. BERRY	RELOCATED PER F.C.R. M-5844
11	11/17/68	J.S. BERRY	J.S. BERRY	J.S. BERRY	RELOCATED PER F.C.R. M-5844
10	11/17/68	J.S. BERRY	J.S. BERRY	J.S. BERRY	RELOCATED PER F.C.R. M-5844
9	11/17/68	J.S. BERRY	J.S. BERRY	J.S. BERRY	RELOCATED PER F.C.R. M-5844
8	11/17/68	J.S. BERRY	J.S. BERRY	J.S. BERRY	RELOCATED PER F.C.R. M-5844
7	11/17/68	J.S. BERRY	J.S. BERRY	J.S. BERRY	RELOCATED PER F.C.R. M-5844
6	11/17/68	J.S. BERRY	J.S. BERRY	J.S. BERRY	RELOCATED PER F.C.R. M-5844
5	11/17/68	J.S. BERRY	J.S. BERRY	J.S. BERRY	RELOCATED PER F.C.R. M-5844
4	11/17/68	J.S. BERRY	J.S. BERRY	J.S. BERRY	RELOCATED PER F.C.R. M-5844
3	11/17/68	J.S. BERRY	J.S. BERRY	J.S. BERRY	RELOCATED PER F.C.R. M-5844
2	11/17/68	J.S. BERRY	J.S. BERRY	J.S. BERRY	RELOCATED PER F.C.R. M-5844
1	11/17/68	J.S. BERRY	J.S. BERRY	J.S. BERRY	RELOCATED PER F.C.R. M-5844

ASME NOZZLE BY VICKERY-SIMMS, INC. DWG. NO. S-N117-6 DRAVO TO FABRICATE AND DELIVER NOZZLE ASSEMBLY IN 7-1" SECTION

REV. NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
1			R.S. FERGUSON	J.H. HARRIS		G.W. BORENRAPE		J.P. Aiken			

POWERHOUSE  
 AUXILIARY BUILDING UNITS 1&2

MECHANICAL  
 AUXILIARY FEEDWATER  
 PIPING

WATTS BAR NUCLEAR PLANT  
 TENNESSEE VALLEY AUTHORITY  
 DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
J.P. Aiken	J.P. Aiken	J.P. Aiken
KNOXVILLE	95 M	47W427-7 R16

SECTION D7-D7  
 AS SHOWN  
 OPP HAND EXCEPT AS NOTED

SCALE: 3/16" = 1'-0"  
 EXCEPT AS NOTED

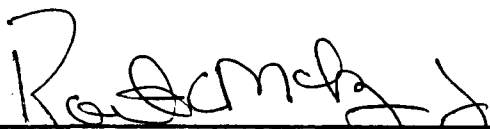
RECORD DRAWING AS CONSTRUCTED



WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEWFinding Number F1716101

## Comments pertinent to finding:

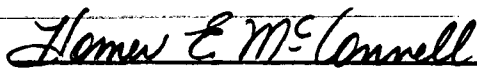
At the Black and Veatch inspection, construction of hanger number 1-03B-39 was not complete. The hanger was being tracked as incomplete by the construction accountability program. Installation of the hanger has now been completed in accordance with the existing Quality Assurance Program and tracked with the site accountability program. Attached is a copy of any additional field change requests, Quality Assurance inspection documentation, and accountability print out.



Program Team Member

11/2/83

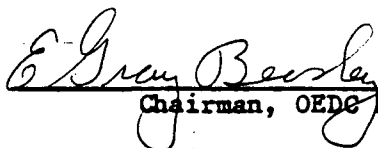
Date



OEDC Program Manager

11/4/83

Date



Chairman, OEDC Policy Committee

11/8/83

Date

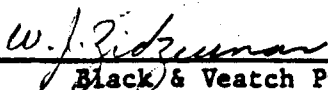
Black &amp; Veatch

*Documentation indicates hanger was subsequently modified and passed inspections (tests).*

Classification: Type

R

Category

A


Black &amp; Veatch Project Manager

11/21/83

Date



Black &amp; Veatch Senior Review Team Chairman

12/1/83

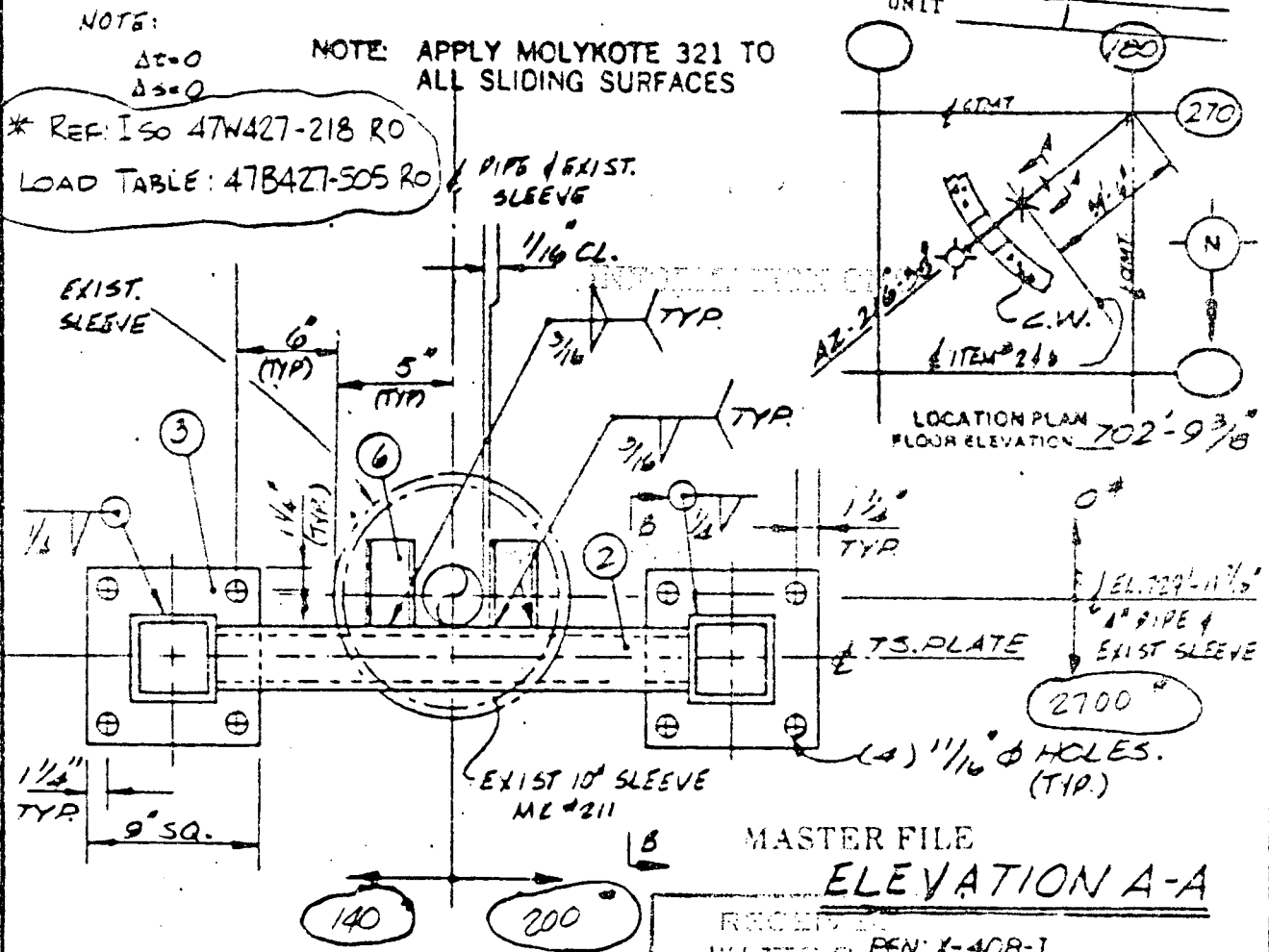
Date



5	3/8" X 1" U.S. PLATE 11" LG.	2	OK
4	3/4" PHILLIPS CONCRETE WEDGE ANCHORS (3-5)	5	OK
6	5/8 X 5.7, 5" LG.	2	OK

NOTE FOR SYMBOL DEFINITIONS  
SEE 47A050 DRAWING SERIES

PROJECT: WENP  
CONTRACT: WATTS BAR  
DRAWING: WENP-500A  
SHEET: 1 OF 3  
REV: 10/2



NOTE:  
Δc=0  
Δs=0

\* REF: ISO 47W427-218 RO  
LOAD TABLE: 47B427-505 RO

NOTE: APPLY MOLYKOTE 321 TO ALL SLIDING SURFACES

LOCATION PLAN  
FLOOR ELEVATION 702'-9 3/8"

MASTER FILE  
ELEVATION A-A

RECEIVED  
WATTS BAR PEN: X-408-1

SERVICE: AUXILIARY FEED WATER	SEP 28 1962
AREA: ICS TVA NUC. CLASS: B	ISSUED FOR CONSTRUCTION
LOAD SOURCE: 205-011 PT. 64A	DIV. OF CONSTRUCTION
DESIGN LOAD (FORCES: LBS. MOMENTS: FT. LBS.)	PRD BY: [initials]

P1	200	140	Mx	
P2	-	2700	My	
P3			Mz	

MOVEMENTS, IF ANY, SHOWN ON DETAIL

REQ. DWG 5  
PIPE 47W427-5 R. 4 STEEL

**EDS NUCLEAR INC.**  
SAN FRANCISCO, CALIFORNIA

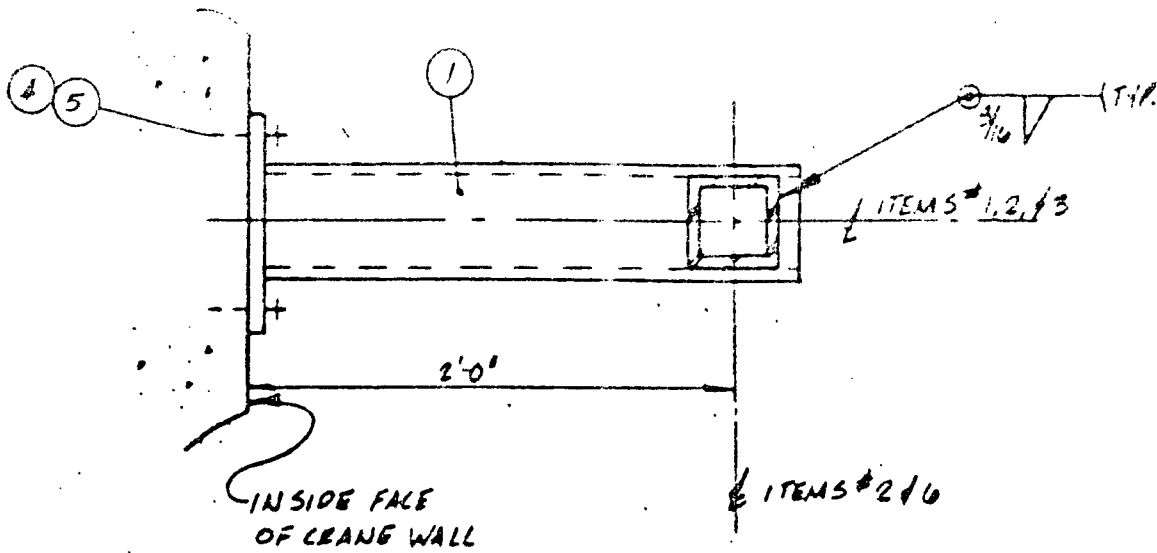
TENNESSEE VALLEY AUTHORITY  
WATTS BAR NUCLEAR PLANT  
UNIT NO. 1

CUSTOMER NO: T142499A  
WORK NO: 1-038-39  
10340  
26102307

DATE: 1-038-39  
REV: 1/2 1962

908 2576, 5207, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

TVA 900 - VENDOR RD



SECTION B-B

902 2576, 3200-1-1  
 REV LOADS P  
 'N'S "INACTIVE CONTRACT  
 700 106 354

11 210	19-60	10-10-60	10-10-60	10-10-60	10-10-60	10-10-60	10-10-60	10-10-60	10-10-60
11 210	19-60	10-10-60	10-10-60	10-10-60	10-10-60	10-10-60	10-10-60	10-10-60	10-10-60

PROJECT WBNP  
 CONTRACT V42499A  
 DRAWING I-03B-059  
 SHEET 2/2  
 REVISION 902  
 UNIT 1

MASTER FILE

WATTS BAR  
 SEP 28 1962  
 DIV. OF CONSTR.

NOTES:

**EDS NUCLEAR INC.**  
 SAN FRANCISCO, CALIFORNIA

TENNESSEE VALLEY AUTHORITY  
 WATTS BAR NUCLEAR PLANT  
 UNIT NO. 1

	CUST NO. <u>V42499A</u>	WORK NO. <u>1-03B-39</u>	DATE <u>9/2</u>	REV. <u>102</u>
	NO. & NO. <u>01000107</u>	DATE <u>1-03B-39</u>		

TYP 900 - VENDOR PC

FIELD CHANGE REQUEST  
REPLY MEMORANDUM

Attachment A  
FCR H-6937  
DOC  
723

TO: C. Standifer, Sequoyah and Watts Bar Design Projects Manager, 204 GB-K (3)

FROM: Guenter Wadewitz, Project Manager, Watts Bar Nuclear Plant CONST

DATE: WEN '83 0309 371

Attention: J. C. PURKEY, (EN DES ON SITE)

SECTION I - CONST REQUEST

Reason for Change:	Status Point:	System No. <u>03</u>
<input type="checkbox"/> Drawing Discrepancy	<input checked="" type="checkbox"/> Prior to Fuel Loading	Work Package No. <u>H003 E10</u>
<input checked="" type="checkbox"/> Facilitate Construction	<input type="checkbox"/> After Fuel Loading but prior to Closing Capitalized Accounts	Work Plan No. <u>NA</u>
<input type="checkbox"/> Additional Design Information	<input type="checkbox"/> After Closing Capitalized Accounts for the Entire Plant	

Documents Affected 1-03B-39 R902

Marked documents required and attached  Yes  No

Document revision required  Yes  No

Change Description: REVISE PER THE ATTACHED SKETCH (EP FCR F-2182)

Change requested by: <u>JO Applewhite</u> (CONST Engineer) <u>HGC 2-17-83</u>	<u>THOMAS R. BROWN</u> (Unit Supervisor) <u>2-1-83</u>
Change approved by: <u>Wayne L. Smathers</u> (EN DES Engineer)	<u>2/23/83</u> (Date) <u>EN DES ON SITE</u>
Approval obtained by: _____ Telephone _____ Memo _____ <input checked="" type="checkbox"/> Other	
Approved for transmittal to EN DES: <u>Bill E. Hoffman</u> (Construction Engineer)	<u>Thomas R. Brown</u> (Project Manager)

SECTION II - EN DES REPLY/RESOLUTION

FCR No. \_\_\_\_\_ Date Issued \_\_\_\_\_

Drawing Nos: \_\_\_\_\_

Change Complete \_\_\_\_\_  
(EN DES Engineer) (Design Project Manager) (Date)

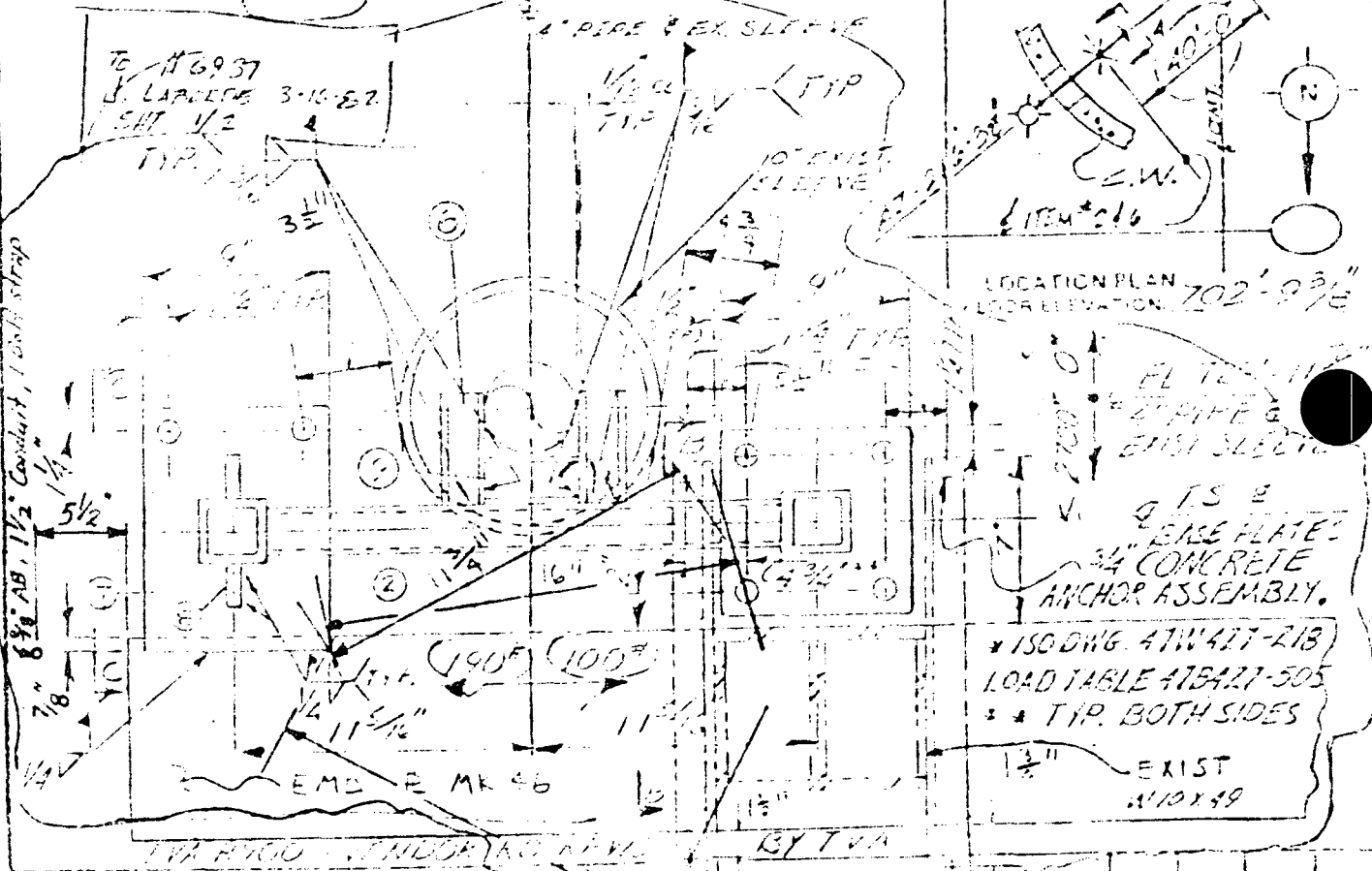
Original - Return to CONST by EN DES cc: Hanger Inspection Unit  
 Copy - Retained by CONST until original is returned  
 Copy - Retained by EN DES  
 Copy - Retained by OCSR  
 MEDS, 100 UB-K

FIG. NO.	QTY	DESCRIPTION	NO. REQD	NO. REQD
1		T.S. 4" x 4" x 3/16" LG. AS REQD	2	<input type="checkbox"/>
2		T.S. 3" x 3" x 3/16" LG. AS REQD	1	<input type="checkbox"/>
3		5/8" x 4" C.S. PLATE 9" LG. (W/4) 11/16" HOLES	1	<input type="checkbox"/>
4		5/8" PHILLIPS CONCRETE ANCHORS (S-38)	6	<input type="checkbox"/>
5		1/2" MACHINE BOLT, 1 1/8" LG.	6	<input type="checkbox"/>
6		53 x 5.7 x LG. AS REQD	2	<input type="checkbox"/>
7		3/8" x 4" C.S. PLATE, 1-1/2" LG. W(2) 11/16" HOLES	1	<input type="checkbox"/>
8		5/8" x 3 3/4" C.S. PLATE, 3 3/4" LG. (CUT TO SUIT)	2	<input type="checkbox"/>
9		53 x 5.7 x LG. AS REQD	1	<input type="checkbox"/>

NOTE: APPLY POLYKOTE 321 TO ALL SLICING SURFACES

PROJECT NAME: CONTRACT 242495A  
 DRAWING: 17-93-039  
 SHEET 1/2

NOTE:  
 25.0  
 35.0



LOCATION PLAN  
 COORDINATION: 702'-0 3/8"

FL TYPICAL  
 4" PIPE &  
 10" SLEEVE  
 3/4" T.S. &  
 3/4" CONCRETE  
 ANCHOR ASSEMBLY.

\* ISO DWG. 47W427-218  
 LOAD TABLE 47B427-505  
 3 & TYP. BOTH SIDES

1/2" EXIST  
 4" x 4"

SERVICE: AUXILIARY FEED WATER  
 AREA: 103 | TYPING CLASS: B  
 LOAD SOURCE: ES-01(S) LEV. 2, FT. 23A  
 DESIGN LOAD: (FORCES (LBS), MOMENTS (FT. LBS.))

ISSUED FOR CONSTRUCTION HL VJ RC  
 REV. DATE: \_\_\_\_\_ REVISION: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_ CHECKED BY: \_\_\_\_\_

F1	206	182	Mx	
F2		1280	My	
F3			Mz	

**EDS NUCLEAR INC.**

SAN FRANCISCO, CALIFORNIA

TENNESSEE VALLEY AUTHORITY  
 WATER RESOURCES DIVISION

MOVEMENTS, IF ANY, SHOWN ON DETAIL  
 REF DWGS: PIPE 47W427-505, 4 STEEL 46N438-2 PIA



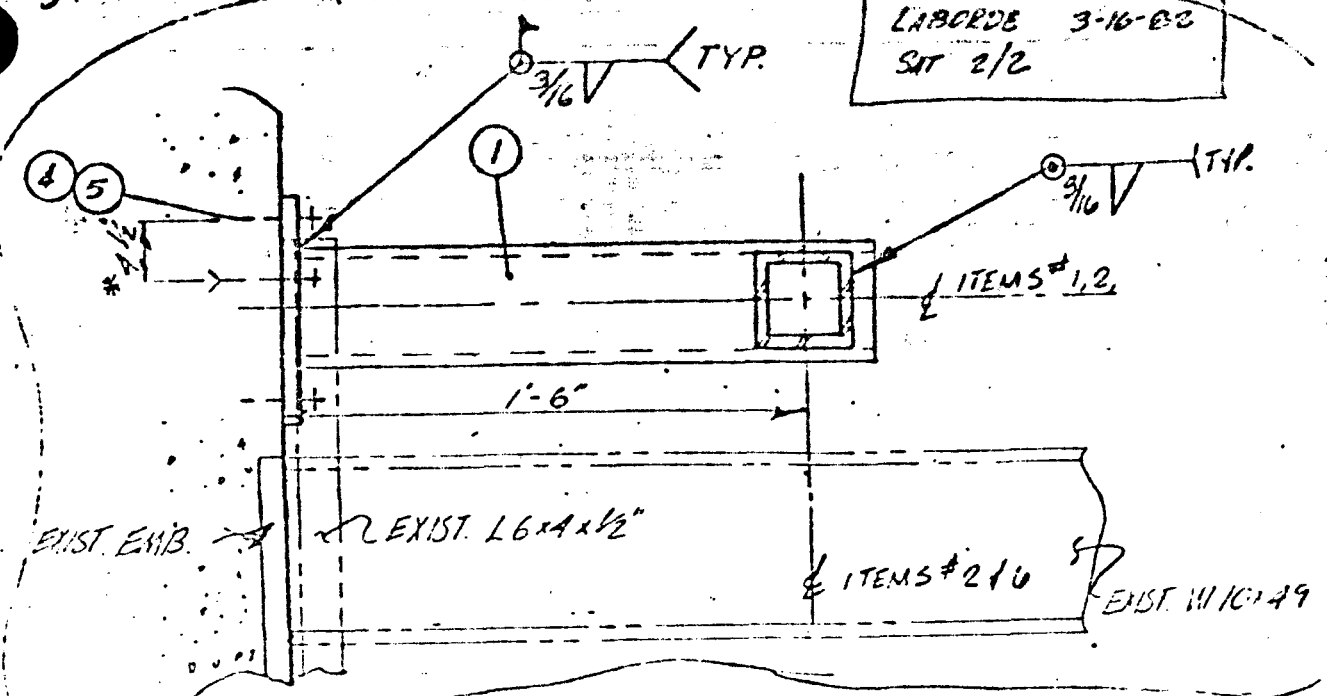
CUSTOMER NO. T402499A  
 PROJECT NO. 060-007  
 SHEET NO. 1/2



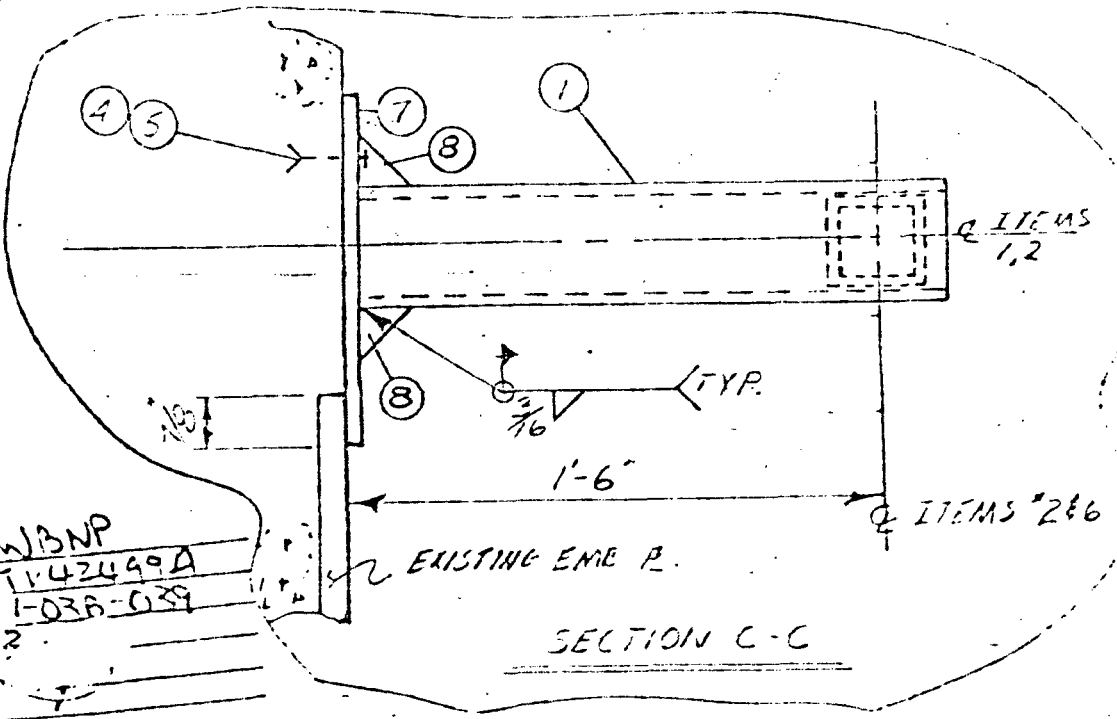
FCR # 6757

SH 20F2

To 11-6937  
 LABORDE 3-16-68  
 SAT 2/2



SECTION B-B



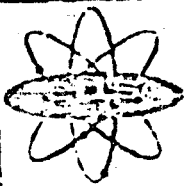
SECTION C-C

PROJECT WBNP  
 CONTRACT 142499A  
 DRAWING 1-038-089  
 SHEET 2/2  
 REVISION  
 UNIT

TVA R900 - VENDOR RO REVISIONS BY TVA

NOTES:

**EDS NUCLEAR INC.**  
 SAN FRANCISCO, CALIFORNIA



Tennessee Valley Authority		SHTS		REV	
Shelby BWR Nuclear Plant		UNIT NO. 1			
CUST. NO.	TVAC499A	DATE	1/6	BY	
JOB NO.	04-1001	DRAWING NO.		REV	

REV. LOADS & ADDED PEN #  
 Date  
 Description  
 Drawn  
 Checked  
 Approved  
 Date  
 Description  
 Drawn  
 Checked  
 Approved  
 Date  
 Description  
 Drawn  
 Checked  
 Approved

TENNESSEE VALLEY AUTHORITY  
FIELD CHANGE REQUEST  
REPLY MEMORANDUM

FORM TCR-1.13 1/7  
Attachment A  
FOR 14-9273  
DOC

TO: J.C. Stumfifer, Sequoyah and Watts Bar Design Project Manager, 204 GB-K (3)  
FROM: Guenter Wadewitz, Project Manager, Watts Bar Nuclear Plant CONST

SUBJECT: **WBN '83 0302 311**

ATTENTION: J.L. Nash, (EN DES ON SITE)

SECTION I - CONST REQUEST

Reason for Change:	Startup Point:	System No. <u>03</u>
<input checked="" type="checkbox"/> Drawing Discrepancy	<input checked="" type="checkbox"/> Prior to Fuel Loading	Work Package No. <u>N/A</u>
<input type="checkbox"/> Facilitate Construction	<input type="checkbox"/> After Fuel Loading but prior to Closing Capitalized Accounts	Work Plan No. <u>N/A</u>
<input type="checkbox"/> Additional Design Information	<input type="checkbox"/> After Closing Capitalized Accounts for the Entire Plant	

Drawings Affected: 47W427-218 R/6

Requested documents received and attached  Yes  No

Previous revision required  Yes  No

Change Description: CHANGE DIMENSIONS AS SHOWN ON ATTACHED SHEET.

Change requested by: CONNIE M. HUBERT 2-9-83  
(CONST Engineer)

Tao S. Chao 2-9-83  
for (Unit Supervisor)

Change approved by: Frank A. Gans  
(EN DES Engineer)

February 17, 1983  
(Date)

Approval obtained per \_\_\_\_\_ Telephone \_\_\_\_\_ Date \_\_\_\_\_

EN DES ON SITE  
 Other

Approved for time sheet by EN DES: Will Chapman

Guenter Wadewitz  
(Project Manager)

CRITERIA FOR APPROVAL OF FIELD CHANGES

1. No. \_\_\_\_\_

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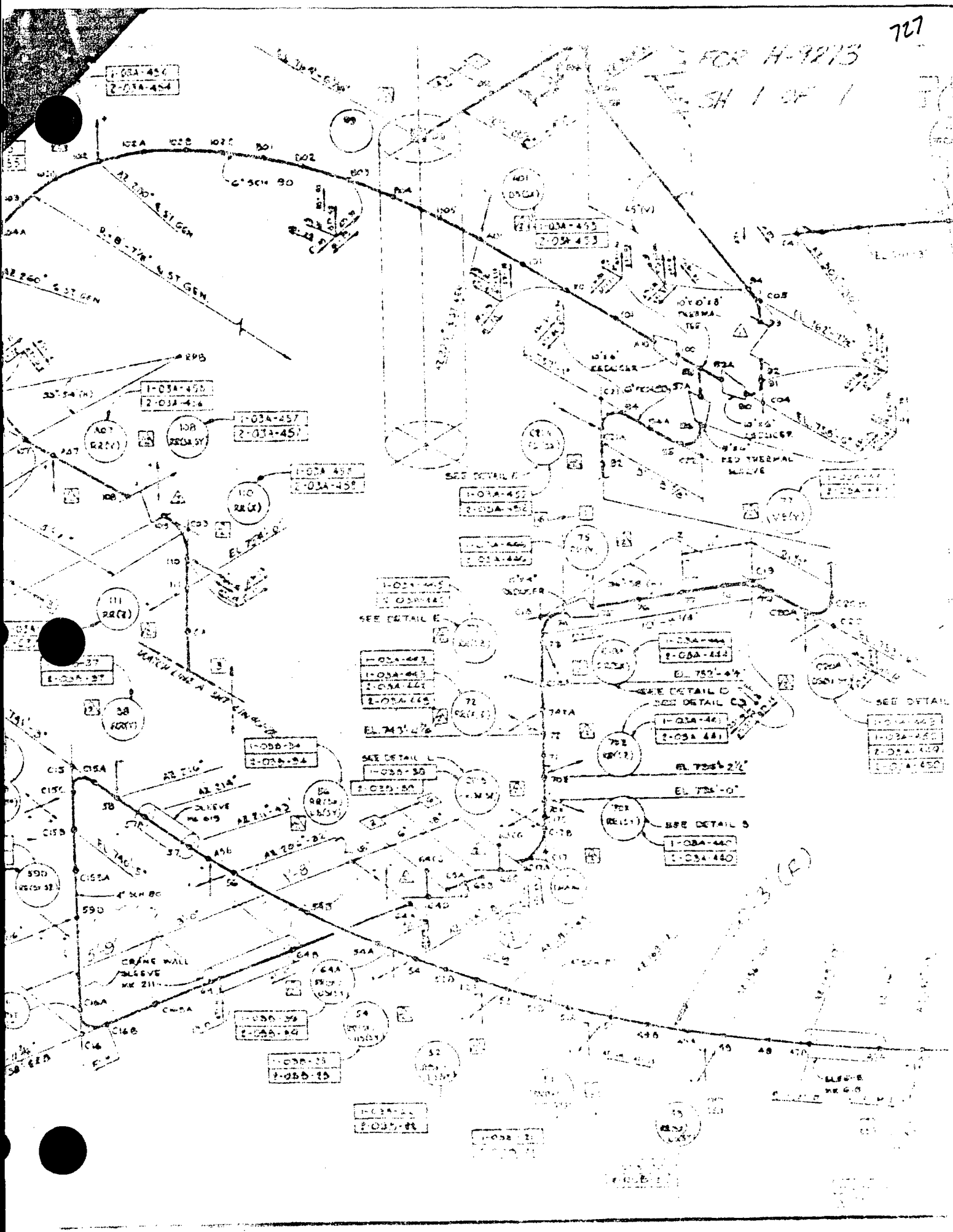
97. \_\_\_\_\_

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100. \_\_\_\_\_

FOR H-9213  
SH 1 OF 1



1003B-1-038-11	3003-2	1-47W427-218	903		* HM 03A* 04A* 07A* 08B* 09A*
1003B-1-038-12	3003-2	1-47W427-218	903	H-9010	* HM 03A* 04A* 07A* 08A* 09A*
1003B-1-038-13	3003-2	1-47W427-218	903		* HM 03A* 04A* 07A* 08B* 09A*
1003B-1-038-14	3003-2	1-47W427-218	903		* HM 03A* 04A* 07A* 08B* 09A*
1003B-1-038-15	3003-2	1-47W427-218	903		* HM 03A* 04A* 07A* 08B* 09A*
1003B-1-038-16	3003-2	1-47W427-218	903		* HM 03A* 04A* 07A* 08B* 09A*
1003B-1-038-17	3003-2	1-47W427-218	903		* HM 03A* 04A* 07A* 08B* 09A*
1003B-1-038-18	3003-2	1-47W427-218	903		* HM 03A* 04A* 07A* 08B* 09A*
1003B-1-038-19	3003-2	1-47W427-218	903		* HM 03A* 04A* 07A* 08B* 09A*
1003B-1-038-20	3003-2	1-47W427-218	903		* HM 03A* 04A* 07A* 08B* 09A*
1003B-1-038-21	3003-2	1-47W427-218	903		* HM 03A* 04A* 07A* 08B* 09A*
1003B-1-038-22	3003-2	710H 1-47W427-218	903		* HM 03A* 04B* 07A* 08B*
1003B-1-038-23	3003-2	711H 1-47W427-218	903		* HM 03A* 04A* 07A* 08B* 09A*
1003B-1-038-24	3003-2	1-47W427-218	901		* HD 08A*
1003B-1-038-25	3003-2	1-47W427-218	905		* HK 01A* 02A* 03A* 04A* 07A* 09A*
1003B-1-038-26	3003-2	1-47W427-218	901		* HD 08A*
1003B-1-038-27	H 3003-2	1-47W427-218	905		* HK 01A* 02A* 03A* 04A* 07A* 08A*
1003B-1-038-28	3003-2	1-47W427-218	901		* HD 08A*
1003B-1-038-29	3003-2	1-47W427-218	901		* HD 08A*
1003B-1-038-30	3003-2	987A 1-47W427-218	903	NCR 3085K	* HK 03A* 04B* 08B* 09A*
1003B-1-038-31	3003-2	1-47W427-218	901		* HD 08A*
1003B-1-038-32	3003-2	1-47W427-218	901		* HD 08A*
1003B-1-038-33	3003-2	1-47W427-218	901		* HD 08A*
1003B-1-038-34	3003-2	1-47W427-218	902		* HM 03A* 04A* 07A* 08B*
1003B-1-038-35	3003-2	1-47W427-218	902	1778H/H-7516	* HK 01A* 02A* 03A* 04A* 05A* 08A*
1003B-1-038-36	3003-2	713H-P 1-47W427-218	902		* HK 08A*
1003B-1-038-37	3003-2	1-47W427-218	901		* HM 03A* 04A* 07A* 08B*
1003B-1-038-38	H 3003-2	1-47W427-218	902		* HL 03A* 04A* 07A* 08A*
1003B-1-038-39	H 3003-2	1-47W427-218	902		* HK 01A* 02A* 03A* 04A* 07A* 08A*
1003B-1-038-40	H 3003-2	1-47W427-218	901		* HD 08A*
1003B-1-038-41	H 3003-2	1-47W427-218	903	H-0605	* HM 03A* 04A* 07A* 08A*
1003B-1-038-42	3003-2	1-47W427-218	901		* HD 08A*
1003B-1-038-43	3003-2	1-47W427-218	901		* HD 08A*
1003B-1-038-44	3003-2	1-47W427-218	901		* HK 03A* 04A* 08B*
1003B-1-038-45	3003-2	1-47W427-218	901		* HD 08A*
1003B-1-038-46	3003-2	1-47W427-218	901	H-8606	* HM 03A* 04A* 07A* 08A*
1003B-1-038-47	3003-2	704H-H70 1-47W427-218	903		* HM 03A* 04A* 07A* 08B* 09A*
1003B-1-038-48	H 3003-2	1-47W427-218	902	H-10311	* HM 03B* 04A* 07A* 08D 09A*
1003B-1-038-49	H 3003-2	1-47W427-218	904	H-10312/H-4970	* HM 03A* 04A* 07A* 08C 09A*
1003B-1-038-50	H 3003-2	709H-H70 1-47W427-218	904	H-10134	* HM 03A* 04A* 07A* 08C 09A*
1003B-1-038-51	H 3003-2	1-47W427-218	904		* HK 01A* 02A* 03A* 04A* 07A* 08B* 09A*

DUNBELL F-760

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEWFinding Number F/7/6/2/

## Comments pertinent to finding:

A pre-transfer walkdown was performed in February, 1983, by Hanger Engineering Unit A personnel involving the drain lines for the motor driven AFW pumps on EL. 713'. There were no temporary hangers identified by this walkdown. The temporary hangers denoted by Black and Veatch under number F762 had been removed prior to February, 1983.

<u><i>Robert McRy</i></u> Program Team Member	<u>11/9/83</u> Date
<u><i>James E McConnell</i></u> OEDC Program Manager	<u>11/16/83</u> Date
<u><i>MS Martin for EA Beasley</i></u> Chairman, OEDC Policy Committee	<u>11/18/83</u> Date

Black & Veatch *TVA stated action is considered acceptable.*

Classification: Type \_\_\_\_\_ R Category A

<u><i>W. J. Zidzuman</i></u> Black & Veatch Project Manager	<u>12/6/83</u> Date
<u><i>R. E. Blardell</i></u> Black & Veatch Senior Review Team Chairman	<u>12/19/83</u> Date

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F1716131

Comments pertinent to finding:

At the Black and Veatch inspection, construction of hanger number O3B-1AFW-R202 was not complete. The hanger was being tracked as incomplete by the construction accountability program. Installation of the hanger has now been completed in accordance with the existing Quality Assurance Program and tracked with the site accountability program. Attached is a copy of any additional field change requests, Quality Assurance inspection documentation, and accountability print out.

Robert C McKay  
Program Team Member

11/2/83  
Date

L E McConnell  
OEDC Program Manager

11/4/83  
Date

E Gray Beasley  
Chairman, OEDC Policy Committee

11/19/83  
Date

Black & Veatch *Based on data in the original DRR (DRR 581) this hanger has been re-designed. The attached information supports close out of this item*

Classification: Type R Category A

W. J. Zitzman  
Black & Veatch Project Manager

12/8/83  
Date

R E Blawie  
Black & Veatch Senior Review Team Chairman

12/19/83  
Date

10	2	-	TS 5X5X1/2 XLG AS REQ'D	x
20	1	-	TS 4X4X1/2 XLG AS REQ'D	x
30	2	-	R 1/2 X3X0'-6" LG	
40	1	B-P203-4		
50	1	B-P200-3	P-P 12"	
60	1	B-P200-3		

BYTVA	
BYTVA	
BYTVA	
BYTVA	

1	SDE	( 3 ) HRS
1	SDD	
1	SB	210-3 FOR STRUT ITEM # 5 (PIN TO PIN)
1	EZP	
1	BKT	

SEE TVA DWG. # 47A050-181A  
 (2) 7/8" Ø HOLES

REV	PER	FOR	DATE	BY
1	2620	2-10-81	LA	RC

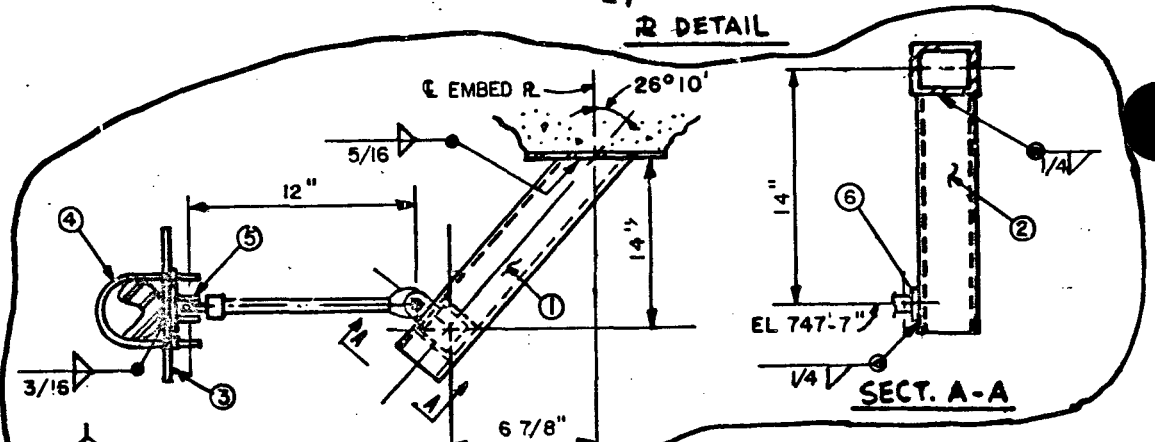
REVISED LOADS PER ECN

ECN No.	ECN No.	Date	Design	Drawn	Checked	Supv	By	Insp	Subm	Reas	Appr
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ISO 47W427-200-R3  
 JOINT: 50  
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 TYPE: RR  
 + 2000  
 DESIGN LOAD: 1400

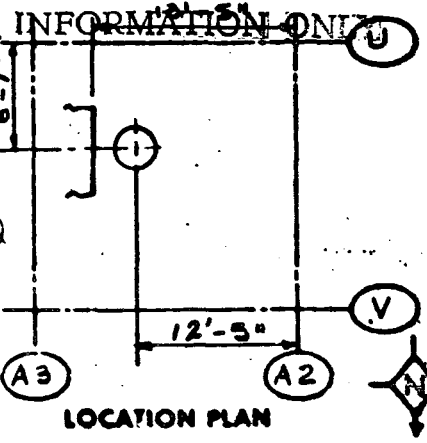
INVOICE CODE

DESCRIPTION



NUCLEAR  
 T. V. A. CLASS B.

4" PIPE SIZE  
 PLAN



INFORMATION ONLY

LOCATION PLAN

PROJECT WBNP CONTRACT 74C38-83015  
 DRAWING # 03B-IAFW-R202  
 SHEET 1 of 1 REV 902 UNIT 1  
 DRAVO ISO E-2879-IC-10

*FCR-  
 H-7506*

DESIGNER	RG
ENGINEER	EP
CHECKER	SD
DATE	10-31-77

BERGEN-PATERSON PIPESUPPORT CORP.			
PIPING SYSTEM	AUXILIARY FEEDWATER		
REF. DWGS.	PIPING 47W427-3-10	STRUCTURAL 48N223-2-10	
JOB NO.	3604	MSB NO.	009
MARK #	03B-IAFW-R202		
DWG. NO.	101	902	

**L.O.P.** WBNP-QCP-4.23  
Appendix 8  
Attachment A

FINAL INSPECTION OF SEISMIC SUPPORT

Reference Drawing & Revision No.

03B-1AFW-R2-02 R1

Acceptable

- 1. Fabrication Tolerances ✓
- 2. Installation Tolerances ✓
- 3. Unique Identifier ✓
- 4. Protective Coating or SS Shims N/A
- 5. Support Grouted N/A
- 6. Integral Attachment N/A
- 7. Insulation Saddle N/A
- 8. Cleanliness of SS Pipe N/A

Remarks: FCR # H-7506  
BOLTS ACCEPTABLE  
HG 635

I certify that this inspection was accomplished in accordance with Rev. 2 of this procedure.

Challenger 5-8-82  
Inspector Date



WSP-4.23-S  
Attachment A (LSP)

SUPPORT PERAL INSPECTION

SUPPORT ID  
10030-030-1AFW-R202  
Reference Drawing  
030-1AFW-R202 Rev 9D1  
Accepted  
(Check)

- Unique Identifier
- Fabrication
- Installation
- |      |           |           |           |
|------|-----------|-----------|-----------|
|      | Top       | Bottom    | Lateral   |
| Caps | <u>NA</u> | <u>NA</u> | <u>NA</u> |
- Stainless Pipe Protection NA
- Grout NA
- Integral Attachments NA
- Insulation Saddle or Lugs NA
- Stainless Pipe Cleanliness NA
- Bolted Connections
- Cotter Pins

Remarks: FOR H-7506

Ref ATT.G. HG-635  
Inspected in accordance with  
Rev 2 of 6/1/83

LeRoy David 2-1-83  
Inspector

INSPECTED 2-1-83

WR 4244

PROGRAM: Z55320  
DATE: 10 26 83

WBNP HANGER INFORMATION AND TRACKING  
REPORT: FULL-FILE BY DRAWING FOR 79-14 GROUP

DRAWING NO:  
1-47W427-200

PAGE 118

IDENTIFIER	CL	REFR	PKG/PLN	DRAWING	REV	DESCRIPTION	STAT	TEST LIB & SEQUENCE OF TESTS
1R03-47W427-200			2090	1-47W427-200		AUX FEEDWATER	16	HV 16A
				WALKED CCWN				
1003-A060-3-1	M		X003-2	1-47W427-200	001	H-8192	*	HA 01A* 02A* 03A* 04A* 08B*
				1-47W427-201				
1003-A060-3-2			X003-2	1-47W427-200	001	H-978 H-7065	*	HA 01A* 02A* 03A* 04A* 08A* 09A*
1003-A427-4-1	M		X003-2	9528	000	H-7497	*	HK 01B* 02A* 03A* 04A* 07A* 08A*
1003-A427-4-2	M		X003-2	9528	000	H-7498	*	HL 03A* 04A* 07A* 08A*
1003B-03B-1AFW-R20J			X003-2	1-47W427-200	905		*	HB 03A* 04A* 08B*
1003B-03B-1AFW-R20I			X003-2	1-47W427-200	005	H-4705/H-4686	*	HD 03A* 04A* 08B* 09A*
				/01H-H/C				
1003B-03B-1AFW-R20J			X003-2	1-47W427-200	003	H-4687/H-4706	*	HD 03A* 04A* 08A* 09A*
1003B-03B-1AFW-R20K	M		X003-2	9871	001	H-6767/H-423	C3	HB 02A* 03B* 04A* 08C* 09A*
1003B-03B-1AFW-R20L			I	1-47W427-200	002		VOID	* HA 08A*
1003B-03B-1AFW-R36	M		X003-2	1-47W427-200			*	HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-R38			X003-2	1-47W427-200	901		*	HB 02A* 03B* 04A* 08B* 09A*
1003B-03B-1AFW-R39			X003-2	1-47W427-200	901		*	HA 01A* 02A* 03B* 04A* 08B* 09A*
1003B-03B-1AFW-R41			X003-2	1-47W427-200	000		*	HB 02A* 03B* 04A* 08B* 09A*
				/02H-H/C				
1003B-03B-1AFW-R42			X003-2	1-47W427-200	903		*	HA 01A* 02A* 03B* 04A* 08B* 09A*
1003B-03B-1AFW-R43			X003-2	1-47W427-200			*	HA 01A* 02A* 03A* 04A* 08A* 09A*
				/03H-H/C				
1003B-03B-1AFW-R44			X003-2	1-47W427-200			*	HB 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-R45			X003-2	1-47W427-200	902		*	HD 03A* 04A* 08A* 09A* 01A* 02A*
				/04H-H/C				
1003B-03B-1AFW-R46			X003-2	1-47W427-200			*	HB 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-R47			I	1-47W427-200	001		VOID	* HD 08A*
1003B-03B-1AFW-R48	M		X003-2	1-47W427-200	002	H-4997/H-6299	*	HA 01A* 02A* 03A* 04A* 08A* 09A*
				/05H-H/C				
1003B-03B-1AFW-R49	M		X003-2	1-47W427-200	001	H-4785	*	HB 02A* 03A* 04A* 08A* 09A*
				/06H-H/C				
1003B-03B-1AFW-V37	M		X003-2	9529	000		*	HH 01A* 02A* 03A* 04A* 06B* 08A* 09A*
1003B-03B-1AFW-V40			X003-2	9529	901		*	HH 01A* 02A* 03A* 04A* 06B* 08B* 09A*
				/03X				

DIV 5163 F-763

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F / 7 / 6 / 4 /

Comments pertinent to finding:

At the Black and Veatch inspection, construction of hanger number 47A060-3-1 was not complete. The hanger was being tracked as incomplete by the construction accountability program. Installation of the hanger has now been completed in accordance with the existing Quality Assurance Program and tracked with the site accountability program. Attached is a copy of any additional field change requests, Quality Assurance inspection documentation, and accountability print-out. The print-out is a Quality Assurance document and will be retained as life of plant documentation.

Rosemary J  
Program Team Member

11/18/83  
Date

Harold E McConnell  
OEDC Program Manager

11/18/83  
Date

ms martin for E J Beasley  
Chairman, OEDC Policy Committee

11/21/83  
Date

*The attached documentation indicates that the Range was subsequently revised and certified. The action taken satisfies the intent of the finding and is therefore considered closed*

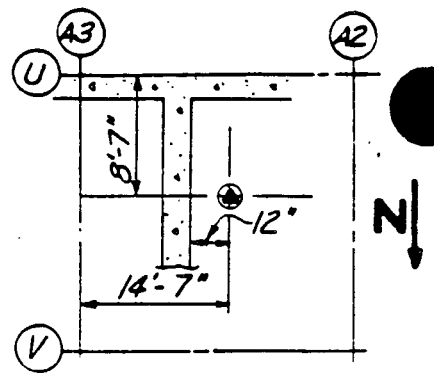
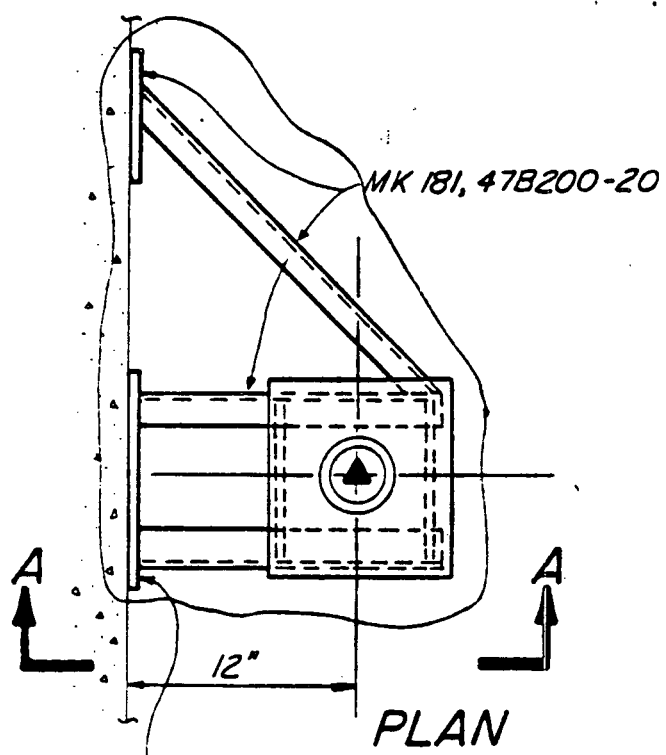
Classification: Type          R Category A

W.J. Ziberman  
Black & Veatch Project Manager

12/27/83  
Date

R.E. Blandell  
Black & Veatch Senior Review Team Chairman

12/27/83  
Date

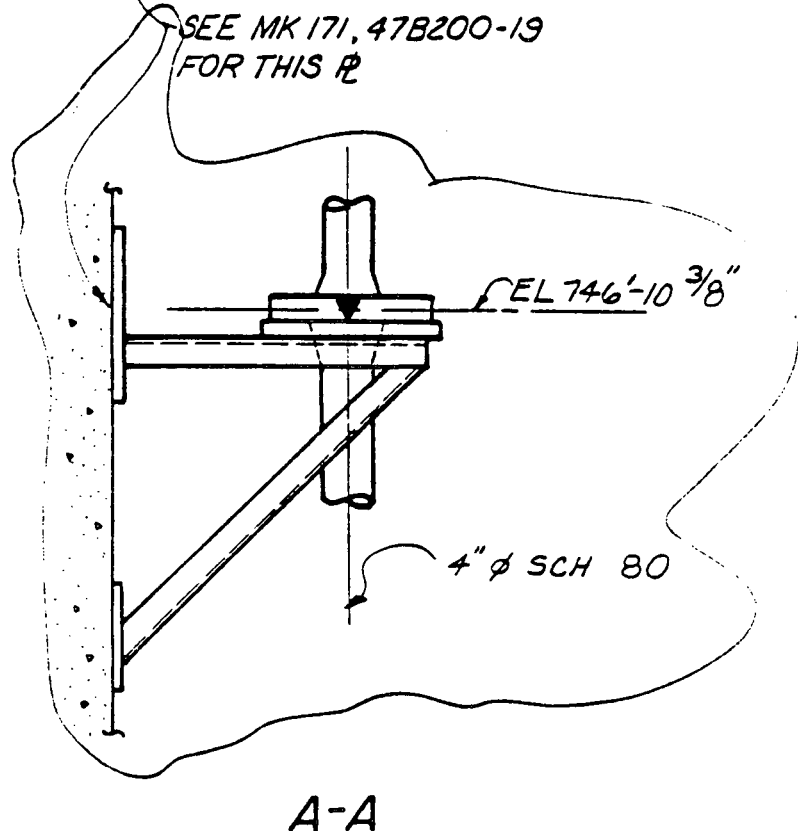


**LOCATION PLAN**  
 Q ANCH. FLG. ELEV. 746'-10<sup>3</sup>/<sub>8</sub>"  
 JOINT NO. 50A  
 PROB. NO. N3-3-3A

FCR H-81923

NOTES:  
 1. FOR GENERAL NOTES, SEE 47A060-1.

APPROVED  
 APR 09 1953  
 DIV. OF CONSTR.



REFERENCE DWGS.  
 ISOM. 47W427-200 R5  
 PIPING 47W427-3,4  
 COMPOSITE NONE  
 ANCHOR LOADS 47B427-373  
 TVA PIPE CLASS B

NOT TO SCALE

SEISMIC CATEGORY I STRUCTURES

MECHANICAL ANCHOR FORGING FOR THE AFW SYSTEM UNIT I

WATT'S BAR NUCLEAR PLANT  
 TENNESSEE VALLEY AUTHORITY  
 DIVISION OF ENGINEERING DESIGN

DESIGNED BY: J.B. Adams  
 CHECKED BY: R.M. K...  
 APPROVED BY: R.M. K...

KNOXVILLE 2-4-50 85 M 47A060-3-1

1	3511	2-24-53	PC	RM	PP	JP	DM	...	...	...	...	...	...	...	...	...	...	...	...	...	
REVISED PER ECN # B-V F-764																					
REV NO.	ECN NO.	DATE	DESIGN	DESIGN	CHILD	SUPV	ENGR	INSP	ENGR	ENGR	APPR										
DESIGN	D.H. SCHULTZ										DESIGN										
CHKD	J. CAGLE										ENGINEER	J.B. Adams									
APPV	R.G. SHARP										APPV										
APPV	G.F. VEIS										APPV										

TENNESSEE VALLEY AUTHORITY  
FIELD CHANGE REQUEST  
REPLY MEMORANDUM

WBWP-QCI-1.13 R7  
Attachment A  
FCR H-8192  
DOC

TO: J. C. Standifer, Sequoyah and Watts Bar Design Projects Manager, 204 GB-K (3)

FROM: Guenter Wadewitz, Project Manager, Watts Bar Nuclear Plant CONST

DATE: WEN '83 0624 342

Attention: J.J. NASH (EN DES ON SITE)

SECTION I - CONST REQUEST

Reason for Change:

Status Point:

System No. 03

Drawing Discrepancy

Prior to Fuel Loading

Work Package No. H003F13

Facilitate Construction

After Fuel Loading but prior to Closing Capitalized Accounts

Work Plan No. NA

Additional Design Information

After Closing Capitalized Accounts for the Entire Plant

Documents Affected 47A060-3-1 R/O R/I PRG 5/22/83

Marked documents required and attached  Yes  No

Document revision required  Yes  No

Change Description: Revise hanger per attached sketches

Change requested by: S.W. HUGHES 7-20-82  
(CONST Engineer)

Thomas R. Brown 71C for 7RB  
(Unit Supervisor) 2-3-83

Change approved by: Everett Patrick / Wayne Smith  
(EN DES Engineer)

6/10/83  
(Date)

Approval obtained by:  Telephone  Memo

EN DES ON SITE  
 Other

Approved for transmittal to EN DES: Bill E. Hoffmann  
(Construction Engineer)

Thomas R. Brown  
(Project Manager)

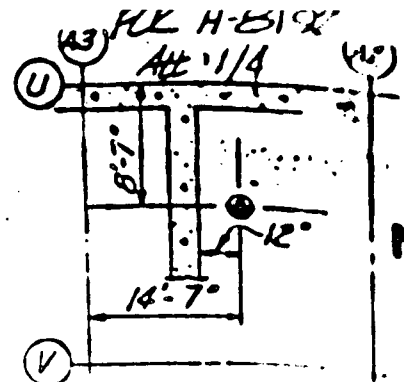
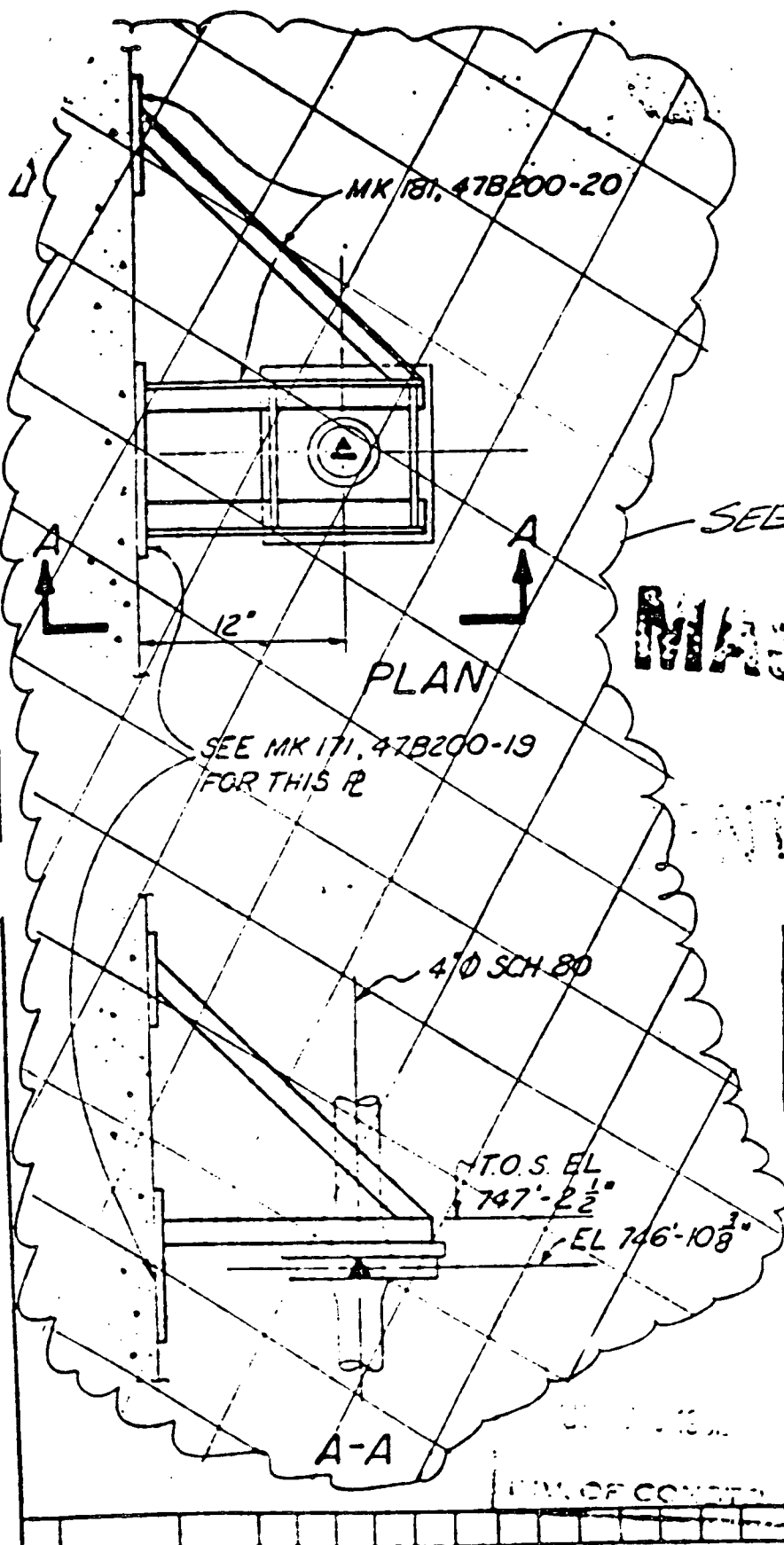
SECTION II - EN DES REPLY/RESOLUTION

ECN No. \_\_\_\_\_ Date Issued \_\_\_\_\_

Drawing Nos: \_\_\_\_\_

Change Complete \_\_\_\_\_  
(EN DES Engineer) (Design Project Manager) (Date)

Original - Return to CONST by EN DES  
Copy - Retained by CONST until original is returned  
Copy - Retained by EN DES  
Copy - Retained by CC&R  
MEDS, 100 UB-K  
CC: HANGER INSPECTION UNIT



LOCATION PLAN  
 CANCH FLG. ELEV. 746'-10 3/8"  
 JOINT NO. 50A  
 PROB. NO. N3-3 1A

SEE ATTACHED SKETCHES

# MASTER FILE

SEE MK 171, 47B200-19  
 FOR THIS R

NOTES:  
 1. FOR GENERAL DETAILS,  
 SEE 47A060-1.

RECEIVED  
 WATTS R.O.  
 FEB 26 1980  
 DIV. OF CONSTR.

REFERENCE DRAWING  
 ISOM. 47W421 1111  
 PIPING 47W421 1111  
 COMPOSITE 111111  
 ANCHOR LOADS 47W421 1111  
 TVA PIPE CLASS. 11

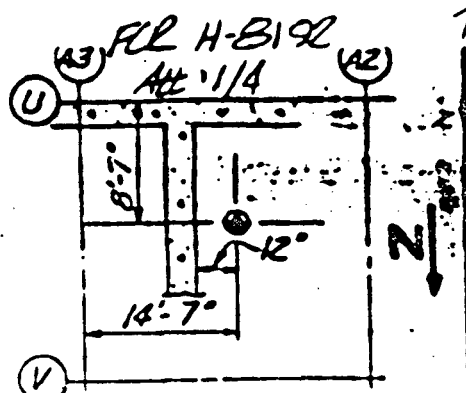
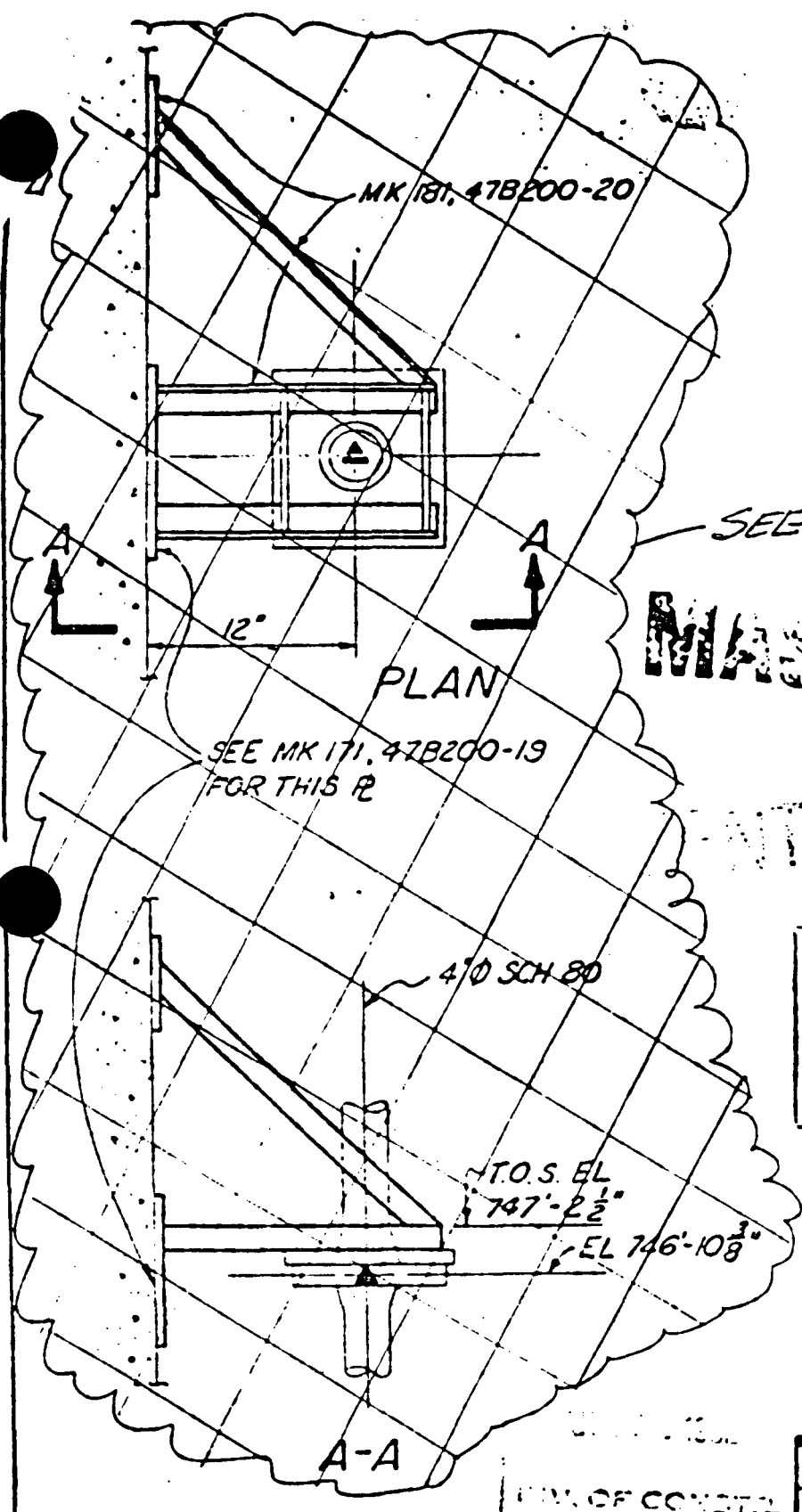
NOT TO SCALE

SEISMIC CATEGORY I

MECHANICAL  
 ANCHOR FORGING  
 AFW SYSTEM

WATTS R.O. DIVISION  
 TENNESSEE VALLEY AUTHORITY

DATE	BY	APP'D	REV
01/15/80	DH SCHULTZ		
	J. CAGLE		
	R.S. SHARP		
		J.B. GIBBS	



LOCATION PLAN  
 CANCH FLG. ELEV. 746'-03"  
 JOINT NO. 50A  
 PROB. NO. N3-3-3A

SEE ATTACHED SKETCHES

# MASTER FILE

SEE MK 171, 47B200-19  
 FOR THIS R

NOTES:  
 1. FOR GENERAL NOTES,  
 SEE 47A060-1.

RECEIVED  
 WATTS R.D.  
 FEB 26 1980  
 DIV. OF CONSTR.

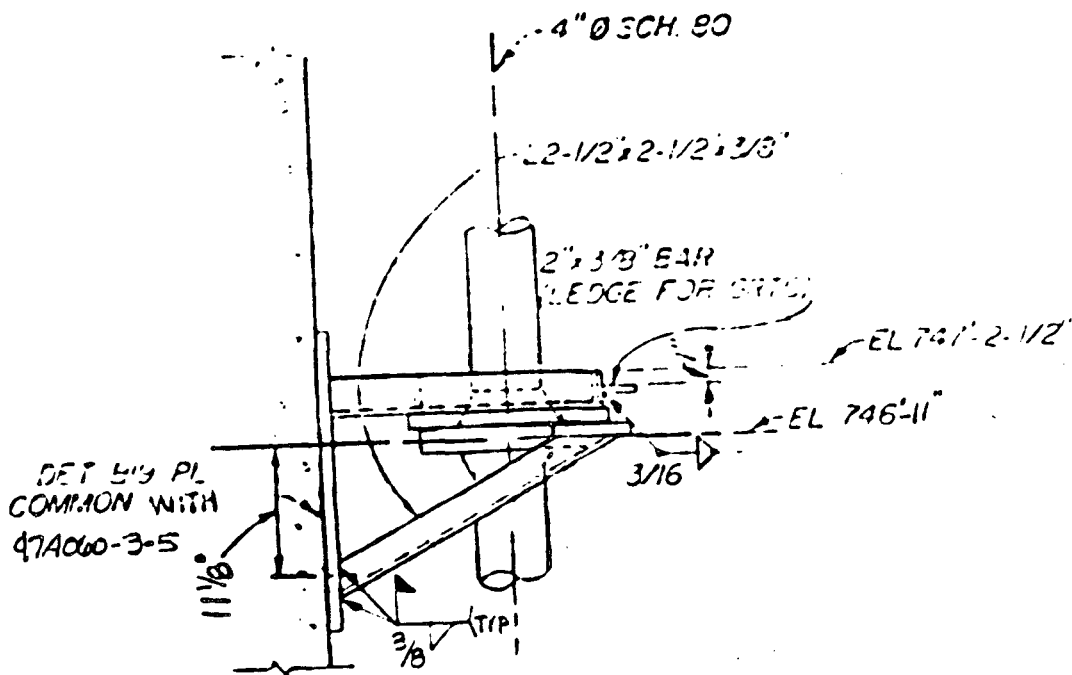
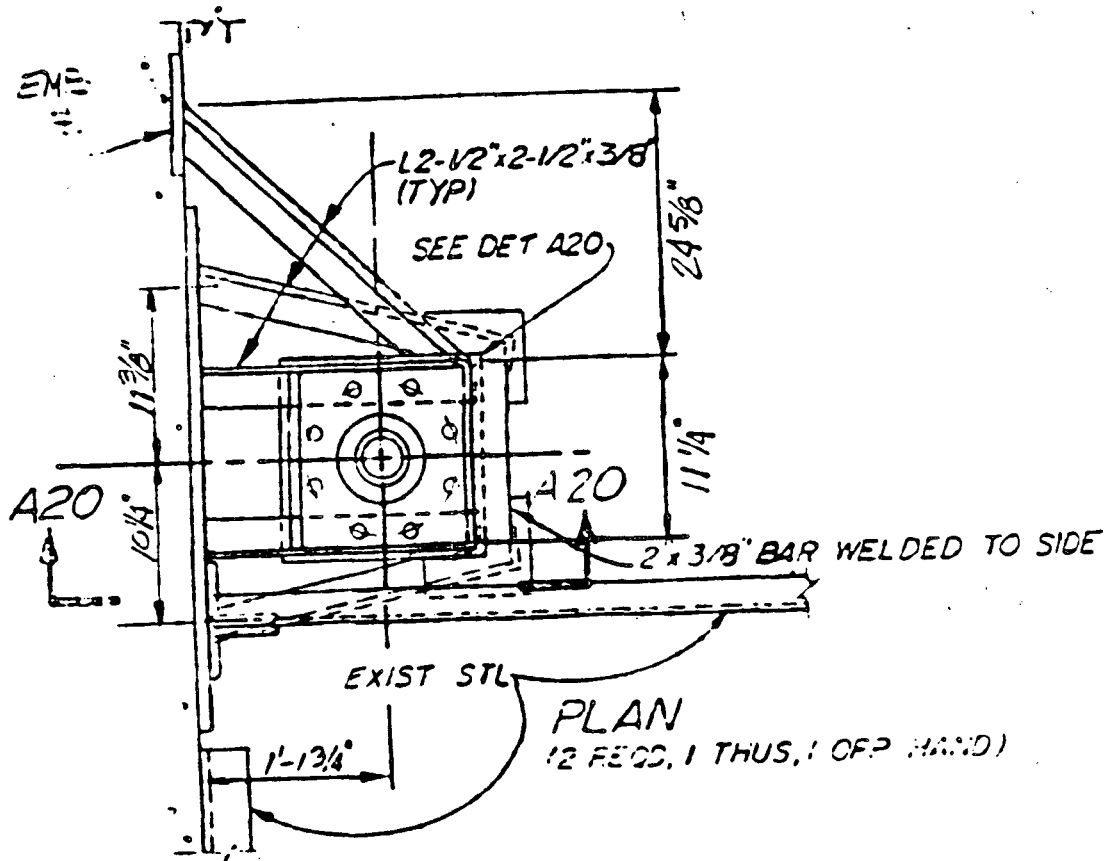
REFERENCE DWGS.  
 ISOM. 47W427-200  
 PIPING 47W427-3,4  
 COMPOSITE NONE  
 ANCHOR LOADS 47B427-373  
 TVA PIPE CLASS B

NOT TO SCALE

SEISMIC CATEGORY I STRUCTURES  
 MECHANICAL  
 ANCHOR FORGING FOR THE  
 AFW SYSTEM UNIT I  
 WATTS R.D. NUCLEAR PLANT  
 TENNESSEE VALLEY AUTHORITY

DATE	BY	CHECKED	APPROVED
	DH SCHULTZ		
	J. CAGLE		
	R.G. SHARP		
J.B. Gibson			

FOR H-8192  
Att 2/14 740

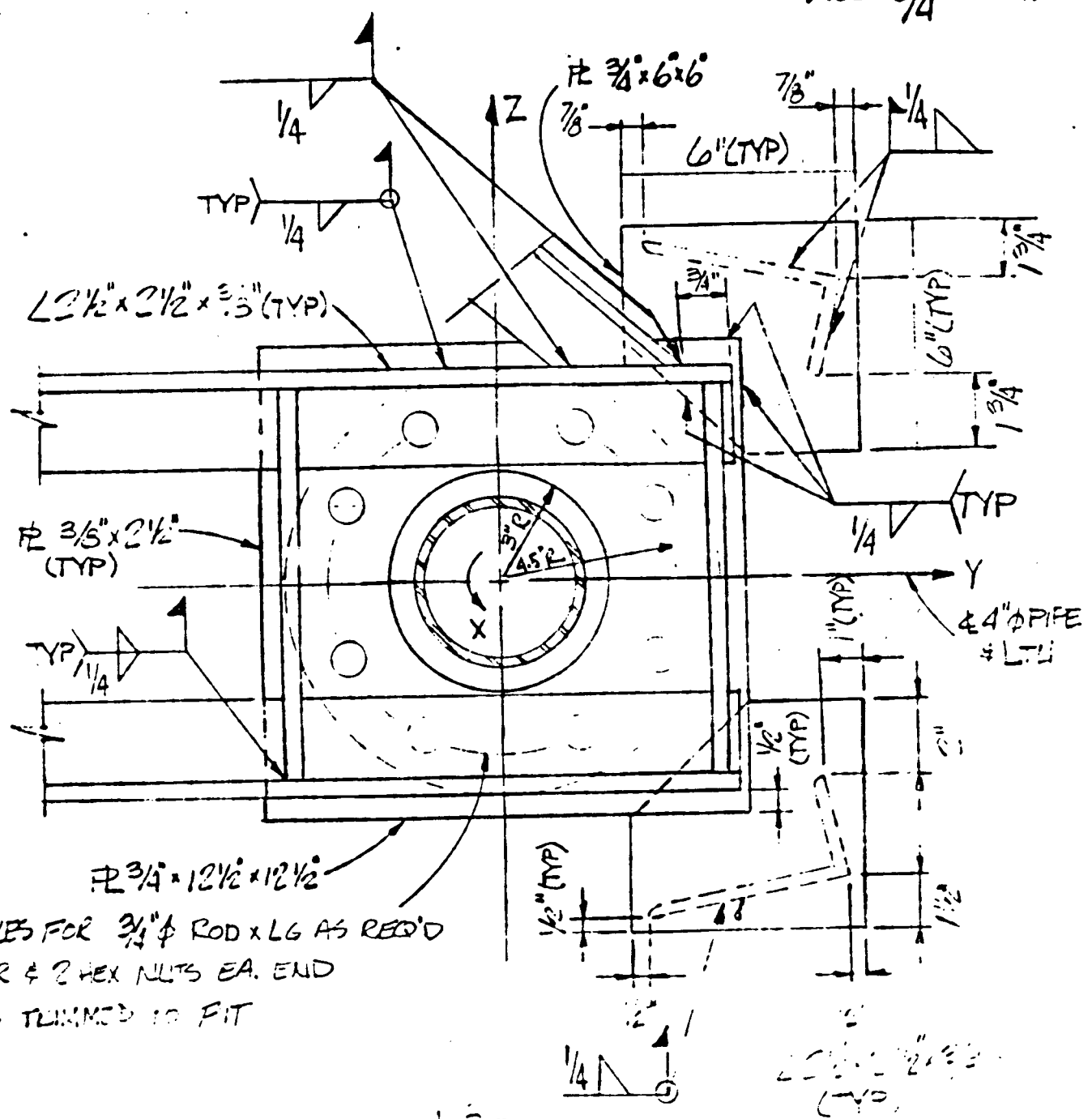


A20-A20



FOR H-8192  
 ALL 3/4

74F



7/8"  $\phi$  HOLES FOR 3/4"  $\phi$  ROD x LG AS REQ'D  
 1/4" WASHER & 2 HEX NUTS EA. END  
 WASHERS TRIMMED TO FIT

DET ACC

LOADS

F = LBS  
 M = FT-LBS

$F_x$	$F_y$	$F_z$	$M_x$	$M_y$	$M_z$
1750	3920	1410	985	960	2520



LOP

ENGINEERING EVALUATION  
QCI 1.8

INDENT 1003-A060-3-1

PROC/RECORD N/A

CURRENT PROC 4.23-8 R2

TEST NO. 08B

EVALUATION REV. 1 IS DUE TO ECN 3511 WHICH

REVISED THE DRAWING

PER THE BLACK AND VETCH

FINDING 764 FCN H-8192

SUPERCEDES THE CHANGES

MADE BY B+V F-764.

SUPPORT DOCUMENTED TO  
Former documentation meets the current  
WBND-QCP requirements. (+)

Engineer Henry Ruth

Date 8-12-83

REV. 0 AND FCN H-8192

NO REWORK REQUIRED

SUPPLEMENTAL DOCUMENTATION

SUPPLEMENTAL DOCUMENTATION  
SHOWN ON REVERSE SIDE

UNIQUE IDENTIFIER

08B 1003-A060-3-1

00011  
AUG 23 1983  
M/R

PROGRAM: Z55020  
 DATE: 11 15 83

WBNP HANGER INFORMATION AND TRACKING  
 REPORT: FULL-FILE BY SYSTEM, HANGER ID <BREAK ON: SYSTEM>

SYSTEM: 003 PAGE 52

IDENTIFIER CL XFER PPG/PLN DRAWING REV DESCRIPTION STAT TEST ID & SEQUENCE OF TESTS

IDENTIFIER	CL	XFER	PPG/PLN	DRAWING	REV	DESCRIPTION	STAT	TEST ID & SEQUENCE OF TESTS
1003-A060-3-10						1-47M427-201		
1003-A060-3-11			X003-2			1-47M427-207	003	* HA 03A* 04A* 08E* 09A*
1003-A060-3-2			X003-2			1-47M427-207	002 H-8436 H-10501	* HA 01B* 02A* 03B* 04B* 08B* 09A*
2003-A060-3-21			X003-00			47M427-267	001 H-978R1 H-7065	* HA 01A* 02A* 03A* 04A* 08A* 09A*
2003-A060-3-22			Z003-00			47M427-267		01 HA 01A 02A 03A 04A 08A
2003-A060-3-23			Z003-00			2-47M427-207		01 HA 01A 02A 03A 04A 08A
2003-A060-3-24			Z003-00			2-47M427-207		01 HA 01A 02A 03A 04A 08A
1003-A060-3-3			X003-2	9528		1-47M427-203	004	* HA 01A* 02A* 03A* 04A* 08C* 09A*
2003-A060-3-30			Z003-00			2-47M427-211		03 HD 03A 04A 08A
2003-A060-3-31			Z003-00			2-47M427-211		01 HA 01A 02A 03A 04A 08A
2003-A060-3-32			Z003-00			2-47M427-211		01 HA 01A 02A 03A 04A 08A
2003-A060-3-33			Z003-00			2-47M427-211		01 HA 01A 02A 03A 04A 08A
1003-A060-3-34			X067-??	9587		1-47M427-206	000 H-8449 EP-3768	* HA 01A* 02A* 03A* 04A* 08A*
1003-A060-3-35			T	9617		1-47M427-220	002 H-9231	* HA 01A* 02A* 03A* 04A* 08A*
1003-A060-3-36			T	9617		47M427-221	000 H-9947	* HA 01A* 02A* 03A* 04A* 08A*
1003-A060-3-4			X003-2	9528		1-47M427-203	001	* HA 01A* 02A* 03A* 04A* 08B* 09A*
1003-A060-3-5			RM X003-2	9522		1-47M427-202	000 H-8193	01 HA 01AP 02AP 03AP 04AP 08AP
1003-A060-3-6			X003-2	9528		1-47M427-203	002 H-9127 EP-3968	* HA 01B* 02B* 03B* 04B* 08B* 09A*
1003-A060-3-7			X003-2	9528		1-47M427-203	002	* HA 01A* 02A* 03A* 04A* 08B* 09A*
1003-A060-3-8			X003-2			1-47M427-207	001 H-8164/8242R	01 HA 01B 02B 03A* 04B 08B 09A*
1003-A060-3-9			X003-2			1-47M427-207	000 H-8408 H-10502	* HA 01A* 02A* 03B* 04A* 08B*
1003-A401-6-1			X003-3			1-47M401-213	003 H-9204	* HE 01A* 02A* 03A* 04A* 05A* 08A*
1003-A401-7-1			M X003-	9543		-47M401-219		03 HD 03A 04A 08A
1003-A401-7-2			M T	9543		-47M401-212		03 HD 03A 04A 08A
1003-A401-7-4			M T	9511				03 HD 03A 04A 08A
1003-A401-7-8			M T	9543		-47M401-215		03 HD 03A 04A 08A
1003-A401-8-1			M X003-3	9543		1-47M401-213	000 H-8546	03 HE 01A* 02A* 03B C4B 05B 08B
1003-A401-9-2			T	9511		-47M401-422	000 H-10944	03 HG 03AP 04AP 05AP 08AP
1003-A401-9-3			M T	9511		-47M401-422		03 HD 03A 04A 08A
1003-A401-9-5			M T	9543		-47M401-421		01 HE 01A 02A 03A 04A 05A 08A
1003-A401-9-6			X003-			-47M401-421		03 HD 03A 04A 08A
1003-A427-1-02			T	9508		1-47M427-221	00	* HE 01A* 02A* 03A* 04A* 05B* 08A*

DINERSI F-764

PHL

10520DIN5164  
10520.92.0000  
ref: 10520DIN4340

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F/7/6/7/1

C

Comments pertinent to finding:

See F371 for comments.

*EU Cole*

Program Team Member

11/17/83

Date

*Homer E McConnell*

OEDC Program Manager

11/17/83

Date

*E Gray Beasley*

Chairman, OEDC Policy Committee

11/21/83

Date

*The information contained in F371 supports close out of*  
Black & Veatch *this item since subsequent efforts are documented in a formal*  
*program*

Classification: Type R Category A

*W.J. Fidzimas*

Black & Veatch Project Manager

12/8/83

Date

*R.E. Blandell*

Black & Veatch Senior Review Team Chairman

12/19/83

Date

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F/7/6/9/

Comments pertinent to finding:

Deficiency identified by Black and Veatch finding number F769, on support number 1-03A-454 R902, was identified and corrected under NRC-IE Bulletin 79-14. See attached closed discrepancy along with inspection data verifying grouting of support.

Ronald McKelvey  
Program Team Member

11/3/83  
Date

Thomas E. McConnell  
OEDC Program Manager

11/4/83  
Date

F. Gray Bessley  
Chairman, OEDC Policy Committee

11/4/83  
Date

Black & Veatch *attached records indicate work required to resolve finding is complete.*  
*NOTE: Home NO. should be 1-03A-459 per original Finding and attached data 12/12/83*  
Classification: Type R Category A

W. J. Zidzunas  
Black & Veatch Project Manager

12/12/83  
12/15/83  
Date

R E Blandell  
Black & Veatch Senior Review Team Chairman

12/15/83 RB6  
12/1/83  
Date

IE-79-14 Individual Support Inspection Data Sheet

Inspection Package Computer ID. 1R03 47W427-218  
Inspection Drawing No. and Rev. 47W427-218 R0  
Support Identifier (WBNP-OCI-1.40) 1R03A-1-03A-459  
Support Drawing No. and Rev. 1-03A-459/R902 (FCR-18631)  
Discrepancy Tracking No. 1R03-47W427-218/08 N

1. Support Inspection Checklist

- Support Relative Location Correct: Yes  No
- Restraint Installed Direction Correct: Yes  No
- Support Type Correct: Yes  No
- Structural Members/Parts Installed: Yes  No
- Major Structural Member Size/Length: Size 3x4x1/4" Length 12 3/16"
- Specified Welds made: Yes  No
- Anchor Bolts Installed: Yes  No  N/A
- Bolted Connections Acceptable: Yes  No  N/A
- Snubber Size/Setting Correct: Yes  No  N/A
- Spring Can Size Correct: Yes  No  N/A
- Cotter Keys Installed: Yes  No  N/A
- Component Standard Support Sizes Correct: Yes  No  N/A
- Lug Size Correct: Yes  No  N/A
- Clearances Correct: Yes  No  N/A
- Record Actual Clearance: Vertical: Top 1/8 in., Bottom 1/8 in.
- Axial: 1/8 in., Lateral: Total Gap 1/8 in.
- Support Damaged: Yes  No
- Additional Attachments(s) To Support: Yes  No  N/A
- Miscellaneous (Describe): 1/8 SEE DWG.

I.E.-79-14 Individual Support Inspection Data Sheet

Inspection Package Computer ID. 1R03-47W427-218  
Inspection Drawing No. and Rev. 47W427-218 R0  
Support Identifier (WSP-OCF-1.40) 1003A-1-03A-459  
Discrepancy Tracking No. 1R03-47W427-218/08H

2. Describe below each discrepant condition on this support.

PLATES NOT GROUDED. 1  
A

3. Describe below corrective action required to rectify each discrepant condition. Specify inspection test number(s) and test level; update requirements for the support identifier.

CONSTRUCTION TO GROUT BASEPLATES.  
NOTIFY 79-14 INSPECTOR WHEN COMPLETE (X-439).  
INSP. REQ'D. : ~~OSB~~ not required as of 9/6/83

David Vickery 4-8-83  
Engineer Date

4. Corrective Action Complete and Acceptable.

Larry R. Harper 24 8/9/83  
Inspector Date

5. Final Acceptance

Inspection performed in accordance with Rev. 5 of WSP-OCF-4.56 and was acceptable.

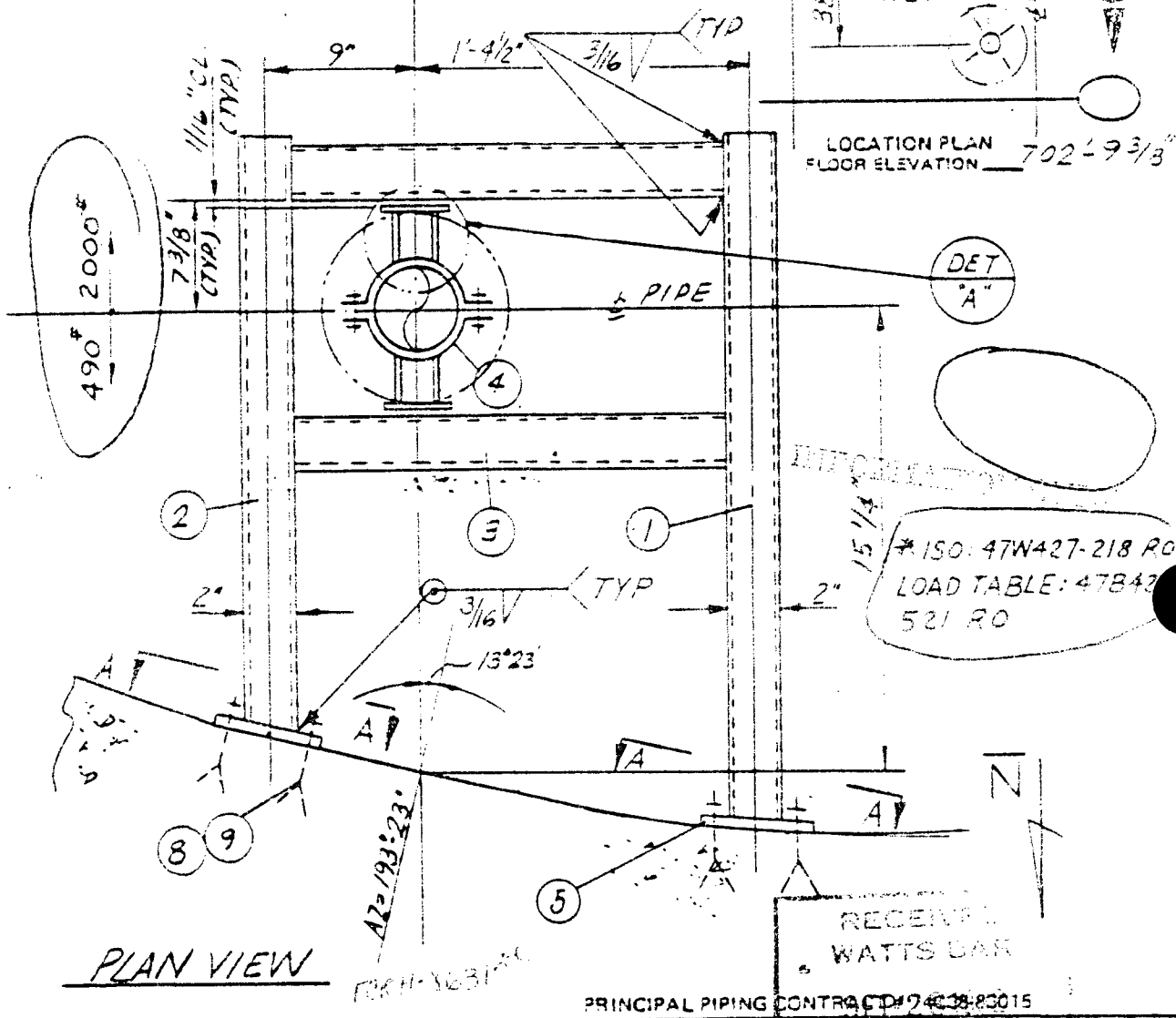
Inspector Larry R. Harper Date 9/6/83



CONTRACT  
DRAWING #  
SHEET  
REVISION 902  
UNIT

3/6" PIPE W/ 3/2" INSUL.,  
ITEMS 3, 6 & 7, 11 TO  
AZ-180°

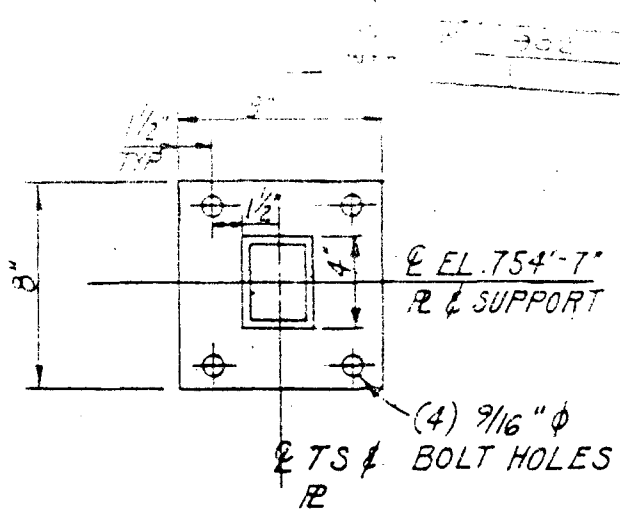
SEE PLAN VIEW  
LOCATION PLAN  
FLOOR ELEVATION 702-9 3/8"



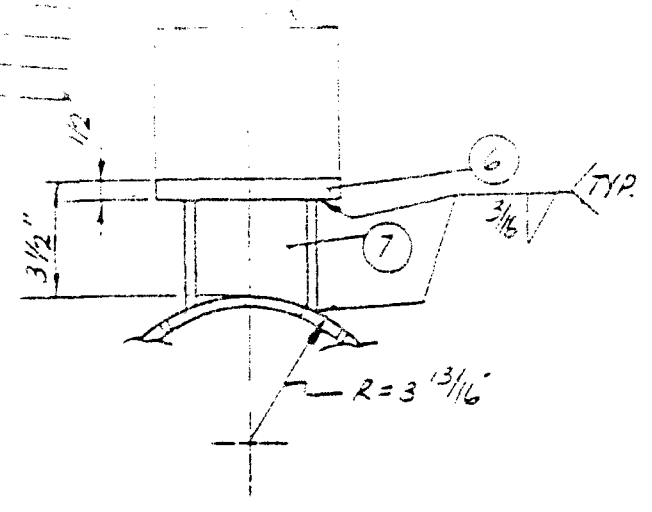
REV LCA  
 REV 1  
 7/23/81  
 FCR H-3137  
 REV 1

SERVICE: FEEDWATER		DIV. OF CONSTR.													
AREA: 1C9	TVA NUC. CLASS: B	ISSUED FOR CONSTRUCTION ON 12/2/77													
LOAD SOURCE: *05-01	PT. III	REVISION	WFT												
DESIGN LOAD (FORCES: LBS. MOMENTS: FT.-LBS.)	MASTER FILE	DRAFT/RESP. 37	ENG. CHECK												
<table border="1"> <tr> <td>Fz</td> <td>Mx</td> </tr> <tr> <td>Fy</td> <td>My</td> </tr> <tr> <td>Fz</td> <td>Mz</td> </tr> </table>	Fz	Mx	Fy	My	Fz	Mz	EDS NUCLEAR INC.								
Fz	Mx														
Fy	My														
Fz	Mz														
MOVEMENTS, IF ANY, SHOWN ON DETAIL	SAN FRANCISCO, CALIFORNIA														
REF. DWGS	TENNESSEE VALLEY AUTHORITY														
PIPE 47W401-8R1 STEEL	WATTS BAR NUCLEAR PLANT														
ISO	UNIT NO. 1														
OTHER	<table border="1"> <tr> <td>CUST. NO.</td> <td>MARK NO.</td> <td>DATE</td> </tr> <tr> <td>7422499A</td> <td>1-034-459</td> <td>1/6/90</td> </tr> <tr> <td>ICB NO.</td> <td>SKETCH NO.</td> <td></td> </tr> <tr> <td>0600207</td> <td>1-034-459</td> <td></td> </tr> </table>			CUST. NO.	MARK NO.	DATE	7422499A	1-034-459	1/6/90	ICB NO.	SKETCH NO.		0600207	1-034-459	
CUST. NO.	MARK NO.	DATE													
7422499A	1-034-459	1/6/90													
ICB NO.	SKETCH NO.														
0600207	1-034-459														

TVA 900 - VENDOR RC



SECTION A-A (TYP)



DETAIL "A"

902	2576, 32101	9-17-72	DCP	JWS	3CC	WJA	JH	2/2	3/2	11 S1	7-23-81	Rev. 240 x 60	SEP 28 1982
REV LOADS & PROB PER ECN "INACTIVE CONTRAST"										REV PER FOR H-3137			
Rev	ECN No	Date	Design	Drawn	Checked	Supv	Eng	Insp	Spec	Draw	Rev	App	

ITEM NO.	FIG. NO.	SIZE	DESCRIPTION	NO. REQ'D
1			TS 2" X 4" X 1/2" LG AS REQ'D (CUT TO SUIT)	1
2			TS 2" X 4" X 1/2" LG AS REQ'D (CUT TO SUIT)	1
3			TS 3" X 3" X 3/16" 1-1 1/2" LG	2
4			B-P PART 298 FOR 6" PIPE	1
5			1/2" X 8" C.S. PLATE 8" LG	2
6			1/2" X 4" C.S. PLATE 4" LG	2
7			53 X 5.7 3/4" LG (CUT TO SUIT)	2
8			1/2" φ PHILLIPS CONCRETE ANCHOR (CS-12)	8
9			1/2" φ MACHINE BOLTS 1 1/4" LG	8

NOTE: APPLY MOLYKOTE 321 TO ALL SLIDING SURFACES

NOTE: FOR SYMBOL DEFINITIONS SEE 47A050 DRAWING SERIES

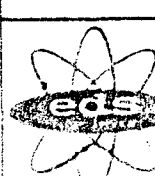
RECEIVED  
WATTS BAR  
SEP 28 1982

MASTER FILE DIV. OF CONSTR.

NOTES:

## EDS NUCLEAR INC.

SAN FRANCISCO, CALIFORNIA



TENNESSEE VALLEY AUTHORITY  
WATTS BAR NUCLEAR PLANT  
UNIT NO. 1

CUST NO. T742499A	MARK NO. 1-03A-459	SHT'S	REV.
JOB NO. 0600207	SKETCH NO. 1-03A-159	2/2	902

FIELD CHANGE REQUEST  
REPLY MEMORANDUM

Attachment A  
FOR H-3631  
PCC

27

TO : J. C. Standifer, Sequoyah and Watts Bar Design Projects Manager, 204 GB-R (3)

FROM: Gwenter Wadewitz, Project Manager, Watts Bar Nuclear Plant CONST

DATE: WBN 83 0214 365

Attention: J. J. NASH (EN DES ON SITE)

SECTION I - CONST REQUEST

Reason for Change:	Status Point:	System No. <u>03</u>
<input type="checkbox"/> Drawing Discrepancy	<input checked="" type="checkbox"/> Prior to Fuel Loading	Work Package No. <u>403F04</u>
<input checked="" type="checkbox"/> Facilitate Construction	<input type="checkbox"/> After Fuel Loading but prior to Closing Capitalized Accounts	Work Plan No. <u>N/A</u>
<input type="checkbox"/> Additional Design Information	<input type="checkbox"/> After Closing Capitalized Accounts for the Entire Plant	

Documents Affected: 1-03A-459 R/D 1-1-83

Marked documents required and attached  Yes  No

Document revision required  Yes  No

Change Description: Revise per attached sketches

Change requested by: S.W. HUGHES 10-1-82  
(CONST Engineer) DBM

Thomas R. Brown <sup>TIC for TRB</sup>  
(Unit Supervisor)

Change approved by: Frank C. Gas CBW  
(EN DES Engineer) \* AS NOTED

January 8, 1983  
(Date)

Approval obtained by:  Telephone  Verbo

EN DES  
 Other

Approved for transmittal to EN DES: Thomas R. Brown  
(Construction Engineer)

ED  
(Project Manager)

SECTION II - EN DES REPLY/RESOLUTION

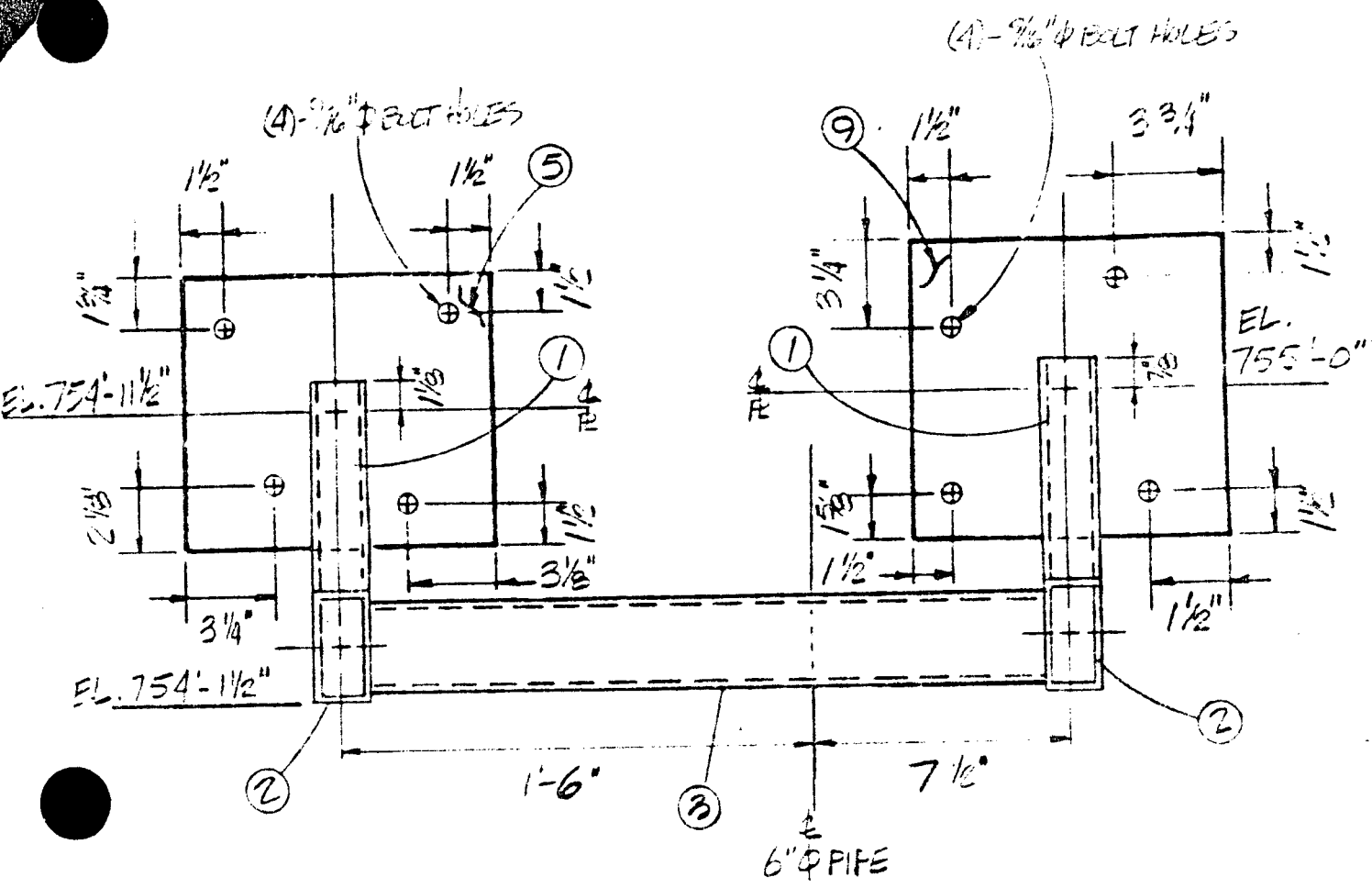
CHN No. \_\_\_\_\_ Date Issued \_\_\_\_\_

Drawing Nos: \_\_\_\_\_

Change Complete: \_\_\_\_\_  
(CONST Engineer) (Design Project Manager) (Date)

Original - Return to CONST by EN DES cc: Hanger Inspection Unit  
 Copy 3 - Retained by CONST until original is returned  
 Copy 2 - \_\_\_\_\_  
 Copy 1 - \_\_\_\_\_  
 EN DES, 100-100

FILE NO. -  
 FILE 1/3



ELEV. LOOKING NORTH

ITEM	QTY	DESCRIPTION
1	2	TS 2" x 4" x 1/4" LG AS REQ'D (CUT TO SUIT)
2	2	TS 2" x 4" x 1/4" LG AS REQ'D (CUT TO SUIT)
3	2	TS 3" x 3" x 3/16" LG AS REQ'D
4	1	B-P PART 393 FOR 6" Q PIPE
5	1	PL 1/2" x 9 1/2" x 11 3/16"
6	2	PL 1/2" x 4" x 0'-4"
7	2	S3 x 5.7 x 3/4" LG. (CUT TO SUIT)
8	3	1/2" Q BOLT ANCHOR ASSY
9	1	PL 1/2" x 10 3/4" x 11 3/16"

AE 4/3

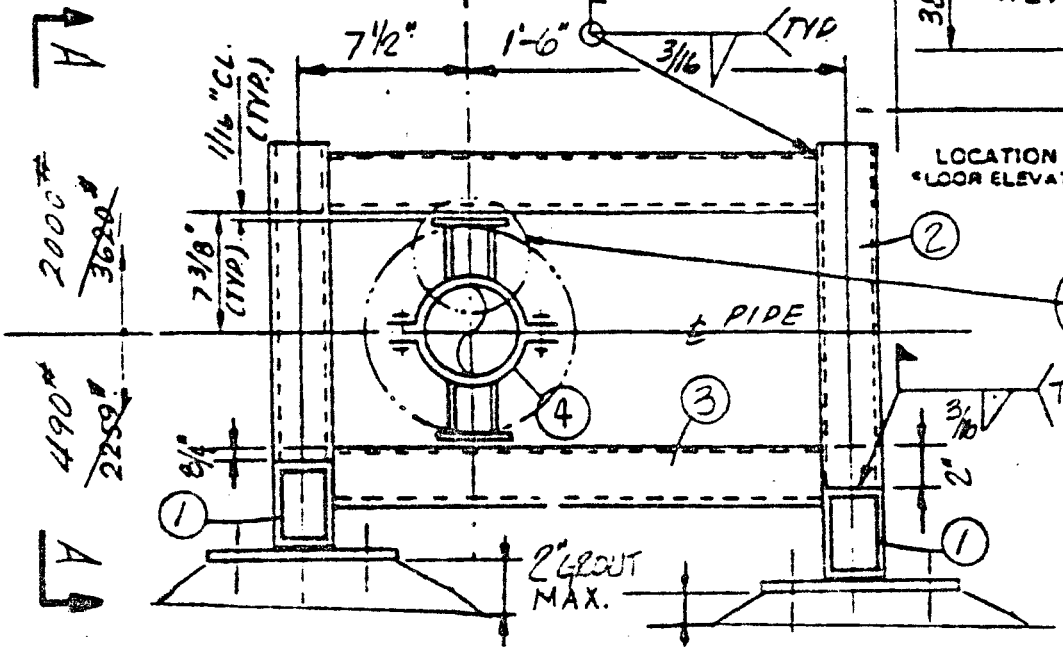
PROJECT WBNP  
 CONTRACT 43497A  $\Delta S = 1/16"$   $\Delta S = 1/16"$   
 DRAWING# 1-03A-457  
 SHEET 3  
 REVISION 201  
 UNIT \_\_\_\_\_

6" PIPE W/ 3 1/2" INSUL,  
 ITEMS # 3, 6 & 7, 11 TO  
 AZ-180°

SEE  
 PLAN  
 VIEW



LOCATION PLAN  
 FLOOR ELEVATION 702 - 9 3/8"

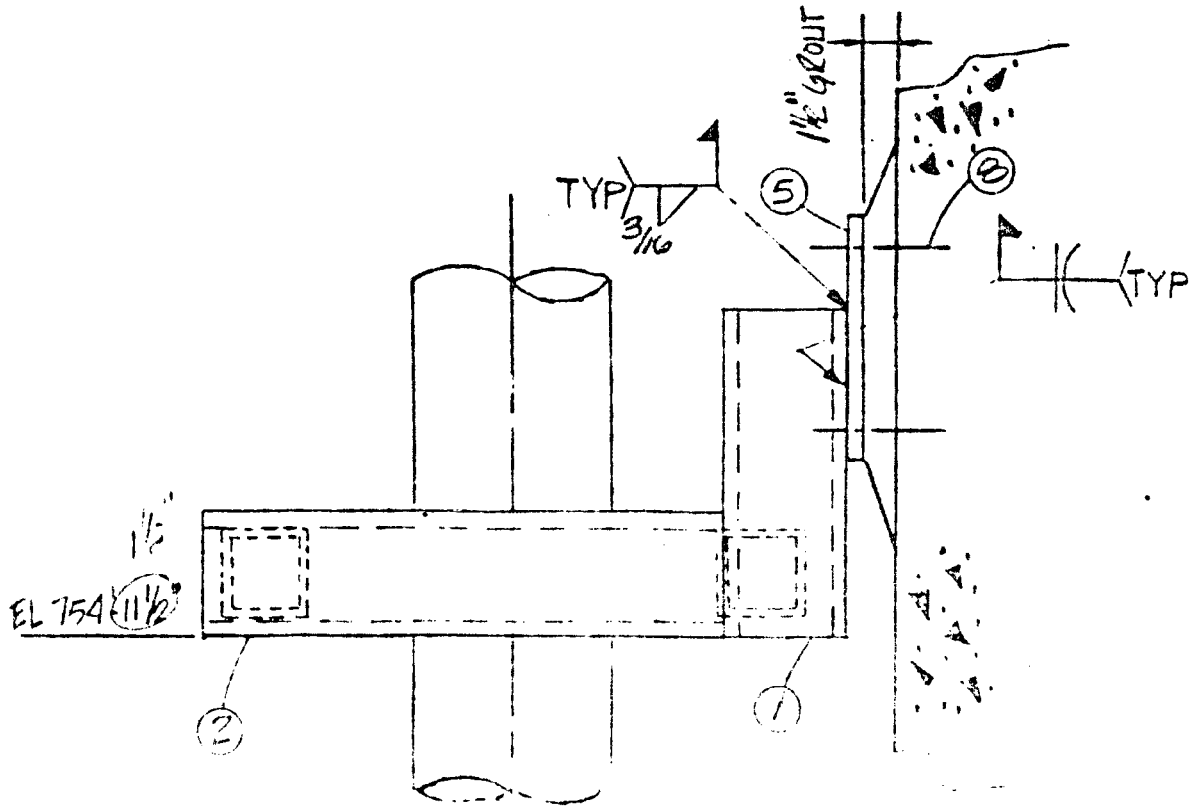


DET  
 'A'

TYP 3 SIDES  
 NOTE:

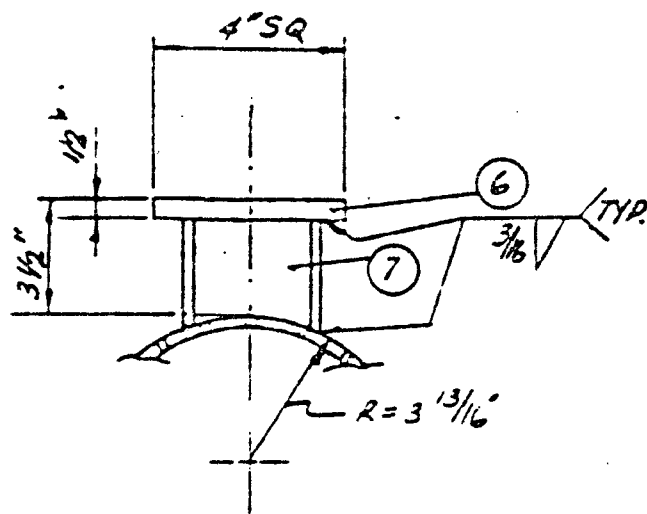
$\Delta x = -1/8"$   
 $\Delta y = \pm 1/16"$

PLAN



EL 754  $\pm 1 1/2"$

FOR H-3631  
Att 3/3



DETAIL "A"







IDENTIFIER	CL	REF	PKG/PLN	DRAWING	REV	DESCRIPTION	STAT	TEST LIB & SEQUENCE OF TESTS
1003A-1-03A-440		X003-2		1-47W427-218	901			* HD 02A* 03A* 04A* 08H* 09A*
1003A-1-03A-441		X003-2		1-47W427-218	901			* HD 02A* 03A* 04A* 08H* 09A*
1003A-1-03A-442		X003-2		1-47W427-218	902			* HD 02A* 03A* 04A* 08H*
				/01H				
1003A-1-03A-443		X003-2		1-47W427-218	901			* HA 01A* 02A* 03A* 04A* 08H*
1003A-1-03A-444		X003-2		1-47W427-218	901			* HA 01A* 02H* 03C* 04H* 08C* 09A*
				/02H				
1003A-1-03A-445		X003-2		1-47W427-218	901	H-8916		* HA 01A* 02A* 03H* 04H* 08H*
1003A-1-03A-446		X003-2	9007	1-47W427-218	901	44766 43771 L		01 HA 01H* 02EP 03A* 04H* 07A* 08H*
				/03H				
1003A-1-03A-447		X003-2	9091	1-47W427-218	901	H-8972		* HE 01A* 02H* 03E* 04E* 08A* 08H*
				/04H				
1003A-1-03A-448		1		1-47W427-218	002		VOID	* HH 08A*
1003A-1-03A-449	H	X003-2		1-47W427-218	901			* HE 03E* 04E* 05E* 08C* 09A*
				/05H				
1003A-1-03A-450		X003-2		1-47W427-218	001	H-8756		* HE 03C* 04E* 05C* 08C* 09A*
1003A-1-03A-451		1		1-47W427-218	901		VOID	* HK 08A*
1003A-1-03A-452	H	X003-2		1-47W427-218	901	H-8972		* HK 01A* 02A* 03A* 04A* 07A* 08H*
				/06H H/C				
1003A-1-03A-453		X003-2		1-47W427-218	904	H-8288 H-1433 SP		* HE 01A* 02A* 03A* 04A* 05A* 07A* 08H* 09A*
1003A-1-03A-454	H	X003-2		1-47W427-218	901			* HK 01A* 02A* 03A* 04A* 07A* 08A* 09A*
1003A-1-03A-455	H	X003-2	9011	1-47W427-218	904	H-9733		01 HE 01C* 02C* 03E* 04E* 05C* 08H*
1003A-1-03A-456		X003-2		1-47W427-218	903			* HA 01A* 02A* 03E* 04A* 07A* 08H*
1003A-1-03A-457	H	X003-2		1-47W427-218	901	H-8127		* HK 01A* 02A* 03A* 04A* 07A* 08H*
1003A-1-03A-458	H	X003-2		1-47W427-218	901	H-12341		* HK 01A* 02A* 03A* 04A* 07A* 08H*
				/07H H/C				
1003A-1-03A-459		X003-2		1-47W401-216	901	SP		* HE 01A* 02A* 03A* 04A* 07A* 08H*
				/01H/02H/H				
1003A-1-03A-461		X003-2		1-47W401-216	901	H-7277		* HE 01A* 02A* 03A* 04A* 07A* 08H*
				/03H H/C				
1003A-1-03A-462	H	X003-2		1-47W401-216	901	H-7277 SP		* HE 01A* 02A* 03C* 04A* 07C*
				/04H H/C				
1003A-1-03A-463		X003-2		1-47W401-216	901	H-7277		* HE 02A* 04H* 07A* 08H* 09A*
				/06H/05H H/C				
1003A-1-03A-464		X003-2		1-47W401-216	901	H-7135 SP		* HK 01A* 02A* 03A* 04A* 07A* 08H* 09A*
				/07H H/C				
1003A-1-03A-465		X003-2		1-47W401-216	902	SP		* HK 01A* 02A* 03E* 04A* 07A* 08H* 09A*
				/08H H/C				
1003A-1-03A-466		X003-2		1-47W401-216	902			01 HE 02B* 03H* 04E* 05H* 08C* 09A*
				/09H H/C				
1003A-1-03A-467		X003-2		1-47W401-216	901	SP		* HK 01A* 02A* 03E* 04A* 07A* 08C* 09A*
				/10H H/C				
1003A-1-03A-468	H	X003-2		1-47W401-216	901			* HE 01A* 02A* 03A* 04A* 05A* 07A* 08H* 09A*
				/11H H/C				

DINEB3 F-769

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEWFinding Number F1717101

## Comments pertinent to finding:

At the Black and Veatch inspection, construction of hanger number 1-03A-406 was not complete. The hanger was being tracked as incomplete by the construction accountability program. Installation of the hanger has now been completed in accordance with the existing Quality Assurance Program and tracked with the site accountability program. Attached is a copy of Quality Assurance inspection documentation, and accountability print out.

Robert C. McKay  
Program Team Member

11/2/83  
Date

Thomas E. McConnell  
OEDC Program Manager

11/4/83  
Date

E. Gray Beasley  
Chairman, OEDC Policy Committee

11/8/83  
Date

Black & Veatch *attached copy of records indicates required action complete*

Classification: Type R Category A

W.J. Zidzimas  
Black & Veatch Project Manager

11/21/83  
Date

R.E. Blandell  
Black & Veatch Senior Review Team Chairman

12/1/83  
Date

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WBNP-QCP-4.23.9 TEST NO. 8  
Attachment A (LOP)

SUPPORT FILLING INSPECTION

Support ID

1003A-1-03A-406

Reference Drawing

1-03A-406 Rev. 902

Accepted  
(Check)

Unique Identifier

Fabrication

Installation

Gaps 

Top	Bottom	Local
<u>N/A</u>	<u>N/A</u>	<u>1/16" EA. SIDE</u>

Stainless Pipe Protection N/A

Grout N/A

Integral Attachments N/A

Insulation Saddle or Lugs N/A

Stainless Pipe Cleanliness N/A

Bolted Connections N/A

Cotter Pins N/A

Remarks: FOR 24-2233

N/A

Inspected in accordance with

Rev. 2 of QCP-4.23.9

5-6-93

Inspector

Date

D 1003A-1-03A-406

Barcode area with two circular stamps. The top stamp contains the text "1003A-1-03A-406" and a signature. The bottom stamp contains the text "1003A-1-03A-406" and a signature. The barcode consists of vertical bars of varying heights, with numbers printed below them.

1003A-1-03A-371		1003-3	9752	1-47W401-212	901 H-10680	01 HK 01BP 02A* 03EF 04PP 07A* 09HF
1003A-1-03A-372		1003-3		1-47W401-212 /11H-H7C	903	* HL 02A* 03A* 04A* 07A* 08CA 09A*
1003A-1-03A-373	M	1003-3	9911	1-47W401-212	002 H-7607	03 HF 03B 04B 05B 08B 09A*
1003A-1-03A-374	M	1003-3	9911	1-47W401-212 /04H-H/D	902	03 HF 02A* 03B 04E 05B 09C 09A*
1003A-1-03A-375	M	1003-1	9893	1-47W401-212 /02H-H/D	902	VOID 08 HF 08B
1003A-1-03A-376	M	1003-1	9893	1-47W401-212 /03H-H/D		VOID 08 HF 08C
1003A-1-03A-377		1003-3	9593	1-47W401-212	901 H-8935	* HK 01A* 02A* 03A* 04A* 05A* 06A* 09A*
1003A-1-03A-378		1003-3		1-47W401-212	901 H-9717	* HK 01A* 02A* 03A* 04A* 06B* 08B* 09A*
1003A-1-03A-379		1003-3		1-47W401-212	902	* HK 01A* 02A* 03A* 04A* 07A* 08C* 09A*
1003A-1-03A-380		1003-3		1-47W401-212	001	03 HL 02A* 03B 04A* 07A* 08B 09A*
1003A-1-03A-381		1003-3		1-47W401-212	902	* HL 02A* 03A* 04A* 07A* 08B* 09A*
1003A-1-03A-382		1003-3		1-47W401-212 /01H-H7C	002 H-7335	* HR 02A* 03A* 04A* 06A* 09A*
1003A-1-03A-400	M	1003-2	9528	1-47W427-219	902 H-7427	* HE 03A* 04A* 08A*
1003A-1-03A-401	M	1003-2	9528	1-47W427-219	902 H-8134 H-8545	* HE 03A* 04A* 08A*
1003A-1-03A-402		1003-2		1-47W427-219	902 H-8637	* HA 01A* 02A* 03A* 04A* 08B* 09A*
1003A-1-03A-403	M	1003-2		1-47W427-219	904 H-7618	* HK 03A* 04A* 07A* 08A* 09A*
1003A-1-03A-404	I	1003-2		1-47W427-219 /03H-H7C	903	VC10 * HE 08A*
1003A-1-03A-405		1003-2		1-47W427-219	903 H-8721	* HE 01B* 02B* 03B* 04B* 05B* 08B* 09A*
1003A-1-03A-407		1003-3	9809	1-47W401-213	902 4377K1	01 HK 01BP 02BP 03A* 04A* 07A* 09A*
1003A-1-03A-408		1003-3		1-47W401-213	902	* HK 01A* 02A* 03A* 04A* 05B* 08B* 09A*
1003A-1-03A-409	M	1003-3		1-47W401-213	902	* HE 01A* 02B* 03A* 04A* 05B* 08B* 09A*
1003A-1-03A-410		1003-3	9809	1-47W401-213	902 4377K1	01 HK 01BP 02BP 03A* 04A* 07A* 09A* 09A*
1003A-1-03A-411		1003-3	9871	1-47W401-213 /02H-HH	903	* HE 01A* 02C* 03B* 04B* 09C* 08F* 09A*
1003A-1-03A-412		1003-3		1-47W401-213	904	* HK 01A* 02A* 03A* 04A* 07A* 08C* 09A*
1003A-1-03A-413		1003-2		1-47W427-219	902	VC10 * HA 08A*
1003A-1-03A-414		1003-2		1-47W427-219	902	VC10 * HA 08A*
1003A-1-03A-415	M	1003-2		1-47W427-219	903	* HA 01A* 02A* 03A* 04A* 08B*
1003A-1-03A-416	M	1003-3		1-47W401-213	901 H-8178	* HK 01A* 02A* 03A* 04A* 07A* 08A*
1003A-1-03A-417	M	1003-3		1-47W401-213	000	* HL 02A* 03A* 04A* 07A* 08A* 09A*
1003A-1-03A-418	M	1003-3		1-47W401-213	903 H-7394	* HA 01A* 02A* 03A* 04A* 07A* 08A*
1003A-1-03A-419		1003-3		1-47W401-213	903	* HA 01A* 02A* 03A* 04A* 07A* 08A*
1003A-1-03A-420		1003-3		1-47W401-213	001 H-7230 03997H	01 HK 01B 02B 03B 04B 07A* 08A* 09A*
1003A-1-03A-421	M	1003-3	9511	1-47W401-213	001	03 HL 02B* 03C 04C 07C 08C 09A*
1003A-1-03A-422		1003-3		1-47W401-213	901	* HL 02A* 03A* 04A* 07A* 08C* 09A*
1003A-1-03A-423	M	1003-3		1-47W401-213	901	* HE 02A* 02A* 03A* 04A* 08A*
1003A-1-03A-424	M	1003-3		1-47W401-213	001	* HK 01A* 02A* 03A* 04A* 07A* 08A* 09A*
1003A-1-03A-425		1003-2		1-47W401-213 /04H-H/05H-H/D	901 H-907K1	* HK 01A* 02A* 03A* 04A* 07A* 08A* 09A*

DINSO24 F-770

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F1717121

O-PL

Comments pertinent to finding:

J. C. Standifer to G. Wadewitz memo dated 6/10/83 for disposition of NCR 4455R approves use as constructed. Support 03B-2AFW-R219 R902 was issued on 3/24/83 under ECN 3511 to resolve this finding. This corrective action is complete.

References: J. C. Standifer to G. Wadewitz memo dated 6/10/83 (WBP 830610 020)  
NCR 4455R  
ECN 3511  
03B-2AFW-R219 R902

<u><i>EUG</i></u> Program Team Member	<u>11/14/83</u> Date
<u><i>Thomas E. McConnell</i></u> OEDC Program Manager	<u>11/10/83</u> Date
<u><i>M.S. Martin for E.A. Beasley</i></u> Chairman, OEDC Policy Committee	<u>11/17/83</u> Date

Black & Veatch *attached documentation supports close out of this item*

Classification: Type \_\_\_\_\_ R Category A

*W.J. Zitzman*  
Black & Veatch Project Manager 12/1/83  
Date

*R E Blewett*  
Black & Veatch Senior Review Team Chairman 12/15/83  
Date

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

WBP 83 0610 020

TO : G. Wadewitz, Project Manager, Watts Bar Nuclear Plant, CONST (7)

FROM : J. C. Standifer, Project Manager, Watts Bar Design Project, 204 GB-K

DATE : JUN 10 1983

SUBJECT: WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - NONCONFORMANCE REPORT 4455R R0

Reference: Your memo to me dated May 12, 1983 (WBN 830512 007) transmitting subject NCR 4455R R0 (WBN 821126 135)

Your recommended disposition of the Black and Veatch findings addressed in subject NCR is as follows:

- Finding F718: (03B-LAFW-R231) Use-as-is. This is acceptable because of small loads on the support structure.
- Finding F726: (03B-LAFW-R232) Relocating clamp to elevation 743'-1/2" is acceptable and will bring support within installation tolerance of 1/8".
- Finding F736: (03B-LAFW-R150) Use-as-is. This is acceptable because small load induces minimal stress into the pipe.
- Finding F772: (03B-2AFW-R219) Use-as-is. This is acceptable because installation of the riser clamp at 2294' has no effect on the integrity of the support. The shear lugs still make sufficient contact with the clamp.
- Finding F776: (03B-LAFW-R191) Reworking support is acceptable and will bring support into compliance with the design drawing.
- Finding F742: (47A427-2-2) Reworking support in accordance with FCR H-8382 is acceptable and will bring the support into compliance with the design drawing.
- Finding F704: (03B-LAFW-R100) This is not acceptable because the overhead and distorted weld connection between the column and brace could cause the support to fail. We recommend that CONST replace the support and ensure that the proper weld is made. Ed D13 will revise the drawing to change 4'-10" dimension to 4'-11" under ECR 3511.

*J. C. Standifer*  
 J. C. Standifer  
 PM

GLP:LB  
 Attachment  
 (Attachment):

- C. Barine, 77124 C-K
- L. J. Cooney, 400134 C-K
- P. A. Corbett, 40127 C-K
- MER, WBN 83 C-K
- E. H. Piarco, 104 ESTA-K
- G. H. Spence, 41149 C-K



WBN '821126

135 DIVISION OF CONSTRUCTION  
NONCONFORMING CONDITION REPORT

WBNP-QC1-1.02 R5  
Attachment A  
LOP

763

1A. Item and CAQ Description, and Apparent Cause:

The identification of the following nonconforming conditions of previously inspected and documented pipe supports resulted from the System 03 review by Black and Veatch:

- Findings F 718: Hanger 03B-1AFW-R231 is not welded to embedment in accordance with the current revision of the drawing;
- Findings F 726: Item 1 of Hanger 03B-1AFW-R232 is installed 6°52' with the horizontal; it is shown as horizontal on the drawing;
- Findings F 736: Item 1 of Hanger 03B-1AFW-R150 is installed 8°21' with the vertical; it is shown as vertical on the drawing;
- Findings F 772: The angle of the Riser Clamp of Hanger 03B-2AFW-R219 is specified as 30° with the vertical; it is installed at 22°45' with the vertical;
- Findings F 776: The end attachments of Hanger 03B-1AFW-R191 are rotated 90° from where specified on the drawing, and cotter pins are missing;
- Findings F 704: Hanger 03B-1AFW-R100 is distorted in the vicinity of the weld between the W4 brace and W4 vertical member. The specified 4'-10" dimension is actually 2'-11";
- Findings F 742: Hanger 47A427-2-2 was not installed in accordance with FCR H-8382.

1B. NCR No.: 4455R Rev. 0

1C. REF. NR or  
AUDIT No.: N/A

1D. PLANT: WBNP

1E. UNIT: 1 & 2

1F. SYSTEM: 03

1G. ASME CODE:  Yes  No

1H. CONTRACT No.: N/A

1I. INITIATING  
UNIT: HEU

1J. Vendor Name N/A Address (City and State) N/A

2. Initiator R. Chambers Date 11-12-82 Approver Thomas R. Brown Date 11/17/82

3A. Significant CAQ:  Yes  No Construction Engineer Ed Burke Date 11-17-82

Signature \_\_\_\_\_  
Authorization to Upgrade NCR to Significant \_\_\_\_\_ Title & Organization \_\_\_\_\_ Date \_\_\_\_\_  
If Significant, NEB-NLS Contact \_\_\_\_\_ Date \_\_\_\_\_ By \_\_\_\_\_

3B. For Significant CAQ:

- 1. Describe Root Cause
- 2. This is a Generic CAQ:  Yes  No (If yes, describe)



Prepared by: \_\_\_\_\_ Date \_\_\_\_\_ Supervisor \_\_\_\_\_ Date \_\_\_\_\_

Nuclear Project: WATTS BAR  
NUCLEAR PLANT

NONCONFORMING CONDITION REPORT  
CONTINUATION PAGE

NCR: 4455R R

Item  
No.

REMARKS

4A.

- Finding F718: Use as is. Revise weld symbols to reflect installed condition. See attachment 1.
- Finding F726: Rework to locate clamp at 748'-0 $\frac{1}{2}$ " elevation. Reinspect and document support in accordance with QCP 4.23-3 and QCP 4.23-8.
- Finding F736: Use as is. Revise drawing to reflect installed condition as identified on attachment 2.
- Finding F772: Use as is. Revise drawing to reflect installed condition as identified on attachments 3 and 4.
- Finding F776: Rework hanger to the current revision of the drawing. Reinspect and document support in accordance with QCP 1.14, QCP 1.42-2, and the QCP 4.23 series.
- Finding F704: Use as is. The distortion is not in the vicinity of the weld between tube and "W" section; it is in the vicinity of the weld between the "W4" brace and "W4" vertical member.
- Finding F742: Rework hanger in accordance with FCR H-8382. As a result of site inspection, it has been concluded that the 6'-9 $\frac{1}{2}$ " dimension is correct. Reinspect and document support in accordance with the QCP 4.23 series.



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4A. Disposition:  Rework  Repair  Use-As-Is  Reject  Other  
(Check Block and Detail Below)

See continuation sheet for recommended disposition.

4B. Action Required to Prevent Recurrence: (For Significant CAO's Only)

4C. Date for Completion of all actions to close NCR (For Significant CAO's only) \_\_\_\_\_

Recommended By R. Chambers Date 11-12-82  
Thomas R. Brown 11/17/82

5.  Approved:  As Detailed in 4 above  Other (See Continuation Page)

Referred to Design Project Organization (DPO): DPO Coordination Contact Doug Shaffer

Construction Engineer Ed Burke Date 11-17-82

6. Concurrence of Designated QA Reviewer for Action Required to Prevent Recurrence \_\_\_\_\_ Date \_\_\_\_\_

7.  Approved:  As Detailed in 4 above  Other (See Continuation Page)

Design Project Organization: g. D. Collins Date 6-9-83  
See memo from JCS to GW dated 6/10/83 (WBP 830610 020) See Memo JCC to GW MEDS (Attached) for signature

8. Approved Disposition Completed, and if applicable, Item released from Nonconforming Status

Responsible Individual \_\_\_\_\_ Date \_\_\_\_\_ Approved by \_\_\_\_\_ Date \_\_\_\_\_

9. NCR Closed (Includes completion of action required to prevent recurrence for significant NCR's)

Construction Engineer \_\_\_\_\_ Date \_\_\_\_\_

10. Reviewed and Accepted By:

\_\_\_\_\_  
Authorized Nuclear Inspector Date

11. Distribution:

- Site QA Records File
- Construction Engineer
- CONST QA Branch
- QA Manager, OEDC
- MEDS
- Design Project Organization
- EN DES NEB Codes, Standards, and Materials Section (Code Items Only)

**C. J. COONEY W6D224**  
 NRC Resident Inspector  
 (Significant NCR's Only)  
 ANI (Code Items Only)  
 EN DES NEB-NLS  
 (Significant NCR's Only)  
 NSRS (Significant NCR's Only)

# ENGINEERING CHANGE NOTICE

COVER SHEET

SWP

83 0314 506

766

(BEFORE ISSUANCE OF OPERATING LICENSE)

ECN NO. 3511

TENNESSEE VALLEY AUTHORITY  
DIVISION OF ENGINEERING DESIGN

To: Construction Project Manager Watts Bar Nuclear Plant, Spring City, TN

From: Design Project Manager SWP 204 GB-K

DATE MAR 14 1983

Budget Item: 211

Was IJ Analysis Required: Yes  No

G.L. PENNINGTON

Prepared by

Project Engineer

SWP WMG-2

Section

Released:

Design Project Manager

J.J. Nash  
Section Leader

3/9/83  
Date

SCOPE

Project WATTS BAR NUCLEAR PLANT

Affected Unit(s) 1

System or Feature AUXILIARY FEEDWATER - SYS 3B (NCR WBN SWP 8301, WBN SWP 8309, WBN SWP 8305)

Reference & Description of Change ENDES CHANGES, EXCEPT ELECTRICAL, DUE TO BLACK AND VEATCH INDEPENDENT REVIEW FINDINGS. REF NEB 82 1006 220 (ATTACH 1)

DRAWINGS OR B/M'S INVOLVED: Yes or No Date Branch Data Sheet Available

(Data Sheets Required)

ENGINEERING SUPPORT BRANCHES

Civil YES  
Electrical NO  
Mechanical NO  
Nuclear NO

NUCLEAR PROJECTS DESIGN GROUPS

Civil 1,2 YES  
Electrical 4 YES  
Mech 2 YES

FOSSIL, HYDRO & SPECIAL PROJECTS DESIGN

SPECIAL DESIGN PROJECTS NO  
ARCHITECTURAL SUPPORT BRANCH NO

ENGINEERING SUPPORT BRANCHES Approval Required YES

ECN is ready for branch review: R.W. Toller 2-9-83  
Design Project Manager Date

Approved: R.O. Barnett 2/23/83  
ENS CIVIL BR. CHIEF Date

NA/MB Date  
ENS ELECTRICAL BR. CHIEF

Davidson 2-24-83  
ENS MECHANICAL BR. CHIEF Date

A.J. Wilder 3-7-83  
Chief Nuclear Engineer Date

Required for PSAR or FSAR: NO  
Required for Preoperational Test: YES NO YES NO  
If Yes, Test No. 31422

Vendor Backcharges Involved NO  
Seismic Analysis Required YES  
Nonconformance Report Required YES  
QA Applies YES  
Security System Modified NO  
Vendor(s) involved: NO

PHYSICAL WORK MUST BE DONE BEFORE:

	Pre-Op Test	1st Fuel Load	1%Therm Power	Comm'l Oper'n	1st Refuel
Unit <u>1</u>		<input checked="" type="checkbox"/>			
Unit(s)					

CC (Attachments): No - Yes (5)

CHIEF, ARCHITECTURAL SUPPORT BRANCH, WNC126 C-K  
CHIEF, CIVIL ENGINEERING BRANCH, W0224 C-K  
CHIEF, ELECTRICAL ENGINEERING BRANCH, W0C126 C-K  
CHIEF, MECHANICAL ENGINEERING BRANCH, W7C126 C-K  
CHIEF, NUCLEAR ENGINEER, W10C126 C-K  
CHIEF, QUALITY ASSURANCE BRANCH, 5100 MIB-K

CHIEF, COST PLANNING AND CONTROL STAFF, W12C74 C-K  
CHIEF, SPECIAL DESIGN PROJECTS, W20224 C-K  
MANAGER OF CONSTRUCTION, E7824 C-K  
PLANT SUPERINTENDENT  
MEDS, W0843 C-K

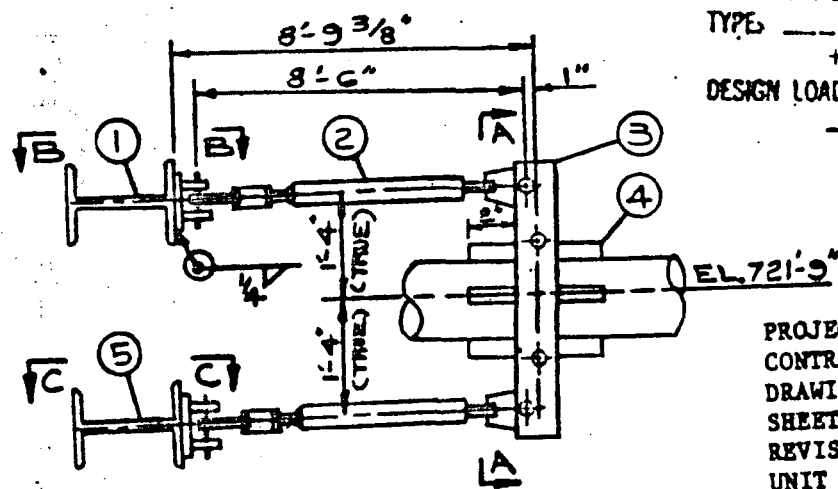
ITEM	QUAN.	PART NO.	SIZE	DESCRIPTION	WT.			
1	1	-	W 4X13X2-10" LG.	(A36)	BYTYA			767
2	2	2200	3-8'-6"-RSSA					
3	1	CS/AS	12" PIPE SIZE RISER CLAMP	(SEE SHT. 3 OF 3)	125			
4	8	-	1" X (5/8)" X 2" LG SHEAR LUG	(A36)	BYTYA			
5	1	-	W 4X13X4'-2" LG.	(A36)	BYTYA			
6	2	-	7" X 1/2" FL X 7" LG.	(A36)	BYTYA			
7	1	-	3 X 3 X 3/8 ANGLE X 1-11/16 LG (CUT AS SHOWN)	(A36)	BYTYA			
8	1	-	3 X 3 X 3/8 ANGLE X 3'-0 5/8 LG (CUT AS SHOWN)	(A36)	BYTYA			

SEE TYA DWG # 47A050-191A

NO. 47W427-205-R5

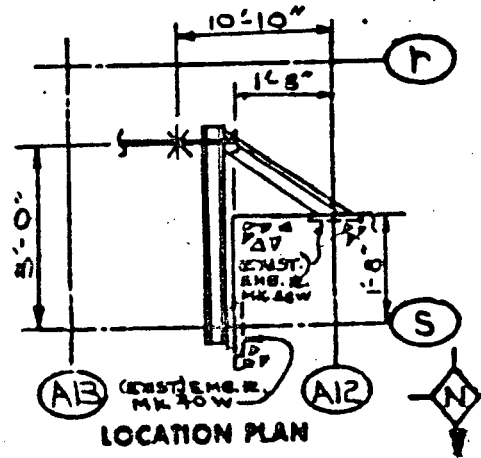
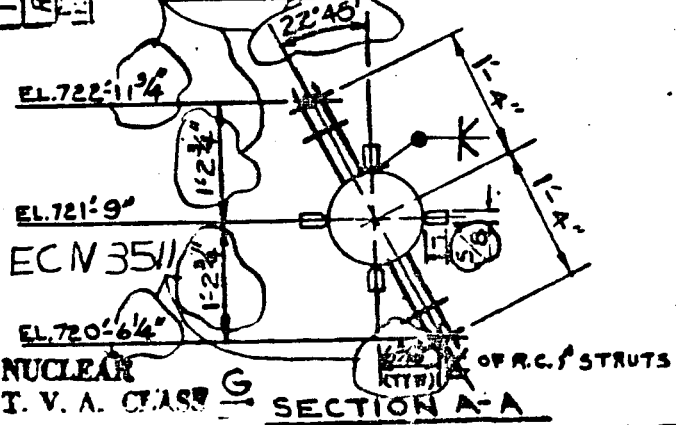
JOINT: 41  
 DIRECTION: X  
 TYPE: RR  
 DESIGN LOAD: + 5000 #  
 - 4000 #

REV	PER	DATE	DESCRIPTION
1	SI	10/17/78	FOR M-5989



PROJECT: [unclear]  
 CONTRACT: 3605  
 DRAWING: 03B-2AFW-R211  
 SHEET: 13  
 REVISION: 902  
 UNIT: 1

ECN 3511  
 12" PIPE SIZE  
 ELEV. LOOKING NORTH



REV	PER	DATE	DESCRIPTION
1	SI	10/17/78	FOR M-5989

DRACO CORPORATION P.O. #E-2882  
 I. V. A. CONTRACT #74 C 98-83015  
 WATTS BAR NUCLEAR PLANT - UNIT #2  
 TYA R900 - VENDOR RO

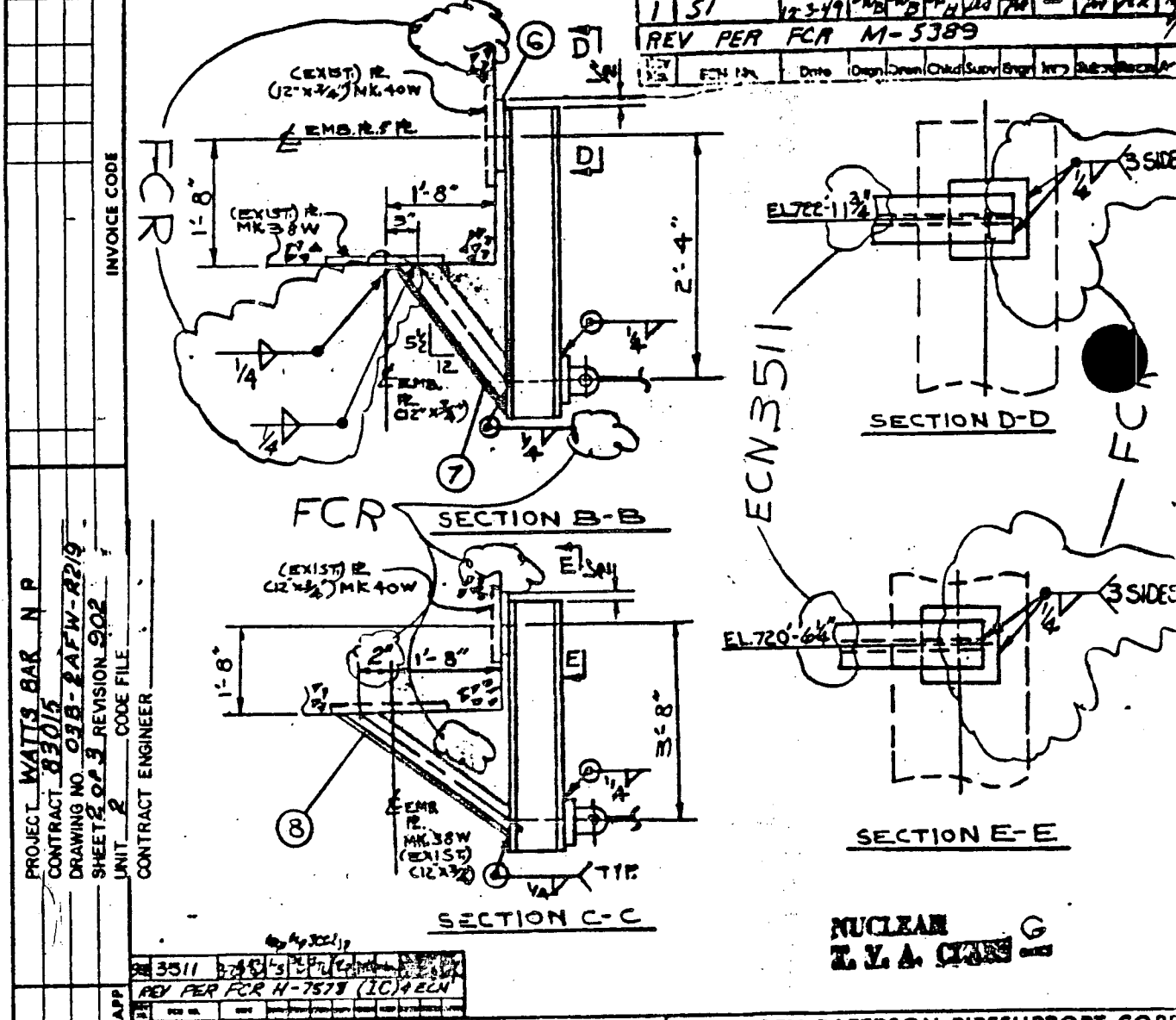
BERGEN-PATERSON PIPESUPPORT CORP			
PIPING SYSTEM	AUX. FEEDWATER	STRUCTURAL	48N1223-1-3
REF. DWG.	47W427-2-1	FAB NO.	009
JOB NO.	3605	NO. RECD	1
MARK & DWG. NO.	03B-2AFW-R219	SHEET	13
DATE	2-17-78	REV	902

902

FORM BY-3, 10/75

ITEM	QUAN.	PART NO.	SIZE	DESCRIPTION	WGT.
-	1	SDE	(5) HRS.		
-	1	SDD			
-	1	SB			
-	1	EZR	210-3 FOR STRUT ITEM #2 (PIN TO PIN)		
-	1	BST			

1	SI	12-2-79	DR	DR	DR	DR	DR	DR	DR	DR	DR	DR	DR	DR	DR	DR	DR	DR	DR	DR
REV PER FOR M-5389																				



INVOICE CODE

PROJECT: WATTS BAR N.P.  
 CONTRACT: 83015  
 DRAWING NO. 03B-2AFW-R219  
 SHEETS 013 REVISION 002  
 UNIT 2 CODE FILE  
 CONTRACT ENGINEER

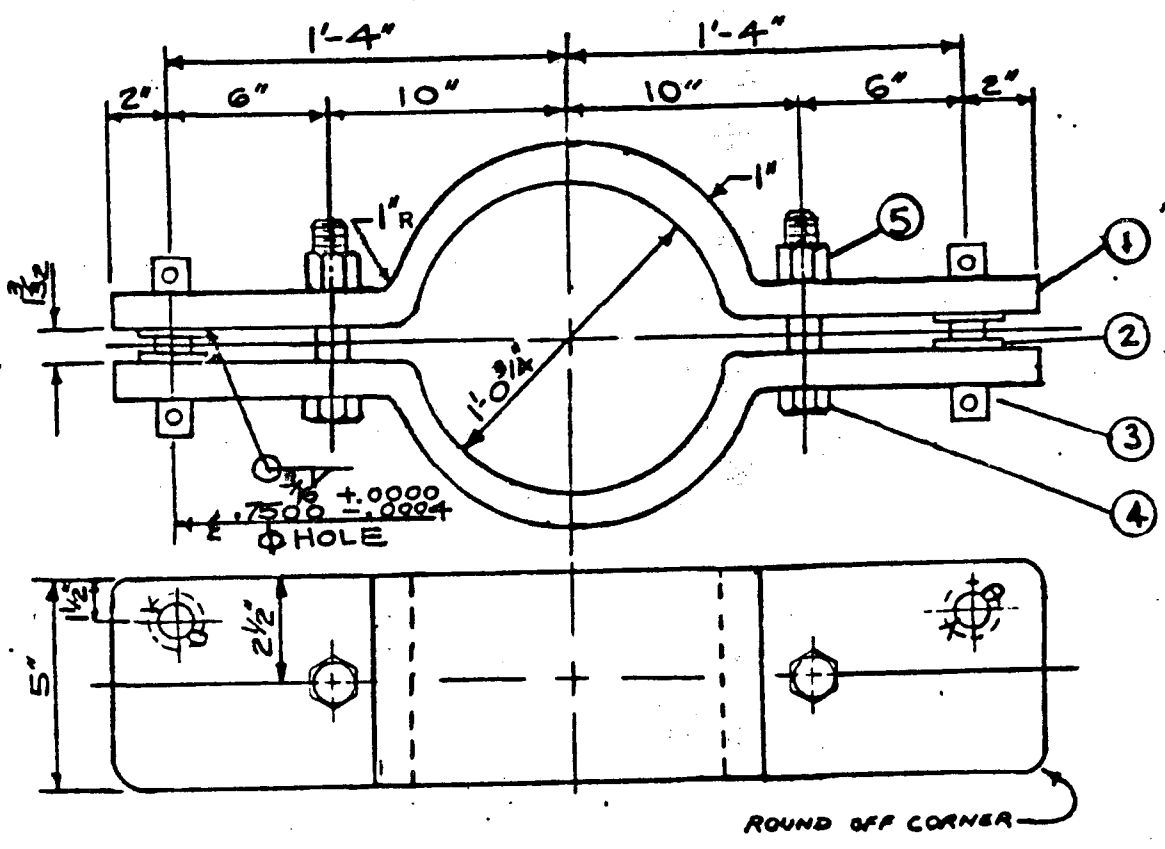
3511	74513	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
REV PER FOR H-7578 (10) 4 ELN																				

DRAVO CORPORATION P.O. # E-2882	BERGEN-PATERSON PIPESUPPORT CORP		
T.V.A. CONTRACT # 74C38-83015	PIPING SYSTEM	AUX. FEEDWATER	STRUCTURAL
WATTS BAR NUCLEAR PLANT - UNIT #2 (TVA R 900 - VENDOR REQ.)	REF. DWGS.	PIPING 47W427-2-1	48N1223-1-3
J.G. DES	R.S. DRN	S.D. CHK	S.M. DATE 2-17-78
MARK 8 DWG. NO. 03B-2AFW-R219	JOB NO. 3605	FAB NO. 009	NO. REQ'D 1
			SWPT 2-3
			REV 902

NUCLEAR  
T.V.A. CONTRACT # 74C38-83015

ITEM	QUAN.	PART NO.	SIZE	DESCRIPTION	WGT.	ASTM
1	2	CS	CLAMP HALVES 1" X 5"		121	A36
2	4	CS	1 3/32" φ x 1/4" THK. WASHER		1	A36
3	2	AS	3/4" φ x 3 3/4" LG PIN W/ (2) - 1/8" φ x 1/4" LG. COT.		1	A193-B7
4	2	CS	1" φ x 4" LG. HEX. HD BOLT		1	A307 GRA A
5	2	CS	1" φ AHH NUT		1	A307 GRA A
TOTAL					125	

902 SI 2483 L's P's M's - 11/21/76  
 REV PER FCR H-7578 (IC)  
 REV ECR NO DATE



**NOTES:**  
 GOLD FORM ALL CLAMPS UP TO φ INCLUDING 5" φ PIPE  
 HOT FORM ALL CLAMPS 6" φ UP  
 HOLE SIZES } 1/16" OVERSIZE TO 7/8" BOLTS  
 FOR BOLTS } 1/8" OVERSIZE 1" BOLTS φ OVER

PROJECT W/BNP  
 CONTRACT 83015  
 DRAWING# 03B-2AFW-R2  
 SHEET 93  
 REVISION 902

NUCLEAR G  
 T.V.A. CLASS CC

INVOICE CODE  
 DESCRIPTION  
 1 SI 2483 L's P's M's - 11/21/76  
 REV PER FCR M-5383

DRAYO CORPORATION P.O. #E-2882  
 T. V. A. CONTRACT #74C38-83015  
 WATTS BAR NUCLEAR PLANT - UNIT #2

BERGEN-PATERSON PIPESUPPORT CO.			
PIPING SYSTEM	AUX. FEEDWATER	STRUCTURAL	
REF. DWGS.	PIPING 47W427-2-1	48N1223-1-3	
JOB NO.	3605	IAB NO. 009	NO. 1
MARK & DWG. NO.	03B-2AFW-R219		3-3-76

TVA R900 = VENDOR 70  
 DES J.G. ORS S.D. SM DATE 2-17-76

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F1717131

Comments pertinent to finding:

Hanger number 03B-1AFW-R184 was reworked according to  
NCR number 4454R attached is a copy of  
inspection documentation, accountability print-out and NCR number  
4454R.

Rod C McKay  
Program Team Member

11/2/83  
Date

Thomas E McConnell  
OEDC Program Manager

11/4/83  
Date

B. Gray Bessley  
Chairman, OEDC Policy Committee

11/6/83  
Date

Black & Veatch *Records indicate required action is complete*

Classification: Type R Category A

W. J. Zipesman  
Black & Veatch Project Manager

11/21/83  
Date

RE Blawiehl  
Black & Veatch Senior Review Team Chairman

12/1/83  
Date

QC&R  
FEB 28 1983

08B

UNIQUE IDENTIFIER  
1003B-03B-1A-W-E18A

WBSP-QCP-4.23-8 TEST NO. 8  
Attachment A (LOP)

SUPPORT FINAL INSPECTION

SUPPORT ID  
1003B-03B-1A-W-E18A  
Reference Drawing  
03B-1A-W-E18A Rev 901

Unique Identifier N/A  
Fabrication N/A  
Installation N/A  
Caps N/A  
Stainless Pipe Protection N/A  
Crust N/A  
Integral Attachments N/A  
Insulation Saddle or Rings N/A  
Stainless Pipe Cleanouts N/A  
Bolted Connections N/A  
Cotter Pins /

Remarks FOR H-4553  
NCP# 6463 NCP# 4454E R11  
Inspected in accordance with  
Rev 2 of QCP-4.23-8  
Inspector 1-16-83  
Date

PROGRAM: 25220  
DATE: 1 17 20 83

WONP HANGER INFORMATION AND TRACKING  
REPORT: FULL-FILE BY SYSTEM, HANGER ID (BREAK ONE SYSTEM) SYSTEM: 033

PAGE: 48

IDENTIFIER	CL	PLK	PAU/PLN	DRAWING	REV	DESCRIPTION	STAT	TEST	LID	C	SEQUENCE OF TESTS
1003B-03B-1AFW-4182	X003-2	9722		1-47W427-207	903						HA 01A* 02C* 03C* 04C* 08C* 09A*
1003B-03B-1AFW-4183	X003-2			1-47W427-207	901						HA 01A* 02A* 03A* 04A* 08A*
1003B-03B-1AFW-4185	X003-2			1-47W427-207	901	H-7786					HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4186	X003-2			1-47W427-207	901	NCR 4454R R1					HE 01A* 02B* 03A* 04A* 05B* 08C*
1003B-03B-1AFW-4187	X003-2			1-47W427-207	901						HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4188	X003-2	9671		1-47W427-207	904						HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4189	X003-2			1-47W427-207	904						HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-419	X067-??			1-47W427-206	901	H-8923					HA 01A* 02A* 03A* 04A* 08A*
1003B-03B-1AFW-4190	X003-2			1-47W427-207	901						HA 01A* 02A* 03A* 04A* 08A*
1003B-03B-1AFW-4191	X003-2	9722		1-47W427-207	901	H-10572/NCR 4456P					HA 01A* 02B* 03B* 04B* 08C*
1003B-03B-1AFW-4192	X003-2			1-47W427-207	901						HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4193	X003-2			1-47W427-207	902						HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4194	X003-2			1-47W427-207	903						HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4195	X003-2			1-47W427-207	903						HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4196	X003-2			1-47W427-207	903						HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4197	X003-2	9796		1-47W427-207	903						HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4198	X003-2			1-47W427-206	904						HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4199	X067-??			1-47W427-206	901	H-8924					HA 01A* 02A* 03A* 04A* 08A*
1003B-03B-1AFW-4200	X003-2			1-47W427-200	905						HA 01A* 02A* 03A* 04A* 08A*
1003B-03B-1AFW-4201	X003-2			1-47W427-200	905	H-47707/H-4680					HA 01A* 02A* 03A* 04A* 08A*
1003B-03B-1AFW-4202	X003-2			1-47W427-200	901	H-7506					HA 01A* 02A* 03A* 04A* 08A*
1003B-03B-1AFW-4203	X003-2			701H H7C	905						HA 01A* 02A* 03A* 04A* 08A*
1003B-03B-1AFW-4204	X003-2			1-47W427-201	902	H-4487/H-4370					HA 01A* 02A* 03A* 04A* 08A*
1003B-03B-1AFW-4205	X003-2	9371		1-47W427-201	901	H-706P 42					HA 01A* 02A* 03A* 04A* 08A*
1003B-03B-1AFW-4206	X003-2			1-47W427-201	902						HA 01A* 02A* 03A* 04A* 08A*
1003B-03B-1AFW-4207	X003-2			1-47W427-201	904						HA 01A* 02A* 03A* 04A* 08A*
1003B-03B-1AFW-4208	X003-2	9617		1-47W427-201	902	H-9026					HA 01A* 02A* 03A* 04A* 08A*
1003B-03B-1AFW-4209	X003-2			721H H7C	902						HA 01A* 02A* 03A* 04A* 08A*
1003B-03B-1AFW-4210	X003-2			1-47W427-202	901	H-6709					HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4211	X003-2			1-47W427-202	904						HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4212	X003-2			1-47W427-201	903						HA 01A* 02A* 03A* 04A* 08C* 09A*
1003B-03B-1AFW-4213	X001-0	9592		1-47W427-201	902						HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4214	X001-0			1-47W427-204	905						HA 01A* 02A* 03C* 04B* 05B* 08C* 09A*
1003B-03B-1AFW-4215	X001-0	9702		1-47W427-204	901	H-10585					HA 01A* 02A* 03C* 04A* 05A* 08C*

DIN5025 F-773



712

WBN 830122. 141

DEPARTMENT OF CONSTRUCTION  
NONCONFORMING CONDITION REPORT

1A. Item and CAQ Description and Appearance:

The identification of the following nonconforming conditions of previously inspected and documented pipe supports resulted from the System 03 review by Black and Veatch:

Finding F 734: Hanger 03B-IAFW-R147 has cotter pins missing at lower end attachment;

Finding F 773: Hanger 03B-IAFW-R184 has cotter pins missing;

Finding F 774: Hanger 03B-IAFW-R185 has a cotter pin missing; and

Finding F 737: Hanger 03B-IAFW-R159 lacks a hanger rod.

See continuation sheet for revised item description.

1. NUMBER: 44548

2. PROJECT: N/A

3. PLAN: NBNP

4. SHEET: 1

5. SYSTEM: 03

6. ASSESSMENT: Yes  No

7. CONTRACT NO: N/A

8. INSTALLING UNIT: BVP



1J. Vendor Name: N/A Address: City and State: N/A

2. Initiator: *Randolph G. Chambers* Date: 12/20/83 Approved: *Thomas R. Patten* Date: 12/20/83

3A. Significant CAQ:  Yes  No Construction Engineer: *Ed B. Urbe* Date: 12-27-83

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

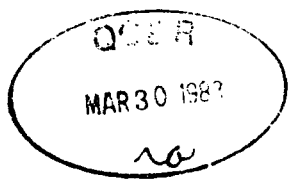
Authorization to be Significant: \_\_\_\_\_ Date: \_\_\_\_\_

If Significant, NEB-NLS Contact: \_\_\_\_\_

3B. For Significant CAQ

1. Describe Root Cause:

2. This is a Generic CAQ:  Yes  No (If Yes, describe)



Prepared by \_\_\_\_\_

4A. Disposition of Findings (Check, Block and Detail as Appropriate)

Finding F 734: Replace cotter pins, reinspect, and document support in accordance with OCP 4.23-8.

Finding F 773: Replace cotter pins, reinspect, and document support in accordance with OCP 4.23-8.

Finding F 774: Replace cotter pins, reinspect, and document support in accordance with OCP 4.23-8.

Finding F 737: Replace hammer rod, reinspect, and document support in accordance with OCP 4.23-1 and OCP 4.23-8.

See continuation sheet for revised disposition.

4B. Action Required to Prevent Recurrence of Defects (Specify as Appropriate)

4C. Date for Completion of all actions to be taken (For Guidance See OCP 4.23-1)

Recommended By: Donald Chambers Date: 12/10/82  
Thomas F. Brown

5.  Approved  As Described in Report  Other (See Continuation Sheet)

Referred to Design Project Organization

Construction Engineer: H. E. ...

6. Concurrence of Designated QA Reviewer for Action Required to Prevent Recurrence of Defects

7.  Approved  As Described in Report  Other (See Continuation Sheet)

Design Project Organization \_\_\_\_\_ Date \_\_\_\_\_

8. Approved Disposition Complete and if applicable, it is closed from the project file (Date)

Responsible Individual: Sergeant Alley Date: 3-28-83

9. NCR Closed (Includes completion of actions required to prevent recurrence of defects and can NCR be closed)  
 Construction Engineer: Thomas F. Brown Date: 3-28-83

10. Reviewed and Accepted By \_\_\_\_\_ Date \_\_\_\_\_

11. Distribution

Site QA Records File	NRC Resident Director
Construction Engineer	(Significant NCR Only)
CONSTR QA Branch	ANSI Code Items Only
QA Manager - QUDC	EN DES NEB NLS
WEDS	(Significant NCR Only)
Design Project Organization	NSR (Significant NCR Only)
EN DES NEB - Codes, Standards, and Materials Section (Code Items Only)	

WBN 830300 122



WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F1717191

Comments pertinent to finding:

Hanger number 03B-IAFW-R186 was reworked according to  
NCR number 4454R attached is a copy of  
inspection documentation, accountability print-out and NCR number  
4454R.

Rand C McKay  
Program Team Member

11/2/83  
Date

Homer E McConnell  
OEDC Program Manager

11/4/83  
Date

E Gray Beesley  
Chairman, OEDC Policy Committee

11/2/83  
Date

Black & Veatch *The attached documentation supports close out of this item.*

Classification: Type R Category A

W.J. Zidzeman  
Black & Veatch Project Manager

12/08/83  
Date

R E Blardell  
Black & Veatch Senior Review Team Chairman

12/19/83  
Date

66

WSP-QCP-4.23-8 TEST NO. 8  
Attachment A (LOP)

SUPPORT FINAL INSPECTION

SUPPORT ID  
10033-033-1A-N-R-126  
No. to record of testing  
033-1A-N-R-126

- Design N/A
- Fabrication N/A
- Installation N/A
- Caps N/A N/A N/A
- Stainless Pipe Protection N/A
- Grout N/A
- Integral Attachments N/A
- Insulation Saddle or Lug N/A
- Stainless Pipe Cleanliness N/A
- Bolted Connections N/A
- Cotter Pins ✓

Remarks NR 6164  
NR 445AR P1  
Inspected in accordance with  
Rev 2 of QCP-4.23-8

Timothy W. Hadley 1-16-83 ✓  
Inspector Date  
704  
12-18-83

PROGRAM: 259220  
 DATE: 17 28 83

REPORT: FULL-FILE BY SYSTEM, MANAGER ID (BREAK ONE SYSTEM) SYSTEM: 003

PAGE: 08

IDENTIFIER	CL	AFK	PAU/PER	DRAWING	REV	DESCRIPTION	STAT	TEST ID & SEQUENCE OF TESTS
10038-038-1AFW-4184	X003-2		4752	1-47W427-207	903			HA 01B* 02L* 03C* 04C* 08C* 09A*
10038-038-1AFW-4185	X003-2			1-47W427-207	901			HA 01A* 02A* 03A* 04A* 08A*
10038-038-1AFW-4186	X003-2			1-47W427-207	901	H-4553 MCR 4454R R1		HA 01A* 02A* 03A* 04A* 08B* 09A*
10038-038-1AFW-4189	X003-2			1-47W427-207	901	H-7786		HA 01A* 02A* 03A* 04A* 08A* 09A*
10038-038-1AFW-4187	X003-2			1-47W427-207	901			HA 01A* 02A* 03A* 04A* 08A* 09A*
10038-038-1AFW-4188	X003-2		4071	1-47W427-207	904		VCID	HA 01A* 02A* 03A* 04A* 08A* 09A*
10038-038-1AFW-4189				1-47W427-207	901		VCID	HA 08C*
10038-038-1AFW-419	X067-77			1-47W427-206	901	H-8923		HA 01A* 02A* 03A* 04A* 08A*
10038-038-1AFW-4190				1-47W427-207	902		VCID	HA 08A*
10038-038-1AFW-4191	X003-2		4752	1-47W427-207	900	H-13572/MCF 4455B		HA 01B* 02B* 03B* 04B* 08C*
10038-038-1AFW-4192	X003-2			1-47W427-207	901			HA 01A* 02A* 03A* 04A* 08A* 09A*
10038-038-1AFW-4193	X003-2			1-47W427-207	902			HA 01A* 02A* 03A* 04A* 08A* 09A*
10038-038-1AFW-4194	X003-2			1-47W427-207	902			HA 01A* 02A* 03A* 04A* 08A* 09A*
10038-038-1AFW-4195	X003-2			1-47W427-207	902			HA 01A* 02A* 03A* 04A* 08A* 09A*
10038-038-1AFW-4196	X003-2			1-47W427-207	902			HA 01A* 02A* 03A* 04A* 08A* 09A*
10038-038-1AFW-4197	X003-2		4790	1-47W427-207	902			HA 01A* 02A* 03A* 04A* 08A*
10038-038-1AFW-42	X003-2			1-47W427-206	904			HA 01A* 02A* 03A* 04A* 08B* 09A*
10038-038-1AFW-420	X067-77			1-47W427-206	901	H-8924		HA 01A* 02A* 03A* 04A* 08B*
10038-038-1AFW-4200	X003-2			1-47W427-206	902			HA 01A* 02A* 03A* 04A* 08A*
10038-038-1AFW-4201	X003-2			1-47W427-206	901	H-8924/MCF 4455B		HA 01A* 02A* 03A* 04A* 08A*
10038-038-1AFW-4202	X003-2			1-47W427-206	901	H-1596		HA 01A* 02A* 03A* 04A* 08A*
10038-038-1AFW-4203	X003-2			1-47W427-206	902	H-4553/MCF 4455B		HA 01A* 02A* 03A* 04A* 08A*
10038-038-1AFW-4204	X003-2		4371	1-47W427-206	901	H-8924/MCF 4455B		HA 01A* 02A* 03A* 04A* 08A*
10038-038-1AFW-4205				1-47W427-206	901		VCID	HA 03A*
10038-038-1AFW-4206	X003-2			1-47W427-201	904			HE 01A* 02B* 03A* 04A* 05B* 08A* 09A*
10038-038-1AFW-4208	X003-2		4071	1-47W427-201	902	H-9024		HA 01A* 02A* 03A* 04C* 08C*
10038-038-1AFW-4209	X003-2			1-47W427-202	901	H-6789		HA 01A* 02A* 03A* 04A* 08A* 09A*
10038-038-1AFW-4210	X003-2			1-47W427-202	904			HA 03A* 04B* 08C* 09A*
10038-038-1AFW-4211	X003-2			1-47W427-201	903			HA 01A* 02A* 03A* 04A* 08C* 09A*
10038-038-1AFW-4212	X003-2		4592	1-47W427-203	902			HA 01A* 02A* 03A* 04A* 08A* 09A*
10038-038-1AFW-4213	X001-6			1-47W427-204	902			HE 01A* 02A* 03C* 04B* 05B* 08C* 09A*
10038-038-1AFW-4214	X001-6		4752	1-47W427-204	901	H-10035		HE 01A* 02A* 03C* 04A* 05A* 09C*
10038-038-1AFW-4216	X001-6			1-47W427-204	902			HE 01A* 02A* 03C* 04A* 05A* 09C*

DU05/05 F-774

WBN 830122 141

DEPARTMENT OF CONSTRUCTION  
NONCONFORMING CONDITION REPORT

1A. Description of CAG Description and Apparent Cause:

The identification of the following nonconforming conditions of previously inspected and documented pipe supports resulted from the System 03 review by Black and Veatch:

Finding F 734: Hanger 03B-IAFW-R147 has cotter pins missing at lower end attachment;

Finding F 773: Hanger 03B-IAFW-R184 has cotter pins missing;

Finding F 774: Hanger 03B-IAFW-R185 has a cotter pin missing; and

Finding F 737: Hanger 03B-IAFW-R159 has a damaged rod.

See continuation sheet for revised item description.

PROJECT NO. 4454R

PROJECT NAME

AGENCY N/A

PROJECT LOCATION MBSP

DATE OF INSPECTION 03

BY ASME CODE Yes  No

CONTRACT NO. N/A

INDUSTRIAL

UNIT MBP



1J. Vendor Name N/A

2. Initiator *Walter C. ...* Date *12/20/92* Approved *Thomas R. ...*

3A. Significant CAG  Yes  No Construction Engineer *ELB*

Signature \_\_\_\_\_

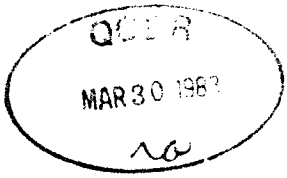
Authorization in accordance with significant \_\_\_\_\_

If Significant, NEB NLS Contact \_\_\_\_\_

3B. For Significant CAG

1. Describe Root Cause \_\_\_\_\_

2. This is a Generic CAG  Yes  No (If Yes, describe \_\_\_\_\_)



Prepared by \_\_\_\_\_

4A. Disposition of Findings (Check Blank and Detail)

Finding F 734: Replace cotter pins, reinspect, and document support in accordance with OCP 4.23-8.

Finding F 773: Replace cotter pins, reinspect, and document support in accordance with OCP 4.23-8.

Finding F 774: Replace cotter pins, reinspect, and document support in accordance with OCP 4.23-8.

Finding F 777: Replace hanger rod, reinspect, and document support in accordance with OCP 4.23-3 and OCP 4.23-8.

See continuation sheet for revised disposition.

4B. Action Required to Prevent Recurrence of Findings (See 4A)

4C. Date for Completion of all actions to be taken (If Significant, enter DATE)

Recommended By Samuel Chambers Date 12/15/82  
Norman Brown

5.  Approved  As Disposed of in Report (See Construction Pages)  
 Referred to Design Project Organization

Construction Engineer E. J. Ruck

6. Concurrence of Design Project Organization for Action Required to Prevent Recurrence

7.  Approved  As Disposed of in Report (See Construction Pages)  
 Design Project Organization \_\_\_\_\_ Date \_\_\_\_\_

8. Approved Disposition Completed and if applicable, if no longer in force, enter final status  
 Responsible Individual Samuel Alley Date 3-22-83 Approved by Samuel Alley Date 3-22-83

9. NCR Closed (Includes completion of actions required to prevent recurrence of findings and NCR closed)  
 Construction Engineer Norman Brown Date 3-24-83

10. Reviewed and Accepted By \_\_\_\_\_ Date \_\_\_\_\_  
 Authorized Nuclear Inspector

11. Distribution  
 Site QA Records File  
 Construction Engineer  
 CONST QA Branch  
 QA Manager, OIUC  
 MFDS  
 Design Project Organization  
 EN DES NFB - Codes, Standards, and Materials Section (Code Items Only)

NRE Resident Inspector  
 (Significant NCR Only)  
 ANI (Code Items Only)  
 EN DES NBS NLS  
 (Significant NCR Only)  
 NCRS (Significant NCR Only)

WBN '830350 122



NONCONFORMING CONDITION REPORT  
CONTINUATION PAGE

Item No. REMARKS

- 1. A. Revised item and CAO description:  
Add finding F 749: Hanger OJB-1AFW-R112 has Item 1 (RSSA) missing.
- 4. A. Revised disposition:  
Add Finding F 749: Replace item 1, reinspect, and document in accordance with QCP 4.23-1 and QCP 4.23-2.

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number 1 F 17 17 15 1

C

Comments pertinent to finding:

The design of support 03B-1AFW-R188 R901 would not allow for a secure tightening of the U-bolt and therefore would not allow for adequate restraint. Per disposition of NCR WBNSWP8305, support 03B-1AFW-R188 R904 was voided on 8/10/83 under ECN 3511. A new, more stable structure which allows proper tightening of the U-bolt and will adequately restrain the pipe was designed and issued as drawing 47A427-4-5 RO on 8/10/83 under ECN 3511. All corrective action for the finding is complete. The NCR is scheduled to be closed by 12/15/83.

References: ECN 3511  
03B-1AFW-R188 R904  
47A427-4-5 RO  
NCR WBNSWP8305

*EMC*

Program Team Member

11/23/83

Date

*Thomas E McConnell*

OEDC Program Manager

11/23/83

Date

Chairman, OEDC Policy Committee

Date

Black & Veatch

*Range has been re-designed. Follow up action is covered by a documented program that will assure completion of required efforts*

Classification: Type

R

Category

A

*W.J. Ziskin*

Black & Veatch Project Manager

12/13/83

Date

*RE Blawie*

Black & Veatch Senior Review Team Chairman

12/23/83

Date

# ENGINEERING CHANGE NOTICE

COVER SHEET

SWP 83 0314 506

(BEFORE ISSUANCE OF OPERATING LICENSE)

ECN NO. 3511

TENNESSEE VALLEY AUTHORITY  
DIVISION OF ENGINEERING DESIGN

To: Construction Project Manager Watts Bar Nuclear Plant, Spring City, TN

From: Design Project Manager SWP 204 GB-K

DATE MAR 14 1983

Budget Item: 211

Was IJ Analysis Required: Yes  No

Prepared by: G.L. PENNINGTON Section: SWP WMG-2 Section Leader: JJ Nash  
Project Engineer: [Signature] Design Project Manager: JC Standiford Date: 3/9/83

SCOPE

Project WATTS BAR NUCLEAR PLANT Affected Unit(s) 1  
System or Feature AUXILIARY FEEDWATER - SYS 3B (NCR WBN SWP 8301, WBN SWP 8309, WBN SWP 8302)  
Reference & Description of Change ENDES CHANGES, EXCEPT ELECTRICAL, DUE TO BLACK AND VEATCH INDEPENDENT REVIEW FINDINGS. REF NEB 82 1006 220 (ATTACH 1)

DRAWINGS OR B/M'S INVOLVED: Yes or No Date Branch Data Sheet Available

ENGINEERING SUPPORT BRANCHES  
Civil YES  
Electrical NO  
Mechanical NO  
Nuclear NO

NUCLEAR PROJECTS DESIGN GROUPS  
Civil 1,2 YES  
Electrical YES  
Mech 2 YES

FOSSIL, HYDRO & SPECIAL PROJECTS DESIGN  
SPECIAL DESIGN PROJECTS NO  
ARCHITECTURAL SUPPORT BRANCH NO

ENGINEERING SUPPORT BRANCHES Approval Required	Yes or No <u>YES</u>
ECN is ready for branch review: <u>R.D. Tolles</u> Design Project Manager	<u>2-9-83</u> Date
Approved: <u>R.O. Barnett</u> ENB CIVIL BR. CHIEF	<u>2/23/83</u> Date
<u>NA/108</u> ENB ELECTRICAL BR. CHIEF	<u>        </u> Date
<u>CD Davidson</u> for ENB MECHANICAL BR. CHIEF	<u>2-24-83</u> Date
<u>A.J. Wilder</u> for Chief Nuclear Engineer	<u>3-7-83</u> Date

Required for PSAR or FSAR NO  
Required for Preoperational Test: YES <sup>VAB</sup> ~~NO~~ <sub>3-7-83</sub>  
If Yes, Test No. TRA 22  
Vendor Backcharges Involved NO  
Seismic Analysis Required YES  
Nonconformance Report Required YES  
QA Applies YES  
Security System Modified NO  
Vendor(s) involved: NO

PHYSICAL WORK MUST BE DONE BEFORE:

	Pre-Op Test	1st Fuel Load	1% Therm Power	Comm'l Oper'n	1st Refuel
Unit <u>1</u>		<input checked="" type="checkbox"/>			
Unit(s)					

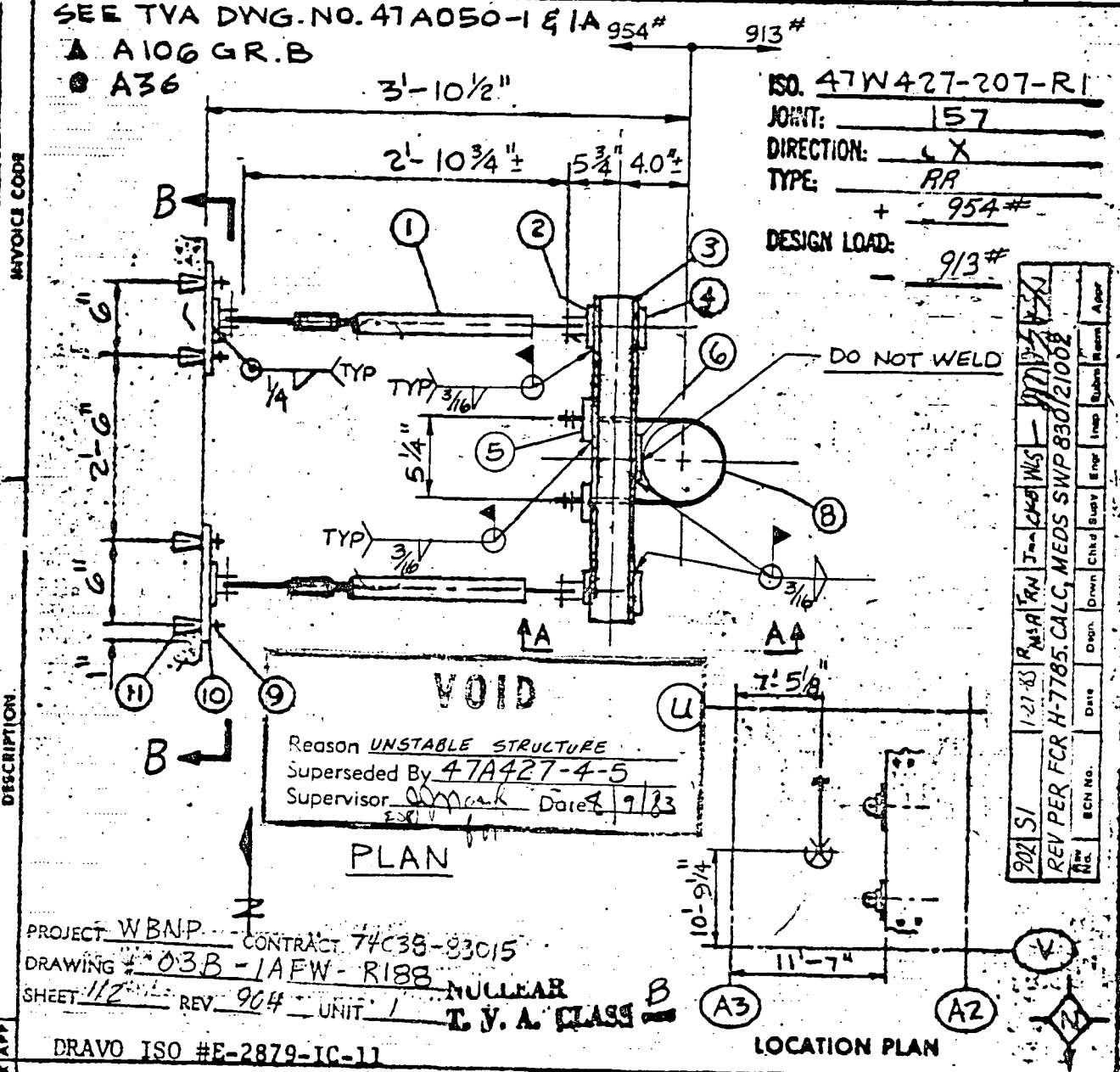
CC (Attachments): NO - Yes

CHIEF, ARCHITECTURAL SUPPORT BRANCH, WVC126 C-K  
CHIEF, CIVIL ENGINEERING BRANCH, WDD228 C-K  
CHIEF, ELECTRICAL ENGINEERING BRANCH, WVC126 C-K  
CHIEF, MECHANICAL ENGINEERING BRANCH, WVC126 C-K  
CHIEF, NUCLEAR ENGINEER, WVC126 C-K  
CHIEF, QUALITY ASSURANCE BRANCH, 5100 MIB-K

CHIEF, COST PLANNING AND CONTROL STAFF, W12C78 C-K  
CHIEF, SPECIAL DESIGN PROJECTS, WDD228 C-K  
MANAGER OF CONSTRUCTION, E7824 C-K  
PLANT SUPERINTENDENT  
MEDS, W8863 C-K

ITEM	QUAN.	PART NO.	SIZE	DESCRIPTION	904 3511	10-10-83	40	40	RDG	JP	LDN	-	904
100	2	2200	1.5 - 2' - 9"	- R.S.S.A	VOID DWG								
200	2	2003-L5		END ATTACHMENT									
300	2	-	4	[5.4 x 3'-6" LG. b-b = 1"	(A36)								
400	2	-	3 x 3/8"	R x 3" LG.	(A36)								
500	2	260	5	WASHER PLATE									
600	1	CS	4" x 3/8"	R x 4" LG.	(A36)							3	
700	1												3
800	1	283A	4"	PIPE SIZE U-BOLT, A=5 1/8", D=1-4"									
900	8	-	1/2"	φ x 1 1/4" LG. BOLT.									BITVA
1000	2	-	8" x 1/2"	R x 8" LG. W/ (4) 3/8" φ HOLES.									BITVA
1100	8	-	1/2"	CONCRETE FASTENER (PHILLIPS REDHEAD)									BITVA

Ticket 2190 R-900  
 904 3511  
 REV ECN, NCR WBSWMP B305 + B + V F. 775  
 REV PER FOR M-4152  
 DATE 4-22-77



ISO 47W427-207-R1  
 JOINT: 157  
 DIRECTION: X  
 TYPE: RR  
 + 954#  
 DESIGN LOAD: 913#

**VOID**  
 Reason UNSTABLE STRUCTURE  
 Superseded By 47A427-4-5  
 Supervisor [Signature] Date 8/9/83

902 SI  
 1-21-83  
 REV PER FCR H-7785.CALC, MEDS SWP 830/2100E  
 DATE  
 ECN No.  
 MS

PROJECT WBNP CONTRACT 74C38-83015  
 DRAWING 03B-1AEW-R188 NUCLEAR  
 SHEET 112 REV 904 UNIT 1 T.V.A. CLASS B

DRavo ISO #E-2879-IC-11  
 DRavo CORPORATION P.O. # E-2879-  
 T.V.A. CONTRACT # 74C38-83015  
 WATTS BAR NUCLEAR PLANT - UNIT # 1  
 TVA 900 = VENDOR RO

BERGEN-PATERSON PIPESUPPORT CORP.  
 PIPING SYSTEM AUXILIARY FEEDWATER  
 REE PIPING STRUCTURAL  
 DWGS. 47W427-4-8 41N318-2-5  
 JOB NO. 3604 FAB NO. 09  
 MARK 8 DSG. NO. 03B-1AEW-R188  
 DATE 4-22-77

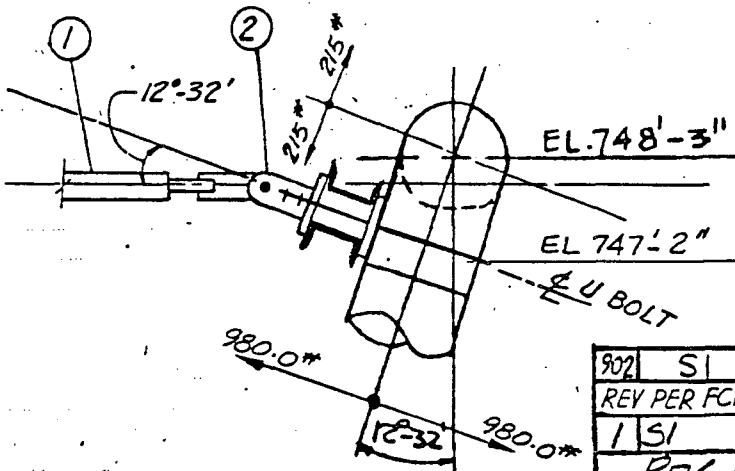
REV	DES	DATE	CHK	APP
MS	MS	HE	SM	DATE 4-22-77

786

Ticket 2 R-902

ITEM	QUAN.	PART NO.	SIZE	DESCRIPTION	WGT.
-	1	SDE	(4) HRS		
-	1	SDD			
-	1	SB			
-	1	EZP	210-3	FOR STRUT ITEM #1 (PIN TO PIN)	
-	1	B&T			

INVOICE CODE



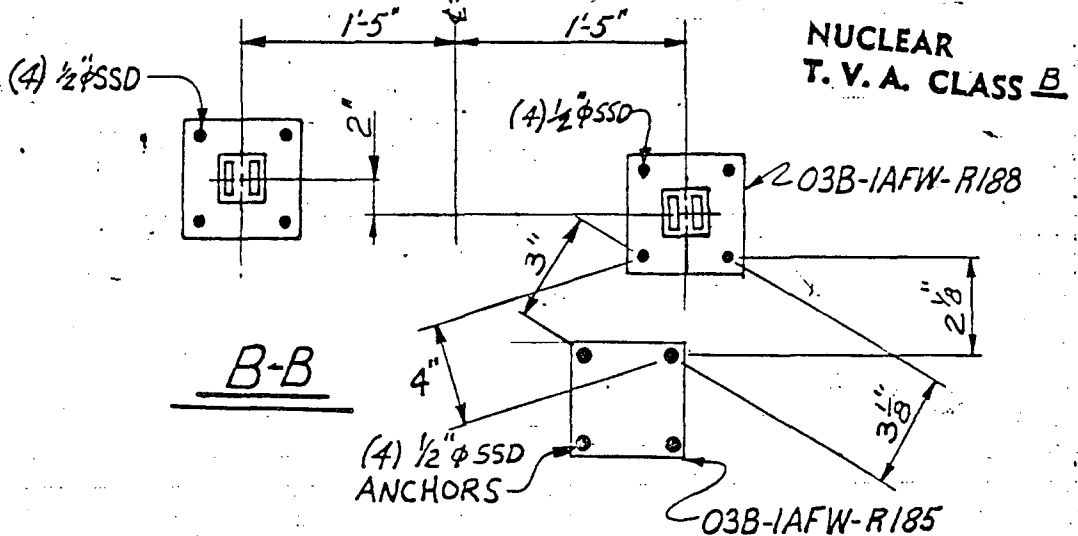
NOTE:  
1. THIS SUPPORT RESTRAINT HAS TO BE WORKED WITH SUPPORT 03B-IAFW-R187

**VOID**  
Reason UNSTABLE STRUCTURE  
Superseded By 47A427-4-5  
Supervisor \_\_\_\_\_ Date \_\_\_\_\_  
EZP

902	SI	1-27-43	R	TRN	JM	CKB	WLS	-	SM
REV PER FCR H-7785. CALC, MEDS SWP 830121002									
1	SI	10/78	47A	47A	DB	2	SM	-	SM
REV PER FCR M-4152									
REV	ECN No.	Date	Desgn	Drawn	Chkd	Supv	Engr	Incr	Subm

SECT. A-A

PROJECT WBNP CONTRACT 74C38-83015  
DRAWING # 03B-IAFW-R188  
SHEET 2/2 REV. 904 UNIT 1



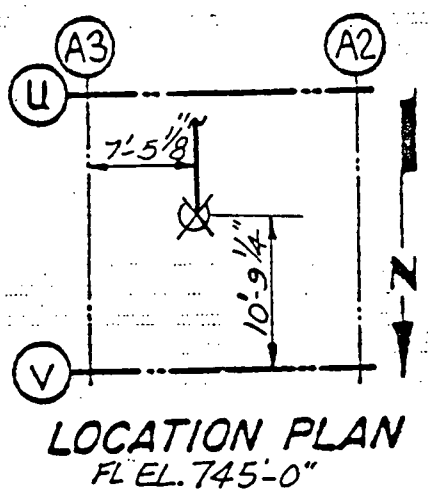
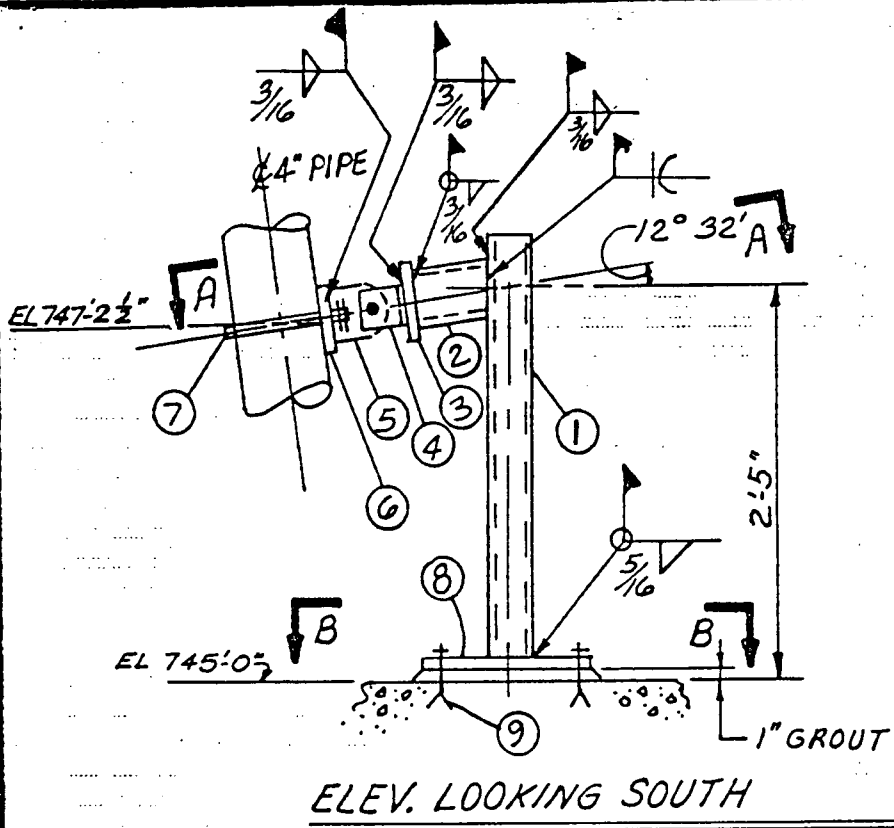
B-B

904	3511	8-10-83	44P	RDG	SPUN	-	SM	WLS	SM
VOID DWG									
REV	ECN No.	Date	Desgn	Drawn	Chkd	Supv	Engr	Incr	Subm
903	3511	4-8-13	OP	SM	PC	EPJUN	-	SM	WLS
REV PER ECN, NCR WONS WP 8305 # B&V F 775									

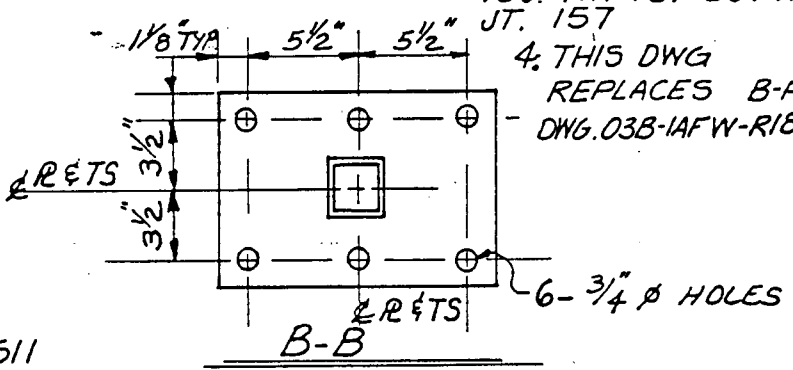
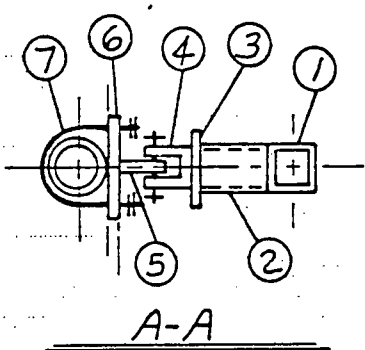
DRAWING APP					DRAWING NO. DATE				
BY CHK APP					DATE				
DES					DATE				
MS					MS				
ORN					CHK				
HE					SM				
DATE					DATE				
4-22-77					4-22-77				
DRAVO ISO #E-2879-IC-11 TVA 900 = VENDOR RO									
DRAVO CORPORATION P.O. # E-2879.									
T.V.A CONTRACT #74C38-83015									
WATTS BAR NUCLEAR PLANT UNIT #1									
BERGEN-PATERSON PIPESUPPORT CORP.									
PIPING SYSTEM AUXILIARY FEEDWATER									
REF. DWGS					STRUCTURAL DWGS				
47W427-4-8					41N318-2-5				
JOB NO. 3604			FAS NO. 09			NO. REC'D			
MARK & DWG. NO. 03B-IAFW-R188					REV				
					2		904		

RO # 14855  
RO CALCS WBP 83 0728

786



- NOTES:**
- FOR GENERAL NOTES SEE 47A427-1
  - DESIGN LOADS  
 $F_x = +954 \#$   
 $-913 \#$
  - PROB NO. N3-3-13A  
 ISO. 47W427-207 R4  
 JT. 157
  - THIS DWG REPLACES B-P DWG. 03B-IAFW-R18B.



INITIAL ISSUE PER ECN 3511

ITEM	QTY	MATERIAL DESCRIPTION FOR ONE SUPPORT	No. SUPPORTS - 1
9	6	5/8" $\phi$ SSD ANCHOR	
8	1	R 1 X 9 1/4" X 1'-1 1/4"	
7	1	B-P PART 6502, PIPE SIZE 4" $\phi$ (U-BOLT)	
6	1	R 1/2 X 3 X 0'-9"	
5	1	B-P PART 1052, ROD SIZE 5/8 (WELDING LUG)	
4	1	BP PART 1047, ROD SIZE 5/8, CONFIGURATION TYPE 2 (WELDED BM ATTACH)	
3	1	R 1/2 X 5 X 0'-5"	
2	1	TS 4 X 4 X 1/2 X LG AS REQ'D	
1	1	TS 4 X 4 X 1/2 X LG AS REQ'D	

SEISMIC CATEGORY I STRUCTURES

MECHANICAL - UNIT 1  
CATEGORY I SUPPORT FOR  
SUPPORT DETAIL 4-5

WATTS BAR NUCLEAR PLANT  
TENNESSEE VALLEY AUTHORITY  
DIVISION OF ENGINEERING DESIGN

REV	ISS. NO.	DATE	ISSUED BY	DESIGNED BY	CHECKED BY	APP'D BY
0000			<i>Richard Dunlap</i>			
0001			<i>Goodland Warren</i>			
0002			<i>G.L. PENNINGTON</i>			
1000			<i>E.J. PATRICK</i>			

APPROVED BY: *[Signature]*  
 DATE: 8-10-83  
 PROJECT: 47A427-4-5  
 SHEET: 1 OF 1  
 WELDING GRADING AS CONTRACTED

POUN  
JEWELL

DIVISION OF ENGINEERING DESIGN  
NONCONFORMANCE REPORT

787

MEDS Accession No. SWP '83 0110 124

REPORT NO. WBNSWP8305

PLANT WATTS BAR NUCLEAR PLANT  UNIT 1

PREPARER/ORGANIZATION/DATE R. L. Ilich/SWP/January 10, 1983

DESCRIPTION OF CONDITION

The design for support 03B-1AFW-R188 Rev 901 will not allow for a secure tightening of the U-bolt and will therefore not allow for adequate restraint. This deficiency was identified during Black & Veatch Review on finding F775.

DATE OF OCCURRENCE EST (  ) ACT. (  ) December 1978

SIGNIFICANT CONDITION ADVERSE TO QUALITY  
YES  NO

METHOD OF DISCOVERY Black & Veatch Review

BRANCH CHIEF/DATE EJC/ 1/10/83

UNID CODE (EN DES-EP 8.01)

CORRECTIVE ACTION:

CORRECTIVE ACTION DEVIATES FROM A DESIGN CRITERIA REQUIREMENT YES  NO

DESIGN CRITERIA DOCUMENT NO. EXCEPTION REQUEST NO.

ECN REQUIRED  YES  NO  LCN NO  SCHEDULE IMPACT  P  A  N

NONCONFORMANCE REPORT

1 REPORT NO.

305

788

16 ASSIGNABLE CAUSE: (REQUIRED IF SIGNIFICANT)

17 THIS IS A GENERIC CONDITION YES  NO

18 ACTION REQUIRED TO PREVENT RECURRENCE: (REQUIRED IF SIGNIFICANT)

19 INDEPENDENT REVIEW:

20 LABOR EST. ( ) , ACT. ( ) MH 21 SCHEDULE EST. ( ) , ACT. ( ) DAYS

22 ACTIVITY NO. 23 TASK DESCRIPTION 24 DATE INITIATED

25 REMARKS:

27 DISTRIBUTION: R. L. Ilich, 375 GB-K

- 28 CONST PROJECT MANAGER
- EN DES PROJECT MANAGER
- CHIEF, ESB
- OFFICE OF QA
- NEB (for Significant NCRs)\*\*
- MEDS CIS
- NSRS (for Significant NCRs)\*
- ASSISTANT TO THE MANAGER OF OEDC (Quality and Nuclear Safety)-for Significant NCRs
- \* DISTRIBUTE AFTER THIS SIGNATURE
- \*\* HANDCARRY COPY TO NEB-NLS

26 ALL EN DES ACTION COMPLETE:

\*BRANCH CHIEF/ORG.

DA..

MEDS ACCESSION NO.



WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F1716

Comments pertinent to finding:

At the Black and Veatch inspection, construction of hanger number 03B-1AFW-R191 was not complete. The hanger was being tracked as incomplete by the construction accountability program. Installation of the hanger has now been completed in accordance with the existing Quality Assurance Program and tracked with the site accountability program. Attached is a copy of Quality Assurance inspection documentation, and accountability print-out. The print-out is a Quality Assurance document and will be retained as life of plant documentation.

Robert C. McKay  
Program Team Member

11/21/83  
Date

Thomas E. McConnell  
OEDC Program Manager

11/23/83  
Date

E. Gray Beasley  
Chairman, OEDC Policy Committee

11/23/83  
Date

Black & Veatch *The attached information documents that the hanger has been removed to correct the conditions noted*

Classification: Type       R       Category       A      

W.J. Fitzgibbon  
Black & Veatch Project Manager

12/13/83  
Date

R.E. Blandell  
Black & Veatch Senior Review Team Chairman

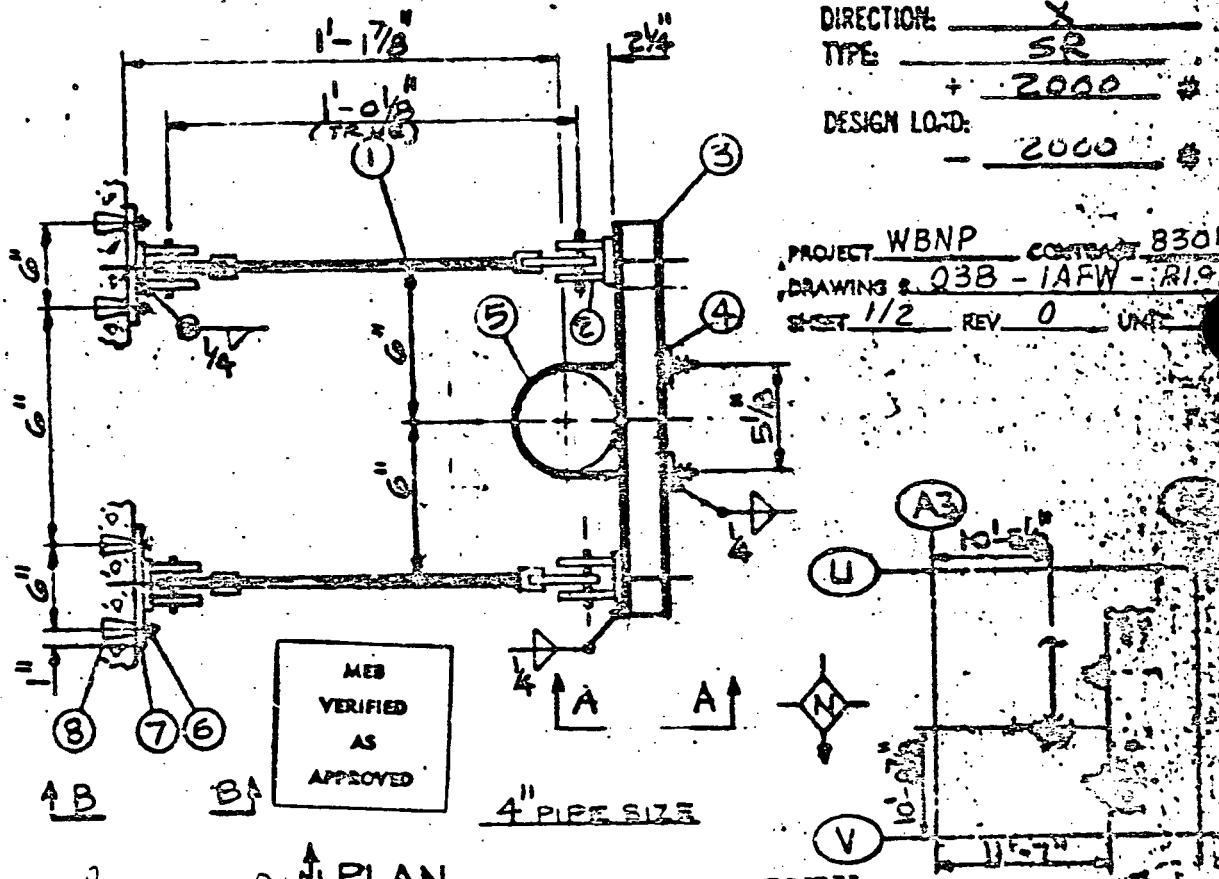
12/23/83  
Date

ITEM NO.	QTY	PART NO.	SIZE	DESCRIPTION	UNIT
1	2	2000	1.5-1-0/8"	RRS	
2	2	2001		END ATTACHMENT	
3	2	-	4 E 5.4 x 1-7"	LG. b-b = 1" (A 36)	BTVA
4	2	260		WASHER PLATE	
5	1	203A	4"	PIPE SIZE U-BOLT D = 9 5/8"	
6	8	-	1/2" x 1/4"	LG. BOLT	BTVA
7	2	-	8" x 1/2" R x 8"	LG. W/ (4) 5/8" HOLES	BTVA
8	8	-	1/2"	CONCRETE FASTNER (PHILLIPS RED HEAD)	BTVA

SEE TVA DWG. 47A050-1 & 1A.

NO. 47W427-207-R1  
 JOINT: 306  
 DIRECTION: X  
 TYPE: SR  
 DESIGN LOAD: + 2000 #  
- 2000 #

PROJECT WBNP CONTRACT 83015  
 DRAWING 038-1AFW-R191  
 SHEET 1/2 REV 0 UNIT



MEB  
 VERIFIED  
 AS  
 APPROVED

FCR-  
 H-161572  
 PLAN

INFORMATION ONLY  
 NUCLEAR  
 T. V. A. ~~PLANT~~  
 LOCATION PLAN  
 LOAD:

DRAVO ISO #E-2879-IC-13  
 DRAVO CORPORATION P.O. # E-2879-

CUSTOMER  
 T.V.A. CONTRACT # 74C38-83015

ENGINEER  
 WATTS BAR NUCLEAR PLANT - UNIT # 1

PIPING SYSTEM AUXILIARY FEEDBACK  
 REFERENCE DWG. 47W427-2-3 (REV)  
 MARK NO. 038-1AFW-R191 NO. 2000

BEJEN-PATERSON PIPESUPPORT CORP.

BOSTON, MASS. ROCHESTER, N.Y. SAN FRANCISCO, CALIF.  
 PITTSBURGH, PA. CHESTER, N.Y. CHICAGO, ILL.

DESIGN	CHECK	APPROVE
MS	AS	SK

INVOICE CODE

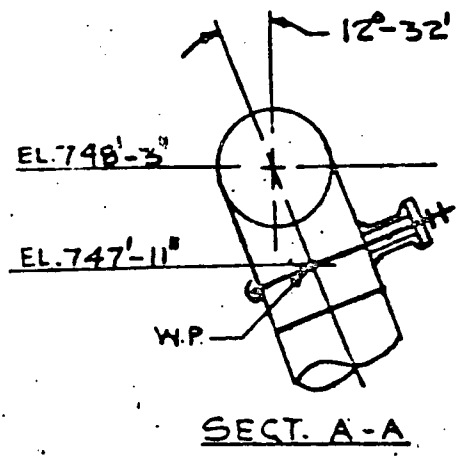
DESCRIPTION

DATE

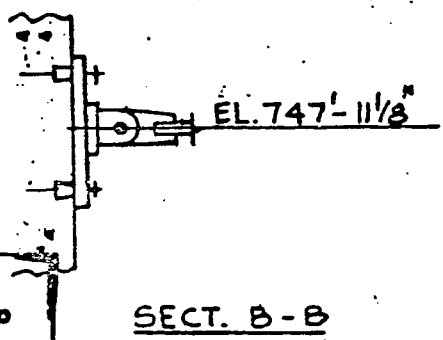
FORM 89-1 12/75

QTY	UNIT	PART NO.	SIZE	DESCRIPTION	WGT.			
-	1	SDE	(4)	HRS				
-	1	SDD						
-	1	SB7						
-	1	E2P	210-3	FOR STRUT ITEM 91 (PINTO PIN)				
-	1	B&T						

INVOICE CODE



DESCRIPTION



MIB  
VERIFIED  
AS  
APPROVED

INFORMATION ONLY

PROJECT WBNP CONTRACT 83015  
 DRAWING # 03B-1AFW-R191  
 SHEET 2/2 REV 0 UNIT 1

*FCR-H-10,572*

NUCLEAR  
T. V. A. CLASS **D**

DRAVO ISO #E-2879-IC-13  
 DRAVO CORPORATION P. O. # E 2879-  
 T. V. A. CONTRACT # 74C38-83015  
 WTS BAR NUCLEAR PLANT UNIT #1

BERGEN-PATERSON FABRICATORY CO.	
AUXILIARY FEEDWATER	
DESIGN NO. 47427-2-8	REV. NO. 41012-2-5
ISS. NO. 3805	ISS. DATE 09
DRAWING NO. 03B-1AFW-R191	
DATE 4-22-77	

REV BY DATE

MS MS AS SM DATE 4-22-77

TENNESSEE VALLEY AUTHORITY  
FIELD CHANGE REQUEST  
REPLY MEMORANDUM

USNR-OCI-1.13 R9 792  
Attachment A  
FOR H-10572  
DOC

J. C. Standifer, Sequoyah and Watts Bar Design Projects Manager, 204 GB-K (3)

Walter Guenter Wadewitz, Project Manager, Watts Bar Nuclear Plant CONST

NO: WBN 83 0928 345

Attention: JJ NASH (ENDES ON SITE)

SECTION I - CONST REQUEST

Reason for Change:

Status Point:

Drawing Discrepancy



Prior to Fuel Loading

System No. 03

Work Package No. N/A

Work Plan No. 9752

Facilitate Construction



After Fuel Loading but prior to Closing Capitalized Accounts

Additional Design Information



After Closing Capitalized Accounts for the Entire Plant

Units Affected: 03B-1AEW-R191 R/2

Checked documents required and attached  Yes  No

Document revision required  Yes  No

Change Description: CHANGE JOINT # 306 TO JOINT # 307

Change requested by: El Bannan  
(CONST Engineer) BGP

Jao J Chao 8-24-83  
for (Unit Supervisor)

Change approved by: Frank C. Gao KBK  
(EN DES Engineer)

September 7, 1983  
(Date)

Approval obtained by:  Telephone  Memo

Approved for transmittal to EN DES: Bill E. Huppak  
(Construction Engineer)

Thomas L. Brown  
(Project Manager)  Other

SECTION II - EN DES REPLY/RESOLUTION

File No. \_\_\_\_\_ Date Issued \_\_\_\_\_

Change No.: \_\_\_\_\_

Change Complete \_\_\_\_\_  
(EN DES Engineer) (Design Project Manager) (Date)

- Original - Return to CONST by EN DES
- Copy 3 - Retained by CONST until original is returned
- Copy 2 - Retained by EN DES
- Copy 1 - Retained by OCRM

WBN '821126

135 DIVISION OF CONSTRUCTION  
NONCONFORMING CONDITION REPORT

WBNP-QCI-1.02 R5  
Attachment A  
LOP  
Page 1 of 2

1A. Item and CAQ Description, and Apparent Cause:

The identification of the following nonconforming conditions of previously inspected and documented pipe supports resulted from the System 03 review by Black and Veatch:

- Findings F 718: Hanger 03B-1AFW-R231 is not welded to embedment in accordance with the current revision of the drawing;
- Findings F 726: Item 1 of Hanger 03B-1AFW-R232 is installed 6°52' with the horizontal; it is shown as horizontal on the drawing;
- Findings F 736: Item 1 of Hanger 03B-1AFW-R150 is installed 8°21' with the vertical; it is shown as vertical on the drawing;
- Findings F 772: The angle of the Riser Clamp of Hanger 03B-2AFW-R219 is specified as 30° with the vertical; it is installed at 22°45' with the vertical;
- Findings F 776: The end attachments of Hanger 03B-1AFW-R191 are rotated 90° from where specified on the drawing, and cotter pins are missing;
- Findings F 704: Hanger 03B-1AFW-R100 is distorted in the vicinity of the weld between the W4 brace and W4 vertical member. The specified 4'-10" dimension is actually 2'-11";
- Findings F 742: Hanger 47A427-2-2 was not installed in accordance with FCR H-8382.

1B. NCR No.: 4455R Rev. 0  
 1C. REF. NR or AUDIT No.: N/A  
 1D. PLANT: WBNP  
 1E. UNIT: 1 & 2  
 1F. SYSTEM: 03  
 1G. ASME CODE:  Yes  No  
 1H. CONTRACT No.: N/A  
 1I. INITIATING UNIT: HEU

1J. Vendor Name N/A Address (City and State) N/A

2. Initiator R. Chambers Date 11-12-82 Approved Thomas R. Brown Date 11/17/82

3A. Significant CAQ:  Yes  No Construction Engineer Ed Burke Date 11-17-82

Signature \_\_\_\_\_  
 Authorization to Upgrade NCR to Significant \_\_\_\_\_ Title & Organization \_\_\_\_\_ Date \_\_\_\_\_  
 If Significant, NEB-NLS Contact \_\_\_\_\_ Date \_\_\_\_\_ By \_\_\_\_\_

- 3B. For Significant CAQ:
- 1. Describe Root Cause
  - 2. This is a Generic CAQ:  Yes  No (if yes, describe)



LOP

Item No.	REMARKS
Nuclear Project: WATTS BAR NUCLEAR PLANT	NONCONFORMING CONDITION REPORT CONTINUATION PAGE
NCR: 4455R R 0	
4A.	<p>Finding F718: Use as is. Revise weld symbols to reflect installed condition. See attachment 1.</p> <p>Finding F726: Rework to locate clamp at 748'-0<math>\frac{1}{2}</math>" elevation. Reinspect and document support in accordance with QCP 4.23-3 and QCP 4.23-8.</p> <p>Finding F736: Use as is. Revise drawing to reflect installed condition as identified on attachment 2.</p> <p>Finding F772: Use as is. Revise drawing to reflect installed condition as identified on attachments 3 and 4.</p> <p>Finding F776: Rework hanger to the current revision of the drawing. Reinspect and document support in accordance with QCP 1.14, QCP 1.42-2, and the QCP 4.23 series.</p> <p>Finding F704: Use as is. The distortion is not in the vicinity of the weld between tube and "W" section; it is in the vicinity of the weld between the "W4" brace and "W4" vertical member.</p> <p>Finding F742: Rework hanger in accordance with FCR H-8382. As a result of site inspection, it has been concluded that the 6'-9<math>\frac{1}{2}</math>" dimension is correct. Reinspect and document support in accordance with the QCP 4.23 series.</p>

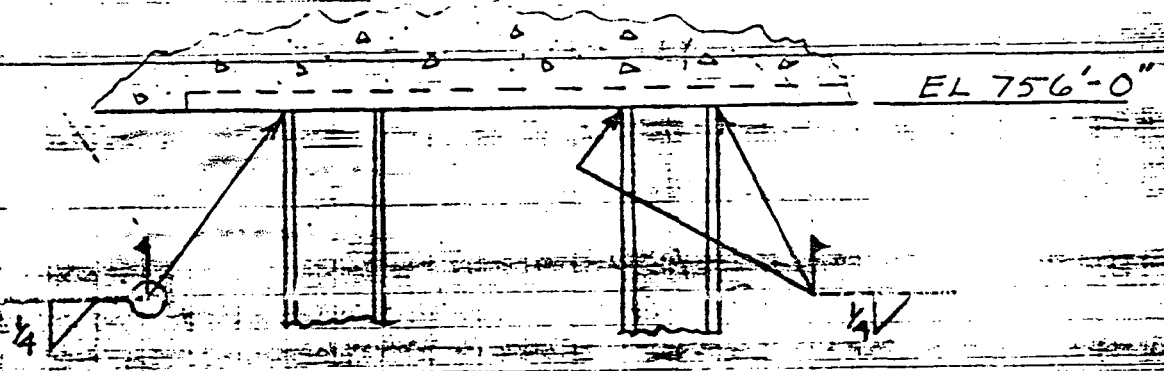
NO. \_\_\_\_\_

DATE \_\_\_\_\_

CHECKED BY \_\_\_\_\_

DATE \_\_\_\_\_

Finding: F718  
Hanger: 03B-1AFW-R231



ELEV. LOOKING EAST

NCR 4455R  
ATTACHMENT 1 of 4

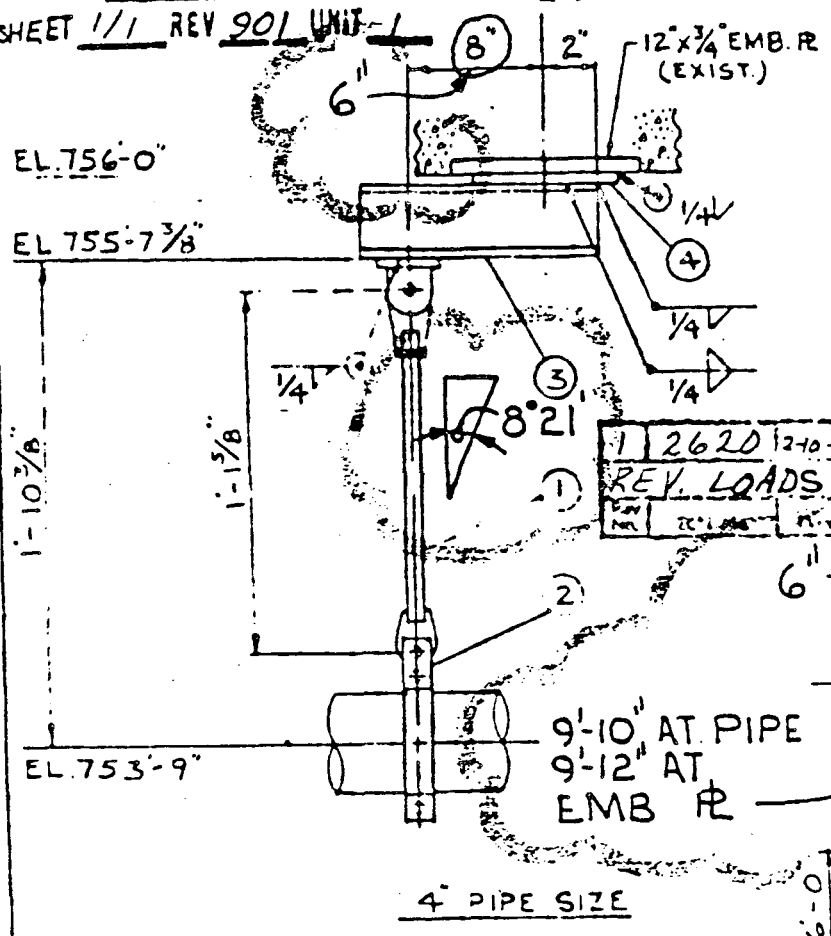
796

NO	QTY	DESCRIPTION	WGT			
000		R/O - 1.5 - 1-15/8"	11			
2660-15		4" PIPE CLAMP		BY TVA		
		W4 X 13 X 1-1"		BY TVA		
		6" X 1/2" R X 6" LG.				
SDE		(2) HRS.				
SDD						
SB		210-3 FOR ITEM 1 (PIN TO PIN)				
EZP						
BAT						

SEE TVA DWG. 47A050 1A  
 PROJECT WBNP CONTRACT # 74C38-83015  
 DRAWING # 03B-1AFW-R150  
 SHEET 1/1 REV 901 UNIT-1

ISO. 47W427-202-R-1  
 JOINT: 324  
 DIRECTION: Y  
 TYPE: RR  
 DESIGN LOAD: 200 #  
 430 #

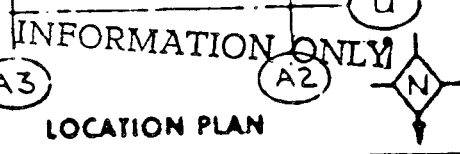
PROCESS CODE



1	2620	12-10-81	12A	ELB	Jsp	JJA	JU	galy
REV. LOADS PER ECN								

DESCRIPTION

ELEV. LOOKING SOUTH  
 NUCLEAR  
 T. V. A. CLASS C



DRAVO ISO#E-2879-IC-9-1  
 DRAVO CORPORATION P. O. #E-2879-  
 T.V.A. CONTRACT # 74C38-83015  
 WATTS BAR NUCLEAR PLANT - UNIT #1

BERGEN-PATERSON PIPESUPPORT CORP.			
PIPING SYSTEM	AUX. FEEDWATER		
REF DWGS	PIPING 47W427-3-5	STRUCTURAL 48N1225-2-2	
JOB NO	3604	FAB NO	09
		NO. OF PIPES	1
MATERIAL		SHEET	REV

DATE BY CHECK APP

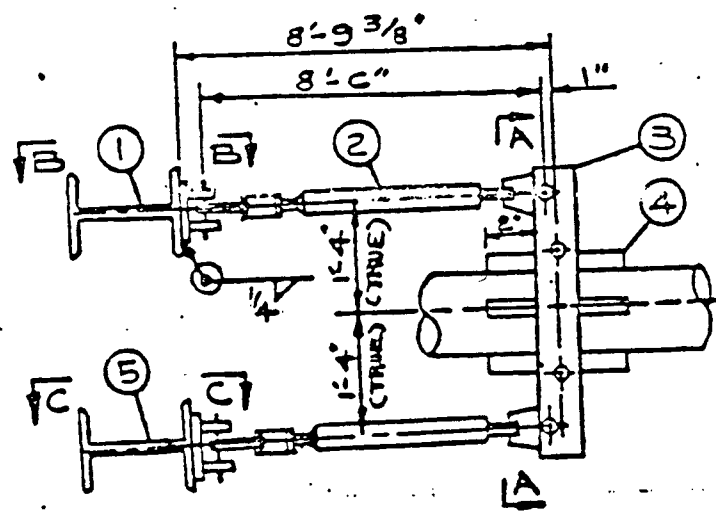


QUAN.	PART NO.	SIZE	DESCRIPTION	WGT.
10	1	—	W 4 X 13 X 2'-10" LG (A 3 G)	BTVA
2	2200	3-8'-6"-RSSA		
1	CS/AS	12" PIPE SIZE RISER CLAMP (SEE SHIT 3 OF 3)		125
40	8	—	1" X (5/8)" X 2" LG SHEAR LUG (A 3 G)	BTVA
50	1	—	W 4 X 13 X 4'-2" LG (A 3 G)	BTVA
60	2	—	7" X 1/2" R X 7" LG (A 3 G)	BTVA
70	1	—	3 X 3 X 3/4 ANGLE X 11'-11 1/2" LG CUT AS SHOWN (A 3 G)	BTVA
80	1	—	3 X 3 X 3/8 ANGLE X 3'-0 3/4" LG CUT AS SHOWN (A 3 G)	BTVA

SEE TYA DWG # 47A050-151A

NO. 47W427-205-RI  
 JOINT: 41  
 DIRECTION: X  
 TYPE: SR  
 + 5000 #  
 DESIGN LOAD: - 4000 #

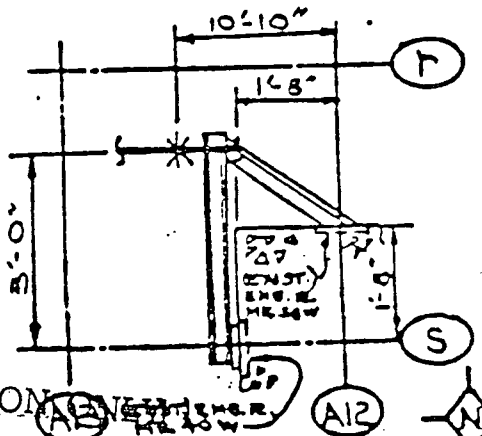
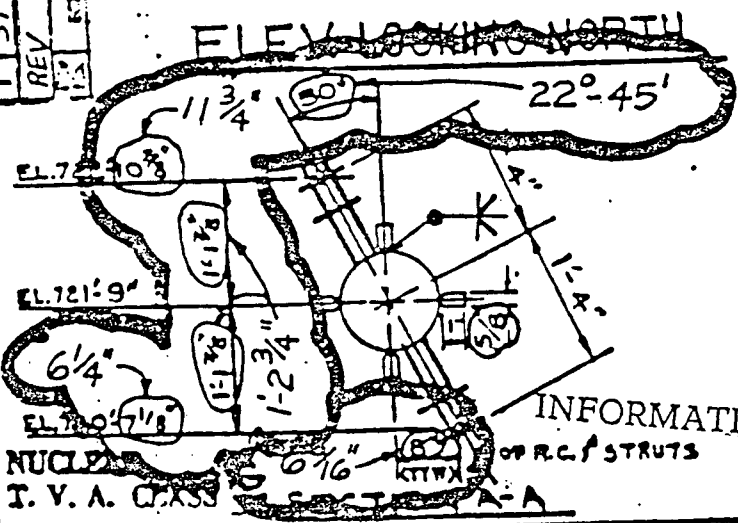
REV	PER	DATE	DESCRIPTION
1	SI	10/3/77	FOR M-5989



PROJECT: \_\_\_\_\_  
 CONTRACT: 83065  
 DRAWING: 47W427-205-RI  
 SHEET: 13  
 REVISION: 001  
 UNIT: 7

12" PIPE SIZE

LOAD: \_\_\_\_\_



INFORMATION OF R.C. STRUTS  
 T. V. A. CLASS

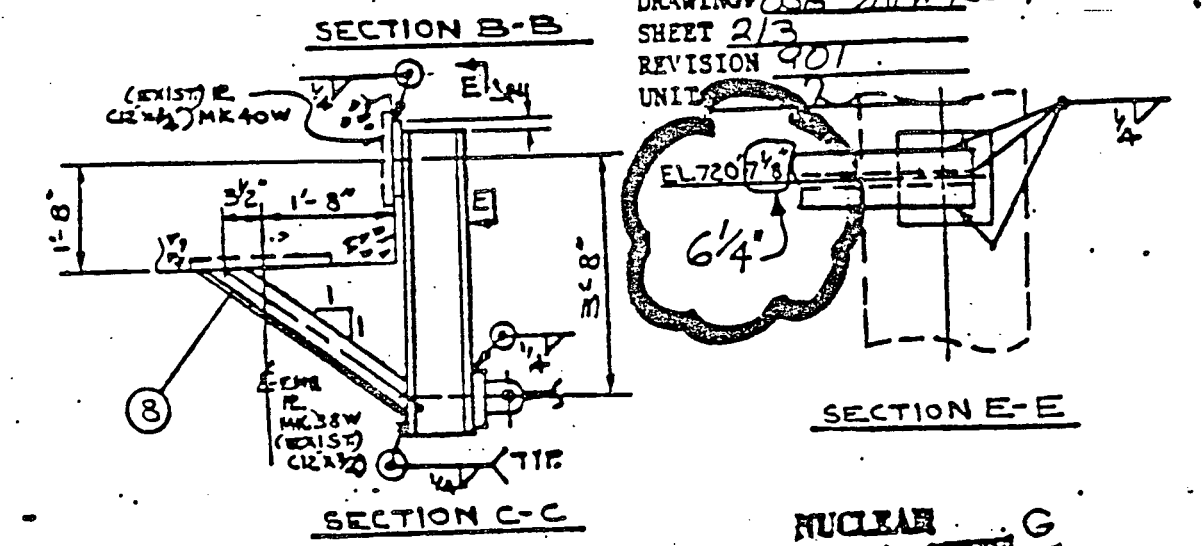
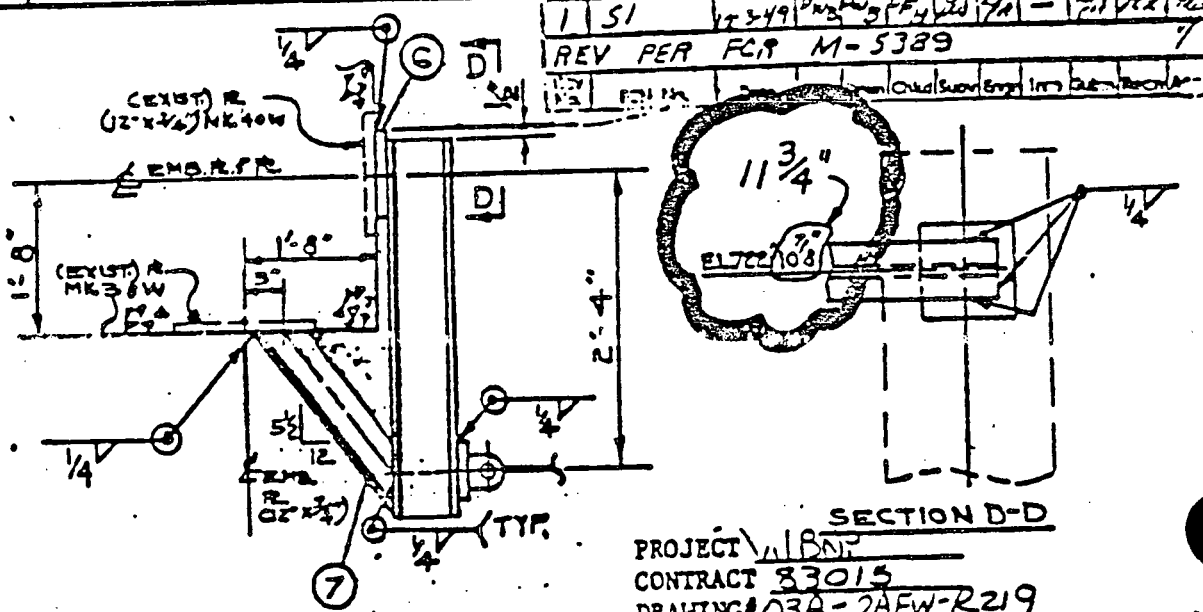
LOCATION PLAN

DRAYO CORPORATION P.O. #E-2882  
 T. V. A. CONTRACT #74 C58-83015  
 WATTS BAR NUCLEAR PLANT - UNIT #2

BERGEN-PATERSON PIPESUPPORT CORP.			
PLANT	AUX. FEEDWATER	STRUCTURAL	48N1223-1-3
PROJ. NO.	47W427-2-1	DWG. NO.	3605
JOB NO.	3605	ISS. NO.	009
DATE	10/3/77	REV.	1

QTY	SIZE	DESCRIPTION	UNIT
1	SDE	(5) HRS.	
1	SDD		
1	SB		
1	EZF	210-3 FOR STRUT ITEM #2 (PIN TO PIN)	
1	BFT		

INVOICE CODE
DESCRIPTION
CHK APP
DATE



PROJECT: BNIP  
 CONTRACT: 83015  
 DRAWING: 03B-2AFW-R219  
 SHEET: 2/3  
 REVISION: 901  
 UNIT: 2

NUCLEAR  
 T.V.A. CONTRACT # 74C38-83Q15

INFORMATION ONLY

DRAVO CORPORATION P.O. # E-2882  
 T.V.A. CONTRACT # 74C38-83Q15  
 WATTS BAR NUCLEAR PLANT - UNIT #2

BERGEN-PATERSON PIPESUPPORT CORP.			
PIPING SYSTEM	AUX. FEEDWATER		
REF. DWG. NO.	47W427-2-1	STRUCTURAL	48NL223-1-3
JOB NO.	3605	PAR. NO.	009
MARK & DES. NO.	03B-2AFW-R219		DWGT. NO. 2-3

798  
 21

Memorandum

TENNESSEE VALLEY AUTHORITY

WBP '83 0610 020

799

TO : G. Wadewitz, Project Manager, Watts Bar Nuclear Plant, CONST (3)

FROM : J. C. Standifer, Project Manager, Watts Bar Design Project, 204 GB-K

DATE : JUN 10 1983

SUBJECT: WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - NONCONFORMANCE REPORT 4455R RO

Reference: Your memo to me dated May 12, 1983 (WBN 830512 007) transmitting subject NCR 4455R RO (WBN 821126 135)

Your recommended disposition of the Black and Veatch findings addressed in subject NCR is as follows:

- Finding F718: (03B-1AFW-R231) Use-as-is. This is acceptable because of small loads on the support structure.
- Finding F725: (03B-1AFW-R232) Relocating clamp to elevator 748'-1/2" is acceptable and will bring support within installation tolerance of  $\pm 6^\circ$ .
- Finding F736: (03B-1AFW-R150) Use-as-is. This is acceptable because small load induces minimal stress into the pipe.
- Finding F772: (03B-2AFW-R219) Use-as-is. This is acceptable because installation of the riser clamp at 22°45' has no affect on the integrity of the support. The shear lugs still make sufficient contact with the clamp.
- Finding F776: (03B-1AFW-R191) Reworking support is acceptable and will bring support into compliance with the design drawing.
- Finding F742: (47A427-2-2) Reworking support in accordance with FCR H-8382 is acceptable and will bring the support into compliance with the design drawing.
- Finding F704: (03B-1AFW-R100) This is not acceptable because the over-heated and distorted weld connection between the column and brace could cause the support to fail. We recommend that CONST replace the support and ensure that the proper weld is made. EN DES will revise the drawing to change 4'-10" dimension to 2'-11" under ECN 3511.

*J. D. Collins*  
 J. C. Standifer

*CHEN 6/15*

WBNP PROJECT MANAGER		
JUN 15 '83		
Time	Distribution	Method
	AAPC	
✓	CEO	CEO
	CSO	
	PMS	
✓	QM	
	SE	
RETURN TO MASTER FILE		

GLP:LB  
 Attachment  
 cc (Attachment):  
 C. Bonine, E7B24 C-K  
 L. J. Cooney, W6D224 C-K  
 R. A. Costner, M173 MIB-K

MEDS, W5B63 C-K  
 R. M. Pierce, 104 ESTA-K  
 M. N. Sprouse, W11A9 C-K

RDT





1003B-03B-1AFW-R191

OCC&R  
 SEP 21 1983  
 JN

WBNP-CCP-4.23.8  
Attachment A (LOP)

TEST NO. 8  
Level C

SUPPORT FINAL INSPECTION

Support ID  
1003B-03B-1AFW-R191

Reference Drawing  
03B-1AFW-R191 Rev. 0  
Rev. N  
Rev. A

Acc (Check)  
Unique Identifier .....   
Fabrication .....   
Installation .....

	Top	Bottom	Lateral
Gaps	<u>NA</u>	<u>NA</u>	<u>NA</u>

Stainless Pipe Protection .....   
Integral Attachments .....   
Insulation Saddle or Lugs .....   
Stainless Pipe Cleanliness .....   
Bolted Connections .....   
Cotter Pins .....

Remarks: FCR 110572  
NER 4455R  
NA

Inspected in accordance with Rev. 3  
of CCP-4.23.8.  
Ray S. Coe 9-15-83  
Inspector  
INSP. 8-23

600

PROGRAM : ZSS020  
 DATE : 11 15 83

WBNP HANGER INFORMATION AND TRACKING  
 REPORT: FULL-FILE BY SYSTEM, HANGER ID <BREAK ON: SYSTEM>

SYSTEM: C03  
 PAGE

IDENTIFIER	CL	XFER	PKG/PLN	DRAWING	REV	DESCRIPTION	STAT	TEST	LIA	S.	SEQUENCE	OF	TESTS
1003B-03B-IAFW-R182	X003-2		9752	1-47W427-207	903								
1003B-03B-IAFW-R183	X003-2			1-47W427-207	001								
1003B-03B-IAFW-R184	X003-2			1-47W427-207	901	H-4553 NCR 4454R R1	*	HA	01B*	02C*	03C*	04C*	08C*
1003B-03B-IAFW-R185	X003-2			1-47W427-207	001	H-7786	*	HA	01A*	02A*	03A*	04A*	08A*
1003B-03B-IAFW-R186	X003-2			1-47W427-207	901	H-4553 NCR 4454R R1	*	HA	01A*	02A*	03A*	04A*	08B*
1003B-03B-IAFW-R187	X003-2			1-47W427-207	901	H-4553 NCR 4454R R1	*	HE	01A*	02B*	03A*	04A*	08A*
1003B-03B-IAFW-R188	X003-2		9771	1-47W427-207	001		*	HE	01A*	02B*	03A*	04A*	08C*
1003B-03B-IAFW-R189	T			1-47W427-207	904		*	HA	01A*	02A*	03A*	04A*	08A*
1003B-03B-IAFW-R19	X067-77			1-47W427-207	001		VOID						
1003B-03B-IAFW-R190	T			1-47W427-207	901	H-8923	VOID						
1003B-03B-IAFW-R191	X003-2		9752	1-47W427-207	002								
1003B-03B-IAFW-R192	X003-2			1-47W427-207	000	H-10572/NCR 4455R	VOID						
1003B-03B-IAFW-R194	X003-2			1-47W427-207	001		*	HA	01B*	02B*	03B*	04A*	08A*
1003B-03B-IAFW-R195	X003-2			1-47W427-207	002		*	HA	01A*	02A*	03A*	04A*	08C*
1003B-03B-IAFW-R196	X003-2			1-47W427-207	002		*	HA	01A*	02A*	03A*	04A*	08A*
1003B-03B-IAFW-R197	X003-2			1-47W427-207	000		*	HA	01A*	02A*	03A*	04A*	08A*
1003B-03B-IAFW-R2	X003-2			1-47W427-207	000		*	HA	01A*	02A*	03A*	04A*	08A*
1003B-03B-IAFW-R20	X067-77			1-47W427-206	904		*	HA	01A*	02A*	03A*	04A*	08A*
1003B-03B-IAFW-R20C	X003-2			1-47W427-206	901	H-6924	*	HA	01A*	02A*	03A*	04A*	08B*
1003B-03B-IAFW-R201	X003-2			1-47W427-200	905		*	HA	01A*	02A*	03A*	04A*	08A*
1003B-03B-IAFW-R202	X003-2			1-47W427-200	003	H-4705/H-4686	*	HB	05A*	04A*	06E*		
1003B-03B-IAFW-R203	X003-2			1-47W427-200	001	H-7506	*	HD	03A*	04A*	08A*	09A*	
1003B-03B-IAFW-R204	X003-2		9871	1-47W427-200	003	H-4687/H-4706	*	HA	01A*	02A*	03E*	04A*	08B*
1003B-03B-IAFW-R205	T			1-47W427-200	001	H-676/H-423							
1003B-03B-IAFW-R206	X003-2			1-47W427-201	002								
1003B-03B-IAFW-R208	X003-2		9617	1-47W427-201	004		VOID						
1003B-03B-IAFW-R209	X003-2			1-47W427-201	002	H-9024	*	HE	01A*	02B*	03A*	04A*	05D*
1003B-03B-IAFW-R210	X003-2			1-47W427-202	001	H-6789	*	HA	01A*	02A*	03A*	04C*	08C*
1003B-03B-IAFW-R211	X003-2			1-47W427-201	904		*	HA	01A*	02A*	03A*	04A*	08A*
1003B-03B-IAFW-R212	X003-2		9592	1-47W427-202	902		*	HD	03A*	04B*	08C*	09A*	
1003B-03B-IAFW-R213	X001-6			1-47W427-204	903		*	HA	01A*	02A*	03A*	04A*	08C*
1003B-03B-IAFW-R214	X001-6		9752	1-47W427-204	902		*	HA	01A*	02A*	03B*	04A*	08B*
1003B-03B-IAFW-R216	X001-6			1-47W427-204	901		*	HE	01A*	02A*	03C*	04B*	08C*
1003B-03B-IAFW-R217	X001-6			1-47W427-204	902								
1003B-03B-IAFW-R218	X001-6			1-47W427-204	901								

DW5258 F-776

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F1717171

Comments pertinent to finding:

At the Black and Veatch inspection, construction of hanger number 03B-1AFW-V199 was not complete. The hanger was being tracked as incomplete by the construction accountability program. Installation of the hanger has now been completed in accordance with the existing Quality Assurance Program and tracked with the site accountability program. Attached is a copy of Quality Assurance inspection documentation, and accountability print out.

Robert C. McRydt  
Program Team Member

11/2/83  
Date

Thomas E. McConnell  
OEDC Program Manager

11/4/83  
Date

E. Gray Bersley  
Chairman, OEDC Policy Committee

11/8/83  
Date

Black & Veatch attached records indicate work has been completed

Classification: Type R Category A

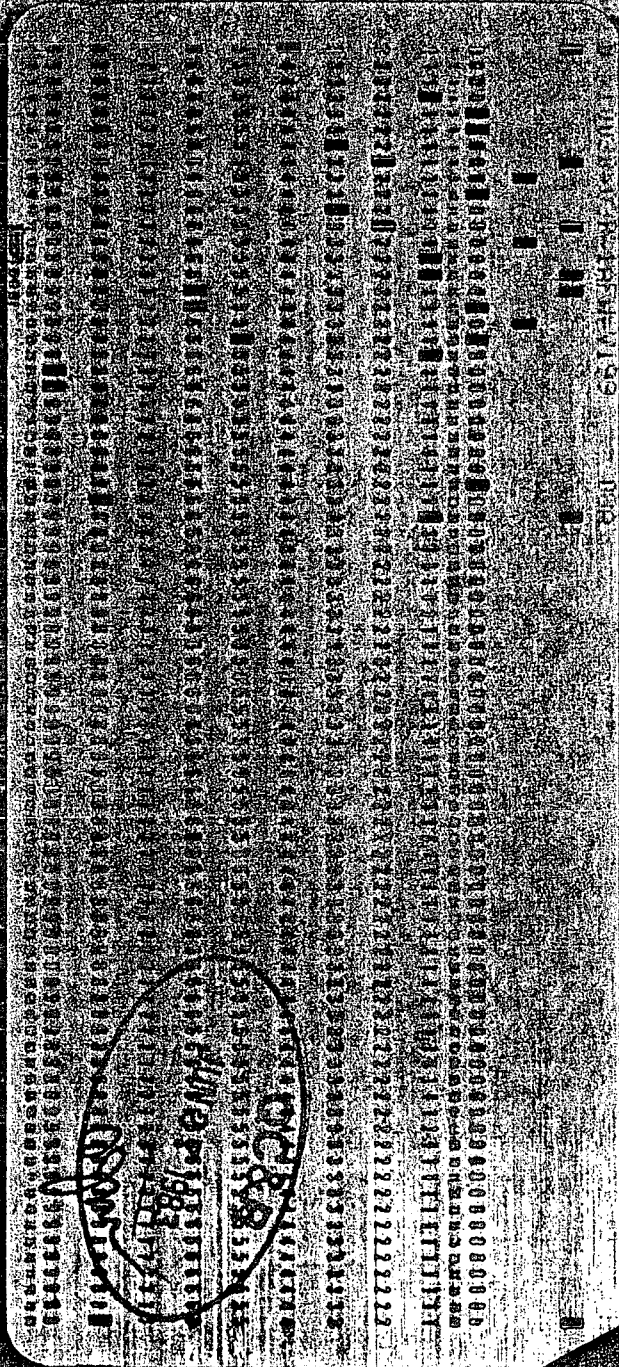
W. J. Zederman  
Black & Veatch Project Manager

11/21/83  
Date

RE Blandell  
Black & Veatch Senior Review Team Chairman

12/1/83  
Date

908



WMP-QCM.23-8  
Attachment A (107)

SUPPORT FINAL INSPECTION

Support ID  
1003B-038-1AFW-199

Reference Drawing  
038-1AFW-199 Rev. 1

Unique Identifier  
Fabrication  
Installation

Top Bottom  
Case NS MS

Stainless Pipe Protection  
Grout  
Integre  
Insulation  
Stainless  
Cotton  
Cement

Remarks  
See notes

Inspector  
Donald J. ...

DATE INSPECTED 4/1/88

B-038-1AFW-661	3003-2		1-47W427-221	902		HA 01A* 02A* 03A* 04A* 05A*	
B-038-1AFW-662	3003-2		1-47W427-221	901		HA 01A* 02A* 03A* 04A* 05A* 06A*	
B-038-1AFW-663	3003-2	95 87	1-47W427-204	902	VCID	HA 03C*	
B-038-1AFW-665	3003-2		1-47W427-204	902	VCID	HA 03C*	
B-038-1AFW-666	3003-2		1-47W427-221	901	H-8346	HA 01A* 02A* 03B* 04A* 05B*	
B-038-1AFW-667	3003-2	95 87	1-47W427-204	901	VCID	HA 03A*	
B-038-1AFW-668	3003-2	95 87	1-47W427-204	901	VCID	HA 03A*	
B-038-1AFW-669	3003-2	95 87	1-47W427-204	902	VCID	HA 03B*	
B-038-1AFW-670	3003-2		1-47W427-206	901	VCID	HA 01A* 02A* 03A* 04A* 05B* 09A*	
B-038-1AFW-671	3003-2		1-47W427-204	901	VCID	HA 03A*	
B-038-1AFW-672	3003-2	95 87	1-47W427-204	902	VCID	HA 03A*	
B-038-1AFW-676	3003-2		1-47W427-204	902	VCID	HA 03A*	
B-038-1AFW-675	3003-2	95 87	1-47W427-204	902	VCID	HA 03B*	
B-038-1AFW-676	3003-2		1-47W427-204	902	VCID	HA 03A*	
B-038-1AFW-677	1		1-47W427-204	901	VCID	HA 03A*	
B-038-1AFW-677	3003-2		1-47W427-220	903	H-8881/9924	HA 01A* 02A* 03A* 04A* 05A*	
B-038-1AFW-678	1		1-47W427-206	905	VCID	HE 03B*	
B-038-1AFW-681	1	95 87	1-47W427-204	902	VCID	HA 03A*	
B-038-1AFW-682	1	95 87	1-47W427-204	902	VCID	HA 03A*	
B-038-1AFW-683	3003-2		1-47W427-220	905	H-10141	HE 01C* 02A* 03A* 04A* 05A* 08A*	
B-038-1AFW-684	3003-2	95 87	1-47W427-204	903	VCID	HA 03A*	
B-038-1AFW-685	3001-6	95 92	1-47W427-204	901		HA 01A* 02C* 03C* 04C* 08C* 05A*	
B-038-1AFW-686	3001-6	95 92	1-47W427-204	902	H-9874	HE 01B* 02C* 03C* 04B* 05B* 08C*	
B-038-1AFW-687	3001-6	95 87	1-47W427-204	902	VCID	HA 03C*	
B-038-1AFW-689	3001-6		1-47W427-204	901		HA 02A* 03C* 04A* 08C* 09A*	
B-038-1AFW-689	3003-2	95 28	1-47W427-206	905	H-9253/NCR 475980	HA 01A* 02A* 03B* 04B* 08B* 09A*	
B-038-1AFW-691	3001-6	95 92	1-47W427-204	902	H-10231	HE 01A* 02A* 03B* 04B* 08B*	
B-038-1AFW-692	3001-6		1-47W427-204	903		HA 01A* 02A* 03B* 04B* 08C* 09A*	
B-038-1AFW-693	1		1-47W427-204	901		VCID	HE 03B*
B-038-1AFW-694	3001-6	95 87	1-47W427-204	904	VCID	HE 03C*	
B-038-1AFW-695	3003-2		1-47W427-203	904		HA 01A* 02A* 03B* 04B* 08B*	
B-038-1AFW-696	3003-2		1-47W427-203	901		HA 01A* 02A* 03A* 04A* 05B* 09A*	
B-038-1AFW-697	3003-2		1-47W427-203	901	H-9219	HA 01A* 02B* 03B* 04B* 05B* 09A*	
B-038-1AFW-698	3003-2		1-47W427-204	902	H-5198 SP	HA 01A* 02A* 03A* 04A* 08B* 09A*	
B-038-1AFW-699	3003-2		1-47W427-203	901		HA 01A* 02A* 03C* 04A* 08C* 09A*	
B-038-1AFW-713	1		1-47W427-206	901	VCID	HH 03A*	
B-038-1AFW-717	3003-2	95 29	1-47W427-207	903		HJ 02A* 03A* 04A* 05B* 08B* 09A*	
B-038-1AFW-717	3003-2	95 29	1-47W427-207	903		HH 01A* 02A* 03B* 04A* 06B* 08A*	
B-038-1AFW-717	3003-2	95 29	1-47W427-207	903		HH 01A* 02A* 03A* 04B* 05B* 08A*	
B-038-1AFW-719	3003-2	95 29	1-47W427-207	904		HH 01A* 02A* 03A* 04A* 05B* 08B*	
B-038-1AFW-720	3003-2	95 29	1-47W427-201	908	H-10175	HJ 02A* 03A* 04A* 06B* 08B* 09A*	
B-038-1AFW-720	1		1-47W427-206	901	VCID	HO 03A*	

DIM 5026 F-77

804



FORM 3

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F1717181

Comments pertinent to finding:

At the Black and Veatch inspection, construction of hanger number 47A422-3-2 was not complete. The hanger was being tracked as incomplete by the construction accountability program. Installation of the hanger has now been completed in accordance with the existing Quality Assurance Program and tracked with the site accountability program. Attached is a copy of Quality Assurance inspection documentation, and accountability print out.

Ronald C. McRye  
Program Team Member

11/2/83  
Date

Lomal E. McConnell  
OEDC Program Manager

11/4/83  
Date

E. Gray Beasley  
Chairman, OEDC Policy Committee

11/8/83  
Date

Black & Veatch *work is complete per attached records*

Classification: Type R Category A

W. J. Zuckerman  
Black & Veatch Project Manager

11/21/83  
Date

R E Blandell  
Black & Veatch Senior Review Team Chairman

12/1/83  
Date

306

WENT-009-4.23-8 TEST NO. 8  
Attachment A (LOP)

SUPPORT FINAL INSPECTION

SUPPORT ID cep 3 A 127-3-2

Reference Drawing 11A 127-5-2 Rev 1  
Accepted  
(Check)

Unique Identifier

Fabrication

Installation

Top Bottom Lateral

Caps NA NA NA

Stainless Pipe Protection NA

Grout NA

Integral Attachments

Insulation Scales or Lags NA

Stainless Pipe Cleanliness NA

Bolted Connections

Cottler Pins

Welds NA

ECR H9319

Inspected in accordance with

Rev 2 of QCP-4.23-8

Inspector Charlton Date 4/24/83

Inspected 4/24/83 - ckr

65-87  
MAY - 4 1983  
J. G. M.

PROGRAM: 155J2U  
 DATE: 10 26 89

REPORT: WBRP HANGER INFORMATION AND TRACKING  
 FULL-FILE BY SYSTEM, HANGER ID <BREAK UNIT SYSTEM>

SYSTEM:  
 003

PAGE 53

IDENTIFIER	CL NFR	PAW/PLN DRAWING	REV DESCRIPTION	STAT	TEST LIB & SEQUENCE OF TESTS
1003-A427-3-3	1003-2	1-47W427-207	003 H-7317/3842R		HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-3-4	1003-2	1-47W427-207	000 H-8622		HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-3-5	1003-2	1-47W427-207	001 H-11295		HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-3-6	1	1-47W427-207	001	VG10	HE 08A*
1003-A427-3-7	1003-2	1-47W427-207	002		HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-3-8	1003-2	1-47W427-207	003		HE 01A* 02A* 03A* 04A* 05A* 06A*
2003-A427-3-9	2003-00	J003 802 2-47W427-205	000 H-7497		01 HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-4-1	H 1003-2	9528 1-47W427-209	000 H-7498		01 HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-4-2	H 1003-2	9528 1-47W427-209	000 H-7498		01 HE 01A* 02A* 03A* 04A* 05A* 06A*
2003-A427-4-3	2003-00	J003 802 2-47W427-208			01 HE 01A* 02A* 03A* 04A* 05A* 06A*
2003-A427-4-4	2003-00	J003 802 2-47W427-208			01 HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-4-5	1	9871 1-47W427-207	000 H-10717		03 HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-5-1	1	9586 1-47W427-218	001 H-9170		03 HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-6-1	H 1003-2	1-47W427-219	000 H-9110		03 HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-7-04	1	9588 1-47W427-221	000 H-9908		03 HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-7-06	1	9588 1-47W427-221	000 H-17102 EP 4090		03 HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-7-07	1	9588 1-47W427-221	000 EP 4039		03 HE 01A* 02A* 03A* 04A* 05A* 06A*
2003-A427-7-1	2003-00	1-47W427-214			01 HE 01A* 02A* 03A* 04A* 05A* 06A*
2003-A427-7-2	2003-00	2-47W427-214			01 HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-7-3	1001-6	1-47W427-204	003 H-10017		03 HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-7-5	1	9588 1-47W427-221	000 H-9881		03 HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-7-8	1	9588 1-47W427-204	000 H-9996		03 HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-8-01	1	9588 1-47W427-221	001		03 HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-8-02	1	9588 1-47W427-221	001		03 HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-8-03	1	9588 1-47W427-221	000 H-10068		03 HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-8-04	1	9593 1-47W427-221	000 H-9848		03 HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-8-05	1	9593 1-47W427-221	001		03 HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-8-06	1	9588 1-47W427-221	001		03 HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-8-07	1	9588 1-47W427-221	001 H-9886		03 HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-8-12	1	9593 1-47W427-220	000 H-11264		03 HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-8-13	1	9593 1-47W427-220	001		03 HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-8-14	1	9593 1-47W427-221	000 H-9870		03 HE 01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-8-15	1	9593 1-47W427-221	000 H-9882		03 HE 01A* 02A* 03A* 04A* 05A* 06A*

DING627 F-778

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEWFinding Number F1717191

## Comments pertinent to finding:

At the Black and Veatch inspection, construction of hanger number 47A427-3-4 was not complete. The hanger was being tracked as incomplete by the construction accountability program. Installation of the hanger has now been completed in accordance with the existing Quality Assurance Program and tracked with the site accountability program. Attached is a copy of Quality Assurance inspection documentation, and accountability print out.

Robert C. McKoy  
Program Team Member

11/2/83  
Date

Thomas E. McConnell  
OEDC Program Manager

11/4/83  
Date

G. Gray Beasley  
Chairman, OEDC Policy Committee

11/4/83  
Date

Black & Veatch Records indicate hanger installation is complete

Classification: Type R Category A

W. J. Ziskin  
Black & Veatch Project Manager

11/21/83  
Date

RE Blandell  
Black & Veatch Senior Review Team Chairman

12/1/83  
Date



1003-A427-3-11 1 95 88 1-47W427-204 001 \* HC 03A\* 04A\* 05B\* 08A\*

PROGRAMS 100320 WMAP HANGER INFORMATION AND TRACKING SYSTEMS PAGE 03  
 DATE 10 26 83 REPORT: FULL-FILE BY SYSTEM: HANGER ID (OR: LK ONE SYSTEM)

IDENTIFIER	CL	FLK	PKW	PLN	OPARING	REV	DESCRIPTION	STAY	TEST	LIB	2	SEQUENCE	OF TESTS
1003-A427-3-2		1003-2			1-47W427-207	001	H-9319		HE	01A*	02A*	03A*	04A* 05A* 08A*
1003-A427-3-3		1003-2			1-47W427-207	001	H-7317/384K		HE	01A*	02A*	03A*	04A* 05A* 08A*
1003-A427-3-4		1003-2			1-47W427-207	001	H-7317/384K		HE	01A*	02A*	03A*	04A* 05A* 08A*
1003-A427-3-5		1003-2			1-47W427-207	001	H-7317/384K		HE	01A*	02A*	03A*	04A* 05A* 08A*
1003-A427-3-6		1003-2			1-47W427-207	001	H-7317/384K		HE	01A*	02A*	03A*	04A* 05A* 08A*
1003-A427-3-7		1003-2			1-47W427-207	002	H-7317/384K		HE	01A*	02A*	03C*	04A* 05B* 08A*
1003-A427-3-8		1003-2			1-47W427-207	000			HE	01A*	02B*	03B*	04A* 05A* 08B*
2003-A427-3-9		2003-00	J003R02		2-47W427-209	001	H-7497	01	HH	01A*	02A*	03A*	04A* 06A* 08A*
1003-A427-4-1	H	1003-2		95 28	1-47W427-209	000	H-7497		HK	01B*	02A*	03A*	04A* 07A* 08A*
1003-A427-4-2	H	1003-2		95 28	1-47W427-209	001	H-7498		HL	03A*	04A*	07A*	08A*
2003-A427-4-3		2003-00	J003R02		2-47W427-209	001	H-7498	01	HK	01A*	02A*	03A*	04A* 07A* 08A*
2003-A427-4-4		2003-00	J003R02		2-47W427-209	001	H-7498	01	HL	03A*	04A*	07A*	08A*
1003-A427-4-5		1003-2		95 28	1-47W427-209	001	H-10717	03	HA	03AP	04AP	08AP	
1003-A427-5-1		1003-2		95 88	1-47W427-219	001	H-1176		HC	03A*	04A*	08A*	
1003-A427-6-1	H	1003-2			1-47W427-219	002	H-1176		HC	03A*	04A*	05A*	08A*
1003-A427-7-0		1003-2		95 88	1-47W427-221	001	H-9808		HE	01A*	02A*	03A*	04A* 05A* 08A*
1003-A427-7-00		1003-2		95 88	1-47W427-221	001	H-1176 EP 409		HE	01A*	02A*	03A*	04A* 08A*
1003-A427-7-01		1003-2		95 88	1-47W427-221	001	HP 409		HA	03A*	04A*	08A*	
2003-A427-7-1		2003-00			2-47W427-221	001	H-1176	01	HE	01A*	02A*	03A*	04A* 05A* 08A*
2003-A427-7-2		2003-00			2-47W427-221	001	H-1176	01	HH	01A*	02A*	03A*	04A* 06A* 08A*
1003-A427-7-3		1003-2		95 88	1-47W427-221	001	H-1176		HA	01A*	02A*	03A*	04A* 08A*
1003-A427-7-4		1003-2		95 88	1-47W427-221	001	H-1176		HA	01A*	02A*	03A*	04A* 08A*
1003-A427-7-5		1003-2		95 88	1-47W427-221	001	H-1176		HE	01A*	02A*	03A*	04A* 05A* 08A*
1003-A427-7-6		1003-2		95 88	1-47W427-221	001	H-1176		HE	01A*	02A*	03A*	04A* 05A* 08A*
1003-A427-8-01		1003-2		95 88	1-47W427-221	001	H-1176		HE	01A*	02A*	03A*	04A* 05A* 08A*
1003-A427-8-02		1003-2		95 88	1-47W427-221	001	H-1176		HE	01A*	02A*	03A*	04A* 05A* 08A*
1003-A427-8-03		1003-2		95 88	1-47W427-221	001	H-1176		HE	01A*	02A*	03A*	04A* 05B* 08A*
1003-A427-8-04		1003-2		95 93	1-47W427-221	001	H-1176		HH	01A*	02A*	03A*	04A* 06A* 08A*
1003-A427-8-05		1003-2		95 93	1-47W427-221	001	H-1176		HH	01A*	02A*	03A*	04B* 0
1003-A427-8-06		1003-2		95 88	1-47W427-221	001	H-1176		HC	03A*	04A*	08A*	
1003-A427-8-07		1003-2		95 88	1-47W427-221	001	H-1176		HA	01A*	02A*	03A*	04A* 08A*
1003-A427-8-08		1003-2		95 88	1-47W427-221	001	H-1176		HA	01A*	02A*	03A*	04A* 08A*

DIN/NOB F-779

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEWFinding Number F1718101

## Comments pertinent to finding:

At the Black and Veatch inspection, construction of hanger number 47A427-3-5 was not complete. The hanger was being tracked as incomplete by the construction accountability program. Installation of the hanger has now been completed in accordance with the existing Quality Assurance Program and tracked with the site accountability program. Attached is a copy of Quality Assurance inspection documentation, and accountability print out.

Rosemary  
Program Team Member

11/2/83  
Date

Thomas E. McConnell  
OEDC Program Manager

11/9/83  
Date

E. Gray Beasley  
Chairman, OEDC Policy Committee

11/21/83  
Date

Black &amp; Veatch

*The attached documentation supports close out of this item.*

Classification: Type R Category A

W. J. Zitzmann  
Black & Veatch Project Manager

12/8/83  
Date

R. E. Blandell  
Black & Veatch Senior Review Team Chairman

12/19/83  
Date

LOP

SUPPLEMENTAL DOCUMENTATION

ENGINEERING EVALUATION  
QCI 1.8

INDENT 1003-A427-35

PROC/RECORD N/A

CURRENT PROC 4.23-8R2

TEST NO. 08B

EVALUATION SUPPORT DOCUMENTED TO REV. 0 AND

FCM H-8239, REV. 1

INCORPORATES FCM H-8239.

FCM H-10, 299 WAS WRITTEN

TO CORRECT THE COMP.

ANION DWG. NOTES. THIS

CAUD TO REV. 1 AND FCM.  
Former documentation meets the current  
WBWP-QCP requirements. (+)

Engineer Ray Reltz

Date 6-16-83

H-10, 299.

NO REWORK REQUIRED

SUPPLEMENTAL DOCUMENTATION  
SHOWN ON REVERSE SIDE

UNIQUE IDENTIFIER

08B

4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	0	0	3	-	A	4	2	7	-	3	-	5							

0024F  
 JUN 27 1983  
*[Signature]*



08A

1003-A427-3-5

QC&R  
 MAR 07 1983  
*Qu*

WERP-QCP-4.23-8 TEST NO. 8  
 Attachment A (LOP)

SUPPORT FINAL INSPECTION

SUPPORT ID  
1003-A427-3-5  
 Reference Drawing  
47A427-3-5 Rev 0

Accepted  
 (Check)

Unique Identifier ✓

Fabrication ✓

Installation ✓

	Top	Bottom	Lateral
Caps	<u>NA</u>	<u>NA</u>	<u>NA</u>

Stainless Pipe Protection NA

Grout NA

Integral Attachments NA

Insulation Saddle or Lugs NA

Stainless Pipe Cleanliness NA

Bolted Connections ✓

Cotter Pins ✓

Remarks: FCR H-8239

HG-1927  
 Inspected in accordance with  
2 of QCP-4.23-8

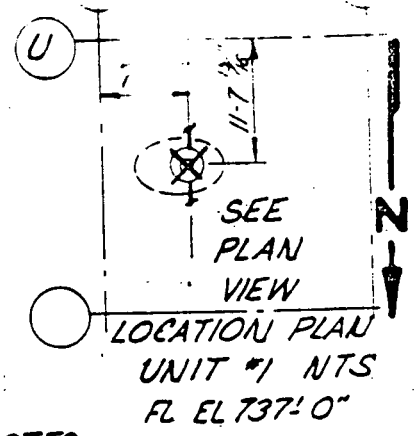
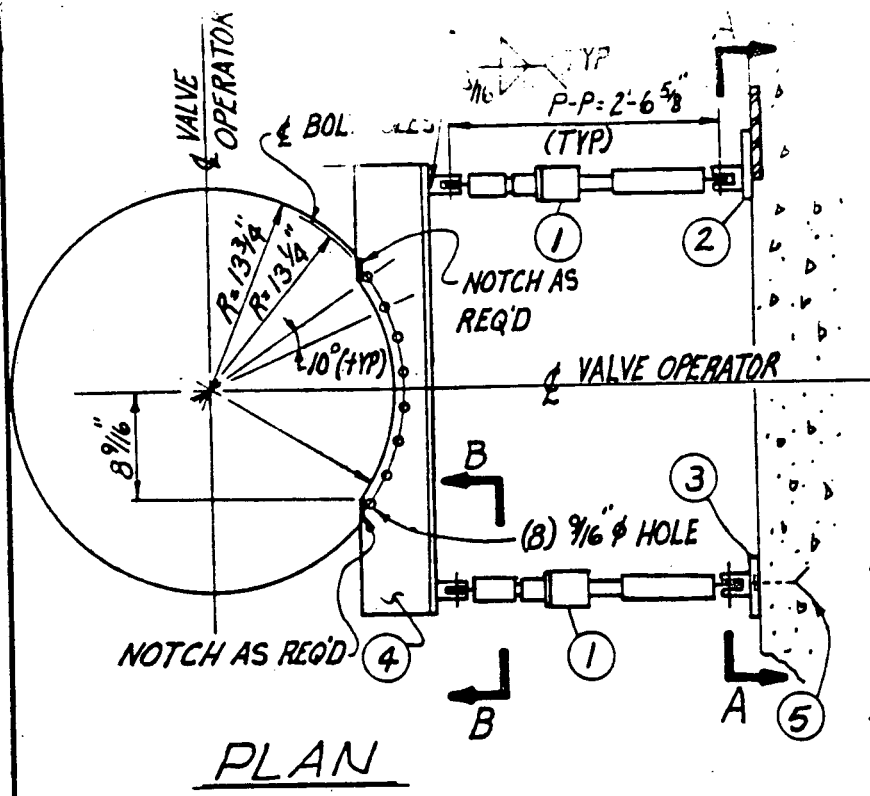
*Lesley Daniel* / 2-11-83  
 Date

Inspected 12-16-82

IDENTIFIER	CL	REF	PLN	CPARING	KEY DESCRIPTION	STAT	TEST	LIB	SEQUENCE OF TESTS
1003-A427-3-2		1003-2		1-47W427-207	001 H-9319	*	HE	01A*	02A* 03A* 04A* 05A* 06A*
1003-A427-3-3		1003-2		1-47W427-207	000 H-7317/5842R	*	HE	01A*	02A* 03A* 04A* 05A* 06A*
1003-A427-3-4		1003-2		1-47W427-207	000 H-8602	*	HE	01A*	02A* 03A* 04A* 05A* 06A*
1003-A427-3-6		1		1-47W427-207	001	VGID	*	HE	03A*
1003-A427-3-7		1003-2		1-47W427-207	002		*	HE	01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-3-8		1003-2		1-47W427-207	003		*	HE	01A* 02B* 03B* 04A* 05A* 06B*
2003-A427-3-9		1003-00	J003 802	2-47W427-204			01	HH	01A* 02A* 03A* 04A* 05A* 06A*
1003-A427-4-1	H	1003-2	95 28	1-47W427-200	000 H-7497	*	HK	01B*	02A* 03A* 04A* 07A* 08A*
1003-A427-4-2	H	1003-2	95 28	1-47W427-200	003 H-7498	*	HL	03A*	04A* 07A* 08A*
2003-A427-4-3		1003-00	J003 802	2-47W427-200			01	HK	01A* 02A* 03A* 04A* 07A* 08A*
2003-A427-4-4		1003-00	J003 802	2-47W427-200			03	HL	03A* 04A* 07A* 08A*
1003-A427-4-5		1	4871	1-47W427-207	000 H-10717		03	HA	03AP 04AP 06AP
1003-A427-5-1		1	95 88	1-47W427-218	007 H-9176	*	HO	03A*	04A* 08A*
1003-A427-6-1	H	1003-2		1-47W427-219	000 H-9110	*	HE	03A*	04A* 05A* 08A*
1003-A427-7-04		1	95 88	1-47W427-221	000 H-9988	*	HE	01A*	02A* 03A* 04A* 05A* 08A*
1003-A427-7-06		1	95 88	1-47W427-221	000 H-10102 EP-4006	*	HA	01A*	02A* 03A* 04A* 08A*
1003-A427-7-07		1	95 88	1-47W427-221	000 EP-4034	*	HA	03A*	04A* 08A*
2003-A427-7-1		1003-00		1-47W427-214			01	HE	01A* 02A* 03A* 04A* 05A* 08A*
2003-A427-7-2		1003-00		2-47W427-214			01	HH	01A* 02A* 03A* 04A* 06A* 08A*
1003-A427-7-3		1001-5		1-47W427-204	003 H-10017	*	HA	01A*	02A* 03A* 04A* 08A*
1003-A427-7-5		1	95 88	1-47W427-221	000 H-9881	*	HA	01A*	02B* 03A* 04A* 08A*
1003-A427-7-8		1	95 88	1-47W427-204	000 H-9896	*	HE	01A*	02A* 03A* 04A* 05A* 08A*
1003-A427-8-01		1	95 88	1-47W427-221	001		*	HE	01A* 02A* 03A* 04A* 05B* 08A*
1003-A427-8-02		1	95 88	1-47W427-221	000		*	HE	01A* 02A* 03A* 04A* 05A* 08A*
1003-A427-8-03		1	95 88	1-47W427-221	000 H-10068	*	HE	01A*	02A* 03A* 04A* 05B* 08A*
1003-A427-8-04		1	95 93	1-47W427-221	000 H-9848	*	HH	01A*	02A* 03A* 04A* 06A* 08A*
1003-A427-8-05		1	95 93	1-47W427-221	001		*	HH	01A* 02A* 03A* 04B* 06A* 08A*
1003-A427-8-07		1	95 88	1-47W427-221	001		*	HO	03A* 04A* 08A*
1003-A427-8-07		1	95 88	1-47W427-221	000 H-9804	*	HA	01A*	02A* 03A* 04A* 08A*
1003-A427-8-12		1	95 93	1-47W427-220	000 H-10243	*	HH	03A*	04A* 06A* 08A*
1003-A427-8-13		1	95 93	1-47W427-220	001		*	HH	01A* 02A* 03A* 04A* 07B* 08A*
1003-A427-8-14		1	95 93	1-47W427-220	000 H-870	*	HH	01A*	02A* 03A* 04A* 06A* 07A* 08A*
1003-A427-8-15		1	95 93	1-47W427-220	001		*	HH	01A* 02A* 03A* 04A* 08A*

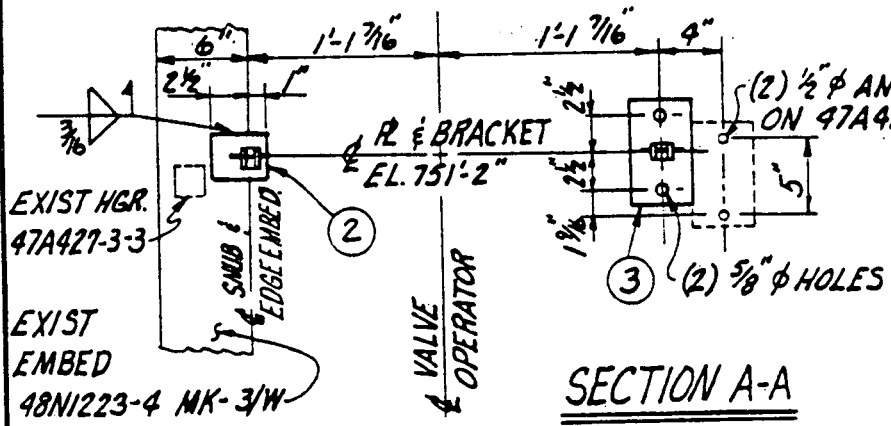
DIM 5166 F-780

H18



- NOTES:
1. ISO 47W427-207
  2. ANAL N<sup>o</sup> N3-3-13A (DS-15B)
  3. DESIGN LOAD: (FAULTED)  
F<sub>x</sub> = ± 150\*
  4. PEN X-40A - 0
  5. INITIAL ISSUE ECN. 2104
  6. FOR GENERAL NOTES SEE 47A427-1
  7. TVA PIPE CLASS B

INFORMATION ONLY



RECEIVED  
WATTS BAR  
OCT 23 1983  
DIV. OF CONSTR.

COMPANION DWG:  
47A427-3-5A  
NOT TO SCALE

2	1	PLATE 1/2" x 3" x 0.3 1/2" C.S.
1	2	B-P PART 2540, .35 w/ ADDITIONAL REAR BRKT,
		MVMT=0 P-P=2'-6 5/8", SET=2"
ITEM	QTY	MATERIAL DESCRIPTION FOR ONE SUPPORT
2	SI	10-11-83
REV. PER FCR H-10299 (CALCS MEDS SWP 830413 351)		
1	SI	5-19-83
REV. PER FCR H-8239. CALC MEDS SWP 830413351		
REVISION	ECN NO.	DATE
OSGN	R. MOORE	
DRWN	James P. ...	
CHKD	Charles ...	
SUPV	L. W. S. CHALLEN	
ENGR	J. ...	
SEISMIC CATEGOR I STRUCTURES		
MECHANICAL UNIT 1		
SEISMIC CAT I SUPPORT FOR AFW		
SUPPORT DETAIL 3-5		
WATTS BAR NUCLEAR PLANT		
TENNESSEE VALLEY AUTHORITY		
DIVISION OF ENGINEERING DESIGN		
SUBMITTED	RECOMMENDED	APPROVED
J. ...	J. ...	R. ...
KNOXVILLE	10-27-83	851M 47A427-3-5
RECORD DRAWING AS CONSTRUCTED		

10520DIN5029  
10520.92.0000  
ref: 10520DIN4195

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F 171811

Comments pertinent to finding:

Support number 03B-IAFW-R1A R903 deleted by reanalysis per TVA EN DES, Civil Engineering Branch. See attached drawing and inspection data verifying removal of support.

Robert C. McKay  
Program Team Member

11/3/83  
Date

Thomas E. McConnell  
OEDC Program Manager

11/9/83  
Date

E. Gray Beasley  
Chairman, OEDC Policy Committee

11/4/83  
Date

Black & Veatch *attached copy of records indicates removal of deleted range*

Classification: Type R Category A

W.J. Zidzeman  
Black & Veatch Project Manager

11/21/83  
Date

RE Blairdell  
Black & Veatch Senior Review Team Chairman

12/1/83  
Date

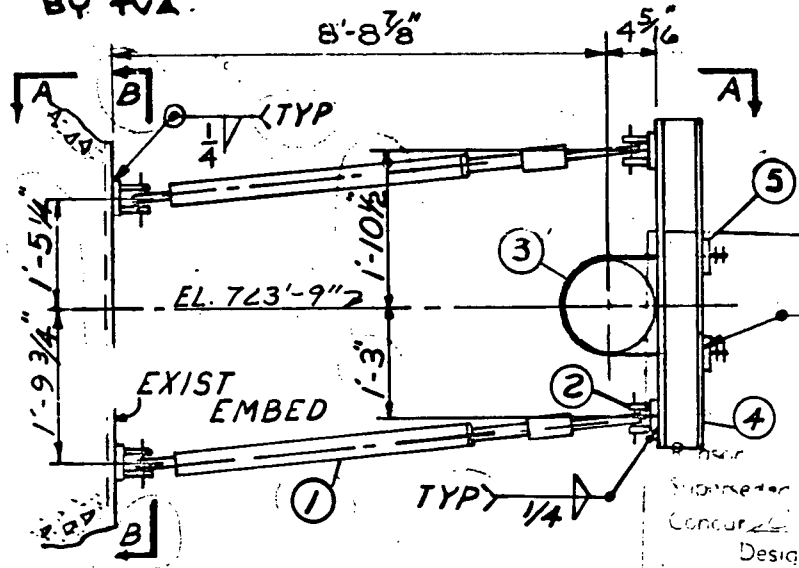


QTY	NO	PART NO.	SIZE	DESCRIPTION	WGT.		
1	2	RSSA	10 O.A. STRUT LGTH = 8'-8 3/4"	EA-3 FOR 8" PIPE SIZE	110		88
	2	2003	10 END ATTACHMENT FOR ITEM # 1				
	1	283	8" LONG TANGENT U-BOLT D = 1'-0 1/16"				
	2	-	6L x 8.2 x 3'-7" LG. 5B = 1 1/2"				
	2	260	5 WASHER PLATE				
-	1	SDB	(2) HRS			PROJECT	WBNP
-	1	SDD				CONTRACT	85015
-	1	SB	210-3 FOR ITEM 1 (PIN TO PIN ONLY)			DRAWING#	03B-IAFW-R014
-	1	EZP				SHEET	1/2
-	1	BGT				REVISION	903
						UNIT	

\*\* PAINT CARBOWELD II BY SP EXCEPT REAR BRKT. & PIPE CLAMP TO BE CARBOWELD II PRIMER BY TVA.  
 SHIP BARE METAL. PAINT CARBOWELD II PRIMER BY TVA.

ISO	47W427-206-RO
JOINT:	401
DIRECTION:	X
TYPE:	SR
	+ 6000 #
DESIGN LOAD:	- 4000 #

#VOICE CODE



**VOID**

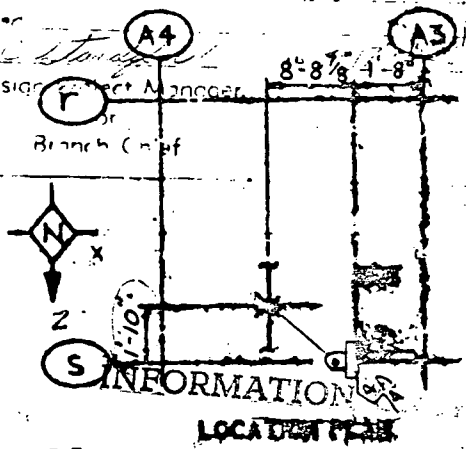
ECN'S 2576, 3210

903	3210, 2576	1/17/78	BS	PNH	OWO															
VOID DRAWING																				
1	SI	7-78	RDC	RA	TVA	DES	DP													
REV PER FCR # M-2269																				
REV NO.	ECN No.	Date	Desn/Drawn	Chkd/Supv	Engr	Insp	Subm	Recm	Appr											

FOR H-7947

8" 6 PIPE SIZE

ELEV. LOOKING NORTH



TVA 900 - VE...  
 DRACO ISO #E-2880-IC-208-1  
 DRACO CORPORATION P.O. # E-2879

ANSI B 81.3  
 T. V. A. CLASS G LOAD

DRACO CONTRACT # 74C38-83015  
 ENGR. WATTS BAR NUCLEAR PLANT, UNIT # 1  
 CONSUMER

PIPING SYSTEM AIX. FEEDWATER  
 47W427-2-0  
 REFERENCE DWS 48N1221-2-8  
 MARK NO. 03B-IAFW-R14 NO. 903

BERGEN-PATERSON PIPESUPPORT CORP.

DRWN	CHK'D	APP'D	DATE
LR	RR	HJT	5-12-77
NO. 3004 (1 of 2)			
03B-IAFW-R14 R903			

2 SI REV PER FCR H-6040



PROGRAM: 255220  
DATE: 10 26 63

WBNP HANGER INFORMATION AND TRACKING  
REPORT: FULL-FILE BY SYSTEM, HANGER ID <BREAK ONE SYSTEM>

SYSTEM:  
033

PAGE 47

IDENTIFIER	CL	REFR	PKG/PLN	DRAWING	REV	DESCRIPTION	STAT	TEST	LIB	E	SEQUENCE	OF TESTS
1003B-03B-1AFW-1132	0003	-2		1-47W421-201	001	H-7279	*	HD	03A*	04A*	08A*	09A*
1003B-03B-1AFW-1133	0003	-2		1-47W421-201	001	H-6714	*	HD	03A*	04A*	08A*	09A*
1003B-03B-1AFW-1134	0003	-2		1-47W421-201	001		*	HA	01A*	02A*	03A*	04A* 08A* 09A*
1003B-03B-1AFW-1135	0003	-2	9528	1-47W421-201 /14H H/C	001	H-9714 NCR 4645	*	HA	01B*	02B*	03B*	04B* 08B* 09A*
1003B-03B-1AFW-1136	0003	-2		1-47W421-201	001		*	HD	03A*	04A*	08A*	
1003B-03B-1AFW-1137	0003	-2		1-47W421-201 /15H	002		*	HD	02A*	03A*	04B*	78C* 09A*
1003B-03B-1AFW-1138	0003	-2		1-47W421-201 /16H H/C	001		*	HD	03A*	04A*	08A*	
1003B-03B-1AFW-1139	0003	-2		1-47W421-201 /17H H/C	001	H-7656CH-6938	*	HD	03B*	04B*	08B*	
1003B-03B-1AFW-1140	0003	-2		1-47W421-201 /18H H/C	001	H-7844	*	HA	01B*	02B*	03B*	04B* 08B* 09A*
1003B-03B-1AFW-1141	0003	-2		1-47W421-201 /19H H/C	001	H-67927H-7346	*	HD	03A*	04C*	08A*	
1003B-03B-1AFW-1146	0003	-2		1-47W421-202	003	H-7787	*	HA	01A*	02A*	03A*	04A* 08A* 09A*
1003B-03B-1AFW-1147	0003	-2		1-47W421-202	001	NCR 4456R R1	*	HA	01A*	02A*	03A*	04A* 08A* 09A*
1003B-03B-1AFW-1148	0003	-2		1-47W421-202	001		*	HD	03A*	04A*	08A*	09A*
1003B-03B-1AFW-1149	0003	-2		1-47W421-202	904	4622R	*	HA	01A*	02B*	03B*	04A* 08A*
1003B-03B-1AFW-1150	0003	-2		1-47W421-202	903		*	HD	02A*	03A*	04A*	08B* 09A*
1003B-03B-1AFW-1150	0003	-2		1-47W421-202	901		03	HD	02A*	03C*	04A*	08C* 09A*
1003B-03B-1AFW-1151	0003	-2		1-47W421-202			*	HD	02A*	03A*	04A*	08A* 09A*
1003B-03B-1AFW-1152	0003	-2		1-47W421-202	902		*	HA	01A*	02A*	03A*	04A* 08B* 09A*
1003B-03B-1AFW-1153	0003	-2		1-47W421-202	001		*	HD	03A*	04A*	08A*	09A*
1003B-03B-1AFW-1154	0003	-2		1-47W421-202	001		*	HD	02A*	03A*	04A*	08A* 09A*
1003B-03B-1AFW-1155	0003	-2		1-47W421-202	001	H-4811	*	HD	02A*	03A*	04A*	08A*
1003B-03B-1AFW-1157	0003	-2		1-47W421-202	003	H-6310	*	HD	02A*	03A*	04A*	08A* 09A*
1003B-03B-1AFW-1158	0003	-2		1-47W421-202	901		*	HD	02A*	03A*	04B*	08A* 09A*
1003B-03B-1AFW-1159	0003	-2		1-47W421-202	001	NCR 4456R R1	*	HD	03B*	04A*	08B*	
1003B-03B-1AFW-1160	1			1-47W421-206	902		VCIB	HE	08B*			
1003B-03B-1AFW-1161	0003	-2		1-47W421-202	001		*	HD	02A*	03A*	04A*	08A*
1003B-03B-1AFW-1162	0003	-2		1-47W421-202	001	H-5964	*	HD	02A*	03A*	04A*	08A*
1003B-03B-1AFW-1163	0003	-2		1-47W421-202	001	H-6793/7579/7173/7234	*	HA	01B*	02B*	03B*	04B* 08B* 09A*
1003B-03B-1AFW-1163	0003	-2		1-47W421-202	002		*	HD	02A*	03A*	04A*	08A* 09A*
1003B-03B-1AFW-1164	0003	-2		1-47W421-202	001		*	HA	01B*	02A*	03B*	04A* 08A* 09A*
1003B-03B-1AFW-1165	0003	-2		1-47W421-202	001	H-4956	*	HA	03A*	04A*	08A*	09A*
1003B-03B-1AFW-1166	0003	-2		1-47W421-202	001	H-6793/7579/7173/7234	*	HD	02A*	03A*	04A*	08A* 09A*
1003B-03B-1AFW-1167	0003	-2		1-47W421-202	002		*	HA	02A*	03A*	04A*	08A* 09A*

181  
6250M

920



10520DIN5259  
10520,92,0000  
ref: 10520DIN4127

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F1718121

Comments pertinent to finding:

At the Black and Veatch inspection, construction of hanger number 03B-ZAFW-R222 was not complete. The hanger was being tracked as incomplete by the construction accountability program. Installation of the hanger has now been completed in accordance with the existing Quality Assurance Program and tracked with the site accountability program. Attached is a copy of Quality Assurance inspection documentation, and accountability print-out. The print-out is a Quality Assurance document and will be retained as life of plant documentation.

Rand C Meyer  
Program Team Member

11/21/83  
Date

Thomas E. McConnell  
OEDC Program Manager

11/23/83  
Date

E. Gray Beasley  
Chairman, OEDC Policy Committee

11/23/83  
Date

*The attached documentation coupled with the question & response Black & Veatch (10520DIN 2118 & 10520DIN 1068) indicates that the installed hanger is correct & that the copy machine is unreliable. The item is considered to be closed*

Classification: Type \_\_\_\_\_ R Category A

W. J. Zitzman  
Black & Veatch Project Manager

12/28/83  
Date

R E Blairdell  
Black & Veatch Senior Review Team Chairman

12/30/83  
Date

ITEM	QUAN.	PART NO	SIZE	DESCRIPTION	WGT.			
10	2	-	W 4 X 13 X 2-4" LG.	(A36)	BTVA			
20	2	-	W 4 X 13 X 1-1" LG.	(A36)	EYVA			
30	1	-	W 4 X 13 X 2-2 3/4" LG. (CUT AS SHOWN)	(A36)	BYVA			
-	1	SDE	(3) HRS					
-	1	SDD						

RECEIVED  
WATTS BAR

DEC 11 1978

Div. of Const.

SEE TVA DWG # 47A050-181A

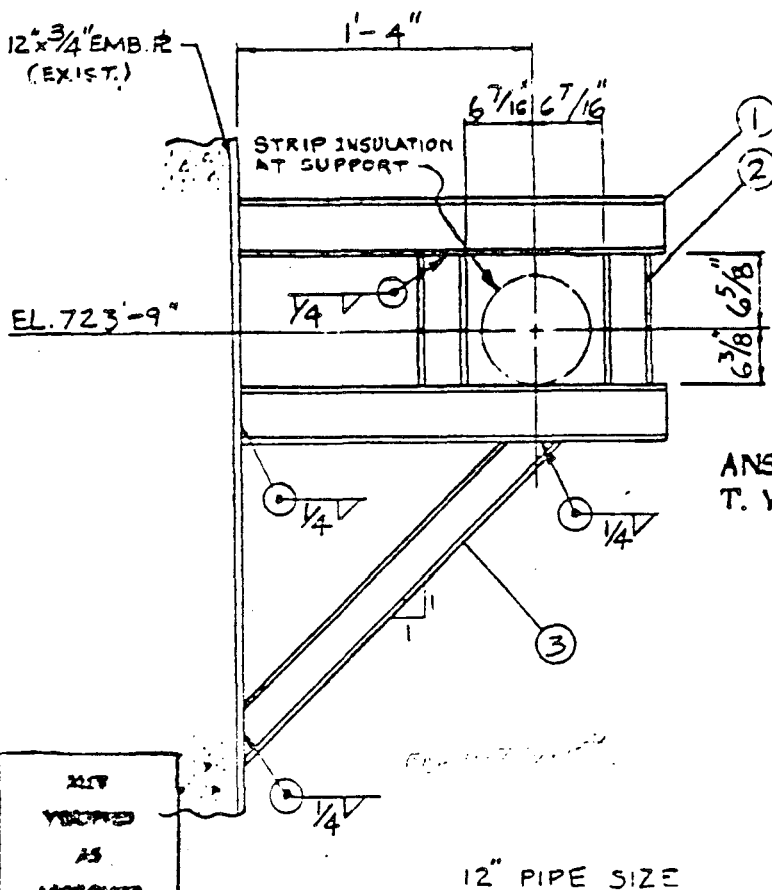
PROJECT WRAP  
 CONTRACT 83015  
 DRAWING# 03B 2AFW R222  
 SHEET 1/1  
 REVISION 0  
 UNIT 2

ISO 47W427-206-RO  
 57  
 Y  
 US  
 0  
 3000 #

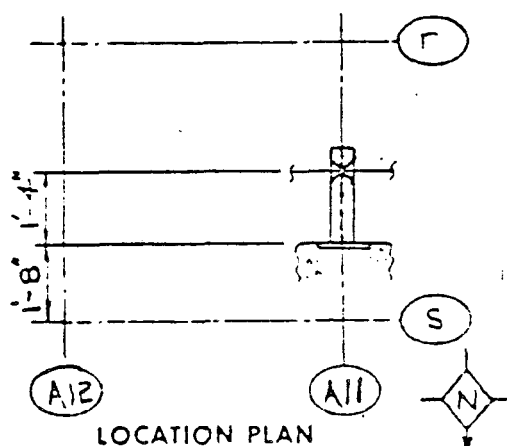
ISO 47W427-206-RO  
 57  
 Z  
 SR  
 5000  
 5000 #

INVOICE CODE

DESCRIPTION



ANSI B 31.1  
 T. V. A. CLASS G LOAD: \_\_\_\_\_



NOT  
 YET  
 AS  
 APPROVED

12" PIPE SIZE

ELEV. LOOKING EAST

DRAWN ISO # E-2880-1C-207-2  
 DRAWN CORPORATION P.O. # E-2882  
 T. V. A. CONTRACT # 74C38-83015  
 WATTS BAR NUCLEAR PLANT UNIT # 2

BERGEN-PATERSON PIPESUPPORT CORP.

PIPING SYSTEM	AIR, FEEDWATER	STRUCTURAL	
REF	PIPING		
DWGS	47W427-2-1	48N1221-2-1	
JOB NO	3605	FAB NO	09
MARK & DWG NO	03B-2AFW-R222	NO REQD	
		SHEET	REV
		1 of 1	

REV DES IG ORN RRS CHK USD APP SM DATE 2-17-78

823

TENNESSEE VALLEY AUTHORITY  
FIELD CHANGE REQUEST  
REPLY MEMORANDUM

WBNP-OCI-1.13 R3  
Attachment 1  
FCR H-7598  
DOC

TO : R. W. Cantrell, Sequoyah and Watts Bar Design Projects Manager, 204 GB-K (3)

FROM: J. E. Wilkins, Project Manager, Watts Bar Nuclear Plant CONST

DATE: WBN 82 0523 319

Attention: J L PURKEY (EN DES ON SITE)

SECTION I - CONST REQUEST

Reason for Change:

Status Point:

System/W.P. No. 03B/H003F-20

Drawing Discrepancy

Prior to Fuel Loading

Facilitate Construction

After Fuel Loading but prior to Closing Capitalized Accounts

Additional Design Information

After Closing Capitalized Accounts for the Entire Plant

Drawings Affected 03B-2AFW-R222 R/O

Major drawings/sketches required and attached  Yes  No

Change Description: REVISE PER THE ATTACHED SKETCH.

Change requested by: 5-3-82  
Donal E. Louther  
(CONST Engineer)

THOMAS R BROWN  
(Unit Supervisor)

Change approved by: James A. Sherrill  
(EN DES Engineer)

5-7-82  
(Date)  
"ENDES ON SITE"

Approval obtained by:  Telephone

Memo  Other

Approved for transmittal to EN DES: Shirley R. Martin  
(Construction Engineer)

Charles A. Christopher  
(Project Manager)

SECTION II - EN DES REPLY/RESOLUTION

ECN No. \_\_\_\_\_

Date Issued \_\_\_\_\_

Drawing Nos: \_\_\_\_\_

Change Complete \_\_\_\_\_  
(EN DES Engineer)

\_\_\_\_\_  
(Design Project Manager) (Date)

Original - Return to CCNST by EN DES  
Copy 3 - Retained by CCNST

COPY: HEL INSPECTION





2003B-03B-2AFW-R184	Z003-00	JC03B02	2-47W427-207		01 HA 01A 02A 03A 04A 08A
2003B-03B-2AFW-R185	Z003-00	JC03B02	2-47W427-207		01 HA 01A 02A 03A 04A 08A
2003B-03B-2AFW-R186	Z003-00	JC03B02	2-47W427-207		01 HA 01A 02A 03A 04A 08A
2003B-03B-2AFW-R187	Z003-00	JC03B02	2-47W427-207		01 HA 01A 02A 03A 04A 08A
2003B-03B-2AFW-R188	Z003-00	JC03B02	2-47W427-207		01 HA 01A 02A 03A 04A 08A
2003B-03B-2AFW-R189	Z003-00	JC03B02	2-47W427-207		01 HA 01A 02A 03A 04A 08A
2003B-03B-2AFW-R19	Z003-00	JC03B02	2-47W427-207		01 HA 01A 02A 03A 04A 08A
2003B-03B-2AFW-R190	Z003-00	JC03B02	2-47W427-207		01 HA 01A 02A 03A 04A 08A
2003B-03B-2AFW-R191	Z003-00	JC03B02	2-47W427-207		01 HA 01A 02A 03A 04A 08A
2003B-03B-2AFW-R192	Z003-00	JC03B02	2-47W427-207		01 HA 01A 02A 03A 04A 08A
2003B-03B-2AFW-R193	Z003-00	JC03B02	2-47W427-217		01 HA 01A 02A 03A 04A 08A
2003B-03B-2AFW-R194	Z003-00	JC03B02	2-47W427-207		01 HA 01A 02A 03A 04A 08A
2003B-03B-2AFW-R195	Z003-00	JC03B02	2-47W427-207		01 HA 01A 02A 03A 04A 08A
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2003B-03B-2AFW-R197	Z003-00	JC03B02	2-47W427-207		01 HA 01A 02A 03A 04A 08A
2003B-03B-2AFW-R2	X003-2		1-47W427-206	001 H-7502	* HD 03A* 04A* 08A* 09A*
2003B-03B-2AFW-R20	Z003-00		2-47W427-205		01 HA 01A 02A 03A 04A 08A
2003B-03B-2AFW-R200	Z003-00		2-47W427-208		02 HD 02A 03A 04A 08A
2003B-03B-2AFW-R201	Z003-00	JC03B02	2-47W427-208		01 HA 01A 02A 03A 04A 08A
2003B-03B-2AFW-R202	Z003-00	JC03B02	2-47W427-208		01 HA 01A 02A 03A 04A 08A
2003B-03B-2AFW-R203	Z003-00	JC03B02	2-47W427-206		03 HD 03A 04A 08A
2003B-03B-2AFW-R204	Z003-00	JC03B02	2-47W427-204		01 HA 01A 02A 03A 04A 08A
2003B-03B-2AFW-R205	Z003-00	JC03B01	2-47W427-208	002	* HA 01A* 02A* 03A* 04A* 08A*
2003B-03B-2AFW-R206	Z003-00	JC03B02	2-47W427-209		02 HF 02A 03A 04A 05A 08A
2003B-03B-2AFW-R209	Z003-00	JC03B02	2-47W427-209		01 HA 01A 02A 03A 04A 08A
2003B-03B-2AFW-R210	Z003-00	JC03B02	2-47W427-216		03 HD 03A 04A 08A
2003B-03B-2AFW-R211	Z003-00	JC03B02	2-47W427-209		01 HA 01A 02A 03A 04A 08A
2003B-03B-2AFW-R212	Z003-00	JC03B02	2-47W427-216		01 HA 01A 02A 03A 04A 08A
2003B-03B-2AFW-R213	Z003-00	JC03B01	2-47W427-214		01 HE 01A 02A 03A 04A 05A 08A
2003B-03B-2AFW-R214	Z003-00	JC03B01	2-47W427-214	000	* HE 01A* 02A* 03A* 04A* 05A* 08A*
2003B-03B-2AFW-R215	X003-2	9752	1-47W427-206	H-8083/3842R	04 HA 03A* 04B 08B C9A*
2003B-03B-2AFW-R216	Z003-00	JC03B01	2-47W427-205		01 HA 01A 02A 03A 04A 08A 09A*
2003B-03B-2AFW-R217	Z003-00	JC03B01	2-47W427-205		03 HD 03A 04A 08A C9A*
2003B-03B-2AFW-R218	Z003-00	JC03B01	2-47W427-205		02 HB 02A 03A 04A 08A 09A*
2003B-03B-2AFW-R219	X003-2		1-47W427-206	902 H-757d/3842R SP	* HD 02A* 03A* 04A* 08B* 09A*
			706HD		
2003B-03B-2AFW-R22	Z003-00	JC03B01	2-47W427-205		02 HB 02A 03A 04A 08A
2003B-03B-2AFW-R220	X003-2		2-47W427-206	000 3842R	* HA 01A* 02A* 03A* 04A* 08A* 09A*
2003B-03B-2AFW-R221	X003-2		2-47W427-206	000 H-5094/H-7597	* HA 03A* 04A* 08A*
2003B-03B-2AFW-R222	X003-2		2-47W427-206	000 H-7598	* HD 03A* 04A* 08A* 09A*
2003B-03B-2AFW-R223	X003-2		2-47W427-206	902	* HA 01A* 02A* 03A* 04A* 08B* 09A*
2003B-03B-2AFW-R224	X003-2		2-47W427-206	000	* HA 01A* 02A* 03A* 04A 05A 08A
2003B-03B-2AFW-R226	Z003-00	JC03B02	2-47W427-214		01 HE 01A 02A 03A 04A 05A 08A
2003B-03B-2AFW-R228	Z003-00	JC03B02	2-47W427-214		01 HE 01A 02A 03A 04A 05A 08A
2003B-03B-2AFW-R229	Z003-00	JC03B02	2-47W427-214		01 HE 01A 02A 03A 04A 05A 08A
2003B-03B-2AFW-R23	X003-2		1-47W427-206		* HD 03A* 04A* 08A* 09A*
2003B-03B-2AFW-R232	Z003-00	JC03B02	2-47W427-214		01 HE 01A 02A 03A 04A 05A 08A
2003B-03B-2AFW-R233	Z003-00	JC03B02	2-47W427-214		

281-J B252ND



TELEPHONE MEMORANDUM

10520DIN2118  
10520.15.1000

827

DATE 12/14/83

(TO) ~~(FROM)~~ H. E. McConnell TELEPHONE (615) 632-4450 TIME 12:53 ~~AM~~ PM

COMPANY Tennessee Valley Authority CC: H. E. McConnell, T

RECORDED BY W. J. Zidziunas *WJZ* R. E. Blaisdell

PROJECT WBNP-Independent Review PROJ. NO. 10520 PDCA/File

SUBJECT Finding Report Responses FILE NO. 15.1000

I called Mr. McConnell to discuss Findings as follows.

F757 (F366) - The inspection tickets for hanger 03B-1AFW-R225 Rev. 904 appear to be against an earlier revision of the drawing and pre-date the hanger drawing by almost one year, in one case, and by seven months in another. Re-examination of F366 data revealed a similar situation. An explanation and/or revised data for these two findings is needed.

F782 - The TVA submittal addresses certification of the hanger to FCR 7598, but the changes defined in Form 1 do not appear to have been made; and the hanger drawing 03B-2APW-R222, which was forwarded by Form 3, still shows the brace. Please clarify the submittal.

F807 - Please verify the cable designation 1A3913 has been color-coded properly. The Form 3 certifies Cable 1A3193. Refer to DRR 727 and F807 basis.

F847 - The computer printout is not legible, let alone reproducible. A readable copy is needed to verify that the outstanding work is, in fact, listed.

Data Sheet 4 references Drawing 47A060-3-8 and 47A060-3-8A against F319 but does not mention this Finding; in fact, no mention of F847 can be found in the ECN 3511 data that was submitted. Clarification and/or additional data is needed before B&V can process this Finding.

F881 - Please provide a replacement printout since the one provided will not adequately reproduce.

Homer indicated he would look into these items.

I advised him that B&V will probably come to Knoxville to review the information that supports the DRR matrix.

bam

RECEIVED B & V  
 DEC 15 1983  
 PROJECT # 10520

TENNESSEE VALLEY AUTHORITY  
KNOXVILLE TENNESSEE 37902

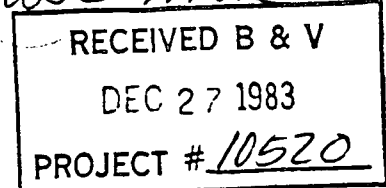
400 West Summit Hill Drive, W10C126 C-R

DEC 23 1983

Black and Veatch  
11401 Lamar Avenue  
Overland Park, Kansas 66211

Attention: Mr. W. J. Zidziunas

Gentlemen:



PERSONAL SERVICES CONTRACT NO. TV-60052A

In response to your telephone request to H. E. McConnell, we are providing additional information for the following findings:

F-807

Our Form 3 certified cable 1A3193 as being properly color-coded; this was a typographical error. The correct number is 1A3913. Please make this correction on Form 3.

F-847

Enclosed is a replacement computer printout for this finding. Engineering change notice (ECN) 3511 data sheet references drawings 47'060-3-8 and 47A060-3-8A against F-319 because it is the finding that required the design to be changed and drawings to be revised. Finding 847 relates to incomplete installation and would not be referenced in the ECN. The ECN was provided to show drawing revisions and the computer printout shows that the installation has not been completed.

F-782

The brace referred to our drawing, 03B-2AFW-R222, which was deleted on Field Change Request (FCR) H-7598. Inspections were made using this FCR as noted on the test card and the computer printout.

F-881

Enclosed is a replacement computer printout for this finding.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

*H E McConnell*

for John A. Raulston, Chief  
Nuclear Engineering Support Branch

Enclosures



WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F / 7 / 8 / 3 /

C

Comments pertinent to finding:

See F371 for comments.

Reference: 03B-2AFW-R223 R902

*EH Ch*

Program Team Member

11/17/83

Date

*Thomas E Mc Connell*

OEDC Program Manager

11/17/83

Date

*E Gray Bentley*

Chairman, OEDC Policy Committee

11/21/83

Date

*Examination of the attached information in conjunction with ORR 566, Black & Veatch F783 basis, and F371 from 3 indicates appropriate action has been taken. Follow-on construction is in a documented program which should assure completion*

Classification: Type \_\_\_\_\_ R Category A

*W. J. Zilziman*

Black & Veatch Project Manager

12/18/83

Date

*RE Blawdell*

Black & Veatch Senior Review Team Chairman

12/19/83

Date



JW

831

ITEM	QUAN.	PART NO.	SIZE	DESCRIPTION	WGT.
-	1	CHA			

INVOICE CODE

ISO 47W427-20G-RO  
 JOINT 63  
 DIRECTION: Z  
 TYPE RR  
+ 6000 #  
 DESIGN LOAD:  
- 6000 #

ISO 47W427-20G-RO  
 JOINT 63  
 DIRECTION: Y  
 TYPE: US  
+ 0 #  
 DESIGN LOAD:  
- 3000 #

PROJECT WBNP  
 CONTRACT 33015  
 DRAWING# 03B-2AFW-R223  
 SHEET 2/2  
 REVISION 902  
 UNIT 2

NUCLEAR  
T.V.A. CLASS G

902	3511	8-10-83	L.S.	2AFW-R223	US	- 902	2/2
REV. PER FOR H-7613, BAV F-783 (IC)							
Rev No.	ECN No.	Date	Dsgn	Drwn	Chkd	Supv	Engr

DRAVO ISO # E-2880-IC-207-2

1	SI	8-10-83	PLG	TEL	M	FEA	FOR	CHG
REV PER FOR M-2350								
REV No.	ECN No.	Date	Dsgn	Drwn	Chkd	Supv	Engr	Insp

DRAVO CORPORATION P. O. # E-2879- CUSTOMER				BERGEN-PATERSON PIPESUPPORT CORP.			
T. V. A. CONTRACT # T-C33-33015 ENGINEER				PIPING SYSTEM AUX. FEEDWATER		REF. DWGS. PIPING 47W427-2-1	
WATTS BAR NUCLEAR PLANT UNIT # 2 CONTRACTOR				- STRUCTURAL 41N370-1-1		JOB NO. 3605	
DESIGNER JG				MARK & DWG. NO. 03B-2AFW-R223		FAB NO. 009	
DATE 2-17-78				SHEET 2 of 2		REV 902	

10520DIN5168  
10520.92.0000  
ref: 10520DIN4343

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F/7/8/4/

C

Comments pertinent to finding:

See F371 for comments.

Reference: 03B-1AFW-R2 R904

*E.H. Cole*

Program Team Member

11/17/83

Date

*Thomas E. McConnell*

OEDC Program Manager

11/17/83

Date

*E. Gray Bawley*

Chairman, OEDC Policy Committee

11/21/83

Date

Black & Veatch

*The specific condition cited in the BSV Finding has been corrected. The item is considered to be resolved.*

Classification: Type \_\_\_\_\_

R

Category A

*W.J. Zidzimas*

Black & Veatch Project Manager

12/18/83

Date

*R.E. Blawdell*

Black & Veatch Senior Review Team Chairman

12/19/83

Date

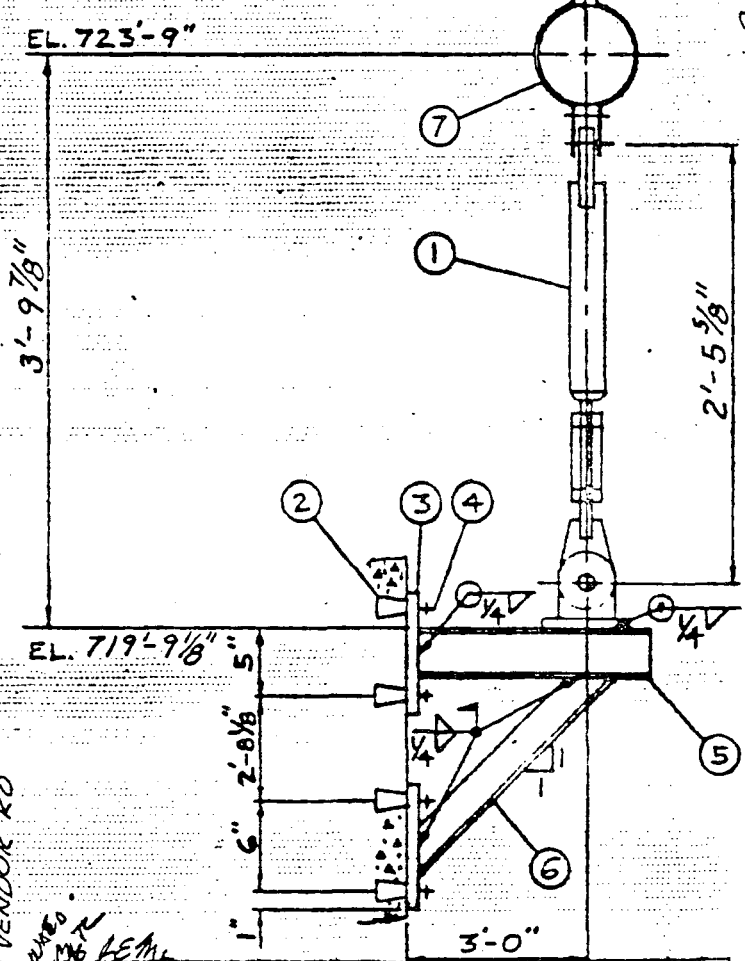
14	1		BP 2200 STRUT SIZE 10 LENGTH 2'-5 5/8"	60	
7	1		BP 2600-10 FOR 12" PIPE		
2	8	512	1/2" CONCRETE FASTENER (PHILLIPS RSDHEAD)		
3	2	C5	8" X 1/2" R x 8" LG. W/ (4) 5/8" HOLES	18	
4	8	-	1/2" x 1 1/2" LG. BOLT		
5	1	C5	W4 X 13 X LG. AS REQ'D.	42	
6	1	C5	4" X 3" X 3/8" ANGLE X LG. AS REQ'D. (CUT AS SHOWN)	38	
7	1	SDE	(2) HRS		
8	1	SDD			
9	1	SB	210-3 FOR 1 (PIN TO PIN ONLY)		
10	1	ERP			
11	1	B&T			

830

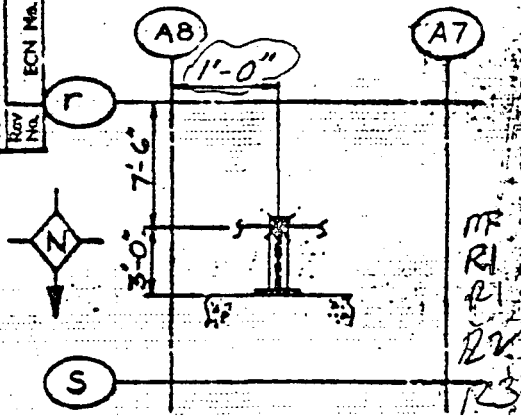
SHIP BARE METAL. PAINT CARBOWELD-II BY TVA.  
 \*\* PAINT CARBOWELD-II BY B.P (PIN TO PIN), REAR BRKT. &  
 PIPECLAMP TO BB CARBOWELD-II BY TVA

ISO. 47W427-206 R4  
 JOINT: 77Y  
 DIRECTION: Y  
 TYPE: US  
 DESIGN LOAD: 1700 #

PROJECT WBNP  
 CONTRACT 83015  
 DRAWING# 03B-1AFW-R000  
 SHEET 11  
 REVISION 904  
 UNIT 1



Rev	Per	Date	ECN No.
1	SI	5-18-79	RG MG DWG PLS 107
			REV PER FCR M-477A



12" PIPE SIZE LOCATION PLAN

ANSI B 31.1  
 T. V. A. CLASS G LOAD:

REV. LOCATION PER ECN, BAY F 784  
 REV PER FCR H-4833 INACTIVE CONTR  
 TVA 900 - VENDOR RD  
 DATE: 5/18/79

REVISED PER ECN. LOAD CHANGE (INACTIVE CONTRACT)  
 ELEV.-LOOKING EAST  
 DRAVO ISO #E-2880-IC-207-2

DRAVO CORPORATION P. O. # E-2879.

T.V.A. CONTRACT # 74C38-83015

WATTS BAR NUCLEAR PLANT - UNIT, # 1.

PIPING SYSTEM AUX. FEEDWATER  
 REFERENCE DWG. 47W427-2-8 (Pipe)  
41N370-1-1 (St-1)  
 MARK NO. 03B-1AFW R2 NO. REG'D.



BERGEN-PATERSON PIPESUPPORT CORP.

BOSTON, MASS. BWOOD-RIDGE, N.J. SAN FRANCISCO, CALIF.  
 PITTSBURGH, PA. CHICAGO, ILL. N.Y. CHICAGO, ILL.

DRAWN	CHK'D	APP'D
LR	RR	HJT 5-12-76
JOB NO.	3600	
ISS. NO.	03B-1AFW-R2 (R904)	

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEWFinding Number F1718151

## Comments pertinent to finding:

At the Black and Veatch inspection, construction of hanger number 03B-1AFW-R5 was not complete. The hanger was being tracked as incomplete by the construction accountability program. Installation of the hanger has now been completed in accordance with the existing Quality Assurance Program and tracked with the site accountability program. Attached is a copy of Quality Assurance inspection documentation, and accountability print out.

Ronald C. McKay  
Program Team Member

11/2/83  
Date

Thomas E. McConnell  
OEDC Program Manager

11/9/83  
Date

E. Gray Beasley  
Chairman, OEDC Policy Committee

11/4/83  
Date

Black & Veatch

*The information provided as classified by TVA letter dated 12/3/83 (DIN 1064 attached) supports close out of this item*

Classification: Type

R

Category

A

W. J. Zidzeman

Black & Veatch Project Manager

12/14/83  
Date

R. E. Blawie

Black & Veatch Senior Review Team Chairman

12/27/83  
Date

588

WBHP-QCP-4.23-8 TEST NO. 8  
Attachment A (LOP)

SUPPORT FIRM INSPECTION

SUPPORT ID  
1003B-03B-1AFW-R5  
 Reference to  
03B-1AFW-R5 Rev 901  
 Accepted  
 (Check)

Uniforms	<input checked="" type="checkbox"/>
Fa	<input checked="" type="checkbox"/>
Ir	<input checked="" type="checkbox"/>
General	<u>N/A</u>
S	<u>N/A</u>
C	<u>N/A</u>
1	<input checked="" type="checkbox"/>
2	<input checked="" type="checkbox"/>
3	<input checked="" type="checkbox"/>
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98	<input checked="" type="checkbox"/>
99	<input checked="" type="checkbox"/>
100	<input checked="" type="checkbox"/>

APR 15 1983  
 10

Remarks: FOR H-9117 WR#6802  
Lugs only per WR#6802  
 Inspected in accordance with  
 Rev 2 of QCP-4.23-8  
 Inspector Wesley D. [Signature] Date 2-3-83

Lug gaps  
 1/16" EAST SIDE  
 3/32" WEST SIDE

1003B-03B-1AFW-1232		NO03-2	1-47W421-215 /09H	903 4455R	• HB 03B* 04A* 08C*
1003B-03B-1AFW-1233		NO03-2	1-47W421-215	001 H-8211	• HB 02A* 03A* 04A* 08A* 01A*
1003B-03B-1AFW-1236		NO03-2	1-47W421-215	001 H-5940	• HB 02A* 03A* 04A* 08A*
1003B-03B-1AFW-1235		NO03-2	95 92 1-47W421-201	503 H-9822	03 HA 03B* 04B* 08C*
1003B-03B-1AFW-1236		NO03-2	1-47W421-201	001 H-6554/H-7589	03 HA 01A* 02A* 03A* 04A* 08B 05A*
1003B-03B-1AFW-1237		NO03-2	96 17 1-47W421-201	903	• HF 02A* 03A* 04B* 05B* 08B*
1003B-03B-1AFW-1238	H	NO03-2	724H-H7C 1-47W421-202	902	• HF 02A* 03A* 04A* 05B* 08B*
1003B-03B-1AFW-1239	H	NO03-2	1-47W421-202		• HF 01A* 02A* 03A* 04A* 05A* 08A*
1003B-03B-1AFW-124		NO03-2	1-47W421-206	003 H-4949	• HD 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-125		NO03-2	1-47W421-206	903 H-9322/4523*	• HA 01C* 02B* 03A* 04B* 08B* 09A*
1003B-03B-1AFW-126		NO03-2	1-47W421-206	906	• HA 03B* 04A* 08C* 09A*
1003B-03B-1AFW-127		NO03-2	1-47W421-206	902 H-5947/H-5112 SP	• HC 03A* 04A* 08A* 09A*
1003B-03B-1AFW-128		NO03-2	1-47W421-206	903	• HA 01A* 02A* 03A* 04A* 08B* 09A*
1003B-03B-1AFW-129		NO03-2	1-47W421-206	902	• HA 01A* 02A* 03A* 04A* 08B* 09A*
1003B-03B-1AFW-128		NO03-2	1-47W421-206	902 H-9218	• HA 01A* 02A* 03A* 04B* 08A*
1003B-03B-1AFW-130	H	NO03-2	1-47W421-206	003 H-8256 REF H-8436	• HA 01A* 02A* 03B* 04A* 08B*
1003B-03B-1AFW-131		NO03-2	1-47W421-206	902	• HA 01A* 02A* 03B* 04B* 08B* 09A*
1003B-03B-1AFW-132		NO03-2	1-47W421-206	903	• HA 01A* 02A* 03A* 04A* 08B* 09A*
1003B-03B-1AFW-133		NO03-2	1-47W421-206	003	• HA 01A* 02A* 03A* 04A* 08A*
1003B-03B-1AFW-134		I	1-47W421-206	901	VCID • HD 08A*
1003B-03B-1AFW-135		I	1-47W421-206	901	VCID • HD 08A*
1003B-03B-1AFW-136	H	NO03-2	1-47W421-200		• HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-138		NO03-2	1-47W421-200	901	• HD 02A* 03B* 04A* 08B* 09A*
1003B-03B-1AFW-139		NO03-2	1-47W421-200	901	• HC 01A* 02A* 03A* 04A* 08B* 09A*
1003B-03B-1AFW-140	H	NO03-2	1-47W421-200	003	• HD 02A* 04A* 08A* 09A*
1003B-03B-1AFW-141		NO03-2	1-47W421-200	000	• HB 02A* 03B* 04A* 08B* 09A*
1003B-03B-1AFW-142		NO03-2	702H-H7C 1-47W421-200	903	• HA 01A* 02A* 03B* 04A* 08B* 09A*
1003B-03B-1AFW-143		NO03-2	1-47W421-200		• HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-144		NO03-2	1-47W421-200		• HB 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-145		NO03-2	1-47W421-200	902	• HD 03A* 04A* 08A* 01A* 02A*
1003B-03B-1AFW-146		NO03-2	704H-H7C 1-47W421-200		• HB 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-147		I	1-47W421-200		VCID • HD 08A*
1003B-03B-1AFW-148		I	1-47W421-200		VCID • HD 08A*
1003B-03B-1AFW-149	H	NO03-2	1-47W421-200	003 H-4997/H-6297	• HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-150	H	NO03-2	705H-H7C 1-47W421-200		• HA 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-151		NO03-2	706H-H7C 1-47W421-200	001 H-4785	
1003B-03B-1AFW-150		NO03-2	711H-H7C 1-47W421-221	001	• HA 02A* 03A* 04A* 08A*
1003B-03B-1AFW-151		NO03-2	95 92 1-47W421-221	504 H-6540 & 6541	• HA 01A* 02A* 03B* 04A* 08C* 09A*

DIN5080 F-785



TENNESSEE VALLEY AUTHORITY  
KNOXVILLE, TENNESSEE 37902

10520DIN1064  
10520.14.0000

837

400 West Summit Hill Drive, W10C126

DEC 8 1983

Black & Veatch  
11401 Lamar Avenue  
Overland Park, Kansas 66211

Attention: Mr. W. J. Zidziunas

Gentlemen:

PERSONAL SERVICES CONTRACT NO. TV-60052A

The following are TVA responses to the questions asked in your November 18, 1983, telecon with H. E. McConnell.

F785 - The finding was generated against hanger 03B-1AFW-R005, but documentation indicates hanger 03B-1AFW-R5.

What is the difference between the two drawings? I have verified the original hanger number by reviewing attachments to DRR 564 DIN 3600.

The correct identification number for the hanger should be 03B-1AFW-R5; the drawing number is 03B-1AFW-R005. TVA's computer tracking program does not include the two zeros. Enclosed is a copy of drawing 03B-1AFW-R005 that should be attached to finding F-785.

F790 - The finding indicated two conditions. The first was that the hanger was incomplete. The second was that a dimension was incorrect. TVA addressed completion of the hanger by submitting a copy of the test No. 8 ticket. How was the dimension problem addressed?

There is no dimension problem. The drawing shows the hanger referenced off of the column centerline as 5' 10"; the measurement to the wall face is 5' 0". Installation was verified according to the drawing.

F825 - The date on the Test card predates the TVA Form 1 which states the inspection was not complete (11/5/82 versus 11/24/83). A formal explanation or later test records are required to clarify or resolve the issue.

WJZ MZR  
RECEIVED P & V  
DEC 09 1983  
PROJECT # 10520

2

Black & Veatch

DEC 8 1983

Enclosed is a copy of later test records for F825.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

*H E Mc Connell*

to John A. Raulston  
Chief Nuclear Engineer

Enclosures

ITEM	QUAN	PART NO.	SIZE	DESCRIPTION	WGT
1	2	STR	W 4 x 13	x LENGTH AS REQ'D.	61
2	2	STR	W 4 x 13	x 1'-0" $\frac{7}{16}$ LG.	28
3	1	CS	W 4 x 13	x LENGTH AS REQ'D. (CUT AS SHOWN)	29
4	4	CS	1" x 1/2"	PLATE 2" LG.	

RECEIVED

WATTS BAR

AUG 24 1983

PROJECT WENP CONTRACT 83015

DRAWING 038-1APW-R005

SHEET 1/1 REV 902 UNIT 1

DIV. OF CONSTR.

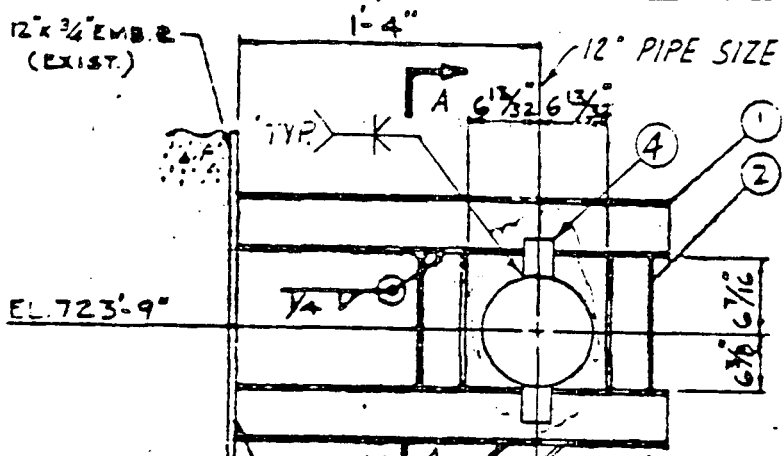
SHIP BARE METAL PAINT CARBONELD II BY TVA

47W427-206 R4

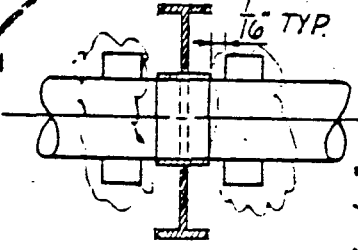
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 DIRECTION X  
 TYPE SR  
 + 3800  
 DESIGN LOAD - 4600

ISO 47W427-206-R4  
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 DIRECTION: Y  
 TYPE: SR  
 + 0  
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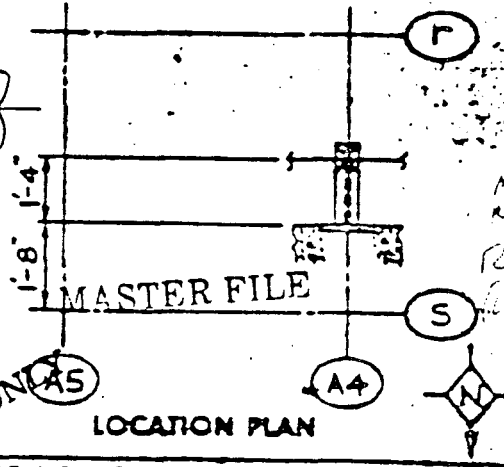
ISO 47W427-206-R4  
 JOINT: 99  
 DIRECTION: Z  
 TYPE: SR  
 + 3500  
 DESIGN LOAD: - 3600



ANSI B 31.1 T. V. A. CLASS 5



SECTION A-A  
 BEVEL TO OBTAIN 60° (MIN)  
 INCLUDED ANGLE (TYP)



MEB VERIFIED AS APPROVED

ELEV. LOOKING EAST

DRAVO ISO #E-2880-IC-207-2  
 DRAVO CORPORATION P. O. # E-2879  
 T. V. A. CONTRACT # 74C38-83015  
 WATTS BAR NUCLEAR PLANT - UNIT # 1  
 TVA 900 = VENDOR RO

BERGEN-PATERSON PIPESUPPORT CO.		
PIPING SYSTEM	AUX. FEEDWATER	STRUCTURAL
REF. DWG. NO.	47W427-2-0	48N1221-
JOB NO.	3684	PAB NO. 09
DATE	5-12-76	
DRAWN BY	RR. HJT	
DATE	5-12-76	

REVISED PER ECN "INACTIVE CONTRACT"  
 9013210  
 8/5/83  
 REV PER FCR H-9117 (CNS WBP 830803E)

INVOICE CODE

DESCRIPTION

REV DATE BY CHK APP

REV 5 DES 5 CHK RR. HJT DATE 5-12-76

F-785

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F 17861

Comments pertinent to finding:

Support number 03B-IAFW-R8 R905 deleted by  
reanalysis per TVA EN DES, Civil Engineering Branch. See attached drawing  
and inspection data verifying removal of support.

Robert C. Mckay  
Program Team Member

11/3/83  
Date

Thomas E. McConnell  
OEDC Program Manager

11/4/83  
Date

E. Gray Beardsley  
Chairman, OEDC Policy Committee

11/4/83  
Date

Black & Veatch *Records indicate void range has been removed.*

Classification: Type R Category A

W. J. Ziskin  
Black & Veatch Project Manager

11/21/83  
Date

RE Blandell  
Black & Veatch Senior Review Team Chairman

12/1/83  
Date

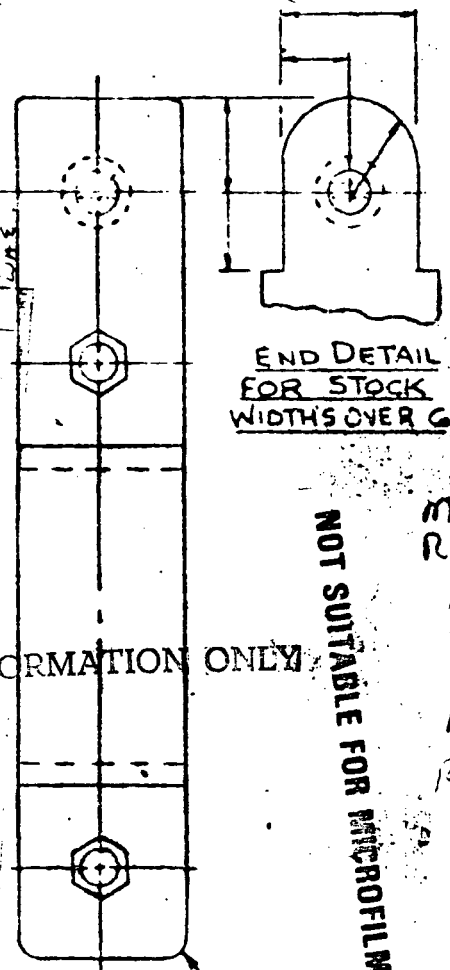
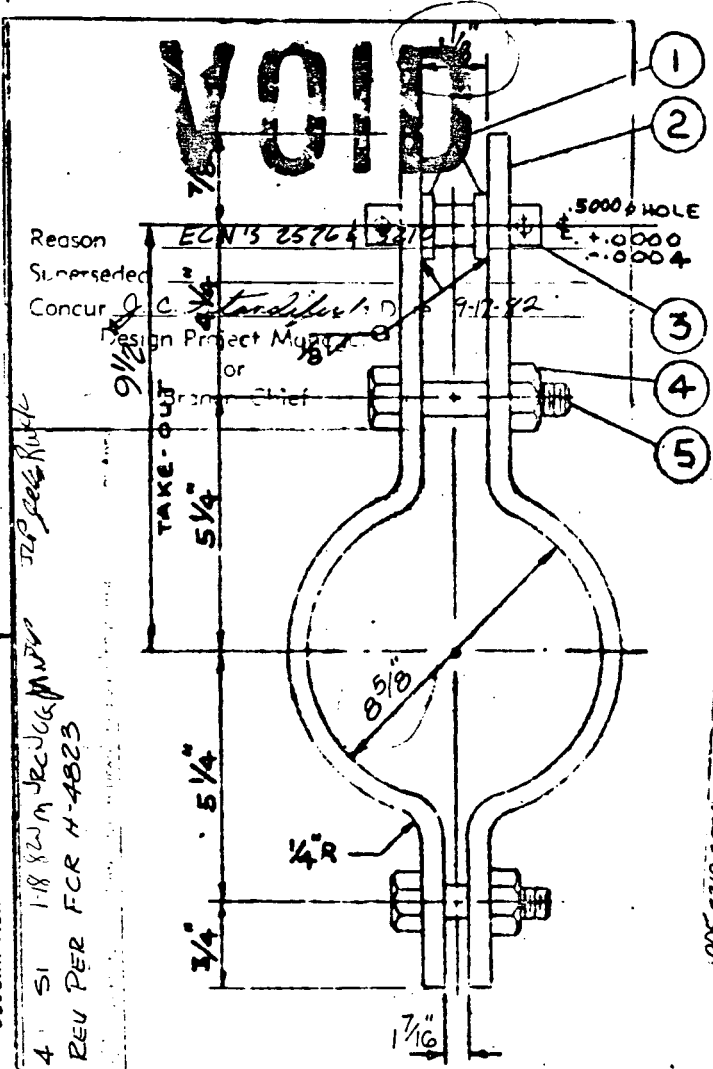


QTY	REQ'D	PART NO.	SIZE	DESCRIPTION	UNIT	MAT'L	SPEC.
1	2	CS	9/16" $\phi$ x 3/16" THK.	WASHER	-	ASTM	A-36
2	2	CS		CLAMP HALVES 3" x 1/4" x 19 1/4"	8		A-36
1	1	AS	1/2" $\phi$ x 2 1/4" LG	PIN W/(2) 1/8" $\phi$ x 1/4" LG COTTERS	0		A-193
2	2	-	1/2" $\phi$	AHH NUT	1		A-307
2	2	-	1/2" $\phi$	BOLT x 2" LG	1		A-307

NOTES: HOT FORM ALL CLAMPS AT 2000°F  
 HOLES FOR BOLTS TO BE AS FOLLOWS:  
 1/16" OVERSIZE FOR  $\phi$ 'S 7/8" AND SMALLER  
 1/8" OVERSIZE FOR  $\phi$ 'S 1" AND LARGER

PROJECT: **NRND**  
 CONTRACT: **83015**  
 DRAWING: **03B-IAFW-R008**  
 SHEET: **2/3**  
 REVISION: **905**  
 UNIT: **1**

93081 R/W P.H. VE M/J Up 30 8/4/90  
 REV AS PER FCR H-5259



905 5210 2576 11/11/90 DWO PWNTR C VCP JAP/RL 35' DEN  
 VOID DRAWING

NOT SUITABLE FOR MICROFILM

RE R1  
 R2  
 R3  
 R4  
 R5

DESCRIPTION  
 4 SI 1-18 X 2 W M REV 10/6/90 M/W  
 REV PER FCR H-4823

DRAVO ISO #E-2880-IC-208-1  
 DRAVO CORPORATION P.O. # E-2879-  
 T.V.A. CONTRACT # 74C38-83015  
 WATTS BAR NUCLEAR PLANT - UNIT # 1

PIPING SYSTEM: **AUX. FEEDWATER**  
 REFERENCE DWG: **47W427-2-0 (PIPP)**  
**48N1221-2-8 (STP)**  
 MARK NO. **03B-IAFW-RB** NO. REQ'D: **1**

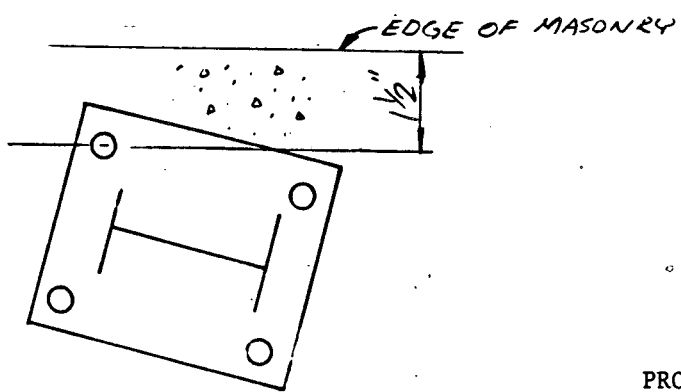
DATE

**BERGEN-PATERSON PIPESUPPORT CORP.**

DRAWN	CHK'D	APP'V	DATE
LR	RR	HJT	5-12-76
JOB NO. 3604			
DWG 03B-IAFW-RB SHEET 2 OF 3 REV 905			
TVA 900 VENDOR RO			

ITEM NO.	NO. REQ'D	PART NO.	SIZE	DESCRIPTION	UNIT		
-	1	SDE	(3) HRS				
-	1	SDD					
-	1	B&T					

743



PROJECT WBHP  
 CONTRACT 83015  
 DRAWING# 038-1AFW-R008  
 SHEET 3/3  
 REVISION 965  
 UNIT 1

**SECTION B-B**

90532 576 9/12/82 DWO: PWN JBS + UJA JWP gels DEN  
 VOI DRAWING

4 SI 118-82JM JRC & JHP JWP gels Ruck  
 REV PER FCR H-4823

3 SI 9-30-81 PEH JRC JWP gels Ruck  
 REV AS PER FCR H-5259

2 SI 4-20-79 CHB KHB DWB PES SA - JWP gels Ruck  
 REV PER FCR M 4671

Rev No.	ECN No.	Date	Design	Drawn	Checked	Supv	Engr	Insp	Subm	Reason	Appr
1	1438	1/31/80	CHB	KHB	DWB	PES	SA			CHANGED DESIGN LOADS SH. (1 OF 5)	

**VOID**

ECN'S 2576 & 3210  
 J.C. Starbuck 9-17-82  
 INFORMATION ONLY  
 RF  
 R1  
 R2  
 R3  
 R4  
 R5

TVA 900 = VENDOR RO LOAD:

DRAVO CORPORATION P.O. # E-2879-

CONTRACTOR  
 T.V.A. CONTRACT # 74C 38-83015

ENGINEER  
 WATTS BAR NUCLEAR PLANT - UNIT #1

CONSUMER

PIPING SYSTEM AUX. FEED WATER

REFERENCE DYC ATN 417-2-0 417021-2-0

MARK NO. 038-1AFW-R3 NO. REQ'D. 1

**BERGEN-PATERSON PIPESUPPORT CORP.**



BERGEN-PATERSON PIPESUPPORT CORP.  
 3604 REV

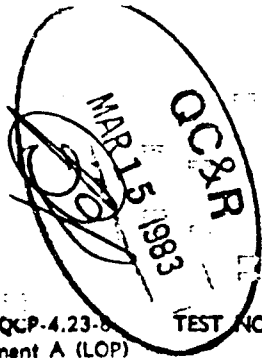
DATE	CHK'D	APPR'D	DATE
LR	RR	HUT	5-12
			3604
			038-1AFW-R3 (3 of 3)

INVOICE CODE

DESCRIPTION

DATE

PHB



D 1003B-03B-1AFW-RA  
COR

WBNP-QCP-4.23-8 TEST NO. 8  
Attachment A (LOP)

SUPPORT FINAL INSPECTION

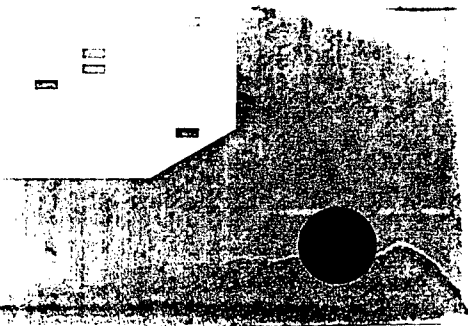
Support ID  
1003B-03B-1AFW-R8

Reference Drawing  
03B-1AFW-R8 Rev. 905

- Accepted (Check)
- Unique Identifier \_\_\_\_\_
- Fabrication \_\_\_\_\_
- Installation \_\_\_\_\_
- \_\_\_\_\_ Lateral
- Gaps N/A \_\_\_\_\_
- Stainless Pipe Penetration \_\_\_\_\_
- Grout \_\_\_\_\_
- Integral Attachments \_\_\_\_\_
- Insulation Saddles or Lugs \_\_\_\_\_
- Stainless Pipe Cleanliness \_\_\_\_\_
- Bolted Connections \_\_\_\_\_
- Cotter Pins \_\_\_\_\_

Remarks: Voided Support  
NOT Installed

Inspected in accordance with  
Rev. 2 of QCP-4.23-8.  
James R. Ferguson 2-27-83  
Inspector Date





Part Number	Quantity	Year	Part Description	Part Number	Notes	Part Description
1003B-03B-1AFW-158	X003-2	95 87	1-47N427-204	901		VCID * HA 08C*
1003B-03B-1AFW-159	X003-2	95 87	1-47N427-204	902		VCID * HF 08P*
1003B-03B-1AFW-165	X003-2	95 28	1-47N427-206	901		* HA 01A* 02A* 03E* 04A* 08V* 09A*
1003B-03B-1AFW-161	X003-2		1-47N427-221	902		* HA 01A* 02A* 03A* 04A* 08E*
1003B-03B-1AFW-162	X003-2		1-47N427-221	901		* HA 01A* 02A* 03E* 04A* 08E* 09A*
1003B-03B-1AFW-163	X003-2	95 87	1-47N427-204	902		VCID * HA 08C*
1003B-03B-1AFW-165	X003-2	95 87	1-47N427-204	902		VCID * HA 08C*
1003B-03B-1AFW-166	X003-2		1-47N427-221	901 H-8846		* HA 01A* 02A* 03E* 04A* 08E*
1003B-03B-1AFW-167	X003-2	95 87	1-47N427-204	901		VCID * HA 08A*
1003B-03B-1AFW-168	X003-2	95 87	1-47N427-204	901		VCID * HA 08A*
1003B-03B-1AFW-169	X003-2	95 87	1-47N427-204	902		VCID * HA 08A*
1003B-03B-1AFW-171	X003-2		1-47N427-204	901		* HA 01A* 02A* 03A* 04A* 08E* 09A*
1003B-03B-1AFW-172	X003-2	95 87	1-47N427-204	902		VCID * HA 08A*
1003B-03B-1AFW-174	X003-2		1-47N427-204	902		VCID * HA 08A*
1003B-03B-1AFW-175	X003-2	95 87	1-47N427-204	902		VCID * HA 08A*
1003B-03B-1AFW-176	X003-2		1-47N427-204	902		VCID * HA 08A*
1003B-03B-1AFW-177	1		1-47N427-204	901		VCID * HA 08A*
1003B-03B-1AFW-179	X003-2		1-47N427-221	903 H-8881/9924		* HA 01A* 02A* 03E* 04A* 08E*
1003B-03B-1AFW-181	1	95 87	1-47N427-204	902		VCID * HA 08A*
1003B-03B-1AFW-182	1	95 87	1-47N427-204	902		VCID * HA 08A*
1003B-03B-1AFW-183	X003-2		1-47N427-221	905 H-10191		* HA 01A* 02A* 03E* 04A* 08E* 09A*
1003B-03B-1AFW-184	X003-2	95 87	1-47N427-204	903		VCID * HA 08A*
1003B-03B-1AFW-185	X001-6	95 92	1-47N427-204	901		* HA 01A* 02C* 03C* 04E* 08C* 09A*
1003B-03B-1AFW-186	X001-6	95 92	1-47N427-204	902 H-9874		* HF 01B* 02C* 03C* 04E* 08E* 09A*
1003B-03B-1AFW-187	X001-6	95 87	1-47N427-204	902		VCID * HA 08C*
1003B-03B-1AFW-189	X001-6		1-47N427-204	901		* HA 02A* 03C* 04A* 08C* 09A*
1003B-03B-1AFW-190	X003-2	95 28	1-47N427-206	905 H-9283/NCR 470980		* HA 01A* 02A* 03E* 04A* 08E* 09A*
1003B-03B-1AFW-191	X001-6	95 92	1-47N427-204	902 H-10231		* HF 01A* 02A* 03E* 04A* 08E*
1003B-03B-1AFW-192	X001-6		1-47N427-204	902		* HA 02A* 03C* 04E* 08C* 09A*
1003B-03B-1AFW-193	1		1-47N427-204	901		VCID * HA 08C*
1003B-03B-1AFW-194	X001-6	95 87	1-47N427-204	904		VCID * HF 08C*
1003B-03B-1AFW-195	M X003-2		1-47N427-203	904		* HA 01A* 02A* 03E* 04A* 08E*
1003B-03B-1AFW-196	X003-2		1-47N427-203	901		* HA 01A* 02A* 03A* 04A* 08E* 09A*
1003B-03B-1AFW-197	X003-2		1-47N427-203	901 H-9219		* HA 01A* 02E* 03E* 04E* 08E* 09A*
1003B-03B-1AFW-198	X003-2		1-47N427-203	902 H-5198 SP		* HA 01A* 02A* 03A* 04A* 08E* 09A*
1003B-03B-1AFW-199	X003-2		1-47N427-203	901		* HA 01A* 02A* 03C* 04E* 08C* 09A*
1003B-03B-1AFW-200	1		1-47N427-206	901		VCID * HA 08A*
1003B-03B-1AFW-201	M X003-2	95 29	1-47N427-202	904		* HA 01A* 02A* 03A* 04E* 08E* 09A*
1003B-03B-1AFW-202	M X003-2	95 29	1-47N427-207	903		* HA 01A* 02E* 03E* 04E* 08E* 09A*
1003B-03B-1AFW-203	X003-2	95 29	1-47N427-207	904		* HA 01A* 02A* 03A* 04E* 08E* 09A*
1003B-03B-1AFW-204	X003-2	95 29	1-47N427-207	904		* HA 01A* 02A* 03A* 04E* 08E* 09A*
1003B-03B-1AFW-205	X003-2	95 29	1-47N427-207	904		* HA 01A* 02A* 03A* 04E* 08E* 09A*
1003B-03B-1AFW-206	M X003-2	95 29	1-47N427-201	901 H-8840		* HA 01A* 02A* 03E* 04A* 08E* 09A*
1003B-03B-1AFW-207	M X003-2	95 29	1-47N427-201	905 H-10175		* HA 01A* 02A* 03E* 04A* 08E* 09A*
1003B-03B-1AFW-208	1		1-47N427-206			VCID * HA 08A*

DIN5031 F-786

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F1718171

Comments pertinent to finding:

At the Black and Veatch inspection, construction of hanger number 03B-1AFW-R9 was not complete. The hanger was being tracked as incomplete by the construction accountability program. Installation of the hanger has now been completed in accordance with the existing Quality Assurance Program and tracked with the site accountability program. Attached is a copy of Quality Assurance inspection documentation, and accountability print out.

Robert M. Boyd  
Program Team Member

11/2/83  
Date

Thomas E. McConnell  
OEDC Program Manager

11/9/83  
Date

Ed Gray Bessley  
Chairman, OEDC Policy Committee

11/4/83  
Date

Black & Veatch Records indicate construction is complete

Classification: Type R Category A

W.J. Ziskman  
Black & Veatch Project Manager

11/21/83  
Date

RE Blandell  
Black & Veatch Senior Review Team Chairman

12/1/83  
Date





WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEWFinding Number F / 7 / 8 / 8 /

C

## Comments pertinent to finding:

See F371 for comments.

References: 03B-1AFW-R11 R902  
47A427-2-34 RO*EU Cole*

Program Team Member

*11/17/83*

Date

*Thomas E. McConnell*

OEDC Program Manager

*11/17/83*

Date

*E. Gray Bassley*

Chairman, OEDC Policy Committee

*11/21/83*

Date

Black &amp; Veatch

*TVA administrative action complete per attached and F371  
information. Construction effort in a documented program  
but should occur completion*

Classification: Type

R

Category

A*W. J. Zibziunas*

Black &amp; Veatch Project Manager

*12/8/83*

Date

*RE Blawie*

Black &amp; Veatch Senior Review Team Chairman

*12/19/83*

Date

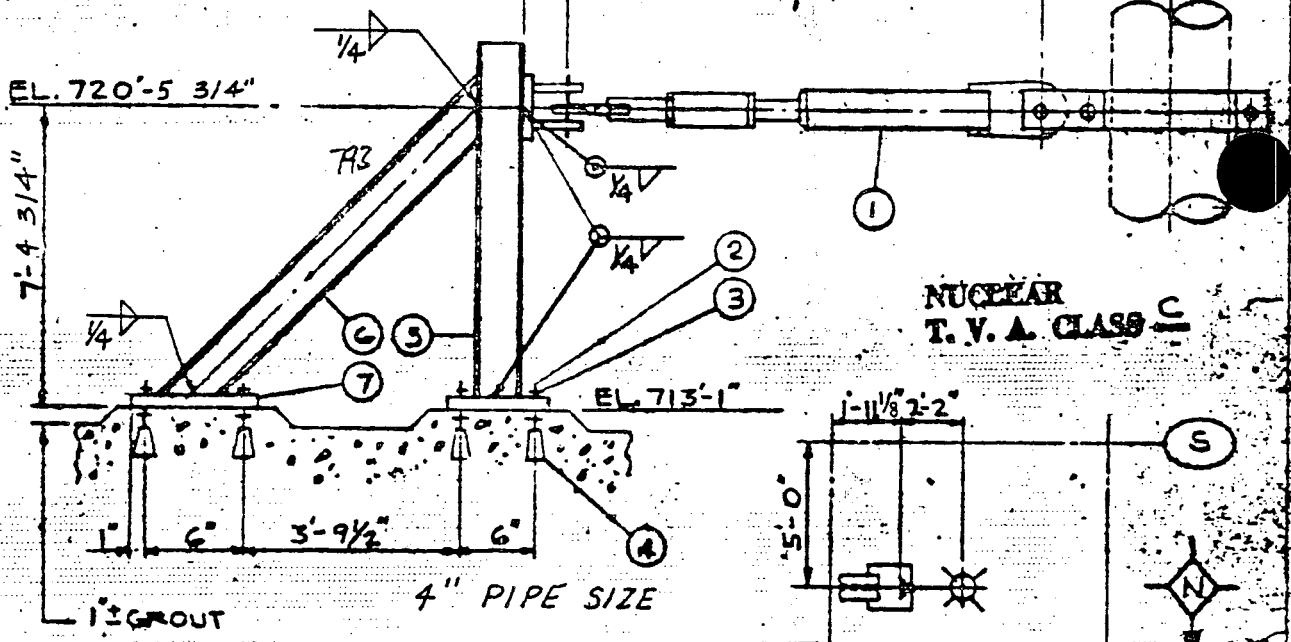
ITEM	QUAN	PART NO	SIZE	DESCRIPTION	WST
1	1	RSSA	8	O.A. STRUT LENGTH = 1'-4 3/4" W/ EA-3 FOR 4" Ø PIPE SIZE	60
2	8		1/2"	Ø X 6" LG. STUD ALL THD.	
3	16		1/2"	Ø AHH NUT	
4	8	512	1/2"	Ø CONCRETE FASTENER (PHILLIPS REDHEAD)	
5	1	CS	W 4 X 13	X LG. AS REQ'D.	96
6	1	CS	W 4 X 13	X LG. AS REQ'D. (CUT AS SHOWN)	113
7	2	CS	8" X 1/2" PL X 8"	LG. W/ (4) 5/8" Ø HOLES	13
		SDE	(3) HRS		
		SDD			
		SG			
		REP	210-3	FOR ITEM 1 (PIN TO PIN ONLY)	
		B&T			

PROJECT WON  
 CONTRACT 93015  
 DRAWING# 03B-IAFW-R011  
 SHEET 11  
 REVISION 902  
 UNIT

\*\* PAINT CARBOZINC II PAINT BY BP EXCEPT REAR BRKT. & PIPE CLAMP TO BE CARBO WELD II  
 SHIP BARE METAL. PAINT CARBOWELD II PRIMER BY TVA.

ISO. 47W427-206-R4  
 JOINT: 353  
 DIRECTION: X  
 TYPE: RR  
 + 1000 #  
 DESIGN LOAD: 810 #

**VOID**  
 Reason DWG DELETED BY VENDOR  
 Superseded By 47A427-2-34  
 Supervisor: [Signature] Date 3/23/82



AWG 901 3210 2576 18-25 VL JBS:FWHDW01-2 F JUB [Signature]  
 REVISED PER ECN'S (INACTIVE CONTRACT)  
 VERIFIED AS APPROVED  
 ECN No. \_\_\_\_\_ Date \_\_\_\_\_ Dsgn. Drwn. Chkd. Issd. Engr. Insp. Subm. Recm. Acpt.

ELEV. LOOKING SOUTH  
 TVA 900 - VENDOR R1

LOCATION PLAN

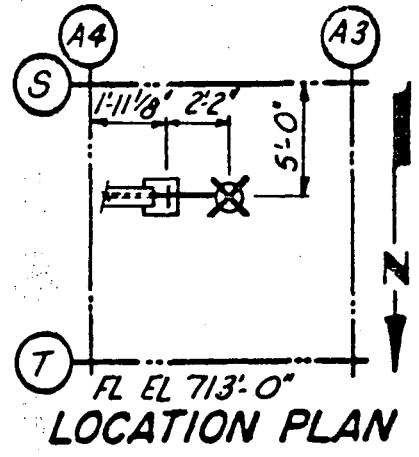
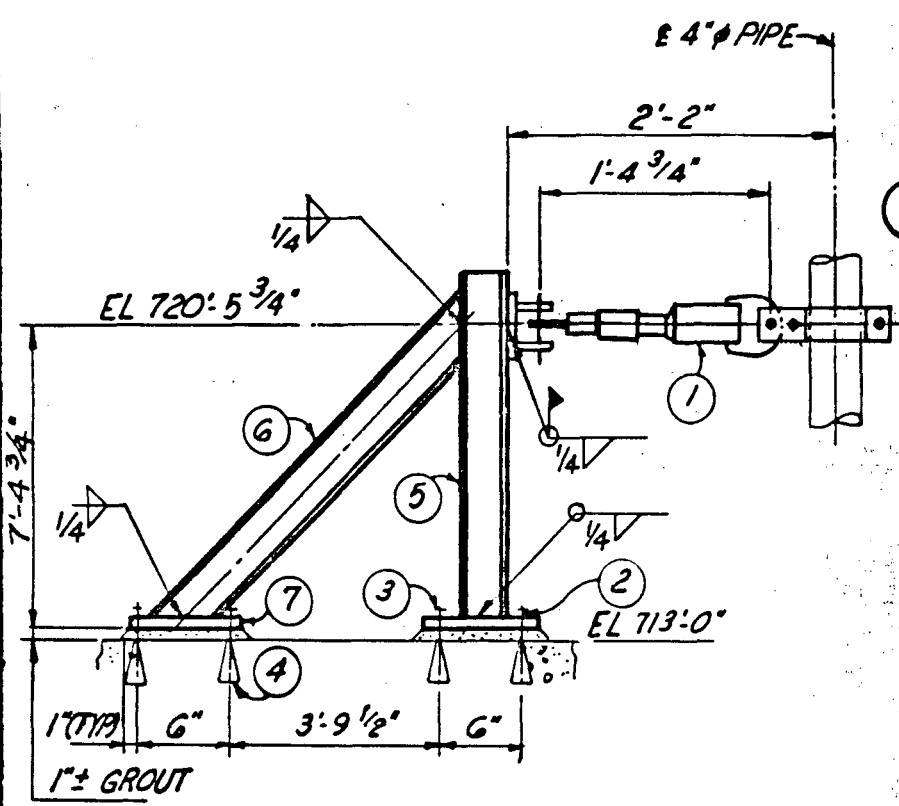
DRAVO CORPORATION P.O. # E-2879  
 T.V.A. CONTRACT # 74C38-83015  
 WATTS BAR NUCLEAR PLANT - UNIT # 1

BERGEN-PATERSON PIPESUPPORT CORP  
 PIPING SYSTEM AUX. FEEDWATER  
 REP. PIPING STRUCTURAL  
 DWGS. 47W427-2-0 48N1221-2-8  
 JOB NO. 3604 FAB NO. 09

VOID DWG RE ECN  
 INVOICE CODE  
 L TVA LTR. MEB-3621 134  
 H&R DELETED  
 DATE 3-9-78  
 REV BY [Signature]

REV BY [Signature] DATE 5-17-76  
 MARK & DWG NO. 03B-IAFW-R11  
 SHEET 1 of 1 REV 902

851



ELEVATION LOOKING NORTH

- NOTES:**
1. FOR GENERAL NOTES SEE 47A427-1
  2. TVA PIPE CLASS C
  3. ANALYSIS REFERENCES  
ISO: 47W427-206 R4  
PROB: N3-3-1A  
JT NO: 353 (RR) X
  4. DESIGN LOAD:  
+ 1000#, - 810#

MF RO

DUPLICATE OF VOID BP 03B-IAFW-R11  
INITIAL ISSUE PER ECN 3511  
NOT TO SCALE

7	2	R 1/2" x 8" x 0'-8" W/ (4) 5/8" Ø HOLES
6	1	W4 x 13 x LG AS REQ'D
5	1	W4 x 13 x LG AS REQ'D
4	8	1/2" Ø CONCRETE FASTNER (PHILLIPS REDHEAD)
3	16	1/2" Ø AHH. NUT.
2	8	1/2" Ø 6" LG STUD ALL THD
1	1	RSSA-8, STRUT LENGTH = 1'-4 3/4" W/EA-3 FOR 4" Ø PIPE

ITEM	QTY	MATERIAL DESCRIPTION FOR ONE SUPPORT	No. SUPPORTS - ONE
------	-----	--------------------------------------	--------------------

SEISMIC CATEGORY I STRUCTURES  
MECHANICAL - UNIT I  
CATEGORY I SUPPORT FOR  
SUPPORT DETAIL 2-34

DESIGN	GL. PENNINGTON	DATE	1-1-73
CHECK	J.S. CHANNARA	DATE	1-1-73
APPR	J. PATRICK	DATE	1-1-73

WATTS BAR NUCLEAR PLANT  
TENNESSEE VALLEY AUTHORITY  
DIVISION OF ENGINEERING DESIGN

APPROVED: [Signature] DATE: 1-3-73  
PROJECT NO: 47A427-2-34  
KINGSVILLE

RO

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F1718191

Comments pertinent to finding:

At the Black and Veatch inspection, construction of hanger number 03B-1AFW-R12 was not complete. The hanger was being tracked as incomplete by the construction accountability program. Installation of the hanger has now been completed in accordance with the existing Quality Assurance Program and tracked with the site accountability program. Attached is a copy of Quality Assurance inspection documentation, and accountability print out.

Robert C. McRay  
Program Team Member

11/2/83  
Date

Thomas E. McConnell  
OEDC Program Manager

11/4/83  
Date

Ed Gray Beasley  
Chairman, OEDC Policy Committee

11/4/83  
Date

Black & Veatch Records indicate hanger is now installed.

Classification: Type R Category A

W.J. Zickman  
Black & Veatch Project Manager

11/21/83  
Date

RE Blandell  
Black & Veatch Senior Review Team Chairman

12/1/83  
Date



858

\* REINSPECTION ON STEUT ONLY PER WA # - 7162  
1-B W/holdings 3-15-83  
INSP. 2-5-83

WBNP-QCP-4.23-8 TEST NO. 8  
Attachment A (LOP)

SUPPORT FINAL INSPECTION

Support ID  
1003B-03B-1AFW-R12

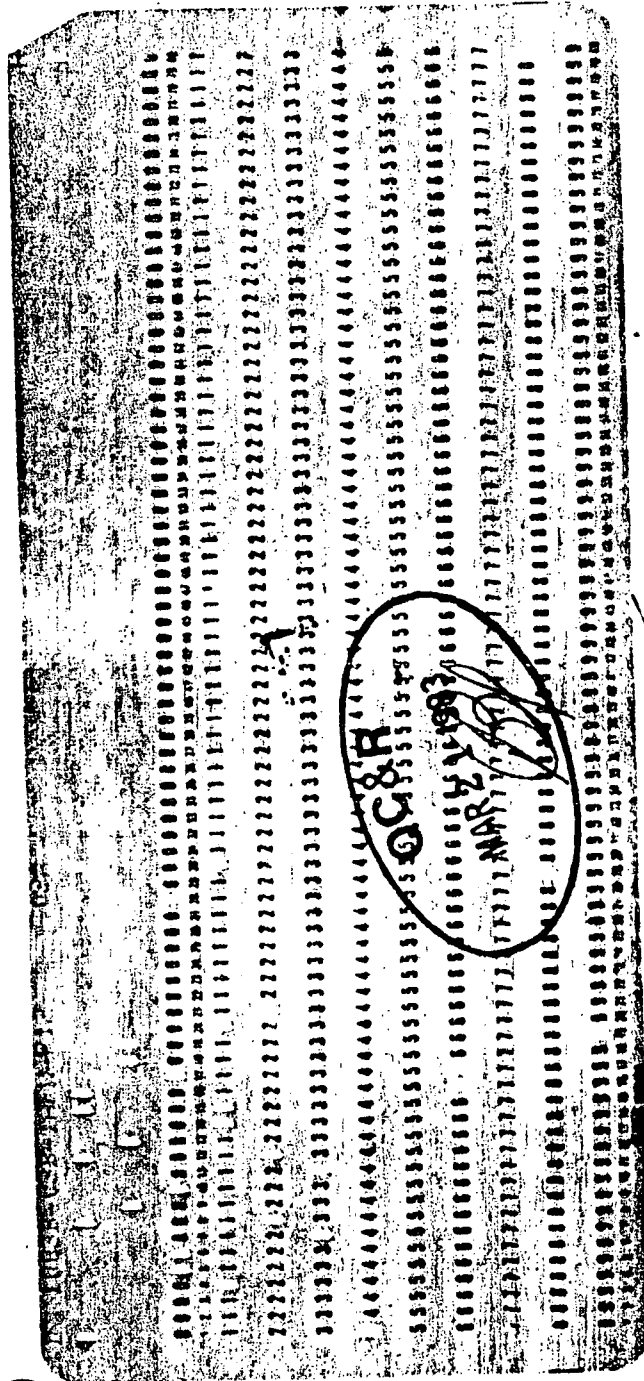
Reference Drawing  
03B-1AFW-R12 Rev. 901

	Accepted (Check)
Unique Identifier	<input checked="" type="checkbox"/>
Fabrication	<input checked="" type="checkbox"/>
Installation	<input checked="" type="checkbox"/>
	Top Bottom Lateral
Gaps	<u>N/A</u> <u>N/A</u> <u>N/A</u>
Stainless Pipe Protection	<input checked="" type="checkbox"/>
Grout	<u>GROUT CARD ISSUED</u>
Integral Attachments	<u>N/A</u>
Insulation Saddle or Lugs	<u>N/A</u>
Stainless Pipe Cleanliness	<input checked="" type="checkbox"/>
Bolted Connections	<input checked="" type="checkbox"/>
Cotter Pins	<input checked="" type="checkbox"/>

Remarks: REF. H8922

Inspected in accordance with  
Rev. 2 of QCP-4.23-8.

Mary G. Mann 3/15/83  
Inspector Date  
INSPECTED 1/12/83



IDENTIFIER	CC	REF	PAG/PEN	DRAWING	REV	DESCRIPTION	STAT	TEST	LIB	SEQUENCE	OF TESTS			
2003A-2-03A-586	2003-00	J003A01	200-02-12				01	HC	01A	02A	03A	04A	05A	08A
2003A-2-03A-585	2003-00	J003A01	0600200-02-12				01	HC	01A	02A	03A	04A	05A	08A
2003A-2-03A-586	2003-00	J003A01	200-02-12				01	HC	01A	02A	03A	04A	07A	08A
2003A-2-03A-587	2003-00	J003A01	200-02-12				03	HC	03A	04A	05A	08A		
2003A-2-03A-588	2003-00	J003A01	200-02-12				01	HC	01A	02A	03A	04A	05A	08A
2003A-2-03A-589	2003-00	J003A01	200-02-12				01	HC	01A	02A	03A	04A	07A	08A
1003B-03B-1AFW-111	2003-2		1-47W427-206		009		*	HA	01A*	02A*	03A*	04A*	04A*	
1003B-03B-1AFW-110	2003-2		1-47W427-206		932		*	HA	01A*	02A*	03A*	04A*	08A*	09A*
1003B-03B-1AFW-110W	M	2003-2	9 752		932	H-8879	02	HA	01A*	02B	03B	04B	08C	09A*
1003B-03B-1AFW-110	2003-2		1-47W427-203		901		*	HA	01A*	02A*	03A*	04B*	08B*	09A*
1003B-03B-1AFW-110	2003-2		1-47W427-203		904		*	HD	03A*	04A*	08B*	09A*		
1003B-03B-1AFW-110	2003-2		1-47W427-203		901		*	HD	03B*	04C*	08C*	09A*		
1003B-03B-1AFW-110	2003-2		1-47W427-203		901	H-10249	*	HA	01B*	02B*	03B*	04B*	08B*	09A*
1003B-03B-1AFW-110	2003-2		1-47W427-203		901		*	HD	03B*	04C*	08C*	09A*		
1003B-03B-1AFW-110	2003-2		1-47W427-203		901		03	HA	02A*	03A*	04A*	08C	09A*	
1003B-03B-1AFW-110	2003-2		1-47W427-203		901		08	HA	01A*	02A*	03A*	04A*	08B	09A*
1003B-03B-1AFW-110	2003-2		1-47W427-203		901		08	HA	01A*	02B*	03B*	04B*	08C	09A*
1003B-03B-1AFW-111	2003-2		1-47W427-206		902	V010	*	HA	01A*					
1003B-03B-1AFW-110	M	2003-2	1-47W427-203		901		*	HA	01A*	02A*	03A*	04A*	08C	09A*
1003B-03B-1AFW-111	2003-2		1-47W427-203		901		*	HA	01A*	02A*	03A*	04A*	08A*	
1003B-03B-1AFW-112	2003-2		1-47W427-201		901	H-4450PL	*	HA	01A*	02B*	03B*	04B*	08C	09A*
			/01H											
1003B-03B-1AFW-113	2003-2		1-47W427-201		901		*	HA	01A*	02A*	03B*	04A*	08B*	09A*
			/02H H/D, 13H											
1003B-03B-1AFW-113	2003-2		1-47W427-201		901		*	HA	03A*	04A*	08A*			
			/04H H/C											
1003B-03B-1AFW-113	2003-2		1-47W427-201		901	H-4732	*	HD	03A*	04A*	08A*	09A*		
			/05H H/D											
1003B-03B-1AFW-113	2003-2		1-47W427-201		903		*	HA	01A*	02A*	03B*	04A*	08B*	09A*
			/06H H/B											
1003B-03B-1AFW-117	2003-2		1-47W427-201		901	H-4603	*	HD	03A*	04A*	08A*			
			/07H H/C											
1003B-03B-1AFW-110	2003-2		1-47W427-201		901	H-4601	*	HA	01A*	02B*	03B*	04A*	08B*	09A*
1003B-03B-1AFW-115	2003-2		1-47W427-201		901	H-4600	*	HA	01A*	02A*	03A*	04A*	08A*	09A*
1003B-03B-1AFW-112	2003-2		1-47W427-201		901		*	HD	03A*	04A*	08A*	09A*		
			/08H H/C											
1003B-03B-1AFW-121	2003-2		1-47W427-201		904		*	HA	01A*	02A*	03B*	04A*	08B*	09A*
1003B-03B-1AFW-122	2003-2		1-47W427-201		901	H-4650	*	HA	01A*	02A*	03B*	04A*	08B*	09A*
1003B-03B-1AFW-123	2003-2		1-47W427-201		904		*	HA	01A*	02A*	03A*	04A*	08A*	09A*

DINGSOB F-789

FB

855

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F1719101

Comments pertinent to finding:

At the Black and Veatch inspection, construction of hanger number 03B-1AFW-R18 was not complete. The hanger was being tracked as incomplete by the construction accountability program. Installation of the hanger has now been completed in accordance with the existing Quality Assurance Program and tracked with the site accountability program. Attached is a copy of Quality Assurance inspection documentation, and accountability print-out.

Rand C. McKay  
Program Team Member

11/3/83  
Date

James E. McConnell  
OEDC Program Manager

11/4/83  
Date

E. Gray Beasley  
Chairman, OEDC Policy Committee

11/4/83  
Date

Black & Veatch *The form 3 information as clarified by TVM letter dated 12/8/83 (DIN 1064 attached) supports close out of this item*

Classification: Type R Category A

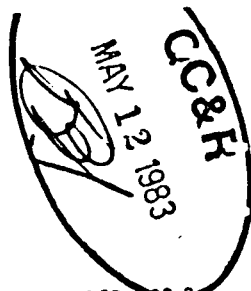
W. J. Zitzman  
Black & Veatch Project Manager

12/14/83  
Date

R. E. Blardell  
Black & Veatch Senior Review Team Chairman

12/27/83  
Date





WBNP-C-2-4-83-0 TEST NO. 8  
Attachment A (LOP)

SUPPORT FINAL INSPECTOR  
Support ID  
1003B-03B-1AFW-R18

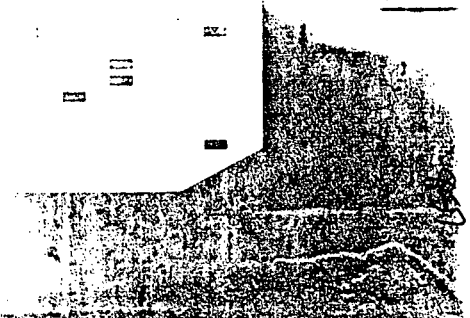
Reference Drawing  
03B-1AFW-R18 Rev. 902

	Accepted (Check)									
Unique Identifier	<input checked="" type="checkbox"/>									
Fabrication	<input checked="" type="checkbox"/>									
Installation	<input checked="" type="checkbox"/>									
Gaps	<table border="0"> <tr><td>Top</td><td>Bottom</td><td>Latent</td></tr> <tr><td>5/32</td><td>0"</td><td>NA</td></tr> <tr><td></td><td></td><td>NA</td></tr> </table>	Top	Bottom	Latent	5/32	0"	NA			NA
Top	Bottom	Latent								
5/32	0"	NA								
		NA								
Stainless Pipe Protection	<input checked="" type="checkbox"/>									
Grout	<input checked="" type="checkbox"/>									
Integral Attachments	NA									
Insulation Saddle or Lugs	NA									
Stainless Pipe Cleanliness	NA									
Bolted Connections	NA									
Cotter Pins	NA									

Remarks: FCR-H-9124, WC#-6729,  
Insp. 2-5-83

Inspected in accordance with  
Rev. 7 SEP 4 13-8  
J. B. Whitford 5/7/83  
Inspector Date

1003B-03B-1AFW-R18  
03B



1003B-03B-1AFW-4131	0003-2	1-47W427-201	001	ND 03A* 04A* 08A*
1003B-03B-1AFW-4132	0003-2	1-47W427-201	001	ND 03B* 04B* 08B*
1003B-03B-1AFW-4133	0003-2	1-47W427-201	001	H-7656CH-6938 ND 03B* 04B* 08B*
1003B-03B-1AFW-414	1	1-47W427-206	903	VDIO * HB 08A*
1003B-03B-1AFW-4143	0003-2	1-47W427-201	001	H-7844 HA 01B* 02B* 03B* 04B* 08B* 09A*
1003B-03B-1AFW-4141	0003-2	1-47W427-201	001	H-6742/H-7346 ND 03A* 04A* 08A*
1003B-03B-1AFW-4146	0003-2	1-47W427-202	003	H-7787 HA 01A* 02A* 03A* 04A* 08A*
1003B-03B-1AFW-4147	0003-2	1-47W427-202	001	HCR 4454R R1 HA 01A* 02A* 03A* 04A* 08B* 09A*
1003B-03B-1AFW-4148	0003-2	1-47W427-202	001	HO 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4149	0003-2	1-47W427-202	904	4622R HA 01A* 02B* 03B* 04A* 04B*
1003B-03B-1AFW-415	0003-2	1-47W427-202	903	HB 02A* 03A* 04A* 08B* 09A*
1003B-03B-1AFW-4150	0003-2	1-47W427-202	901	HB 02A* 03C 04A* 08C 09A*
1003B-03B-1AFW-4151	0003-2	1-47W427-202	902	HE 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4152	0003-2	1-47W427-202	901	HA 01A* 02A* 03A* 04A* 08B* 09A*
1003B-03B-1AFW-4153	0003-2	1-47W427-202	001	HO 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4154	0003-2	1-47W427-202	001	HB 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4155	0003-2	1-47W427-202	001	HB 02A* 03A* 04A* 08B* 09A*
1003B-03B-1AFW-4156	0003-2	1-47W427-202	001	H-4811 HE 02A* 03A* 04A* 08A*
1003B-03B-1AFW-4157	0003-2	1-47W427-202	003	H-6310 HB 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4158	0003-2	1-47W427-202	901	HB 02A* 03A* 04B* 08A* 09A*
1003B-03B-1AFW-4159	0003-2	1-47W427-202	001	HCR 4454R R1 HE 03B* 04A* 08B*
1003B-03B-1AFW-416	1	1-47W427-206	903	VCIO * HE 08B*
1003B-03B-1AFW-4161	0003-2	1-47W427-202	001	HE 02A* 03A* 04A* 08A*
1003B-03B-1AFW-4162	0003-2	1-47W427-202	001	H-5944 HB 02A* 03A* 04A* 08A*
1003B-03B-1AFW-4163	0003-2	1-47W427-202	001	H67937/1579/BL73/8334 HA 01B* 02B* 03B* 04B* 08B*
1003B-03B-1AFW-4164	0003-2	1-47W427-202	007	HB 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4165	0003-2	1-47W427-202	001	HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4166	0003-2	1-47W427-202	001	H-4956 HA 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4167	0003-2	1-47W427-202	001	H-4940/3838R HB 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4168	0003-2	1-47W427-202	903	HB 02A* 03A* 04A* 08B* 09A*
1003B-03B-1AFW-4169	0003-2	1-47W427-202	004	HA 01A* 02A* 03A* 04A* 08B* 09A*
1003B-03B-1AFW-417	0003-2	1-47W427-202	001	HB 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4170	0003-2	1-47W427-202	001	H-7110 HA 01A* 02A* 03A* 04A* 08A*
1003B-03B-1AFW-4171	0003-2	1-47W427-202	001	HA 01A* 02A* 03A* 04A* 08B* 09A*
1003B-03B-1AFW-4172	0003-2	1-47W427-202	001	HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFW-4173	0003-2	1-47W427-202	001	H-8484 HA 01A* 02A* 03A* 04A* 08B* 09A*
1003B-03B-1AFW-4174	0003-2	1-47W427-202	002	H-6634 HA 03A* 04A* 08A*
1003B-03B-1AFW-4175	0003-2	1-47W427-202	004	HA 01A* 02A* 03A* 04A* 08B* 09A*
1003B-03B-1AFW-418	0003-2	1-47W427-202	001	HA 01A* 02A* 03A* 04A* 08B* 09A*
1003B-03B-1AFW-4181	0003-2	1-47W427-207	001	HA 01A* 02A* 03A* 04A* 08A* 09A*

DIN5034 F-790

TENNESSEE VALLEY AUTHORITY  
KNOXVILLE TENNESSEE 37902

10520DIN1064  
10520.14.0000

459

400 West Summit Hill Drive, W10C126

DEC 8 1983

Black & Veatch  
11401 Lamar Avenue  
Overland Park, Kansas 66211

Attention: Mr. W. J. Zidziunas

Gentlemen:

PERSONAL SERVICES CONTRACT NO. TV-60052A

The following are TVA responses to the questions asked in your November 18, 1983, telecon with H. E. McConnell.

F785 - The finding was generated against hanger 03B-1AFW-RC05, but documentation indicates hanger 03B-1AFW-R5.

What is the difference between the two drawings? I have verified the original hanger number by reviewing attachments to DRR 564 DIN 3600.

The correct identification number for the hanger should be 03B-1AFW-R5; the drawing number is 03B-1AFW-R005. TVA's computer tracking program does not include the two zeros. Enclosed is a copy of drawing 03B-1AFW-R005 that should be attached to finding F-785.

F790 - The finding indicated two conditions. The first was that the hanger was incomplete. The second was that a dimension was incorrect. TVA addressed completion of the hanger by submitting a copy of the test No. 8 ticket. How was the dimension problem addressed?

There is no dimension problem. The drawing shows the hanger referenced off of the column centerline as 5' 10"; the measurement to the wall face is 5' 0". Installation was verified according to the drawing.

F825 - The date on the Test card predates the TVA Form 1 which states the inspection was not complete (11/5/82 versus 11/24/83). A formal explanation or later test records are required to clarify or resolve the issue.

WJZ MJR

RECEIVED P & V DEC 09 1983 PROJECT # <u>10520</u>
---------------------------------------------------------

860

2

Black & Veatch

DEC 8 1983

Enclosed is a copy of later test records for F825.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

*H E McConnell*

to John A. Raulston  
Chief Nuclear Engineer

Enclosures



WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEWFinding Number 1F1719111

## Comments pertinent to finding:

At the Black and Veatch inspection, construction of hanger number 03B-1AFW-R19 was not complete. The hanger was being tracked as incomplete by the construction accountability program. Installation of the hanger has now been completed in accordance with the existing Quality Assurance Program and tracked with the site accountability program. Attached is a copy of Quality Assurance inspection documentation, and accountability print out.

Rand C. McKay  
Program Team Member

11/3/83  
Date

Samuel E. McConnell  
OEDC Program Manager

11/4/83  
Date

E. Gray Beersly  
Chairman, OEDC Policy Committee

11/4/83  
Date

Black & Veatch Records indicate construction complete

Classification: Type R Category A

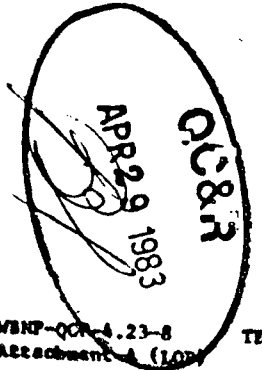
W. J. Zidzimas  
Black & Veatch Project Manager

11/21/83  
Date

R E Blandell  
Black & Veatch Senior Review Team Chairman

12/1/83  
Date

802


  
 APR 29 1983  
 C.C.R.

WSHF-QCP-4.23-8 TEST NO. 8  
 Attachment A (LOD)

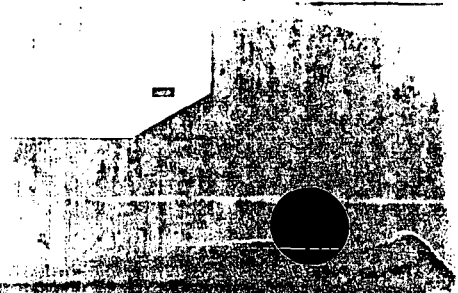
**SUPPORT FINAL INSPECTION**

SUPPORT ID  
10030-03B-1AFW-R19  
 Reference Drawing  
03B-1AFW-R19 Rev 901  
 Accepted (Check)

- Unique Identifier
- Fabrication
- Installation
- Caps NA NA NA
- Stainless Pipe Protection
- Grout
- Integral Attachments NA
- Insulation Baffle or Lags NA
- Stainless Pipe Cleanliness
- Bolted Connections
- Cotter Pins

Remarks: FCR - H-8923.  
INSP. 2-22-83  
 Inspected in accordance with  
 Rev 2 of QCP-4.23-8  
A. B. [Signature] 4/24/83  
 Inspector Date

100-100-100-100-100



IDENTIFICATION	CL	WEEK	PROJ/PCN	DRAWING	REV	DESCRIPTION	STAT	TEST LTD	SEQUENCE OF TESTS
1003B-03B-1AFA-4182	1003-2	9752	1-47H421	207	903				* HA 01A* 02C* 03C* 04C* 09C* 09A*
1003B-03B-1AFA-4182	1003-2		1-47H421	207	901				* HA 01A* 02A* 03A* 04A* 08A*
1003B-03B-1AFA-4184	1003-2		1-47H421	207	901	H-4553 NCR 44548 RI			* HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFA-4185	1003-2		1-47H421	207	901	H-7786			* HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFA-4186	1003-2		1-47H421	207	901	NCR 44548 FI			* HF 01A* 02A* 03A* 04A* 05B* 06A*
1003B-03B-1AFA-4187	1003-2		1-47H421	207	901				* HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFA-4188	1003-2	9671	1-47H421	207	904		VC10		* HA 08C*
1003B-03B-1AFA-4189	1003-2		1-47H421	207	901		VC10		* HA 08C*
1003B-03B-1AFA-4190	1003-2	9728	1-47H421	207	900	H-13572/160 44548			* HA 01A* 02B* 03B* 04B* 08C*
1003B-03B-1AFA-4191	1003-2		1-47H421	207	901				* HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFA-4192	1003-2		1-47H421	207	902				* HA 01A* 02A* 03A* 04A* 04A* 09A*
1003B-03B-1AFA-4193	1003-2		1-47H421	207	900				* HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFA-4194	1003-2		1-47H421	207	900				* HA 01A* 02A* 03A* 04A* 08A*
1003B-03B-1AFA-4195	1003-2	9770	1-47H421	207	900				* HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFA-42	1003-2		1-47H421	206	904				* HA 01A* 02A* 03A* 04A* 03B*
1003B-03B-1AFA-420	1003-2	9677	1-47H421	206	901	H-8924			* HA 01A* 02A* 03A* 04A* 08A*
1003B-03B-1AFA-4200	1003-2		1-47H421	200	900				* HA 01A* 04A* 08B*
1003B-03B-1AFA-4204	1003-2		1-47H421	200	900	H-47057/H-4655			* HD 01A* 04A* 08A* 09A*
1003B-03B-1AFA-4204	1003-2		1-47H421	200	901	H-7536			* HA 01A* 02A* 03E* 04A* 08B*
1003B-03B-1AFA-4205	1003-2		1-47H421	200	003	H-4667/H-4700			* HD 03A* 04A* 08A* 09A*
1003B-03B-1AFA-4206	1003-2	9671	1-47H421	200	901	H-6767/H-423			* HA 02A* 03A* 04A* 08C* 09A*
1003B-03B-1AFA-4209	1003-2		1-47H421	200	902		VC10		* HA 09A*
1003B-03B-1AFA-4209	1003-2		1-47H421	201	905				* HE 01A* 02B* 03B* 04B* 08A* 09A*
1003B-03B-1AFA-4209	1003-2	9677	1-47H421	201	902	H-7024			* HA 01A* 02A* 03B* 04C* 08C*
1003B-03B-1AFA-4209	1003-2		1-47H421	202	901	H-6789			* HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFA-4210	1003-2		1-47H421	202	904				* HA 03A* 04B* 08C* 09A*
1003B-03B-1AFA-4211	1003-2		1-47H421	201	900				* HA 01A* 02A* 03A* 04A* 08C* 09A*
1003B-03B-1AFA-4211	1003-2		1-47H421	201	900				* HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFA-4211	1003-2		1-47H421	204	900				* HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFA-4211	1003-2		1-47H421	204	900				* HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFA-4211	1003-2	9772	1-47H421	204	901	H-12055			* HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFA-4216	1003-2		1-47H421	204	902				* HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-1AFA-4218	1003-2		1-47H421	204	901				* HA 01A* 02B* 03B* 04B* 08B* 09A*

DIN5035 F-791

488

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEWFinding Number F1719121

## Comments pertinent to finding:

At the Black and Veatch inspection, construction of hanger number 03B-1AFW-R20 was not complete. The hanger was being tracked as incomplete by the construction accountability program. Installation of the hanger has now been completed in accordance with the existing Quality Assurance Program and tracked with the site accountability program. Attached is a copy of Quality Assurance inspection documentation, and accountability print out.

Rand C McRae  
Program Team Member

11/2/83  
Date

Thomas E McConnell  
OEDC Program Manager

11/4/83  
Date

B Gray Beasley  
Chairman, OEDC Policy Committee

11/4/83  
Date

Black & Veatch Records indicate installation complete

Classification: Type R Category A

W. J. Ziberman  
Black & Veatch Project Manager

11/21/83  
Date

RE Blawie  
Black & Veatch Senior Review Team Chairman

12/1/83  
Date



1003B-03B-1AFW-4184	0003-2	9752	1-47W427-207	903		HA 01B 02C 03C 04C 08C 09A
1003B-03B-1AFW-4185	0003-2		1-47W427-207	901		HA 01A 02A 03A 04A 08A
1003B-03B-1AFW-4186	0003-2		1-47W427-207	901	H-4553 NCR 4454R R1	HA 01A 02A 03A 04A 08A 09A
1003B-03B-1AFW-4185	0003-2		1-47W427-207	901	H-7786	HA 01A 02A 03A 04A 08A 09A
1003B-03B-1AFW-4186	0003-2		1-47W427-207	901	NCR 4454R R1	HE 01A 02B 03A 04A 05B 08C
1003B-03B-1AFW-4187	0003-2		1-47W427-207	901		HA 01A 02A 03A 04A 08A 09A
1003B-03B-1AFW-4188	0003-2	9671	1-47W427-207	904	VCID	HA 08C
1003B-03B-1AFW-4189	1		1-47W427-207	901	VCID	HA 08A
1003B-03B-1AFW-419	0067-22		1-47W427-206	901	H-8923	HA 01A 02A 03A 04A 08A
1003B-03B-1AFW-4190	1		1-47W427-207	902	VCID	HA 08A
1003B-03B-1AFW-4191	0003-2	9752	1-47W427-207	900	H-10572/NCF 4455P	HA 01B 02B 03B 04B 09C
1003B-03B-1AFW-4192	0003-2		1-47W427-207	901		HA 01A 02A 03A 04A 08A 09A
1003B-03B-1AFW-4194	0003-2		1-47W427-207	902		HA 01A 02A 03A 04A 09A 09A
1003B-03B-1AFW-4195	0003-2		1-47W427-207	903		HA 01A 02A 03A 04A 08A 09A
1003B-03B-1AFW-4196	0003-2		1-47W427-207	903		HA 01A 02A 03A 04A 08A
1003B-03B-1AFW-4197	0003-2	9796	1-47W427-207	903		HA 01A 02A 03A 04A 08A 09A
1003B-03B-1AFW-42	0003-2		1-47W427-206	904		HA 01A 02A 03A 04A 08A 09A
1003B-03B-1AFW-4200	0003-2		1-47W427-200	905		HD 03A 04A 08B
1003B-03B-1AFW-4202	0003-2		1-47W427-200	903	H-5705/H-4686	HE 01A 02A 03A 04A 08A
1003B-03B-1AFW-4204	0003-2		1-47W427-200	901	H-7506	HA 01A 02A 03A 04A 08A
1003B-03B-1AFW-4203	0003-2		1-47W427-203	903	H-4687/H-4700	HD 03A 04A 08A 09A
1003B-03B-1AFW-4204	0003-2	9871	1-47W427-200	901	H-6767/H-423	HA 02A 03A 04A 08C 09A
1003B-03B-1AFW-4205	1		1-47W427-200	902	VCID	HA 09A
1003B-03B-1AFW-4206	0003-2		1-47W427-201	906		HE 01A 02B 03A 04A 05B 08A 09A
1003B-03B-1AFW-4208	0003-2	9617	1-47W427-201	902	H-9024	HA 01A 02A 03A 04C 08C
1003B-03B-1AFW-4209	0003-2		1-47W427-202	901	H-6789	HA 01A 02A 03A 04A 08A 09A
1003B-03B-1AFW-4210	0003-2		1-47W427-202	904		HD 03A 04B 08C 09A
1003B-03B-1AFW-4211	0003-2		1-47W427-201	903		HA 01A 02A 03A 04A 08C 09A
1003B-03B-1AFW-4212	0003-2	9592	1-47W427-202	902		HA 01A 02A 03A 04A 08A 09A
1003B-03B-1AFW-4213	0001-8		1-47W427-204	903		HE 01A 02A 03C 04B 05B 08C 09A
1003B-03B-1AFW-4214	0001-6	9752	1-47W427-204	901	H-10535	HE 01A 02A 03C 04A 05A 08C
1003B-03B-1AFW-4216	0001-6		1-47W427-204	902		HE 01A 02A 03A 04A 05A 08B
1003B-03B-1AFW-4217	0001-6		1-47W427-204	903		HE 01A 02B 03B 04B 05B 08B
1003B-03B-1AFW-4219	0001-6		1-47W427-204	902	H-9541	HE 01A 02A 03A 04A 05A 08A 09A
1003B-03B-1AFW-422	0003-2		1-47W427-206	900		HD 03A 04A 08A 09A
1003B-03B-1AFW-4221	0003-2	9617	1-47W427-212	904	H-7512	HA 01A 02A 03B 04B 08B 09A
1003B-03B-1AFW-4222	0003-2		1-47W427-212	901		HA 01A 02A 03A 04A 08C 09A
1003B-03B-1AFW-4223	0003-2		1-47W427-212	904	H-7527	HA 01A 02A 03A 04A 08B 09A
1003B-03B-1AFW-4224	0001-2	9528	1-47W427-212	902		HD 03A 04B 08A
1003B-03B-1AFW-4225	0003-2		1-47W427-212	902	H-8843	HD 03A 04A 08A
1003B-03B-1AFW-4226	0003-2		1-47W427-212	903		HD 02A 03A 04A 08A 09A

DIM5036 F-772

10520DIN5120  
10520.92.0000  
ref: 10520DIN4321

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F/7/9/3/

O-PL

Comments pertinent to finding:

Black and Veatch finding number F793, support number 03B-AFW-R25, was investigated and resolved per NCR number 4523R and the attached inspection documentation.

*Rand McKee*  
Program Team Member

11/9/87  
Date

*Thomas E. McConnell*  
OEDC Program Manager

11/14/83  
Date

*MS Martin for Ed Beasley*  
Chairman, OEDC Policy Committee

11/18/83  
Date

Black & Veatch *The attached documentation supports close out of this item*

Classification: Type R Category A

*W.J. Zidzunas*  
Black & Veatch Project Manager

12/6/83  
Date

*R.E. Blanchell*  
Black & Veatch Senior Review Team Chairman

12/19/83  
Date

WBN 830122. 147

DIVISION OF CONSTRUCTION  
NONCONFORMING CONDITION REPORT

WBNP-QC-1.02 R5  
Attachment A  
LOP  
Page 1 of 2

1A. Item and CAQ Description, and Apparent Cause:  Seismic pipe support 03B-1APW-R25.	1B. NCR No.: 4523R	Rev. 0
	1C. REF. NR or AUDIT No.: N/A	
	1D. PLANT: WBNP	
	1E. UNIT: 1	
	1F. SYSTEM: 03	
	1G. ASME CODE: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
	1H. CONTRACT No.: N/A	
	1I. INITIATING UNIT: HEU	

Loose concrete was found behind the base plate of the above mentioned support during the System 03 review by Black and Veatch (Finding F793).

Upon subsequent inspection, the concrete was found to be damaged around the shell of the northwest expansion anchor (Lot H 4631). The 1/2" anchor, which was pull tested without failure 11/21/81, failed when retested subsequent to the Black and Veatch review. All other 03B-1APW-R25 expansion anchors were pull tested subsequent to the review and were found to be acceptable.



1. Vendor Name: N/A Address (City and State): N/A

2. Initiator: *[Signature]* Date: 12/14/82 Approver: *[Signature]* Date: 1/15/83

3A. Significant CAQs:  Yes  No Construction Engineer: *[Signature]* Date: 12/20/82

Signature: \_\_\_\_\_ Title & Organization: \_\_\_\_\_ Date: \_\_\_\_\_

If Significant, NBS-NLS Contact: \_\_\_\_\_ Date: \_\_\_\_\_ By: \_\_\_\_\_

3B. For Significant CAQ:

1. Describe Root Cause: \_\_\_\_\_

2. This is a Generic CAQ:  Yes  No (If yes, describe): \_\_\_\_\_



Prepared by: \_\_\_\_\_ Date: \_\_\_\_\_ Supervisor: \_\_\_\_\_ Date: \_\_\_\_\_



NCR NO.: 45238 R 0

Attachment A  
Form  
Page 1 of 2

26

4A. Disposition:  Rework  Repair  Use As Is  Reject  Other  
(Check Block and Detail Below)

Rework in accordance with the following procedures: QCP 1.14, QCP 1.47, QCP 1.42-2 and QCP 2.02.

4B. Action Required to Prevent Recurrence: (For Significant CAO's Only)

N/A

4C. Date for Completion of all actions to close NCR (For Significant CAO's only)

Recommended By: James R. Brown Date 12/14/82  
James R. Brown 12/15/82

5.  Approved:  As Detailed in 4 above  Other (See Continuation Page)

Referred to Design Project Organization (DPO): DPO Coordination Contact N/A

Construction Engineer Ed Bush Date 12-20-82

6. Concurrence of Designated QA Reviewer for Action Required to Prevent Recurrence \_\_\_\_\_ Date \_\_\_\_\_

7.  Approved:  As Detailed in 4 above  Other (See Continuation Page)

Design Project Organization: \_\_\_\_\_ Date \_\_\_\_\_

8. Approved Disposition Completed, and if applicable, Item released from Nonconforming Status

Responsible Individual Shirley Jones Date 2-12-83 Approved by James R. Brown Date 2-12-83

9. NCR Closed (Includes completion of actions required to prevent recurrence for significant NCR's)

Construction Engineer James R. Brown Date 5-18-83

10. Reviewed and Accepted By:

WON 830523 113

Authorized NCR Issuance Date

11. Distribution:

Site QA Records File  
Construction Engineer  
CONST QA Branch  
QA Manager, OEDC  
MEDS  
Design Project Organization  
EN DES NEB - Codes, Standards,  
and Materials Section (Code Items Only)

NRC Resident Inspector  
(Significant NCR's Only)  
AWI (Code Items Only)  
EN DES NEB-NLS  
(Significant NCR's Only)  
NSRS (Significant NCR's Only)

920

WBNP-QCP-1.14  
Attachment F  
LOP

**BOLT ANCHOR INSPECTION**

DRAWING NO 03B-1AFW-R25 REV 903

LOT NUMBER H 9204

ALL ANCHOR TYPES	ACCEPTABLE
Concrete Quality .....	<input checked="" type="checkbox"/>
Correction Location, Spacing and Side Cover .....	<input checked="" type="checkbox"/>
Perpendicularity .....	<input checked="" type="checkbox"/>
<b>WELDED BOLTS ONLY</b>	
Anchor Length .....	<input checked="" type="checkbox"/>
Attachment to Wall .....	<input checked="" type="checkbox"/>
Anchor Projection .....	<input checked="" type="checkbox"/>
Concrete Wall Thickness .....	<input checked="" type="checkbox"/>
<b>GRouted ANCHORS ONLY</b>	
Proper Mix .....	<input checked="" type="checkbox"/>
Anchor Projection .....	<input checked="" type="checkbox"/>
Embedded Nut Sealed .....	<input checked="" type="checkbox"/>

Inspected and accepted in accordance with  
Rev. 12 of WBNP-QCP-1.14, 1.14  
By: Jed Welloughby Date: 4-29-83

INSPECTED 2-9-83

FCR-49322

UNIQUE IDENTIFIER

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	0	3	B	-	0	3	B	-	1	A	F	W	-	R	2	5					

OIC  
AWD  
4-30-83

QC&R  
MAY - 5 1983  
Agm



218

B-level  
Suppliment on  
Item #6 of Rework  
All others by J. Cooper  
12-2-81

WBNP-QCP-4.23-8 TEST NO. 8  
Attachment A (LOP)

SUPPORT FINAL INSPECTION

Support ID  
1003B-03B-IAFW-R25

Reference Drawing  
03B-IAFW-R25 Rev. 903

Accepted  
(Check)

Unique Identifier   
Fabrication   
Installation

Top Bottom Lateral  
Gaps N/A --- N/A  
Stainless Pipe Protection ---  
Grout ---  
Integral Attachments ---  
Insulation Saddle or Lugs ---  
Stainless Pipe Cleanliness ---  
Bolted Connections   
Cotter Pins N/A

Remarks: Inspection done  
2-12-83 WR# 4874

Inspected in accordance with  
Rev. 2 of QCP-4.23-8.  
Wendell Jones 5-2-83  
Inspector Date

FCR- # H-9522  
WCR- #4523R

088

4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	0	3	B	-	0	3	B	-	1	A	F	W	-	R	2	5

UNIQUE IDENTIFIER

MAY 09 1983  
QCP  
1003B-03B-IAFW-R25

10520DIN5170  
10520.92.0000  
ref: 10520DIN4345

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F/7/9/4/

C

Comments pertinent to finding:

See F371 for comments.

Reference: 03B-1AFW-R26 R906

*EU Cole*

Program Team Member

*11/17/83*

Date

*Thomas E. McConnell*

OEDC Program Manager

*11/17/83*

Date

*E. Gray Beasley*

Chairman, OEDC Policy Committee

*11/21/83*

Date

Black & Veatch *Specific items requiring corrective action (See F794 basis and DAR 657) have been completed.*

Classification: Type R Category A

*W. J. Ziskunas*

Black & Veatch Project Manager

*12/8/83*

Date

*R E Blandell*

Black & Veatch Senior Review Team Chairman

*12/19/83*

Date



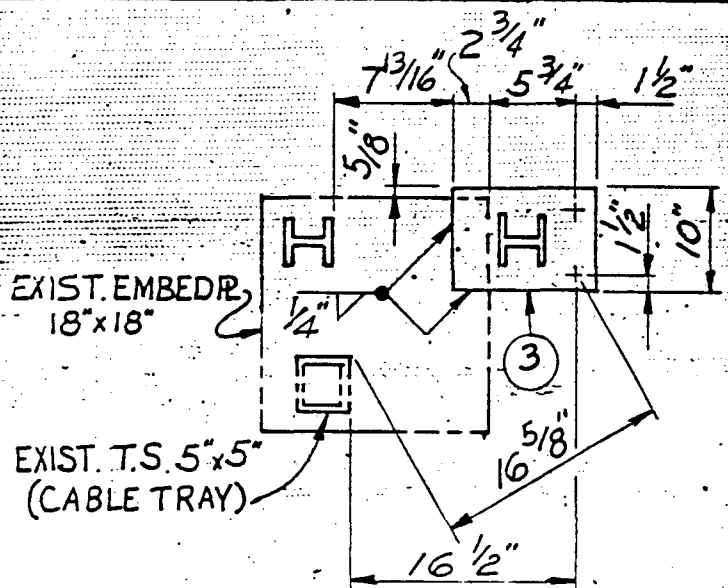
815

HT APP. - - - - -

INVOICE CODE

906 3511 32443 64p RW E E RUN - JVD BERSA DEM  
REV. LOCATION PER ECN, B & V F794

Rev. No. ECN No. Date



SECTION A2-A2

PROJECT WBNP  
 CONTRACT 83015  
 DRAWING# 03B-IAFW-R26  
 SHEET 2 of 2  
 REVISION (906)  
 UNIT

4	S	1	122391	cm	RF	cc	AWDA	JVD	2/6	RWD	
REV PER FCR H-4765											
3	S	1	6-78	R	R	R	R	R	R	R	
REV PER FCR # M-1373 RI											
905	S	1	4-21-82	RH	WE	LS	PAR	JIA	JVD	RWD	
REV PER FCR # 7197 (INACTIVE CONTRACT)											
NO.	ECN No.	Date	Desgn	Drawn	Chkd	Supv	Engr	Insp	Subjrn	Recrn	Appr

ANSI B 31.1  
 T. V. A. CLASS G

M  
R2  
R3  
R3  
R4  
R5

DRAVO ISO #E-2880-IC-208-1

TVA 900 - VENDOR R1 LOAD:

DRAVO CORPORATION P.O. # E-2879-

CONTRACT # 74C38-83015

PIPING SYSTEM AUX. FEEDWATER

WATTS BAR NUCLEAR PLANT - UNIT # 1

REFERENCE DWG. 47N427-1-3 (Pipe)  
48N1221-1-3 (St-1)

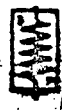
MARK NO. 03B-IAFW-R26 NO. REQ'D. 1

CONSUMER



BERGEN-PATERSON PIPESUPPORT CORP.

BOSTON, MASS. SWOOD-RIDGE, N.J. SAN FRANCISCO, CALIF.  
 PITTSBURGH, PA. CHEMUNFORD, N.Y. CHICAGO, ILL.



DRAWN	CHK'D	APP'VD	DATE
LR	RR	HJT	5-12-76
JOB NO. 3604		REV 1906	
Dwg No. 03B-IAFW-R26			

REV. DATE

HT APP.

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEWFinding Number F / 8 / 0 / 0 /

R-PL

## Comments pertinent to finding:

These discrepancies did exist. They were identified previously to EN DES by NUC PR using an existing program to identify and document these types of errors. The following drawings were revised and issued (per ECN 2946) to correct the mistakes: 45W751-4 R12, 45W751-10 R11, 45W760-3-3 R7, 45W760-3-5 R5, 45B1767-2A R7, 45B1767-2B R7, 45B1767-3A R5, 45B1767-3B R5, 45W1767-4 R10, 45B1769-2A R7, 45B1769-2B R8, 45W1769-4 R12, 45NP751-2-1 R1, 45NP751-2-6 R2, 45NP751-2-14 R2, 45NP751-4-1 R1, 45NP751-4-5 R3, 45NP751-4-6 R1, 45NP751-4-12 R1, 45NP751-4-13 R2, 45NP751-2-7 R1, 45N600-57-5 R3. All corrective action is complete.

Reference: ECN 2946

Note: This finding is identical to Finding F120.

<i>use gr</i>	<u><i>EMGH</i></u> Program Team Member	<u>11/14/83</u> Date
	<u><i>Thomas E. McConnell</i></u> OEDC Program Manager	<u>11/14/83</u> Date
	<u><i>ms mandrake Ed Brasley</i></u> Chairman, OEDC Policy Committee	<u>11/21/83</u> Date

Black &amp; Veatch

*The attached supports clear out of this report*Classification: Type R Category B

<u><i>W. J. Zilziman</i></u> Black & Veatch Project Manager	<u>12/16/83</u> Date
----------------------------------------------------------------	-------------------------

<u><i>R E Blairdell</i></u> Black & Veatch Senior Review Team Chairman	<u>12/27/83</u> Date
---------------------------------------------------------------------------	-------------------------





WATTS BAR NUCLEAR PLANT  
 B&V PROJECT 10520  
 FINDINGS REPORT

ECN NO. 2946  
 ATTACHMENT 1  
 SHEET 1 OF 1

878

FINDING NUMBER

F 2 0 0

FINAL CLASSIFICATION

TYPE  CATEGORY

(FILLED IN BY SENIOR REVIEW TEAM CHAIRMAN)

DESCRIPTION: Reference Table 3-9-25 FSAR  
Nameplates on Reactor MOV BD 1B2-A for  
values 1-FCM-3-116A, 1-FCM-3-116B, 1-FCM-3-136A  
and 1-FCM-3-136B and nameplates on  
Reactor MOV BD 1B2-B for value 1-FCM-3-126A,  
1-FCM-3-126B, 1-FCM-3-177A and 1-FCM-3-177B  
do not agree with nomenclature given in Table  
3-9-25 of the FSAR.

INITIATED BY Melvin L. Hall DATE Oct 22, 1982

LEAD REVIEWER'S ACTION

REMARKS: The correct nomenclature for these  
values is 'ERCW' and not 'HPFP'  
for system designation. The equipment  
nameplates identify them in the 'HPFP' system.  
Second confirming field inspection not made.

SIGNATURE Charles A. Horn DATE 11/3/82

RECOMMENDED CLASSIFICATION  
 TYPE C  
 CATEGORY A

PROJECT MANAGER'S ACTION

REMARKS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

RECOMMENDED CLASSIFICATION  
 TYPE \_\_\_\_\_  
 CATEGORY \_\_\_\_\_

SENIOR REVIEW TEAM ACTION (COMPLETE FINAL CLASSIFICATION IN BOX ABOVE)

REMARKS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_  
 (CHAIRMAN)

SHEET 1  
 CONT'D ON SHEET \_\_\_\_\_

WATTS BAR NUCLEAR PLANT  
B&V PROJECT 10520  
FINDINGS REPORT

NO. 2946  
ATTACHMENT 2  
SHEET 1 OF 2

879

FINDING NUMBER

F/20

FINAL CLASSIFICATION

TYPE

CATEGORY

(FILLED IN BY SENIOR REVIEW TEAM CHAIRMAN)

DESCRIPTION: Nomenclature ERROR. Nomenclature  
identification for values 1-FCV-3-116A-A, 1-FCV-3-116B-A,  
1-FCV-3-126A-B, 1-FCV-3-126B-B, 1-FCV-3-179A-B and 1-FCV-3-179B-B  
is in Error. Value identification indicates HFFP. Correct  
identification should indicate ERCW. Error is consistent  
on single line of Reactor MIV boards, schematics and  
connection diagrams. The instrument status master  
(continued on sheet 2)

INITIATED BY

J. A. Parn

DATE

10/29/82

LEAD REVIEWER'S ACTION

REMARKS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

RECOMMENDED CLASSIFICATION

TYPE 0

CATEGORY A

SIGNATURE

MMWoussa

DATE

10/29/82

PROJECT MANAGER'S ACTION

REMARKS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

RECOMMENDED CLASSIFICATION

TYPE \_\_\_\_\_

CATEGORY \_\_\_\_\_

SIGNATURE

DATE

SENIOR REVIEW TEAM ACTION

(COMPLETE FINAL CLASSIFICATION IN BOX ABOVE)

REMARKS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SIGNATURE

(CHAIRMAN)

DATE

SHEET 1

CONT'D ON SHEET 2

FINDINGS REPORT CONTINUED

ECN NO. 2946  
ATTACHMENT 2  
SHEET 2 OF 2

FINDING NUMBER - 

F	1	2	0
---	---	---	---

Report, INS-001, Run date 10/05/72  
indicates that all these values are  
identified as ERCW. Table 3.9-25  
of the FSAR (sheets 2 and 3) identify  
these values as ERCW values.

SHEET 2  
CONT'D ON SHEET \_\_\_\_\_



Watts Bar Nuclear Plant, Spring City, TN

To: \_\_\_\_\_  
From: Design Project Manager SWP 204 GB-R  
DEC 2 1982

Released By: G. D. Collins  
Design Project Manager

Preparing Section	MEDS Accession No.		MEDS Accession No.	
E2	R	SVR '82 1202 519	R	
Prepared By: C. C. FISHER	O		4	
Total Pages (RO): (R2)	R	SV: '83 0121 524	R	
Section Supervisor: <u>W. M. Coop</u>	1		5	
Staff Eng. or Architect: <u>N/A</u>	R		R	
Group Head: <u>G. D. Collins</u>	2		6	
Branch Chief: _____	R		R	
Date: _____	3		7	

SCOPE \_\_\_\_\_  
Project WATTS BAR NUCLEAR PLANT Affected Units 1 & 2  
System or Feature (3) AUXILIARY FEEDWATER SYSTEM  
Reference & Description of Change CORRECT VALVES NOMENCLATURE DESCRIPTION AS IDENTIFIED BY BLACK AND VEATCH FINDING REPORT. REF: FINDING NUMBERS F120 & F800

**CLOSED**

DATE MAR 30 1983

SEE ASSOCIATED DRAWINGS LIST, REVERSE SIDE

REV. NO.	DATE ISSUED	PREPARED	SECT. SUPV.	GROUP HEAD	BRANCH CHIEF	ECN CLERK	D.P. MGR.	DESCRIPTION OF REVISION	TOTAL PAGES
1	1-21-83	REC	<u>unc</u>	<u>gl</u>	<u>N/A</u>	<u>HH</u>	<u>JCS</u>	ADD 1 DRAWINGS	3

No. N/A No PR Required

SWP '83 0330 509

AFFECTED UNIT	DRAWING OR B/M NUMBER	OWG REV.	ISSUE DATE		REMARKS
			EXPECTED	ACTUAL	
1 & 2	45W751-4	12	1-31-83	2-9-83	
1 & 2	45W751-10	11		↓	
1 & 2	45W760-3-3	7		2-9-83	
1 & 2	45W760-3-4	7		↓	
1 & 2	45W760-3-5	5		↓	
1	45B1767-2A	7		↓	
1	45B1767-2B	7		↓	
1	45B1767-3A	5		↓	
1	45B1767-3B	5		↓	
1	45W1767-4	10		2-9-83	
1	45B1769-2A	7		↓	
1	45B1769-2B	8		↓	
1	45B1769-3A	6		↓	
1	45B1769-3B	6		↓	
1	45W1769-4	12		2-9-83	
1	45NP751-2-1	1		↓	
1	45NP751-2-6	2		↓	
1	45NP751-2-14	2		↓	
1	45NP751-4-1	1		↓	
1	45NP751-4-5	3		↓	
1	45NP751-4-6	1		↓	
1	45NP751-4-12	1		↓	
1	45NP751-4-13	2		↓	
1	45NP751-2-7	1		2-9-83	
2	45B2767-2A	7		2-9-83	
2	45B2767-2B	6		↓	
2	45B2767-3A	5		↓	
2	45B2767-3B	5		↓	
2	45W2767-2	9		2-9-83	
2	45B2769-2A	7		↓	
2	45B2769-2B	6		↓	
2	45B2769-3A	5		↓	
2	45B2769-3B	5		↓	
2	45W2769-4	10		2-9-83	
2	45NP751-6-1	1		↓	
2	45NP751-6-6	2		↓	





WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F/8/0/1/1

0

Comments pertinent to finding:

The time delay range for relays 1SG, 2SG, 3SG, and 4SG were added to drawings 45N600-3-3 R3 and 45N600-3-4 R3 under ECN 3334. The exact setting will be determined during preop testing and added to the necessary drawings. All corrective action is complete.

References: ECN 3334  
NCR WBNEEB8301

Note: This finding is identical to Finding F126.

*unc 92*  
EKGb  
Program Team Member

11/14/83  
Date

Thomas E. McConnell  
OEDC Program Manager

11/14/83  
Date

E. Grey Beasley  
Chairman, OEDC Policy Committee

11/16/83  
Date

*The field effort required by the documented procedure Black & Veatch assumed follow through. This item is considered resolved*

Classification: Type R Category A

W. J. Zilzmann  
Black & Veatch Project Manager

12/1/83  
Date

R. E. Blairdell  
Black & Veatch Senior Review Team Chairman

12/15/83  
Date

# ENGINEERING CHANGE NOTICE

COVER SHEET

SWP '83 0120 508

(BEFORE ISSUANCE OF OPERATING LICENSE)

TENNESSEE VALLEY AUTHORITY  
DIVISION OF ENGINEERING DESIGN

ECN NO. 3334

To: Construction Project Manager Watts Bar Nuclear Plant, Spring City, TN

From: Design Project Manager SWP 204 GB-K

DATE JAN 20 1983

Budget item: 221

Was IJ Analysis Required: Yes  No

CHARLES C. FISHER SWP

E2

AMCOOP

Prepared by

Section

Section Leader

g. D. Collins  
Project Engineer

Released:

J. Standif  
Design Project Manager

1-17-83

Date

SCOPE

Project WATTS BAR NUCLEAR PLANT

Affected Unit(s) 1 & 2

System or Feature VARIOUS SYSTEMS

NCR WBN-SWP 8267

Reference & Description of Change REVISED SCHEMATIC AND CONNECTION DRAWINGS TO

AGREE WITH LOGIC DIAGRAMS ON VARIOUS INSTRUMENT SETTING. REF:

BLACK & VEATCH FINDINGS F113; F125; F126; F132; F801; F114; F131

DRAWINGS OR SYSTEMS INVOLVED:

Yes  or No  Date Branch Data Sheet Available

(Data Sheet Required)

ENGINEERING SUPPORT BRANCHES Approval Required

Yes or No

YES

ECN is ready for branch review:

R. D. Tolley  
Design Project Manager

12-14-82  
Date

Approved:

N/A  
ENS CIVIL BR. CHIEF

12/28/82  
Date

N/A  
ENS ELECTRICAL BR. CHIEF

Date

N/A  
ENS MECHANICAL BR. CHIEF

Date

J. Wilder  
Chief Nuclear Engineer

1-7-83  
Date

FOSSIL, HYDRO & SPECIAL PROJECTS DESIGN

SPECIAL DESIGN PROJECTS

ARCHITECTURAL SUPPORT BRANCH

NO

NO

Required for PSAR or FSAR

Yes or No YES

Required for Preoperational Test:

NO

If Yes, Test No.

Vendor Backcharges Involved

NO

Seismic Analysis Required

NO

Nonconformance Report Required

YES

QA Applies

YES

Security System Modified

NO

Vendor(s) involved:

NONE

PHYSICAL WORK MUST BE DONE BEFORE:

	Pre-Op Test	1st Fuel Load	1% Therm Power	Comm'l Oper'n	1st Refuel
Unit(s) <u>1 &amp; 2</u>		<input checked="" type="checkbox"/>			
Unit(s)					

CC (Attachments): YES YES (1)

CHIEF, ARCHITECTURAL SUPPORT BRANCH, W4C126 C-K  
CHIEF, CIVIL ENGINEERING BRANCH, W90224 C-K  
CHIEF, ELECTRICAL ENGINEERING BRANCH, W8C126 C-K  
CHIEF, MECHANICAL ENGINEERING BRANCH, W7C126 C-K  
CHIEF, NUCLEAR ENGINEER, W10C126 C-K  
CHIEF, QUALITY ASSURANCE BRANCH, 5100 M18-K

CHIEF, COST PLANNING AND CONTROL STAFF, W12C74 C-K  
CHIEF, SPECIAL DESIGN PROJECTS, W20224 C-K  
MANAGER OF CONSTRUCTION, E7824 C-K  
PLANT SUPERINTENDENT  
WEDS, W5963 C-K

WBP '83 0624 - 508

**CLOSURE**  
 6-24-83  
 CLOSURE SH101

Watts Bar Nuclear Plant, Spring City, TN

Design Project Manager SWP 204 GBR

Released By:

J. D. Collins  
Design Project Manager

Date: IAN 20 1983

Preparing Section	MEDS Accession No.	MEDS Accession No.
E2	R 0 SWP '83 0120 501	R 4 1-
Prepared By: CHARLES C. FISHER	R 1 SWP '83 0314 530	R 5
Total Pages (RO): (R5)	R 2	R 6
Section Supervisor: <u>AMISOP</u>	R 3	R 7
Staff Eng. or Architect: <u>N/A</u>		
Group Head: <u>J. D. Collins</u>		
Branch Chief: _____		
Date _____		

SCOPE

Project WATTS BAR NUCLEAR PLANT Affected Units 1 & 2

System or Feature VARIOUS SYSTEMS

Reference & Description of Change REVISED SCHEMATIC AND CONNECTION DRAWINGS TO AGREE WITH LOGIC DIAGRAMS ON VARIOUS INSTRUMENT SETTING. REF: BLACK & VEATCH FINDINGS F113; F125; F126; F132; F801; F114; F131.

SEE ASSOCIATED DRAWINGS LIST, REVERSE SIDE

REV. NO.	DATE ISSUED	PREPARED	SECT. SUPV.	GROUP HEAD	BRANCH CHIEF	ECN CLERK	D.P. MGR.	DESCRIPTION OF REVISION	TOTAL PAGES
1	3-14-83	JED	<u>Amisop</u>	<u>JDC</u>	<u>N/A</u>	<u>HA</u>	<u>XSe</u>	Delete 17 Dwgs & ADD 2 DWGS	3

W-3534

Materials as follows:

Additional Information:

CHIEF, COST PLANNING AND CONTROL STAFF, W12078 C-K  
CHIEF, ARCHITECTURAL SUPPORT BRANCH, W8C126 C-K  
CHIEF, CIVIL ENGINEERING BRANCH, W90228 C-K  
CHIEF, ELECTRICAL ENGINEERING BRANCH, W8C126 C-K  
CHIEF, SPECIAL DESIGN PROJECTS, W20228 C-K

PLANT SUPERINTENDENT  
CONSTRUCTION PROJECT MANAGER  
MEDS, W5863 C-E  
ARMS, 640 CST2-C

AFFECTED UNIT	DRAWING OR B/M NUMBER	DWG REV.	ISSUE DATE		REMARKS	LINE UPDATED ON DATE REV.
			EXPECTED	ACTUAL		
122	45N720	11	3-14-83 <del>3-1-83</del>	3-9-83		
122	45N721-1	7				
122	45W760-2-3	6				
122	45W760-6-1	6				
122	45W760-6-2	5				
122	45W760-27-1	5				
122	45N600-35-2	6		3-7-83		
122	45N600-35-3	4				
122	45N600-3-2	4			FSAR Fig. Q 31.147-2	
122	45N600-3-3	3			FSAR Fig. Q 31.147-3	
122	45N600-3-4	3			FSAR Fig. Q 31.147-4	
122	45N600-3-6	4				
122	45N600-3-7	3				
122	45N600-3-8	2				
122	45N600-3-9	2				
122	45N600-47-1	3				
122	45N600-47-2	5				
122	45N600-47-4	4				
122	45N600-47-5	4		2-28-83		
122	45N600-47-6	7		3-7-83		
122	45N600-47-7	5				
122	45N600-47-8	5				
122	45N600-47-10	1				
<del>1</del>	<del>45N1688-2</del>				Delete	1
<del>1</del>	<del>45N1690-1</del>					1
<del>1</del>	<del>45N1690-2</del>					1
<del>1</del>	<del>45N1691-1</del>					1
<del>1</del>	<del>45N1691-2</del>					1
<del>1</del>	<del>45N1693-2</del>					1
<del>1</del>	<del>45N1694-2</del>					1
<del>2</del>	<del>45N2685-1</del>					1
<del>2</del>	<del>45N2686-1</del>					1
<del>2</del>	<del>45N2688-2</del>					1
<del>2</del>	<del>45N2690-1</del>					1
<del>2</del>	<del>45N2690-2</del>					1
<del>2</del>	<del>45N2691-1</del>					1

SELECTED UNIT	DRAWING OR B/M NUMBER	DWG REV.	ISSUE DATE		REMARKS	LINE UPDATED ON DATA SHEET REV. NO.
			EXPECTED	ACTUAL		
<del>2</del>	<del>45N2691-2</del>		<del>3-1-83</del>		Delete	1
<del>2</del>	<del>45N2693-2</del>				↓	1
<del>2</del>	<del>45N2694-2</del>				↓	1
122	45W760-3-1	5	3-14-83	1-20-83		
122	45W760-3-2	6		3-2-83		
122	45W760-3-3	7		2-9-83		
122	45W760-3-4	7		↓		
122	45W760-3-11	3		3-2-83		
1	45B1767-2A	7		2-9-83		
1	45B1769-2A	7		2-9-83		
2	45B2767-2A	7		↓		
2	45B2769-2A	7		↓		
122	45W751-4	12		2-9-83		
122	45W751-10	11		↓		
<del>122</del>	<del>45W760-30-21</del>				Delete	1
2	45W760-30-23	3		3-2-83		
122	45W760-62-2	7		↓		
1	45BM751	0				
1	45B1767-0	10				
1	45B1767-02	1				
1	45B1769-0	7				
1	45B1769-02	0				
2	45B2767-0	9				
2	45B2767-02	1				
2	45B2769-0	0				
2	45B2769-02	1				
	45N600-57-5	4		3-1-83		
	45N600-57-22	2		3-9-83		
	45N600-57-24	3		3-1-83		
	45W600-57-26	2		2-11-83		
	45W600-57-31	4		3-1-83		
	<del>45N600-57-33</del>				Delete	1
	45N600-2	4	3-14-83	3-1-83		
	45N600-5-1	2		↓		
	45N600-6-2	3		↓		
	45N600-7	4		↓		



DIVISION OF ENGINEERING DESIGN  
NONCONFORMANCE REPORT

891

EEB 30117 90

MEDS Accession No.

1 REPORT NO. WBNEEB8301

2 PLANT Watts Bar Nuclear Plant  
3 UNIT 1 and 2  
4 PREPARER/ORGANIZATION/DATE W. T. Estes/EEB I&C#3/1-14-83

5 DESCRIPTION OF CONDITION  
There are no procedures for documenting time delay relay setting that are determined by pre-op tests.

6 DATE OF OCCURRENCE EST (X), ACT. ( ) 12/30/82  
7 METHOD OF DISCOVERY Black & Veatch Finding F-126  
8 CODE (EN DES-EP 8.01)  
9 SIGNIFICANT CONDITION ADVERSE TO QUALITY  
MRB<sub>4</sub> YES  NO   
10 \*BRANCH CHIEF/DATE  
RRR F. H. O. Hamilton 1/17/83

11 CORRECTIVE ACTION:  
A special engineering procedure will be written to give the procedure for documenting the time delay relay settings.

12 CORRECTIVE ACTION DEVIATES FROM A DESIGN CRITERIA REQUIREMENT YES  NO   
13 DESIGN CRITERIA DOCUMENT NO. EXCEPTION REQUEST NO.  
14 ECN REQUIRED  YES  NO  ECN NO. 15 SCHEDULE IMPACT  P  A  N

NONCONFORMANCE REPORT

PORT NO. 892

ASSIGNABLE CAUSE: (REQUIRED IF SIGNIFICANT)

It was not recognized that a formal procedure was required to document the time delay relay settings.

17 THIS IS A GENERIC CONDITION YES  NO

18 ACTION REQUIRED TO PREVENT RECURRENCE: (REQUIRED IF SIGNIFICANT)

Adherence to the special engineering procedure.

A directive has been issued by the Manager of Engineering Design, instructing all design employees to become thoroughly familiar with and to follow all EPs.

19 \*INDEPENDENT REVIEW: Martin R. Belov 7/19/83

20 LABOR EST. ( ) ACT. ( ) MH 21 SCHEDULE EST. ( ) ACT. ( )

22 ACTIVITY NO. 23 TASK DESCRIPTION 24 DATE INITIATED DAYS

25 REMARKS:

*257*  
This problem exists on BFN and SQN. NCRs have been written addressing this problem for their plants. All WBN schematics have been reviewed. The time delay relay settings not currently specified have been identified in letter from J. C. Standifer to F. W. Chandler dated April 7, 1983 (WBP 830427 022). A memorandum dated June 14, 1983 (EEB 830614 939), to those listed from F. W. Chandler details the interim procedure for documenting the time delay relay settings. Special Engineering Procedures SEP 83-11, issued October 14, 1983 (EEB 831014 937), gives the procedures for documenting the time delay relay settings.

27 DISTRIBUTION:  
 28 CONST PROJECT MANAGER  
 EN DES PROJECT MANAGER  
 CHIEF, ESB  
 OFFICE OF QA  
 NEB (for Significant NCRs)\*\*  
 MEDS CIS  
 NSRS (for Significant NCRs)\*  
 ASSISTANT TO THE MANAGER OF OEDC (Quality and Nuclear Safety)--for Significant NCRs  
 \* DISTRIBUTE AFTER THIS SIGNATURE  
 \*\* HANDCARRY COPY TO NEB-NLS  
 R. L. Brehm, W8D195 C-K

26 ALL EN DES ACTION COMPLETE: MLB: CCH/10/14

REC 5 BY Chandler, EEB 10/18/83

\*BRANCH CHIEF/ORG. DATE

EEB '831 019 957

MEDS ACCESSION NO.





894

Mr. C. Standifer, Sequoyah and Watts Bar Design Projects Manager, 204 GB-K (3)  
Mr. Center Madewitz, Project Manager, Watts Bar Nuclear Plant CONST

WBR '82 1213 322

Subject: W. M. Roop, W3A18 C-K

SECTION I - CONST REQUEST

Reason for Change:	Status Point:	System No. <u>3</u>
<input checked="" type="checkbox"/> Drawing Discrepancy	<input checked="" type="checkbox"/> Prior to Fuel Loading	Work Package No. <u>N/A</u>
<input type="checkbox"/> Facilitate Construction	<input type="checkbox"/> After Fuel Loading but prior to Closing Capitalized Accounts	Work Plan No. <u>N/A</u>
<input checked="" type="checkbox"/> Additional Design Information	<input type="checkbox"/> After Closing Capitalized Accounts for the Entire Plant	

Documents Affected 45B1767-2A R6, -2B R6; 45B1769-2A R6, -2B R7; 45W1767-4 R9, 45W1769-4 R11  
45W2767-2 R8, 45W2769-4 R9; 45B1767-2E R6, 45B1769-2E R7

Marked documents required and attached  Yes  No

Current revision required  Yes  No

Change Description: Clarify the attached drawings to reflect the marked changes.

Change requested by: Eddie Burroughs  
E. E. Burroughs, Jr.  
(CONST Engineer)

K.O. Smith  
for (Unit Supervisor)

Change approved by: Charles Fisher  
(EN DES Engineer)

12-3-82  
(Date)

Approval obtained by:  Telephone  Memo  Other

Approved for transmittal to EN DES: G.B. Burroughs (Construction Engineer) Charles Madewitz (Project Manager)

SWR '83 0217 101

SECTION II - EN DES REPLY/RESOLUTION

Work No. SI Date Issued 2-7-83

Affected Nos: 45W2769-4R10; 45W1769-4R12, 45B1767-2E R7; 45B1769-2E R8;  
45B1767-2AR7; 45B1767-2BR7; 45B1769-2AR7; 45B1769-2BR8; 45W1767-4R10; 45W2767-3R9;

Work Complete W.M. Roop (EN DES Engineer) C. Standifer (Design Project Manager) 2-8-83 (Date)

- Original - Return to CONST by EN DES
- 2 - Retained by CONST until original is returned
- 2 - Retained by EN DES
- 1 - Retained by OC&R

DIVISION OF ENGINEERING DESIGN  
NONCONFORMANCE REPORT

MEDS Accession No.

WBP '83 0818 050<sup>896</sup>

1 REPORT NO. WBNWP8267 R

2 PLANT WATTS BAR NUCLEAR PLANT 3 UNIT 1

4 PREPARER/ORGANIZATION/DATE J. D. Collins/WBP/August 17, 1983

5 DESCRIPTION OF CONDITION

Electrical drawing discrepancies have been identified on the logic, control, schematic, and connection drawings for the auxiliary feedwater system as a result of the Black and Veatch third party independent review. The Black and Veatch finding numbers are:

F101, F102, F103, F104, F105, F106, F107, F110, F111, F114, F115, F116, F117, F123, F124, F127, F130, F131, F141, F802, F803, F804, F805, F806

Approximately 24 drawings have been identified with minor discrepancies.

6 DATE OF OCCURRENCE EST ( X ), ACT. ( ) 1978 9 SIGNIFICANT CONDITION ADVERSE TO QUALITY

YES  NO

7 METHOD OF DISCOVERY Third Party Review 10 \*BRANCH CHIEF/DATE

*J. Stard* 8/18/83

8 CODE (EN DES-EP 8.01)

11 CORRECTIVE ACTION: The minor electrical drawing discrepancies identified by Black and Veatch have been corrected on the following ECNs and FCRs:

- ECN 2816 - F123, F124
- ECN 3647 - F101, F102, F103, F104, F106, F107, F114, F130, F131
- ECN 3650 - F111, F115, F117, F127, F141, F803, F806
- FCR E3458 - F105, F805
- FCR E3508 - F110, F116, F802, F804

12 CORRECTIVE ACTION DEVIATES FROM A DESIGN CRITERIA REQUIREMENT YES  NO

13 DESIGN CRITERIA DOCUMENT NO. EXCEPTION REQUEST NO.

14 ECN REQUIRED  YES NO  ECN NO. 2816, 3647, 3650 15 SCHEDULE IMPACT  P  A  N

NONCONFORMANCE REPORT

896  
 1 REPORT NO. WBNS

16 ASSIGNABLE CAUSE: (REQUIRED IF SIGNIFICANT)

17 THIS IS A GENERIC CONDITION YES  NO

18 ACTION REQUIRED TO PREVENT RECURRENCE: (REQUIRED IF SIGNIFICANT)

19 \*INDEPENDENT REVIEW: *JL Davis 8-18-83*

20 LABOR EST. (  ), ACT. ( ) 20 MH 21 SCHEDULE EST. (  ), ACT. ( )

22 ACTIVITY NO. \*See Below 23 TASK DESCRIPTION EN 24 DATE INITIATED \*Se

25 REMARKS: \* ECN 2816 - Act. No. DZ85-E281669 Date 11/29/82  
 ECN 3647 - Act. No. DZ85-E364725 Date 01/17/83  
 ECN 3650 - Act. No. DZ85-E3650R6 Date 01/28/83

This NCR supersedes NCR WBNSWP8267 RO.

27 DISTRIBUTION:  
 CONST PROJECT MANAGER J. D. Collins, 5100 MIB-K  
 28 EN DES PROJECT MANAGER  
 CHIEF, ESB  
 OFFICE OF QA  
 NEB (for Significant NCRs)\*\*  
 MEDS CIS  
 NSRS (for Significant NCRs)\*  
 ASSISTANT TO THE MANAGER OF OEDC (Quality  
 and Nuclear Safety)--for Significant NCRs  
 \* DISTRIBUTE AFTER THIS SIGNATURE  
 \*\* HANDCARRY COPY TO NEB-NLS

26 ALL EN DES ACTION COMPLETE:

*[Signature]*  
 \*BRANCH CHIEF/ORG.

WBP '83 0818 05

MEDS ACCESSION NO.

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F/8/0/3/1

0

Comments pertinent to finding:

The 62X relay coil was disconnected and the relay was shown as a spare on ECN 3650. Drawings revised and issued for this finding are: 45W751-4 R12, 45W751-10 R11, 45W760-3-3 R3, 45W760-3-4 R3, 45B1767-2A R7, and 45B1769-2A R7. All corrective action is complete.

References: ECN 3650 and NCR WBNSWP8267 R1

Note: This finding is identical to Finding F115.

*EN Cole*

Program Team Member

11/14/83

Date

*Home E McConnell*

OEDC Program Manager

11/14/83

Date

*M. S. Martin for E. G. Beasley*

Chairman, OEDC Policy Committee

11/17/83

Date

Based on the attached Form 3 information and the attached Black & Veatch response to questions this item is considered closed. Site inspection not conducted.

Classification: Type R Category A

*W. J. Zikunas*

Black & Veatch Project Manager

12/21/83

Date

*R E Blausdell*

Black & Veatch Senior Review Team Chairman

12/27/83

Date



## TELEPHONE MEMORANDUM

10520DIN2113  
10520.15.1000

DATE December 2, 1958

TIME 8:30 AM PK

FROM (FROM) Homer E. McConnell TELEPHONE 615-632-4450

COMPANY Tennessee Valley Authority CC: H. E. McConnell, TVA

RECORDED BY William J. Zidziunas *WJZ* R. E. Blaisdell

PROJECT WBNP-Independent Review PROJ. NO. 10520 PDCA

SUBJECT Finding Report Responses FILE NO. 15.1000 nJR

Mr. McConnell returned my call of earlier this a.m., and we discussed the following.

F506. This Finding concerned clustered loads. Additional information is needed to put part of the TVA action into perspective.

B&V does not have a problem with the action designed to prevent the recurrence of the problem by promulgating a construction specification. We concur that this is appropriate.

We do have a concern over how representative the statistical sample is of the population of embedments in question. It is our opinion that a random sampling of 69 plates would not be adequate, since only those with clustered or edge loads are of concern.

If TVA has attempted to screen the embedments in order to assure that those analyzed are representative of the worst case likely to be encountered, then the approach is probably valid.

If no attempt has been made to screen the embedment candidates, then the analysis of the sample embedments cannot be judged representative.

B&V requests that you provide additional information on how the sample was selected and recommends that the details be made part of the NCR or calculation record.

F718. This item concerned welding of a hanger. TVA submitted ECN 3511, which we assume was supposed to reflect the acceptance of the as-built condition. The differences noted are:

- (1) Upper Left attachment was found to be welded on three sides, in accordance with the drawing. The ECN required welding all around.
- (2) Upper Right attachment was found to be welded on three sides. The ECN indicates single fillet on two sides.
- (3) The weld on the top of the lower angle to the support legs was found to be missing; however, the ECN still indicates weld all around.

Additional clarification is considered to be required.

F803. This is a field item. During the B&V inspection, the relay was found to be wired up. TVA was to affirm that the wiring was, in fact, disconnected. F115 was issued to handle paper work.

Additional response is required.



TELEPHONE MEMORANDUM

899

2

DATE December 2, 1983

(TO) (FROM) Homer E. McConnell TELEPHONE \_\_\_\_\_ TIME 8:30 AM ~~PM~~  
COMPANY \_\_\_\_\_ CC: \_\_\_\_\_  
RECORDED BY \_\_\_\_\_  
PROJECT \_\_\_\_\_ PROJ. NO. \_\_\_\_\_  
SUBJECT \_\_\_\_\_ FILE NO. \_\_\_\_\_

Homer indicated he would look into the matters and respond.

We also briefly discussed the status of the submittals.

bam

RECEIVED B & V  
DEC 06 1983  
PROJECT # 10520

TENNESSEE VALLEY AUTHORITY

KNOXVILLE TENNESSEE 37902

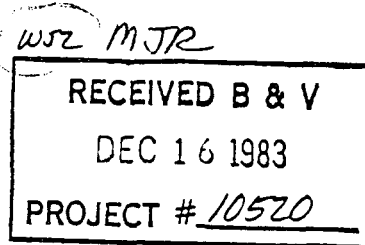
400 West Summit Hill Drive, W10C126

DEC 16 1983

Black & Veatch  
11401 Lamar Avenue  
Overland Park, Kansas 66211

Attention: Mr. W. J. Zidziunas

Gentlemen:



PERSONAL SERVICES CONTRACT NO. TV-60052A

In response to your telephone request to H. E. McConnell, we are providing the following additional information:

*DIN5011*  
F-129 - TVA has verified that the field installation is complete for unit 1 and is in accordance with the design information provided with Form 3. Installation records are available at the site.

*DIN5097*  
F-506 - Enclosed is a description of the screening program TVA used to assure that the sample program was adequate to be representative of the worst case likely to be encountered. This information is included in the NCR documentation.

*DIN5099*  
F-718 - Enclosed are the field inspection records associated with this finding.

*DIN5103*  
F-803 - TVA has verified that the field installation is complete for unit 1 and is in accordance with the design information provided with Form 3. Installation records are available at the site.

*DIN5121*  
F-808 - Calibration and testing of the instrumentation and controls is required before system preoperational tests are conducted. This calibration and testing is done using written procedures and the records are reviewed and filed in accordance with TVA's Quality Assurance Plan. These records are available at the site for review.

*DIN5122*  
F-856 - Enclosed is a reproducible copy of the computer printout for this finding.

*DIN5124*  
F-863 - Enclosed is a reproducible copy of the computer printout for this finding.

*DIN5132*  
F-932 - Enclosed are copies of drawings 47W427-204 R3, 47W427-220 R2, and 47W221 R1.

*DIN5134*  
F-935 - Drawing 85M47W427-204 has been redrawn. The new drawings are enclosed (see F-932).

*DIN5137*  
F-948 - Enclosed is a reproducible copy of the computer printout for this finding.



Black & Veatch

DEC 16 1983

*D1N5201*

F-960 - Enclosed is a reproducible copy of the computer printout for this finding.

*D1N5173*

F-818 - Enclosed is a reproducible copy of the computer printout for this finding.

*5233 5171 5172*

F-815, F-816, F-817 - Enclosed are copies of 85M45W427-205 and 45W427-206.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

*L E Mc Connell*

*for* John A. Raulston  
Chief Nuclear Engineer

Enclosures

# ENGINEERING CHANGE NOTICE COVER SHEET

902

(BEFORE ISSUANCE OF OPERATING LICENSE)

SWP '83 0120 5

TENNESSEE VALLEY AUTHORITY  
DIVISION OF ENGINEERING DESIGN

Watts Bar Nuclear Plant, Spring City, TN

ECN NO. 3650

To: Construction Project Manager \_\_\_\_\_  
SWP 204 GB-K

From: Design Project Manager \_\_\_\_\_

DATE JAN 20 1983

Budget item: 221

Was IJ Analysis Required: Yes \_\_\_\_\_ No

CHARLES C. FISHER

SWP

E2

UNCOOPM

Prepared by

Section

Section Leader

J. D. Collins  
Project Engineer

Released:

J. D. Collins  
Design Project Manager

1-17-83  
Date

SCOPE

Project WATTS BAR NUCLEAR PLANT Affected Unit(s) 1 & 2

System or Feature (3) AUXILIARY FEEDWATER SYSTEM NCR WBN SWP 8267

Reference & Description of Change CORRECT DRAWINGS PER BLACK & VEATCH

FINDINGS ~~F802~~; F803; ~~F804~~; F806; ~~F807~~; F111; F115; ~~F116~~; F117; F127; F133; F141. TRANSFER PKGS X(3)-1 & X(3)-2 (NCR WBN SWP 8267)

DRAWINGS OR B/M'S INVOLVED \_\_\_\_\_ Yes \_\_\_\_\_  
(Data Sheets Required) \_\_\_\_\_ No \_\_\_\_\_  
Date Branch Data Sheet Available

ENGINEERING SUPPORT BRANCHES Approval Required	Yes or No <u>YES</u>
ECN is ready for branch review:	
<u>R. W. Tolley</u> Design Project Manager	<u>12-14-82</u> Date
Approved:	
<u>N/A</u> ENS CIVIL BR. CHIEF	_____ Date
<u>F. W. Chandler</u> ENS ELECTRICAL BR. CHIEF	<u>12/28/82</u> Date
<u>N/A</u> ENS MECHANICAL BR. CHIEF	_____ Date
<u>A. Wilder</u> Chief Nuclear Engineer	<u>1-7-83</u> Date

CLOSED

DATE 8-26-83  
closure SH103

ENGINEERING SUPPORT BRANCHES		
Civil	<u>NO</u>	_____
Electrical	<u>NO</u>	_____
Mechanical	<u>NO</u>	_____
Nuclear	<u>NO</u>	_____
NUCLEAR PROJECT DESIGN GROUPS		
Civil	<u>NO</u>	_____
Electrical E2	<u>YES</u>	_____
Mech	<u>NO</u>	_____

FOSSIL, HYDRO & SPECIAL PROJECTS DESIGN  
SPECIAL DESIGN PROJECTS NO \_\_\_\_\_  
ARCHITECTURAL SUPPORT BRANCH NO \_\_\_\_\_

WBP '83 0826 539

Required for PSAR or FSAR NO YES 1-7-83 JAB  
Required for Preoperational Test: NO  
If Yes, Test No. \_\_\_\_\_  
Vendor Backcharges Involved NO  
Seismic Analysis Required NO  
Nonconformance Report Required YES  
QA Applies YES  
Security System Modified NO  
Vendor(s) involved: NONE

PHYSICAL WORK MUST BE DONE BEFORE:						
	Pre-Op Test	1st Fuel Load	1% Therm Power	Comm'l Oper'n	1st Refuel	
Unit(s) <u>1 &amp; 2</u>		<input checked="" type="checkbox"/>				
Unit(s)						

CC (Attachments): 2 YES (1)

CHIEF, ARCHITECTURAL SUPPORT BRANCH, W4C126 C-K  
CHIEF, CIVIL ENGINEERING BRANCH, W9D224 C-K  
CHIEF, ELECTRICAL ENGINEERING BRANCH, W8C126 C-K  
CHIEF, MECHANICAL ENGINEERING BRANCH, W7C126 C-K  
CHIEF, NUCLEAR ENGINEER, W10C126 C-K  
CHIEF, QUALITY ASSURANCE BRANCH, W5B63 C-K

CHIEF, COST PLANNING AND CONTROL STAFF, W12C74 C-K  
CHIEF, SPECIAL DESIGN PROJECTS, W2D224 C-K  
MANAGER OF CONSTRUCTION, E7B24 C-K  
PLANT SUPERINTENDENT  
MEDS, W5B63 C-K

Design Project Manager SWP 204 CB-K

Released By: J. D. Collins

Design Project Manager

Date: JAN 20 1983

Preparing Section	MEDS Accession No.	MEDS Accession No.
<u>E2</u>	R 0 SWP '83 0120 525	R 4
Prepared By: <u>CHARLES C. FISHER</u>	R 1 SWP '83 0214 544	R 5
Total Pages (RO): <u>R2</u>	R 2 SWP '83 0308 522	R 6
Section Supervisor: <u>[Signature]</u>	R 3	R 7
Staff Eng. or Architect: <u>N/A</u>		
Group Head: <u>J. D. Collins</u>		
Branch Chief: _____		
Date: _____		

SCOPE \_\_\_\_\_

Project WATTS BAR NUCLEAR PLANT Affected Units 1 & 2

System or Feature (3) AUXILIARY FEEDWATER SYSTEM

Reference & Description of Change CORRECT DRAWINGS PER BLACK & VEATCH

FINDINGS <sup>CCF</sup> ~~F802~~; <sup>CCF</sup> ~~F804~~; <sup>CCF</sup> ~~F806~~; ~~F810~~; ~~F111~~; <sup>CCF</sup> ~~F115~~; ~~F116~~; <sup>CCF</sup> ~~F117~~; ~~F127~~; ~~F133~~; ~~F141~~.

CLOSED

DATE AUG 26 1983

SEE ASSOCIATED DRAWINGS LIST, REVERSE SIDE

REV. NO.	DATE ISSUED	PREPARED	SECT. SUPV.	GROUP HEAD	BRANCH CHIEF	ECN CLERK	D.P. MGR.	DESCRIPTION OF REVISION	TOTAL PAGES
1	2-14-83	CCF	<u>[Signature]</u>	<u>[Signature]</u>	N/A	HH	JSA	DELETED 2 DWGS & ADDED 5 DWGS	
2	3-8-83	REC	<u>[Signature]</u>	<u>[Signature]</u>	N/A	N/A	XSO	DELETED 1 DWGS	2

Rev. No. N/A NO PR REQ'D

Materials as follows:

Additional Information:



DIVISION OF ENGINEERING DESIGN  
NONCONFORMANCE REPORT

MEDS Accession No.

WBP

'83 0818 050

906

1 REPORT NO. WBNSWP8267 F

2 PLANT WATTS BAR NUCLEAR PLANT 3 UNIT 1

4 PREPARER/ORGANIZATION/DATE J. D. Collins/WBP/August 17, 1983

5 DESCRIPTION OF CONDITION

Electrical drawing discrepancies have been identified on the logic, control, schematic, and connection drawings for the auxiliary feedwater system as a result of the Black and Veatch third party independent review. The Black and Veatch finding numbers are:

F101, F102, F103, F104, F105, F106, F107, F110, F111, F114, F115, F116, F117, F123, F124, F127, F130, F131, F141, F802, F803, F804, F805, F806

Approximately 24 drawings have been identified with minor discrepancies.

6 DATE OF OCCURRENCE EST (X) ACT. ( ) 1978

9 SIGNIFICANT CONDITION ADVERSE TO QUALITY  
YES  NO

7 METHOD OF DISCOVERY Third Party Review

8 CODE (EN DES-EP 8.01)

10 \*BRANCH CHIEF/DATE J. Stander 8/18/83

11 CORRECTIVE ACTION: The minor electrical drawing discrepancies identified by Black and Veatch have been corrected on the following ECNs and FCRs:

- ECN 2816 - F123, F124
- ECN 3647 - F101, F102, F103, F104, F106, F107, F114, F130, F131
- ECN 3650 - F111, F115, F117, F127, F141, F803, F806
- FCR E3458 - F105, F805
- FCR E3508 - F110, F116, F802, F804

12 CORRECTIVE ACTION DEVIATES FROM A DESIGN CRITERIA REQUIREMENT YES  NO

13 DESIGN CRITERIA DOCUMENT NO. EXCEPTION REQUEST NO.

14 ECN REQUIRED  YES NO  ECN NO 2816, 3647, 3650

15 SCHEDULE IMPACT  P  A  N

5755

# NONCONFORMANCE REPORT

1 REPORT NO. 906 WBNSW

**16** ASSIGNABLE CAUSE: (REQUIRED IF SIGNIFICANT)

[Faint stamp or watermark]

**17** THIS IS A GENERIC CONDITION      YES       NO

**18** ACTION REQUIRED TO PREVENT RECURRENCE: (REQUIRED IF SIGNIFICANT)

**19** \*INDEPENDENT REVIEW: J.L. Davis 8-18-83

**20** LABOR EST. (  ), ACT. (    )      20 MH      **21** SCHEDULE EST. (  ), ACT. (    )

**22** ACTIVITY NO.    \*See Below      **23** TASK DESCRIPTION    EN      **24** DATE INITIATED    \*See

**25** REMARKS:    \* ECN 2816 - Act. No. DZ85-E281669 Date 11/29/82  
                   ECN 3647 - Act. No. DZ85-E364725 Date 01/17/83  
                   ECN 3650 - Act. No. DZ85-E3650R6 Date 01/28/83

This NCR supersedes NCR WBNSWP8267 RO.

**27** DISTRIBUTION:

**28** CONST PROJECT MANAGER      J. D. Collins, 5100 MIB-K  
 EN DES PROJECT MANAGER  
 CHIEF, ESB  
 OFFICE OF QA  
 NEB (for Significant NCRs)\*\*  
 MEDS CIS  
 NSRS (for Significant NCRs)\*  
 ASSISTANT TO THE MANAGER OF OEDC (Quality  
 and Nuclear Safety)-for Significant NCRs  
 \* DISTRIBUTE AFTER THIS SIGNATURE  
 \*\* HANDCARRY COPY TO NEB-NLS

**26** ALL EN DES ACTION COMPLETE:

[Signature]  
 \*BRANCH CHIEF/ORG.

WBP '83 0818 05

MEDS ACCESSION NO.

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F / 8 / 0 / 4 /

R-PL

Comments pertinent to finding:

This error was also detected during the final wiring verification test No. 6-61. EN DES was notified by CONST via the existing Field Change Request procedure.

The connection diagram (45B1767-2B R7) was revised and issued, and the wiring was correctly installed per FCR E-3508. All corrective action is complete.

References: FCR E-3508  
NCR WBNSWP8267 R1

Note: This finding is identical to Finding F110.

<p><i>WJ</i> <i>PR</i></p> <p><u><i>EU Gh</i></u> Program Team Member</p>	<p><u>11/8/83</u> Date</p>
<p><u><i>Henry E McConnell</i></u> OEDC Program Manager</p>	<p><u>11/8/83</u> Date</p>
<p><u><i>Gray Beasley</i></u> Chairman, OEDC Policy Committee</p>	<p><u>11/8/83</u> Date</p>

Black & Veatch *attached documentation supports close out of this item*

Classification: Type R Category B

<p><u><i>W.J. Zitzman</i></u> Black &amp; Veatch Project Manager</p>	<p><u>11/28/83</u> Date</p>
--------------------------------------------------------------------------	---------------------------------

<p><u><i>RE Blausdell</i></u> Black &amp; Veatch Senior Review Team Chairman</p>	<p><u>12/15/83</u> Date</p>
--------------------------------------------------------------------------------------	---------------------------------

Mr. C. Standifer, Sequoyah and Watts Bar Design Projects Manager, 204 GB-K (3)  
Mr. Guenter Wadewitz, Project Manager, Watts Bar Nuclear Plant CONST

WBR '82 1213 322

Subject: W. M. Roop, W3A18 C-K

SECTION I - CONST REQUEST

Reason for Change: Status Point:

Drawing Discrepancy  Prior to Fuel Loading System No. 3  
 Facilitate Construction  After Fuel Loading but prior to Closing Capitalized Accounts Work Package No. N/A  
 Additional Design Information  After Closing Capitalized Accounts for the Entire Plant Work Plan No. N/A

Documents Affected 45B1767-2A R6, -2B R6; 45B1769-2A R6, -2B R7; 45W1767-4 R9, 45W1769-4 R11  
45W2767-2 R8, 45W2769-4 R9; 45B1767-2E R6, 45B1769-2E R7

Marked documents required and attached  Yes  No

Current revision required  Yes  No

Change Description: Clarify the attached drawings to reflect the marked changes.

Change requested by: Eddie Burroughs  
E. E. Burroughs, Jr.  
(CONST Engineer)

K.O. Smith  
K.O. Smith  
(Unit Supervisor)

Change approved by: Charles Fisher  
(EN DES Engineer)

12-3-82  
(Date)

Approval obtained by:  Telephone  Memo  Other

Approved for transmittal to EN DES: A.B. Johnson (Construction Engineer) Charles O. Chubb (Project Manager)

SWF '83 0217 101

SECTION II - EN DES REPLY/RESOLUTION

Case No. SI Date Issued 2-7-83

Drawing Nos: 45W2769-4 R10; 45W1769-4 R12, 45B1767-2E R7; 45B1769-2E R8;  
45B1767-2A R7; 45B1767-2B R7; 45B1769-2A R7; 45B1769-2B R8; 45W1767-4 R10; 45W2767-2 R9;

Work Complete W.M. Roop  
(EN DES Engineer)

C. Standifer (Design Project Manager) 2-8-83 (Date)

- Original - Return to CONST by EN DES
  - 1 - Retained by CONST until original is returned
  - 2 - Retained by EN DES
  - 1 - Retained by OC&R
- WBS, W5652 C-K



DIVISION OF ENGINEERING DESIGN  
NONCONFORMANCE REPORT

MEDS Accession No.

WBP

'83 0818 050

909

1 REPORT NO. WBNSWP8267 R

2 PLANT WATTS BAR NUCLEAR PLANT 3 UNIT 1

4 PREPARER/ORGANIZATION/DATE J. D. Collins/WBP/August 17, 1983

5 DESCRIPTION OF CONDITION

Electrical drawing discrepancies have been identified on the logic, control, schematic, and connection drawings for the auxiliary feedwater system as a result of the Black and Veatch third party independent review. The Black and Veatch finding numbers are:

F101, F102, F103, F104, F105, F106, F107, F110, F111, F114, F115, F116, F117, F123, F124, F127, F130, F131, F141, F802, F803, F804, F805, F806

Approximately 24 drawings have been identified with minor discrepancies.

6 DATE OF OCCURRENCE EST (X) ACT. ( ) 1978

9 SIGNIFICANT CONDITION ADVERSE TO QUALITY

YES  NO

7 METHOD OF DISCOVERY Third Party Review

8 CODE (EN DES-EP 8.01)

10 \*BRANCH CHIEF/DATE

*J. Stander* 8/18/83

11 CORRECTIVE ACTION: The minor electrical drawing discrepancies identified by Black and Veatch have been corrected on the following ECNs and FCRs:

ECN 2816 - F123, F124

ECN 3647 - F101, F102, F103, F104, F106, F107, F114, F130, F131

ECN 3650 - F111, F115, F117, F127, F141, F803, F806

FCR E3458 - F105, F805

FCR E3508 - F110, F116, F802, F804

12 CORRECTIVE ACTION DEVIATES FROM A DESIGN CRITERIA REQUIREMENT

YES  NO

13 DESIGN CRITERIA DOCUMENT NO.

EXCEPTION REQUEST NO.

14 ECN REQUIRED

YES

NO

ECN NO 2816, 3647, 3650

15 SCHEDULE IMPACT

P

A

N

NONCONFORMANCE REPORT

910  
 1 REPORT NO. WBNS

16 ASSIGNABLE CAUSE: (REQUIRED IF SIGNIFICANT)

17 THIS IS A GENERIC CONDITION YES  NO

18 ACTION REQUIRED TO PREVENT RECURRENCE: (REQUIRED IF SIGNIFICANT)

19 \*INDEPENDENT REVIEW: *JL Davis 8-18-83*

20 LABOR EST. (  ), ACT. ( ) 20 MH 21 SCHEDULE EST. (  ), ACT. ( )

22 ACTIVITY NO. \*See Below 23 TASK DESCRIPTION EN 24 DATE INITIATED \*See

25 REMARKS: \* ECN 2816 - Act. No. DZ85-E281669 Date 11/29/82  
 ECN 3647 - Act. No. DZ85-E364725 Date 01/17/83  
 ECN 3650 - Act. No. DZ85-E3650R6 Date 01/28/83

This NCR supersedes NCR WBNSWP8267 RO.

27 DISTRIBUTION:  
 CONST PROJECT MANAGER J. D. Collins, 5100 MIB-K  
 EN DES PROJECT MANAGER  
 CHIEF, ESB  
 OFFICE OF QA  
 NEB (for Significant NCRs)\*\*  
 MEDS CIS  
 SRS (for Significant NCRs)\*  
 ASSISTANT TO THE MANAGER OF OEDC (Quality  
 and Nuclear Safety)--for Significant NCRs  
 \* DISTRIBUTE AFTER THIS SIGNATURE  
 \*\* HANDCARRY COPY TO NEB-NLS

26 ALL EN DES ACTION COMPLETE:

*[Signature]*  
 \*BRANCH CHIEF/ORG.

WBP '83 0818 05

MEDS ACCESSION NO.

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F 18 10 15 1

R-PL

Comments pertinent to finding:

The schematic was incorrect in showing the AUX-NOR switch connections. The connection diagrams which show how the switch was actually wired were reviewed and found to be correct. The schematic diagram (45W760-3-1 R5) was revised and issued to correct this drawing error on FCR E-3458. All corrective action is complete.

References: FCR E-3458  
NCR WBNSWP8267 R1

Note: This finding is identical to Finding F105.

*unc  
92*

*EA Cole*

Program Team Member

*11/8/83*

Date

*Harold E. McConnell*

OEDC Program Manager

*11/8/83*

Date

*E. Gray Beasley*

Chairman, OEDC Policy Committee

*11/8/83*

Date

Black & Veatch

*attached documentation supports close out of this item*

Classification: Type R Category B

*W. J. Zitzman*

Black & Veatch Project Manager

*11/28/83*

Date

*R E Blandell*

Black & Veatch Senior Review Team Chairman

*12/15/83*

Date

TENNESSEE VALLEY AUTHORITY  
FIELD CHANGE REQUEST  
REPLY MEMORANDUM

Attachment A  
FCR E-3458  
DOC

912

TO: J. C. Standifer, Sequoyah and Watts Bar Design Projects Manager, 204 GB-K (3)  
FROM: Guenter Wadewitz, Project Manager, Watts Bar Nuclear Plant CONST  
DATE: **WBN '82 1117 314**  
Attention: W. M. Roop, W3A18 C-K

SECTION I - CONST REQUEST

Reason for Change: Status Point: System No. 3  
 Drawing Discrepancy  Prior to Fuel Loading Work Package No. N/A  
 Facilitate Construction  After Fuel Loading but prior to Closing Capitalized Accounts Work Plan No. N/A  
 Additional Design Information  After Closing Capitalized Accounts for the Entire Plant

Documents Affected: 45W760-3-1 R4  
Marked documents required and attached  Yes  No  
Document revision required  Yes  No  
Description: Change transfer switch references as indicated on the attached drawing.

Change requested by: E. E. Burroughs, Jr. *E.E. Burroughs* for Unit Supervisor *H.D. Smith*  
(CONST Engineer)  
Change approved by: Charles Fisher 10-29-82  
(EN DES Engineer) (Date)  
Approval obtained by:  Telephone  Memo  Other  
Approved for transmittal to EN DES: *D.B. Sullivan* *Charles O. Christy*  
(Construction Engineer) (Project Manager)  
**SWP '83 0125 153**

SECTION II - EN DES REPLY/RESOLUTION

FCR No. 51 Date Issued 11-30-82  
Drawing Nos: 45W760-3-1 R5  
Change Complete *Amroop* *J.C. Standifer* 1-19-83  
(EN DES Engineer) (Design Project Manager) (Date)

- Copy 1 - Return to CONST by EN DES
  - Copy 2 - Retained by CONST until original is returned
  - Copy 3 - Retained by FN DES
  - Copy 4 - Retained by QCSR
- WEDS, 100 UB-K

DIVISION OF ENGINEERING DESIGN  
NONCONFORMANCE REPORT

MEDS Accession No.

WBP

'83 0818 050<sup>913</sup>

1 REPORT NO. WBNSWP8267 F

2 PLANT WATTS BAR NUCLEAR PLANT 3 UNIT 1

4 PREPARER/ORGANIZATION/DATE J. D. Collins/WBP/August 17, 1983

5 DESCRIPTION OF CONDITION

Electrical drawing discrepancies have been identified on the logic, control, schematic, and connection drawings for the auxiliary feedwater system as a result of the Black and Veatch third party independent review. The Black and Veatch finding numbers are:

F101, F102, F103, F104, F105, F106, F107, F110, F111, F114, F115, F116, F117, F123, F124, F127, F130, F131, F141, F802, F803, F804, F805, F806

Approximately 24 drawings have been identified with minor discrepancies.

6 DATE OF OCCURRENCE EST ( X ). ACT. ( ) 1978 9 SIGNIFICANT CONDITION ADVERSE TO QUALITY

7 METHOD OF DISCOVERY Third Party Review YES  NO

8 CODE (EN DES-EP 8.01) 10 \*BRANCH CHIEF/DATE J. Stardz 8/18/83

11 CORRECTIVE ACTION: The minor electrical drawing discrepancies identified by Black and Veatch have been corrected on the following ECNs and FCRs:

- ECN 2816 - F123, F124
- ECN 3647 - F101, F102, F103, F104, F106, F107, F114, F130, F131
- ECN 3650 - F111, F115, F117, F127, F141, F803, F806
- FCR E3458 - F105, F805
- FCR E3508 - F110, F116, F802, F804

12 CORRECTIVE ACTION DEVIATES FROM A DESIGN CRITERIA REQUIREMENT YES  NO

13 DESIGN CRITERIA DOCUMENT NO. EXCEPTION REQUEST NO.

14 ECN REQUIRED  YES NO  ECN NO. 2816, 3647, 3650 15 SCHEDULE IMPACT  P  A  N

NONCONFORMANCE REPORT

914  
 1 REPORT NO. WBNS

16 ASSIGNABLE CAUSE: (REQUIRED IF SIGNIFICANT)

17 THIS IS A GENERIC CONDITION YES  NO

18 ACTION REQUIRED TO PREVENT RECURRENCE: (REQUIRED IF SIGNIFICANT)

19 \*INDEPENDENT REVIEW: *J. L. Davis 8-18-83*

20 LABOR EST. (X), ACT. ( ) 20 MH 21 SCHEDULE EST. (X), ACT. ( )

22 ACTIVITY NO. \*See Below 23 TASK DESCRIPTION EN 24 DATE INITIATED \*Se

25 REMARKS: \* ECN 2816 - Act. No. DZ85-E281669 Date 11/29/82  
 ECN 3647 - Act. No. DZ85-E364725 Date 01/17/83  
 ECN 3650 - Act. No. DZ85-E3650R6 Date 01/28/83

This NCR supersedes NCR WBNSWP8267 RO.

27 DISTRIBUTION: J. D. Collins, 5100 MIB-K  
 CONST PROJECT MANAGER

28 EN DES PROJECT MANAGER  
 CHIEF, ESB  
 OFFICE OF QA  
 NEB (for Significant NCRs)\*\*  
 MEDS CIS  
 NSRS (for Significant NCRs)\*  
 ASSISTANT TO THE MANAGER OF OEDC (Quality  
 and Nuclear Safety)--for Significant NCRs  
 \* DISTRIBUTE AFTER THIS SIGNATURE  
 \*\* HANDCARRY COPY TO NEB-NLS

26 ALL EN DES ACTION COMPLETE:

*[Signature]*  
 \*BRANCH CHIEF/ORG.

WBP '83 0818 05

MEDS ACCESSION NO.

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F 18 10 16 1

R-PL

Comments pertinent to finding:

Wire No. 3AR was shown as being connected to the green light associated with switch 1-HS-3-179A/B. The wire No. should have been 3AG. This error was corrected per ECN 3650 on drawing 45W1769-5 R4. All corrective action is complete.

References: ECN 3650  
NCR WBNSWP8267 R1

Note: This finding is identical to Finding F117.

<i>copy 92</i>	<u><i>EU Cole</i></u> Program Team Member	<u>11/8/83</u> Date
	<u><i>Thomas E Mc Connell</i></u> OEDC Program Manager	<u>11/9/83</u> Date
	<u><i>Elmer Beasley</i></u> Chairman, OEDC Policy Committee	<u>11/14/83</u> Date

Black & Veatch *attached documentation supports close out of this item*

Classification: Type                     R                     Category                     B                    

*W. J. Zimmerman*  
Black & Veatch Project Manager

11/28/83  
Date

*RE Blandell*  
Black & Veatch Senior Review Team Chairman

12/15/83  
Date

# ENGINEERING CHANGE NOTICE COVER SHEET

SWP '83 0120 5

(BEFORE ISSUANCE OF OPERATING LICENSE)

TENNESSEE VALLEY AUTHORITY  
DIVISION OF ENGINEERING DESIGN

ECN NO. 3650

Watts Bar Nuclear Plant, Spring City, TN

To: Construction Project Manager SWP 204 GB-K

From: Design Project Manager \_\_\_\_\_

DATE JAN 20 1983

Budget item: 221

Was IJ Analysis Required: Yes \_\_\_\_\_ No

Prepared by CHARLES C. FISHER SWP E2 Section UNCOOP Section Leader  
 Project Engineer G. D. Collins Released: J. C. Standiford Design Project Manager Date 1-17-83

### SCOPE

Project WATTS BAR NUCLEAR PLANT Affected Unit(s) 1 & 2

System or Feature (3) AUXILIARY FEEDWATER SYSTEM NCR WBN SWP 8267

Reference & Description of Change CORRECT DRAWINGS PER BLACK & VEATCH

FINDINGS F802; F803; F804; F806; F807; F111; F115; F116; F117; F127; F133; F141. TRANSFER PKGS X(3)-1 & X(3)-2 (NCR WBN SWP 8267)

DRAWINGS OR B/M'S INVOLVED (Yes) \_\_\_\_\_ (No) \_\_\_\_\_  
 (Data Sheets Required) \_\_\_\_\_ (Available) \_\_\_\_\_

# CLOSED

8-26-83  
DATE 8-26-83  
closure sh103

ENGINEERING BRANCH	SWP	BRANCH	NO	_____
Civil			NO	_____
Electrical			NO	_____
Mechanical			NO	_____
Nuclear			NO	_____
NUCLEAR PROJECT DESIGN GROUPS				
Civil			NO	_____
Electrical	<u>E2</u>		YES	_____
Mech			NO	_____

ENGINEERING SUPPORT BRANCHES Approval Required	Yes <input checked="" type="checkbox"/>
ECN is ready for branch review:	<u>12-14-82</u> Date
Approved:	
<u>N/A</u> ENS CIVIL BR. CHIEF	Date _____
<u>F.W. Choudhury/wrk</u> ENS ELECTRICAL BR. CHIEF	Date <u>12/28/82</u>
<u>N/A</u> ENS MECHANICAL BR. CHIEF	Date _____
<u>A. Wilder for</u> Chief Nuclear Engineer	Date <u>1-7-83</u>

FOSSIL, HYDRO & SPECIAL PROJECTS DESIGN  
 SPECIAL DESIGN PROJECTS NO  
 ARCHITECTURAL SUPPORT BRANCH NO

WBP '83 0826 539

Required for PSAR or FSAR NO YES 1-7-83  
 Required for Preoperational Test: NO  
 If Yes, Test No. \_\_\_\_\_  
 Vendor Backcharges Involved NO  
 Seismic Analysis Required NO  
 Nonconformance Report Required YES  
 QA Applies YES  
 Security System Modified NO  
 Vendor(s) involved: NON

PHYSICAL WORK MUST BE DONE BEFORE:						
	Pre-Op Test	1st Fuel Load	1% Therm Power	Comm'l Oper'n	1st Refuel	
Unit(s) <u>1 &amp; 2</u>		<input checked="" type="checkbox"/>				
Unit(s)						

CC (Attachments): None YES (1)

CHIEF, ARCHITECTURAL SUPPORT BRANCH, W4C126 C-E  
 CHIEF, CIVIL ENGINEERING BRANCH, W9D228 C-K  
 CHIEF, ELECTRICAL ENGINEERING BRANCH, W8C126 C-E  
 CHIEF, MECHANICAL ENGINEERING BRANCH, W7C126 C-E  
 CHIEF, NUCLEAR ENGINEER, W10C126 C-K  
 CHIEF, QUALITY ASSURANCE BRANCH, 5100 HIB-K

CHIEF, COST PLANNING AND CONTROL STAFF, W12C74 C-E  
 CHIEF, SPECIAL DESIGN PROJECTS, W20224 C-K  
 MANAGER OF CONSTRUCTION, E7824 C-E  
 PLANT SUPERINTENDENT  
 HEDS, W5M63 C-K



Watts Bar Nuclear Plant, Building 204 GB-K

To: Design Project Manager SWP 204 GB-K  
JAN 20 1983

Released By: J. D. Collins  
Design Project Manager

Preparing Section	MEDS Accession No.	MEDS Accession No.
<u>E2</u>	R 0 SWP '83 0120 525	R 4
Prepared By: <u>CHARLES C. FISHER</u>	R 1 SWP '83 0214 544	R 5
Total Pages (RO): <u>R2</u>	R 2 SWP '83 0308 522	R 6
Section Supervisor: <u>UNLIMITED</u>	R 3	R 7
Staff Eng. or Architect: <u>N/A</u>		
Group Head: <u>J. D. Collins</u>		
Branch Chief: _____		
Date: _____		

Project WATTS BAR NUCLEAR PLANT SCOPE \_\_\_\_\_ Affected Units 1 & 2

System or Feature (3) AUXILIARY FEEDWATER SYSTEM

Reference & Description of Change CORRECT DRAWINGS PER BLACK & VEATCH

FINDINGS <sup>CCF</sup> ~~F802~~; <sup>CCF</sup> F803; <sup>CCF</sup> ~~F804~~; F806; <sup>CCF</sup> ~~F810~~; F111; F115; <sup>CCF</sup> ~~F116~~; F117; F127; F133; F141.

**CLOSED**

DATE AUG 26 1983

SEE ASSOCIATED DRAWINGS LIST, REVERSE SIDE

REV. NO.	DATE ISSUED	PRE-PARED	SECT. SUPV.	GROUP HEAD	BRANCH CHIEF	ECN CLERK	D.P. MGR.	DESCRIPTION OF REVISION	TOTAL PAGES
1	2-14-83	CCF	<u>CCF</u>	<u>CCF</u>	<u>N/A</u>	<u>H/H</u>	<u>JUS</u>	DELETED 2 DWGS & ADDED 5 DWGS	
2	3-8-83	REC	<u>CCF</u>	<u>CCF</u>	<u>N/A</u>	<u>N/A</u>	<u>XS</u>	DELETED 1 DWGS	2

Request: N/A NO PR REQ'D  
 Files: \_\_\_\_\_  
 Additional Information: \_\_\_\_\_



IEN NO. 3650  
 ATTACHMENT 1  
 SHEET 1 OF 1

DIVISION OF ENGINEERING DESIGN  
NONCONFORMANCE REPORT

919

MEDS Accession No. SWP '82 1221 019

1 REPORT NO. WBNSWP8267

2 PLANT WATTS BAR NUCLEAR PLANT

4 PREPARER/ORGANIZATION/DATE J. D. Collins/SWP/December 21, 1982

3 UNIT 1

5 DESCRIPTION OF CONDITION

Electrical drawing discrepancies have been identified on the logic, control, schematic, and connection drawings for the auxiliary feedwater system as a result of the Black and Veatch third party independent review. The Black and Veatch finding numbers are:

F101, F102, F103, F104, F105, F106, F107, F110, F111, F114, F115, F116, F117, F123, F124, F127, F130, F131, F141, F802, F803, F804, F805, F806

Approximately 24 drawings have been identified with minor discrepancies.

6 DATE OF OCCURRENCE EST ( X ), ACT. ( ) 1978

7 METHOD OF DISCOVERY Third Party Review

8 CODE (EN DES-EP 8.01)

9 SIGNIFICANT CONDITION ADVERSE TO QUALITY  
YES  NO

10 \*BRANCH CHIEF/DATE EMC 12/21/82

11 CORRECTIVE ACTION:

12 CORRECTIVE ACTION DEVIATES FROM A DESIGN CRITERIA REQUIREMENT YES  NO

13 DESIGN CRITERIA DOCUMENT NO. EXCEPTION REQUEST NO.

14 ECN REQUIRED  YES  NO  LCN NO

15 SCHEDULE IMPACT  P  A  N



DIVISION OF ENGINEERING DESIGN  
NONCONFORMANCE REPORT

MEDS Accession No.

WBP '83 0818 050 <sup>921</sup>

1 REPORT NO. WBNSWP8267 R

2 PLANT WATTS BAR NUCLEAR PLANT 3 UNIT 1

4 PREPARER/ORGANIZATION/DATE J. D. Collins/WBP/August 17, 1983

5 DESCRIPTION OF CONDITION

Electrical drawing discrepancies have been identified on the logic, control, schematic, and connection drawings for the auxiliary feedwater system as a result of the Black and Veatch third party independent review. The Black and Veatch finding numbers are:

F101, F102, F103, F104, F105, F106, F107, F110, F111, F114, F115, F116, F117, F123, F124, F127, F130, F131, F141, F802, F803, F804, F805, F806

Approximately 24 drawings have been identified with minor discrepancies.

6 DATE OF OCCURRENCE EST (X) ACT. ( ) 1978 9 SIGNIFICANT CONDITION ADVERSE TO QUALITY

YES  NO

7 METHOD OF DISCOVERY Third Party Review

8 CODE (EN DES-EP 8.01) 10 \*BRANCH CHIEF/DATE J. D. Collins 8/18/83

11 CORRECTIVE ACTION: The minor electrical drawing discrepancies identified by Black and Veatch have been corrected on the following ECNs and FCRs:

- ECN 2816 - F123, F124
- ECN 3647 - F101, F102, F103, F104, F106, F107, F114, F130, F131
- ECN 3650 - F111, F115, F117, F127, F141, F803, F806
- FCR E3458 - F105, F805
- FCR E3508 - F110, F116, F802, F804

12 CORRECTIVE ACTION DEVIATES FROM A DESIGN CRITERIA REQUIREMENT YES  NO

13 DESIGN CRITERIA DOCUMENT NO. EXCEPTION REQUEST NO.

14 ECN REQUIRED  YES NO  ECN NO 2816, 3647, 3650 15 SCHEDULE IMPACT  P  A  N

NONCONFORMANCE REPORT

922  
 1 REPORT NO. WBNSW

16 ASSIGNABLE CAUSE: (REQUIRED IF SIGNIFICANT)

17 THIS IS A GENERIC CONDITION YES  NO

18 ACTION REQUIRED TO PREVENT RECURRENCE: (REQUIRED IF SIGNIFICANT)

19 \*INDEPENDENT REVIEW: *JL Harris 8-18-83*

20 LABOR EST. (  ), ACT. ( ) 20 MH 21 SCHEDULE EST. (  ), ACT. ( )

22 ACTIVITY NO. \*See Below 23 TASK DESCRIPTION EN 24 DATE INITIATED \*See

25 REMARKS: \* ECN 2816 - Act. No. DZ85-E281669 Date 11/29/82  
 ECN 3647 - Act. No. DZ85-E364725 Date 01/17/83  
 ECN 3650 - Act. No. DZ85-E3650R6 Date 01/28/83

This NCR supersedes NCR WBNSWP8267 RO.

27 DISTRIBUTION:  
 CONST PROJECT MANAGER J. D. Collins, 5100 MIB-K  
 EN DES PROJECT MANAGER  
 28 CHIEF, ESB  
 OFFICE OF QA  
 NEB (for Significant NCRs)\*\*  
 MEDS CIS  
 NSRS (for Significant NCRs)\*  
 ASSISTANT TO THE MANAGER OF OEDC (Quality  
 and Nuclear Safety)-for Significant NCRs  
 \* DISTRIBUTE AFTER THIS SIGNATURE  
 \*\* HANDCARRY COPY TO NEB-NLS

26 ALL EN DES ACTION COMPLETE:

*[Signature]*  
 \*BRANCH CHIEF/ORG.  
 WBP '83 0818 05  
 MEDS ACCESSION NO.

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F/8/0/7/

Comments pertinent to finding:

Cables 1V2963B, 1A3193, and 1V2944B are properly tagged with applicable division color code.

Field Verified by: Betsy Alwood  
System Engineer

<u>Robert C Mc Kay</u> Program Team Member	<u>11/23/83</u> Date
<u>Thomas E Mc Connell</u> OEDC Program Manager	<u>11/23/83</u> Date
<u>E Gray Beasley</u> Chairman, OEDC Policy Committee	<u>11/23/83</u> Date

Black & Veatch *The attached request for classification (10520DIN 2888) and the TVA response dated 12/23/83 (10520DIN 1068) support close out of this item*

Classification: Type R Category A

<u>W.J. Zilzianas</u> Black & Veatch Project Manager	<u>12/28/83</u> Date
<u>RE Blandell</u> Black & Veatch Senior Review Team Chairman	<u>12/30/83</u> Date

TENNESSEE VALLEY AUTHORITY  
 DIVISION OF ENGINEERING DESIGN  
 To: Construction Project Manager Watts Bar Nuclear Plant, Spring City, TN  
 From: Design Project Manager SWP 204 GB-K  
 DATE MAR 14 1983 Budget Item: 211  
 ECN NO. 3511

Was Analysis Required: Yes  No

G.L. PENNINGTON Prepared by 1/16/12 Project Engineer  
SWP WMG-2 Section  
J.J. Nash Section Leader  
J.C. Strickland Design Project Manager  
3/9/83 Date  
 SCOPE

Project WATTS BAR NUCLEAR PLANT Affected Unit(s) 1  
WBNSWP8301, WBNSWP8309, WBNSWP8302  
 System or Feature AUXILIARY FEEDWATER - SYS 38 (NCP)  
 Reference & Description of Change ENDES CHANGES, EXCEPT ELECTRICAL, DUE TO BLACK AND VEATCH INDEPENDENT REVIEW FINDINGS. REF NEB 82 1006 220 (ATTACH 1)

DRAWINGS OR B/M'S INVOLVED: (Data Sheets Required)	Yes or No	Date Branch Data Sheet Available
<b>ENGINEERING SUPPORT BRANCHES</b>		
Civil	<u>YES</u>	_____
Electrical	<u>No</u>	_____
Mechanical	<u>No</u>	_____
Nuclear	<u>No</u>	_____
<b>NUCLEAR PROJECTS DESIGN GROUPS</b>		
Civil 1,2	<u>YES</u>	_____
Electrical 4	<u>YES</u>	_____
Mech 2	<u>YES</u>	_____
<b>FOSSIL, HYDRO &amp; SPECIAL PROJECTS DESIGN</b>		
SPECIAL DESIGN PROJECTS	<u>No</u>	_____
ARCHITECTURAL SUPPORT BRANCH	<u>No</u>	_____

ENGINEERING SUPPORT BRANCHES Approval Required	Yes or No <u>YES</u>
ECN is ready for branch review: <u>R.D. Tella</u> Design Project Manager <u>for</u>	<u>2-9-83</u> Date
Approved: <u>R.O. Barnett</u> ERS CIVIL BR. CHIEF <u>NA/DA</u> ERS ELECTRICAL BR. CHIEF <u>C. Davidson for</u> ERS MECHANICAL BR. CHIEF <u>A. Wilder for</u> Chief Nuclear Engineer	<u>2/23/83</u> Date <u>2-28-83</u> Date <u>3-7-83</u> Date

Required for PSAR or FSAR	Yes or No <u>NO</u>
Required for Preoperational Test: If Yes, Test No.	<u>YES</u> <u>NO</u> <u>PS</u> <u>PSA</u>
Vendor Backcharges Involved	<u>No</u>
Seismic Analysis Required	<u>YES</u>
Nonconformance Report Required	<u>YES</u>
QA Applies	<u>YES</u>
Security System Modified	<u>No</u>
Vendor(s) involved:	<u>No</u>

PHYSICAL WORK MUST BE DONE BEFORE:					
	Pre-Op Test	1st Fuel Load	1% Therm Power	Comm't Oper'n	1st Refuel
Unit(s) <u>1</u>		<u>✓</u>			
Unit(s)					



Watts Bar Nuclear Plant

DATE: MAR 14 1983

Released By: [Signature] Design Project Manager

Working Section RE-CESS-PA52	MEBS Accession No.	MEBS Accession No.
Prepared by Michael A. Brudwig	R 0 SWP '83 0314 507	R 1 WBP '83 0829 507
Total Pages (RO): 02	R 1 WBP '83 0428 513	R 5 WBP '83 0928 532
Section Supervisor: J. E. McLean	R 2 WBP '83 0727 504	R 6 WBP '83 1013 505
Staff Eng. or Architect:	R 3 WBP '83 0808 522	R 7
Group Head: [Signature]		
Branch Chief: R. D. Barnett Date: 11/29/82		

SCOPE

Project WATTS BAR NUCLEAR PLANT Affected Units 1 & 2

System or Feature AUX. Feedwater - SYSTEM 3

Reference & Description of Change CHANGES DUE TO BLACK & VEATCH INDEPENDENT Review Findings

B. Chapman  
V-3637  
10/27/83

SEE ASSOCIATED DRAWINGS LIST, REVERSE SIDE

REV. NO.	DATE ISSUED	PREPARED	SECT. SUPV.	GROUP HEAD	BRANCH CHIEF	ECN CLERK	D.P. MGR.	DESCRIPTION OF REVISION	TOTAL PAGES
1	4-28-83	JNR	JEM	TC	ROB	MR	JCSA	Add Dwg	2
2	7-27-83	JHR	JEM	TCR	ROB	MBO	TCSA	Add Dwg's	2
3	8-8-83	JNR	JEM	TC	ROB	MR	JCSA	Add dwg. est.	2
4	8-29-83	JNR	JEM	TC	ROB	MR	JCSA	Add Dwg's	2
5	9-28-83	JMC	JEM	JAY		MBO	JCSA	ADD DWG'S AND ADD PAGE 3/Revise DATES	3
6	10-5-83	JMC	JEM	JAY		MR	JCSA	ADD DWG	3

as follows:  
Additional Information:

NO.	DESCRIPTION OR C/W NUMBER	REV.	DATE	DATE	REMARKS	
	<del>47W427-201</del>		4-15-83	10/2/83		
	47W427-201	6	2-28-83	2-2-83	N3-3-4A	
2	47W427-207	5	5-30-83	4-28-83	N3-3-13A, 14S	1
	47B427-380	3			N3-3-13A	1
	-382	3			N3-3-14A	1
	-383	5		↓	N3-3-14A	1
✓	47W427-219	1	↓	4-28-83	05-02	1
2	47W427-206	5	7-30-83	7-27-83	N3-3-1A, 2A	2
	47B427-512	1		7-27-83		2
	-478	2				2
	-513	1				2
1	47W427-203	5			N3-3-10A, 12A	2
2	-205	6			N3-3-9A	2
1	-200	6		✓	N3-3-3A	2
1	-202	7	↓	7-27-83	N3-3-11A	2
2	Unit 2 est 6		12-30-84			5
	47W427-201	7	8-30-83	8-29-83	N3-3-4A	
	47B427-475	2		8-29-85		
	468	2				
	484	1		8-27-83		
2	47W401-212	2		9-12-83	200-02-05	
	47B401-408	1		9-12-83		
	410	1		9-12-83		
✓	409	1		9-12-83		
1	47B427-373	4		9-12-83	N3-3-3A	
2	412		12-30-83		N3-3-15A	5 ✓
2	47B401-421	1	✓	9-12-83	200-02-05	✓
2	47W427-207	7	10-28-83	10-3-83	N3-3-13A, 14A	5
1	47W427-203	6			N3-3-10A, 12A	
1	47B427-379	3			N3-3-12A	
1	-378	5				
1	-376	3			N3-3-10A	
	-375	5				
2	47W427-206	6		10-12-83	N3-3-1A, 2A	
1	-202	9		10-3-83	N3-3-11A	
1	47B427-377	7	↓	10-3-83		

CTED SIT	DRAWING OR B/M NUMBER	DWG REV.	ISSUE DATE		REMARKS	LINE CROTTED ON THIS SHEET REV. NO.
			EXPECTED	ACTUAL		
1	47B427-383	6	10-28-83	10-3-83	N3-3-11A	5
1	47W427-200	7	↓	10-3-83	N3-3-3A	
1	47B427-380	4	↓	↓	↓	
1	-382	4	↓	↓	↓	
1	-374	5	↓	↓	↓	
1	47W427-201	8	↓	10-3-83	N3-3-4A	↓
1	47B427-381	5	↓	↓	↓	
1	47W427-221	1	10-28-83	↓	N3-3-5A	5
1	-220	2	↓	↓	↓	
1	47B427-522	1	↓	↓	↓	
1	-523	1	↓	↓	↓	
18.2	47W427-206		11-1-83		N3-3-1A, 2A	6

A. Johnston

Released By:

for Design Project Manager

Design Project Manager  
MAR 14 1983

Preparing Section	MEDS Accession No.	MEDS Accession No.
CC #1	SWP '83 0314 508	R 4
Prepared by: B.W. WHITTIER	WBP '83 0713 518	R 5
Total Pages (RO): 2		R 6
Supervisor: [Signature]		R 7
Staff Eng. or Architect: N/A		
Group Lead: A. Johnston		

Branch Chief: \_\_\_\_\_ Date: \_\_\_\_\_ SCOPE: \_\_\_\_\_ Affected Units: 1R2

Project: WATT'S BAR NUCLEAR PLANT

System or Feature: AUXILIARY FEEDWATER - SYS 3B

Reference & Description of Change: CHANGES DUE TO PUCK & VERTICAH INDEPENDENT

REVIEW FINDINGS

SEE ASSOCIATED DRAWINGS LIST, REVERSE SIDE

REV. NO.	DATE ISSUED	PREPARED	SECT. SUPV.	GROUP HEAD	BRANCH CHIEF	ECN CLERK	D.P. MGR.	DESCRIPTION OF REVISION	TOTAL PAGES
1	7-13-82	AL				MK	JLS	DELETED DWGS	

Reon No. NO PR

Materials as follows: N/A

Additional Information: N/A



930

DATA SHEET NO. 3

Project: Watts Bar Nuclear Plant  
Date: MAR 14 1983

Prepared By: A. Jenson  
Design Project Manager

Preparing Section <u>WCG #2</u>	MEDS Accession No.	MEDS Accession No.
Prepared By: <u>D.E. MARTIN</u>	R 0 SWP '83 0314 509	R 4
Total Pages (PO): <u>2</u>	R 1 SWP '83 0401 509	R 5
Division	R 2	R 6
Author: <u>D.E. Martin</u>	R 3	R 7
Start Eng. or Architect: <u>N/A</u>		
Group Head: <u>A. Jenson</u>		
Branch Chief: _____		
Date: _____		

SCOPE

Project WATTS BAR NUCLEAR PLANT Affected Units 1&2

System or Feature AUXILIARY FEEDWATER - SYS 3B

Reference & Description of Change CHANGES DUE TO BLACK AND VEATCH INDEPENDENT REVIEW FINDINGS

SEE ASSOCIATED DRAWINGS LIST, REVERSE SIDE

REV. NO.	DATE ISSUED	PREPARED	SECT. SUPV.	GROUP HEAD	BRANCH CHIEF	ECN CLERK	D.P. MGR.	DESCRIPTION OF REVISION	TOTAL PAGES
1	4-1-83	ELF	SEM	AJ	N/A	AJ	WJ	Delete 1 drawing	2

Ref No. NO PR

Materials as follows: N/A

Additional Information: N/A







DRAWING OR B/M NUMBER	DWG REV.	DATE		REMARKS	PROJECT NO. / DRAWING NO.
		EXPECTED	ACTUAL		
1 47W803-Z	18	3-31-83	4-12-83	FSAR Fig 10.4-21	F307
<del>47W803-Z</del>					
47W803-Z-4	18		4-14-83		F302
-5	7		↓		F303
✓ -6	7		↓		F304
03B-1AFW-R2	904		3-24-83	NCR WBN5WP8301	F784
-R3					F787
-R11	902		3-24-83	VOID DWG	F788
-R24					F813
-R26	906		3-24-83	NCR WBN5WP8301	F794
-R42	903		3-24-83		F707
-R52				VOID DWG	F821
-R55					F357
-V57					F358
-R65					F359
-R62					F360
-R72					F361
-R74					F362
-V90					F814
-R91				NCR WBN5WP8301	F845
-R94					F937
-R100	903		8-10-83		F704
-R116	903		3-24-83		F751
-R120					F753
<del>---</del>					
-R180	901		3-24-83	NCR WBN5WP8301	F964
-R182	903		↓	NCR WBN5WP8301	F965
✓ -R188	903		4-8-83	NCR WBN5WP8305	F775
-R207				VOID DWG	F865
2 2AFW-R219	902		3-24-83		F772
1AFW-R221	904		4-8-83	NCR WBN5WP8272	F365
2 2AFW-R223	902		8-10-83	NCR WBN5WP8301	F783
1AFW-R231	902		3-24-83	NCR 4455R	F718
-R236				NCR WBN5WP8301	F853
✓ -R237	903		3-24-83		F370
					F372
✓ 1-03B-57	902	✓	↓		F919

ISSUED DATE	DRAWING OR B/M NUMBER	DWG REV.	ISSUE DATE		REMARKS	LIFE IN RE
			EXPECTED	ACTUAL		
	1-03B-64	904	3-31-83	3-24-83		F820
	47A060-3-1	1		3-24-83		F764
	47A427-3-7	2		3-24-83	NEW WNSWP 8301	F863
	<del>3-1</del>				NEW DWG	F817
	-5-1	0		3-24-83	NEW DWG	F868
	V -2-32	0		4-8-83	NEW WNSWP 8301 NEW DWG	F869
V	47A450-3-67	1	V	3-24-83	NEW WNSWP 8301	F371
1	47A060-3-8	2	3-31-83	8-10-83		F319
	<del>47A060-3-9</del>					F824
	47A060-3-10	3		8-10-83		F324
	<del>47A060-3-11</del>					F825
	1-03A-446	905		3-24-83		F884
	<del>03B-1AFW-R58</del>				VOID DWG	F844
	<del>R59</del>					F845
	<del>-R67</del>					F827
	<del>R69</del>					F8
	<del>-R65</del>					F8
	<del>-V71</del>					F833
	V V -R75				V V	F831
	<del>47A060-3-34</del>				NEW WNSWP 8301 NEW DWG	F311
	<del>47A427-1-3</del>					F848
	<del>-7-5</del>					F851
	<del>-7-6</del>					F855
	<del>-7-7</del>					F858
	<del>-8-1</del>					F847
V	V -8-2		V		V V	F833
2	03B-2AFW-R237	901	3-31-83	3-24-83		F370
1	03B-1AFW-V207	908	3-31-83	3-24-83		F756
1	47A060-3-3	4	3-31-83	3-24-83		F747
1	47A427-5-1A	0	3-31-83		NEW DWG	F868
1	1-03B-1	902	3-31-83	V	VOID DWG	F868
2	47A427-2-33	0	4-8-83	4-8-83	NEW DWG	F369
1	47A427-2-34	0	4-8-83	V	NEW DWG	F7
	<del>03B-1AFW-R100</del>					
1	03B-1AFW-R150	902	6-20-83	8-10-83		F736
1	47A427-4-5	0	8-8-83	8-10-83	NEW DWG	F775



936

DESIGN SHEET NO. 5

WATTS BAR NUCLEAR PLANT, TN

Project Manager SWP 204 C-K  
Date: MAR 1 1989

Released By: [Signature]  
Design Project Manager

Preparing Section <b>WEG-4</b>	MEDS Accession No.	MEDS Accession No.
Prepared By: <b>A.F. NESTASIA</b>	R 0 SWP 83 0314 511	R 4
Total Pages (BO): <b>2</b>	R 1 WEP 830419 525	R 5
Section Supervisor: <b>E. G. Murrell</b>	R 2	R 6
Staff Eng. or Architect: <b>N/A</b>	R 3	R 7
Group Head: <b>J. D. Collins</b>		
Branch Chief: _____	Date	

Project WATTS BAR NUCLEAR PLANT Affected Units 1

System or Feature AUX BLDG CABLE TRAYS

Reference & Description of Change CHANGES DUE TO BLACK & VEATCH INDEPENDENT REVIEW FINDING F-817 (MECHANICAL)

SEE ASSOCIATED DRAWINGS LIST, REVERSE SIDE

REV. NO.	DATE ISSUED	PRI.	SECT. PAR.	SECT. SUPV.	GROUP HEAD	BRANCH CHIEF	ECN CLERK	D.P. MGR.	DESCRIPTION OF REVISION	TOTAL PAGES
1	4-19-83	ASST	ESM	10/1	N/A	IMK	ESM		ADDED DWG	2

Materials as follows:

Additional Information:

- CHIEF, COST PLANNING AND CONTROL STAFF, W12C7 & C-K
- CHIEF, ARCHITECTURAL SUPPORT BRANCH, W4C126 C-K
- CHIEF, CIVIL ENGINEERING BRANCH, W49D228 C-K
- CHIEF, ELECTRICAL ENGINEERING BRANCH, W4C126 C-K
- CHIEF, SPECIAL DESIGN PROJECTS, W2D228 C-K
- PLANT SUPERINTENDENT
- CONSTRUCTION PROJECT MANAGER
- MEDS, W5B63 C-K
- ARMS, 64C ESTZ-C



938

WED Project Manager 5-9-83

Project Manager

Preparing Section <b>WBP WMG # 4</b>	MEDS Accession No.	MEDS Accession No.
Prepared By: <b>W. I. KEETON</b> Date: <b>5-6-83</b>	<b>WBP 830509 502</b>	
Total Pages (R/D): <b>2</b>		
Section Supervisor: <b>B. Longell</b>		
Staff Engineer/Architect: <b>N/A</b>		
Group Head: <b>J. [Signature]</b>		
Br. Chief/SDP Mgr.:		

SCOPE

Project WATTS BAR NUCLEAR PLANT Affected Units I ONLY

System or Feature SLEEVE FOR AUX FEEDWATER

Reference & Description of Change NCR 4622 RO TRIM SLEEVE MK 782 FLUSH WITH NORTH SIDE OF "U" LINE WALL (ONE PLACE)

SEE ASSOCIATED DRAWINGS LIST, REVERSE SIDE

REV. NO.	DATE ISSUED	PREPARED	SECT. SUPV.	GROUP HEAD	BRANCH CHIEF	ECN CLERK	D.P. MGR.	DESCRIPTION OF REVISION	TOTAL PAGE

Drawn No. N/A

Field Materials as follows: NONE

Additional Information:





TELEPHONE MEMORANDUM

10520DIN2118  
10520.15.1000

946

DATE 12/14/83  
 TIME 12:53 XATX PM  
 (TO) ~~(FROM)~~ H. E. McConnell TELEPHONE (615) 632-4450  
 COMPANY Tennessee Valley Suthority CC: H. E. McConnell, TV  
 RECORDED BY W. J. Zidziunas *wjz* R. E. Blaisjell  
 PROJECT WBNP-Independent Review PROJ. NO. 10520 PDCA/File  
 SUBJECT Finding Report Responses FILE NO. 15.1000

I called Mr. McConnell to discuss Findings as follows.

F757 (F366) - The inspection tickets for hanger 03B-1AFW-R225 Rev. 904 appear to be against an earlier revision of the drawing and pre-date the hanger drawing by almost one year, in one case, and by seven months in another. Re-examination of F366 data revealed a similar situation. An explanation and/or revised data for these two findings is needed.

F782 - The TVA submittal addresses certification of the hanger to FCR 7598, but the changes defined in Form 1 do not appear to have been made; and the hanger drawing 03B-2AFW-R222, which was forwarded by Form 3, still shows the brace. Please clarify the submittal.

F807 - Please verify the cable designation 1A3913 has been color-coded properly. The Form 3 certifies Cable 1A3193. Refer to DRR 727 and F807 basis.

F847 - The computer printout is not legible, let alone reproducible. A readable copy is needed to verify that the outstanding work is, in fact, listed.

Data Sheet 4 references Drawing 47A060-3-8 and 47A060-3-8A against F319 but does not mention this Finding; in fact, no mention of F847 can be found in the ECN 3511 data that was submitted. Clarification and/or additional data is needed before B&V can process this Finding.

F881 - Please provide a replacement printout since the one provided will not adequately reproduce.

Homer indicated he would look into these items.

I advised him that B&V will probably come to Knoxville to review the information that supports the DRR matrix.

bam

RECEIVED B & V  
 DEC 15 1983  
 PROJECT # 10520



TENNESSEE VALLEY AUTHORITY  
KNOXVILLE TENNESSEE 37902

400 West Summit Hill Drive, W10C126 C-K

DEC 23 1983

Black and Veatch  
11401 Lamar Avenue  
Overland Park, Kansas 66211

Attention: Mr. W. J. Zidziunas

Gentlemen:

PERSONAL SERVICES CONTRACT NO. TV-60052A

*WJZ MJR*  
RECEIVED B & V  
DEC 27 1983  
PROJECT # 10520

In response to your telephone request to H. E. McConnell, we are providing additional information for the following findings:

F-807

Our Form 3 certified cable 1A3193 as being properly color-coded; this was a typographical error. The correct number is 1A3913. Please make this correction on Form 3.

F-847

Enclosed is a replacement computer printout for this finding. Engineering change notice (ECN) 3511 data sheet references drawings 47\*060-3-8 and 47A060-3-8A against F-319 because it is the finding that required the design to be changed and drawings to be revised. Finding 847 relates to incomplete installation and would not be referenced in the ECN. The ECN was provided to show drawing revisions and the computer printout shows that the installation has not been completed.

F-782

The brace referred to our drawing, 03B-2AFW-R222, which was deleted on Field Change Request (FCR) H-7598. Inspections were made using this FCR as noted on the test card and the computer printout.

F-881

Enclosed is a replacement computer printout for this finding.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

*H E McConnell*

for John A. Raulston, Chief  
Nuclear Engineering Support Branch

Enclosures

TENNESSEE VALLEY AUTHORITY  
WATTS BAR NUCLEAR PLANT  
AUXILIARY FEEDWATER SYSTEM  
INDEPENDENT REVIEW

SUPPLEMENTARY REPORT

APPENDIX A BOOK 4  
FOLLOW-UP DATA  
B&V PROJECT NO. 10520

Issued: February 7, 1984

TVA CONTRACT NO. TV-60052A

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEWFinding Number F/8/0/8/

O-PL

## Comments pertinent to finding:

At the Black and Veatch inspection, AFW Pump, associated instrumentation, and controls were not installed and tested. This equipment was being tracked as incomplete by the Construction accountability program. Installation has now been completed in accordance with existing Quality Assurance program and tracked with the accountability program. Attached is a copy of Quality Assurance inspection documentation and accountability print-out.

<u><i>Robert M. Ory</i></u> Program Team Member	<u>11/9/87</u> Date
<u><i>James E. McConnell</i></u> OEDC Program Manager	<u>11/14/83</u> Date
<u><i>M. S. Martin / E. G. Peasley</i></u> Chairman, OEDC Policy Committee	<u>11/18/83</u> Date

Black & Veatch *The attached documentation indicates that installation is complete. The TVA response to test and calibration is considered appropriate.*

Classification: Type R Category A

<u><i>W. J. Zidzicunas</i></u> Black & Veatch Project Manager	<u>12/21/83</u> Date
<u><i>R. E. Blandell</i></u> Black & Veatch Senior Review Team Chairman	<u>12/27/83</u> Date

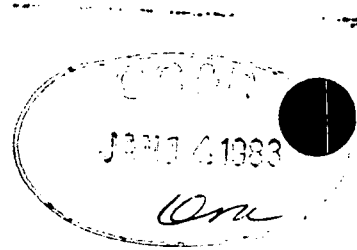
ENGINEERING EVALUATION  
QCI 1.08

IDENT 1-03B-PMP-1A-5  
PROC/RECORD QCP-4.7/ATTACHMENT A  
QCP-2.2/ATTACHMENT O  
CURRENT PROC 4.07-1-Rev.2  
TEST NO. 32

EVALUATION THE DESIGN DRAWINGS  
AND WBNP-QCP-2.2, 2.4, AND 4.7  
DESIGNATED THE ANCHOR STUDS  
AS QA LEVEL 2 MATERIAL.  
THE SIGNED POUR CARD  
PER QCP-2.4-PARA 6.3.3  
PROVIDED DOCUMENTATION  
OF ERECTION INCLUDING  
MATERIAL VERIFICATION  
AND WELD INSPECTION  
ACCEPTANCE AT THAT TIME.

Former documentation does not meet current WBNP-QCP requirements, however documentation is acceptable and satisfies licensing requirements. (\$)

Engineer John F. Smalley  
Date 12/20/82



WATTS BAR NUCLEAR PLANT  
EQUIPMENT INSTALLATION OPERATION SHEET

TVA Class

ASME Class

MIOP No-OPNSHT NO.

1-03-F-11-1 RI \*BACK

Sheet 1 of 2

8/8 12/22/82

ed by	Date	AI Review for Hold Points	Date
Michael D. George	1-25-78	Al Smith	1-26-78
EQUIPMENT DESCRIPTION	MANUFACTURER	SERIAL MODEL NO.	DRAWING NUMBER
AUX FEEDWATER TERRY TURBINE	TERRY STEAM TURBINE COMPANY	T-38677 A	47W 427-1
			IDENTIFIER
			1-T4RB-1-A-S

Op	Operation Description*	Conformance spec. or procedure	Remarks	Hold Point.	Verified by			
					C	E	AI	Date
	EQUIPMENT RELEASE	Std. Inspt. # 00 WBNP-QCP-1.6 & 4.5		E		GXB		7/8/76
	Inspect and accept installation area.			E		mjs		7/8/76
	Place equip. in gen. location			C		mjs		7/9/76
	Verify placement & orientation			E		mjs		7/9/76
	Inspect for damage			E		mjs		7/9/76
	Verify cleanliness (Level- C )	G-39		E		mjs		7/10/76
	Verify equipment protection			E		mjs		7/10/76
	Hold for final setting	Std. Inspt. #10		E		mjs		7/19/76
	Support Steel Documentation verified.	Std. Inspt. # 8		E		NA**		
	Set to design elev. & alignment			C		mjs		7/19/76
	Verify elev. and alignment			E		mjs		7/19/76
	Anchor Bolt/nut			E		NA**		
	Material Verification			E		NA**		
	Weld Inspection Acceptance			W		NA**		
	Torque Acceptance			E		NA**		
	Grout base plate (if required)			C		mjs		7/19/76
	Hold for final installation	Std. Inspt. # 25		E		NA**		
	Post-installation assembly	Std. Inspt. # 29		C		NA**		
	Verify final piping fit-up with no external force on equipment	Std. Inspt. # 45		E		NA**		
	Ductwork Verification	Std. Inspt. # 46	N/A	E		NA**		
	Verify thermal expansion provisions.			E		NA**		
	Verify component alignment (pulleys, coupling, belts, blade clearances, etc.)			E		NA**		
	Verify tubing & instrument check	Std. Inspt. # 49		E		NA**		
	Hold for functional test	Std. Inspt. # 86		E		NA**		
	Verify prefunctional servicing	Std. Inspt. # 89		E		NA**		
	Functional Test	Std. Inspt. # 90		E		NA**		
	Verify thermal insulation	Std. Inspt. # 95		E		NA**		
	HOLD FOR TRANSFER TO P PROD	Std. Inspt. # 99		E		NA**		

8/8 12/22/82  
 \*\*NOTE THAT THIS PROCEDURE WAS CANCELLED ON 1-15-82 AND THESE INSPECTIONS WERE INCORPORATED IN OTHER PROCEDURES

23									
22									
21									
20									
19									
18									
17									
16									
15									
14									
13									
12									
11									
10									
09									
08									
07									
06									
05									
04									
03									
02									
01									

IDENTIFIER

ETS 1-03-F-11-1-R1

Attache  
Back

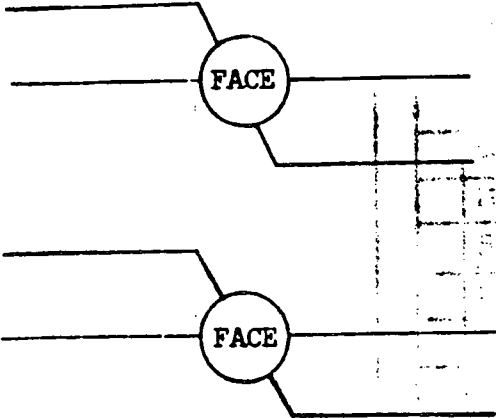
SHEET 2 of 2

EQUIP  
945  
Michael  
T  
P  
NT

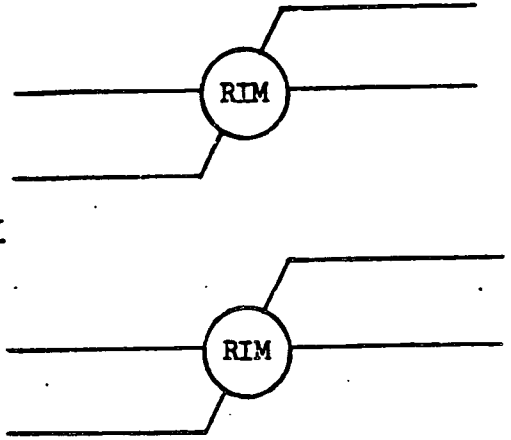
Final Coupling Alignment:

Indicator Arrangement - Fixed to

Both Shafts Turned Together



One Shaft Stationary



Gap

\* R1 TO REPLACE ORIGINAL DESTROYED BY CRAFT  
PERSONNEL *Michael L. George* 1-25-78

04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	-	0	3	B	-	P	M	P	-	1	A	-	5						
IDENTIFIER																			

WATTS BAR NUCLEAR PLANT  
EQUIPMENT INSTALLATION OPERATION SHEET

WBNP-QCP-4.7 R2

LOP

TVA Class

ASME Class

Attachment A

MICP No-OPNSHT NO.

1-03-F-11-2R1 BACK

Sheet 1 of 2

12/20/82

946

8/12/82

Prepared by	Date	AI Review for Hold Points	Date
Michael L. George	1-25-78	Al Smith	1-26-78
EQUIPMENT DESCRIPTION	MANUFACTURER	SERIAL MODEL NO.	IDENTIFIER
TURBINE DRIVEN Aux. FEEDWATER PMP	INGERSOLL RAND	0874-141 PMP-3-1A-5	47W427-1 1-PMP-3-1A-5

Operation Description*	Conformance spec. or procedure	Remarks	Hold Point	Verified by			
				C	E	AI	Date
EQUIPMENT RELEASE	Std. Inspt. # 60 WBNP-QCP-1.6 & 4.5		E	CRB			11/8/76
Inspect and accept installation area.			E	MJB			11/8/76
Place equip. in gen. location			C	MJB			11/8/76
Verify placement & orientation			E	MJB			11/15/76
Inspect for damage			E	MJB			11/19/76
Verify cleanliness (Level- C )	G-39		E	MJB			11/19/76
Verify equipment protection			E	MJB			11/19/76
Hold for final setting	Std. Inspt. #10		E	MJB			2/10/76
Support Steel Documentation verified.	Std. Inspt. # 8		E	NA**			
Set to design elev. & alignment			C	MJB			2/9/76
Verify elev. and alignment			E	MJB			2/10/76
Anchor Bolt/nut			E	NA**			
Material Verification			E	NA**			
Weld Inspection Acceptance			E	NA**			
Torque Acceptance			E	NA**			
Grout base plate (if required)			C	MJB			2/10/76
Hold for final installation	Std. Inspt. # 25		E	NA**			
Post-installation assembly	Std. Inspt. # 29		C	NA**			
Verify final piping fit-up with no external force on equipment	Std. Inspt. # 45		E	NA**			
Ductwork Verification	Std. Inspt. # 46	N/A	E	NA**			
Verify thermal expansion provisions.			E	NA**			
Verify component alignment (pull-eyes, coupling, belts, blade clearances, etc.)			E	NA**			
Verify tubing & instrument check	Std. Inspt. # 49		E	NA**			
Hold for functional test	Std. Inspt. # 86		E	NA**			
Verify prefunctional servicing	Std. Inspt. # 89		E	NA**			
Functional Test	Std. Inspt. # 90		E	NA**			
Verify thermal insulation	Std. Inspt. # 95		E	NA**			
HOLD FOR TRANSFER TO P PT	Std. Inspt. # 99		E	NA**			

205 12/21/82  
 \*\* NOTE THAT THIS PROCEDURE WAS CANCELLED ON 1-15-82 AND THESE INSPECTIONS WERE INCORPORATED IN OTHER PROCEDURES.

04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	-	0	3	B	-	P	M	P	-	1	A	-	5						

IDENTIFIER

E105  
1-03-F-11-2-R1

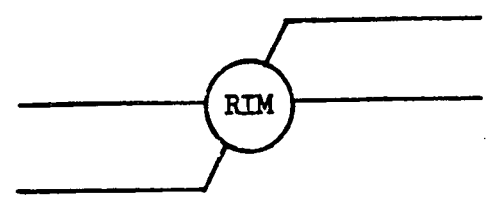
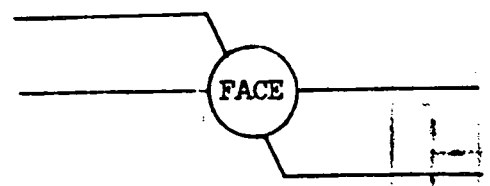
Attach  
Back

Sheet 2 of 2

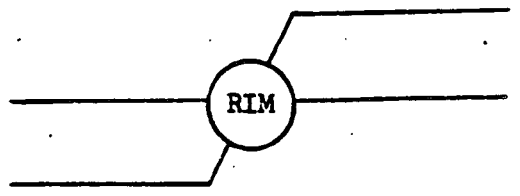
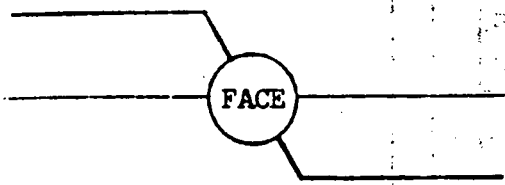
nal Coupling Alignment:

Indicator Arrangement - Fixed to

Both Shafts Turned Together



One Shaft Stationary



Gap

\* R1 TO REPLACE ORIGINAL DESTROYED BY CRAFT  
PERSONNEL

04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	-	0	3	B	-	P	M	P	-	1	A	-	S						
IDENTIFIER																			



GT66 320  
INSPECTOR'S REPORT

MIX NUMBER	TEMP IN EGGS
5 STAR 3	50-85°
CDR E14-80	NA
Plant Circuit w/Al Powder	50-85°
	NA
TYPE FINISH	45°
PLACING FOREMAN	McCOIN
INSPECTOR	L. McMAHAN
BATCH Poured	2-1-77
TIME STARTED	12:50 P
	TIME COMPLETED 3:05 P
CONCRETE PLACED	
MIX NUMBER	CDR 14-80 CU. YDS.
Plant Circuit w/Alum. Powder	10 BAGS 25.0 FT <sup>3</sup>
5 STAR	10 BAGS 10.0 FT <sup>3</sup>
NA	NA
NA	NA
TOTAL	35 FT <sup>3</sup>
REMARKS	NA

POUR TO	NA
LOCATION	CAVITY BE. DRN
FEED WATER	PME 8.5 DRN
Carpenter	NA
Boilermaker	NA
Mechanical	NA
Electrical	NA
Piping	NA
Reinforcing	NA
Struc. Steel	NA
Sheet Metal	NA
Cleaning	NA
Painter	NA
Lines & Grades	NA
Substrate Conditions	NA
Remarks	DO NOT VIBRATE AGAIN
SHIFT ENGINEER	NA
Date	1/24/77
SHIFT ENGINEER	Michael L.

04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	-	0	3	B	-	P	M	P	-	1	A	-	5						
IDENTIFIER																			

EQUIPMENT SETTING

WRNP-CCP-4.07-1 IOP

EQUIPMENT SETTING

TEST 32 Level A

Unique Identifier 1-03B-PMP-1A-5

Ref. Dwg 47W427-1 Rev. 12  
 \*\*

Serial or  
 Mark No. 0874141

Tolerance(s) +/- 1/8"

Anchor Stud Nut Torque 132 ft lbs.  
 GENERAL CONSTRUCTION SPEC.

Source G-29-C-3.C.5.3 (A)

John F. Smalley 12-20-82  
 Engineer Date

INSPECTOR'S ACCEPTANCE

	INITIAL	DATE
1. Identification	<u>RL</u>	<u>12/30/82</u>
2. Orientation	<u>RL</u>	<u>12/30/82</u>
3. Damage	<u>RL</u>	<u>12/30/82</u>
4. Lines & Grade	<u>RL</u>	<u>12/29/82</u>
5. Anchor Studs		
*Material Verif.	<u>NA</u>	<u>9/28 12-20-82</u>
Heat Validation	<u>NA</u>	<u>9/28 12-20-82</u>
*Weld Insp. Stencil	<u>NA</u>	<u>9/28 12-20-82</u>
NDE Report No.	<u>NA</u>	<u>9/28 12-20-82</u>
Nut Torque	<u>RL</u>	<u>12-29-82</u>

Inspection Equipment Calibration  
 Type ID Date

TORQUE WRENCH TWM-05 03-25-82  
N/A N/A N/A

REMARKS \*EVALUATION ACCEPTABLE PER  
 QCI-1.08 ATTACHMENT B ATTACHED 12/30/82  
 \*\* DWG 48N1219-1-R.3; -2-R.15; -3-R.11;  
 -4-R.9

Inspected in accordance with Rev.  
2 of WRNP-CCP-4.07-1.

RL 12/30/82  
 Inspector Date

COUPLING ALIGNMENT DATA AND VERIFICATION SHEET

TVA Equipment ID No. 1-03B-PMP-1A-S Test No. 33 A

Equipment Description TURBINE DRIVEN AUX. FW. PUMP

Location AB, EL 692, (A2), (LL)

Serial or Identification No. 0874141, CONTRACT #74C30-83094

Type Coupling GEAR, FAST'S # 2 1/2 B

Source of Requirements VENDOR MANUAL

Nominal Coupling Gap Dimension (if required) 7.00" ± 0.063"

Parallel Misalignment Tolerance ~~0.0025"~~ 0.005"  $\frac{1}{12} \frac{1}{12} \frac{1}{12}$

Angular Misalignment Tolerance 0.0025"

Determination of Magnetic Center (if required) N/A

Remarks: LUBRICATE WITH SHELL "ALVANIA" EP-1 OR EQUAL. LUBRICATE SLEEVE TEETH PRIOR TO ASSEMBLY. COUPLING BOLT TORQUE: 23 FT. LB ± 10% COLD ALIGNMENT: SET DRIVER 0.005" BELOW PUMP

The information provided above is correct, and the flanges and/or welds which secure piping and other appurtenances are attached to the equipment being aligned, and the equipment is ready to be aligned.

J.F. McLean MEH-A  
Responsible Engineer

DEC 17 1982  
Om  
12/06/82  
Date

grossed coupling  
SRM  
12-11-82  
+ 12-12-82  
SRM

ITEM No.	Activity	Inspector	Date
1	Parallel alignment acceptable	Lillard Claidney	12/10/82
2	Nominal gap acceptable	Lillard Claidney	12/10/82
3	Angular alignment acceptable	Lillard Claidney	12/10/82
4	CPG. BOLT TORQUE ACCEPTABLE	Nenny H. Chance SRM	12-11-82 / 12-12-82
5	TORQUE WRENCH ID# TWE-32	Dick Cal - 7-8-82	Sme wrench Date Due - 1-9-83

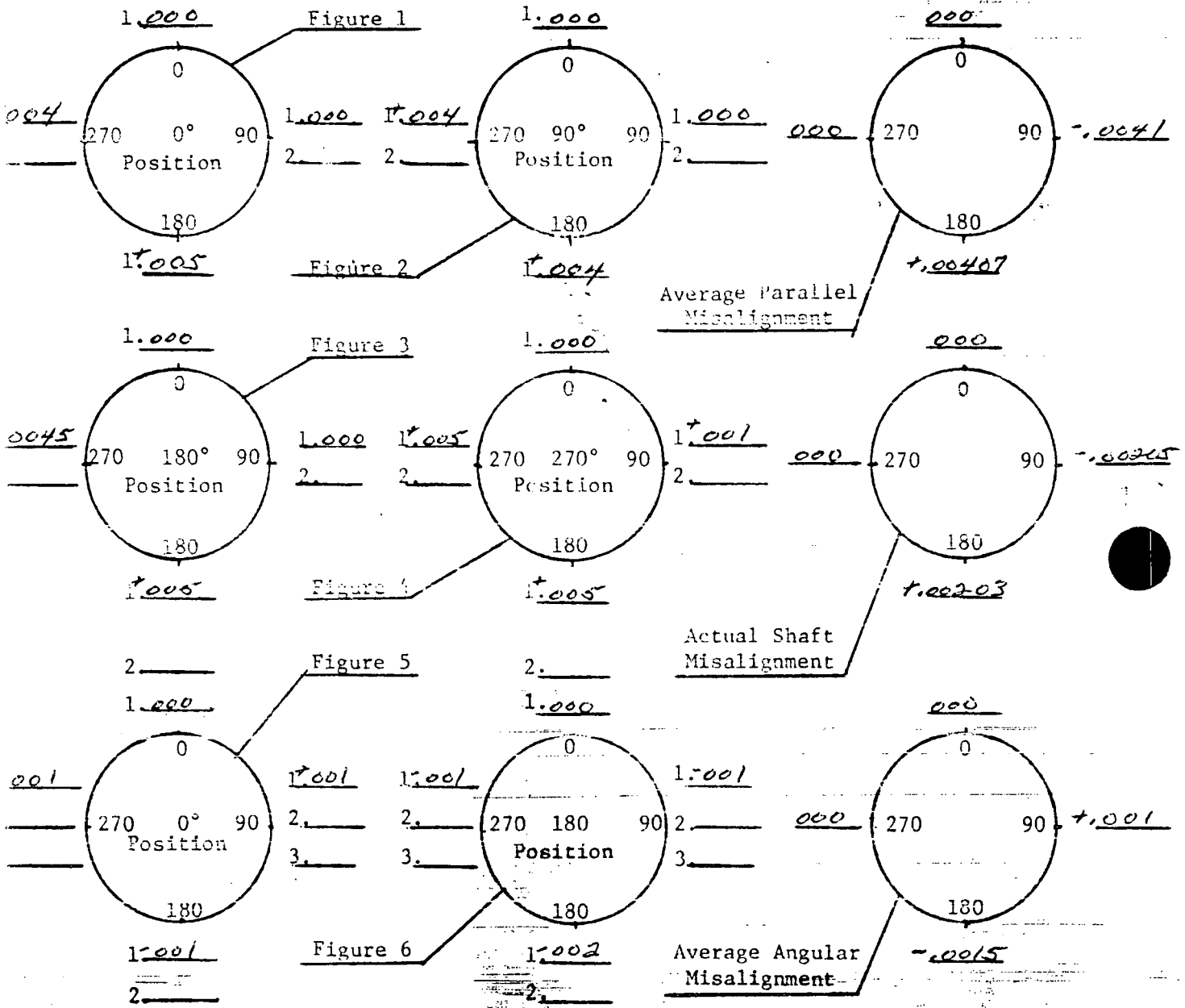
ADDED TO FORM  
JFH  
12/06/82

COUPLING ALIGNMENT DATA VERIFICATION SHEET

Dial Indicator ID No. DI-41 Calibration Due Date 11/21/83

Inside Micrometer ID No. VC-10 Calibration Due Date 11/14/83

TVA Equipment ID No. 1-038-PMP-1A-S Serial or ID No. 0874141



I certify that the above data was obtained in accordance with WBNP-QCP-4.07-2 Rev 20 and that the coupling is aligned.

Lillard Clenday  
Responsible Inspector

12/10/80  
Date

952

WBNP-QCP-4.07-3 RO  
Attachment A  
FRONT  
LOP

EQUIPMENT REASSEMBLY

Test No. 34 A

EQUIPMENT ID 1-03B-PMP-1A-S

Mark No. N/A  
Description TDAPW PUMP  
TVA Class C  
Equipment Drawing No. 47W421R 12  
Contract No. 74C30-83094  
Manufacturer INGERSOLL-RAND  
Serial Nat'l Bd. No. 0874141  
Model No. 5HMTA 6

Reason for Disassembly RELOCATE OIL RING  
Prepared by: J.F. HARRY MEN-A Date 12/13/82  
ANI Review for Hold Points \*N/A JFH 12/13/82 Date

STEP	OPERATION DESCRIPTION	INSPECTOR/DATE	ANI HOLD POINT	ANI RELEASED
1	Work Area Cleanliness	RRL 12-13-82		
2	Materials Approved For Use On Stainless Steel	RRL 12-13-82		
3	Loose Parts Tagging, Storage, & Identification	RRL 12-13-82		
4	Replacement Parts Recorded (Back)	N/A JFH 12/13/82		
5	Contamination	RRL 12-13-82		
6	Damage	RRL 12-13-82		
7	Rework, Repair or Replacement Complete	RRL 12-13-82		
8	Reassembly	RRL 12-13-82		
9	Alignment	RRL 12-13-82		
10	Fitup	RRL 12-13-82		
11	Gaskets & Crinkle Tape	RRL 12-13-82		
12	Bolting Materials	RRL 12-13-82		
13	Tightening 30FT-LB ±10% <sup>max</sup>	RRL ON 12-13-82		
14	Locking Devices	RRL 12-13-82		
15	Seal Welding	N/A JFH 12/13/82		
16	Packing & Seals	N/A JFH 12/13/82		
17	Seal Water Piping	N/A JFH 12/13/82		
18	Operation	RRL 12-13-82		

QC&R  
DEC 25 1982  
Om

\* PRESSURE BOUNDARY NOT VIOLATED  
Inspection Equipment ID No.

Calibration Date

Torque Wrench

TWE-32

01-08-83

N/A

N/A

N/A

INSPECTED IN ACCORDANCE WITH REVISION 0 OF WBNP-QCP-4.07-3;

Robert W. Houser. 12-13-83  
INSPECTOR DATE

ANI Final Review: [Signature]

Date 12-21-82

N-5

953

EQUIPMENT ID: 1-03B-PMP-1A-5

REPLACEMENT PARTS LIST

DESCRIPTION* NAME, BRAND NAME, TYPE, PART NO. ETC.	CONTRACT NUMBER/ ITEM NO.	VERIFIED BY	DATE
N/A			

REMARKS: NONE. 12-13-82

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N-5

PREVENTIVE MAINTENANCE ASSIGNMENT

Prepared By: F.J. Rodriguez Revision: 1 Date: Dec. 11, 1982

Universal Program Test 7  ECM&D Equipment Program Test 00

Storage  Initial Operation  Termination

Identifier 1-03B-PMP-1A-S Mark No. NIA

Item Description AUX F.W. TURBINE DRIVEN PUMP

Contract No. 74C30-83094 Item No. 1

Manufacturer INGERSOLL-RAND Serial No. 0874141

Storage Location INSTALLED - AUX BLD ELV 692 (A2) & (U)

Frequency of Inspection MONTHLY

INSPECTION

INSTRUCTIONS/REQUIREMENTS

Storage Level C (INSTALLED)

Physical Protection NIA

Identification & Marking NIA

Age or Deterioration INSPECT

Cleanliness NIA

Covers, Caps, Plugs INSPECT

Vapor Barriers & Wraps NIA

Coatings & Preservatives NIA

Inert Gas Blanket Type & Pressure NIA

Desiccants NIA

Heat NIA

Electrical Insulation NIA

Insulating Oil Level & Type NIA

Lubrication STO-1 (MAIN BEARINGS)  
Shell "ALVANIA EP41 OR EQUAL (COUPLING)

Rotation DO MONTHLY

DEC 11 1982  
DWR

Additional Inspections or Instructions:  
CHECK OIL LEVEL - MONTHLY  
REPLACE OIL - ANNUALLY  
COUPLING GREASE - ANNUALLY

Additional pages attached NONE

PREVENTIVE MAINTENANCE INSPECTION

Issued By: J.F. Hardy Revision 0 Date: 07/29/82

- Universal Program Test 7
- Storage
- Initial Operation
- Termination
- ECM&D Equipment Program Test 00

Identifier 1-03B-PMP-1A-S Mark No. N/A

Item Description AUX. FW. TURB. DRIVEN PUMP

Contract No. 74C30-83094 Item No. 1

Manufacturer INGERSOLL-RAND Serial No. 0874141

Storage Location AB, EL 692-0, (AZ), (W)

Frequency of Inspection MONTHLY

INSPECTION	INSTRUCTIONS/ REQUIREMENTS	INSPECTION RESULTS OR COMMENT
1 Storage Level	<u>INSTALLED</u>	<u>Good.</u>
2 Physical Protection	<u>N/A</u>	<u>NA</u>
3 Identification & Marking	<u>N/A</u>	<u>NA</u>
4 Damage or Deterioration	<u>CHECK</u>	<u>Good.</u>
5 Cleanliness Class	<u>CHECK</u>	<u>Good.</u>
6 Covers, Caps, Plugs	<u>CHECK</u>	<u>Good.</u>
7 Vapor Barriers & Wraps	<u>N/A</u>	<u>NA</u>
8 Coatings & Preservatives	<u>N/A</u>	<u>NA</u>
9 Inert Gas Blanket	Pressure <u>N/A</u>	Pressure <u>NA</u>
		Area Temp <u>NA</u>
10 Desiccants	<u>N/A</u>	<u>NA</u>
11 Heat	<u>N/A</u>	Temperature <u>NA</u>
		Current <u>NA</u>
12 Electrical Resistance	<u>N/A</u>	Megohms <u>NA</u>
13 Insulating Oil	Type <u>N/A</u>	Level <u>NA</u>
		Temperature <u>NA</u>
14 Lubrication	<u>STO-1 (MAIN BRGS)</u>	Pressure <u>NA</u>
	<u>NA</u>	Issue <u>08-18-82 ABJ.</u>
	<u>SHELL "ALVANIA" EP#1</u>	Cleanliness <u>New - 08-18-82</u>
	<u>OR EQUAL (COUPLING)</u>	Installation <u>08-18-82</u>
	<u>NA</u>	
15 Additional Inspections or Instructions:		
	<u>VERIFY OIL LEVEL</u>	<u>MONTHLY</u>
	<u>OIL CHANGE</u>	<u>ANNUALLY</u>
	<u>COUPLING REGREASE</u>	<u>ANNUALLY</u>
	<u>ROTATE PUMP</u>	<u>MONTHLY</u>
	Additional pages attached <u>NO</u>	
16 Test Equipment Calibration:	<u>N/A</u>	

*(Handwritten signature and date)*

Remarks: LUBRICATION REQUIREMENTS FROM VENDOR MANUAL

Inspected in accordance with revision 0 of WBNP-QCP-1.52

Inspector: Steve (McLean) Date: 8-20-82



PROGRAM: ZB2020  
 DATE : 10/23/83  
 TIME : 23:55:39

EQUIPMENT REPORT BY SYSTEM

MECP UNIT C

IDENTIFIER	CLASS	ACT	EQUIP DRAWING	EQUIPMENT DESCRIPTION	TEST LIBRARY & SEQUENCE OF TESTS	PM REGD
1-03B-CLR-001A-S	C	X03F	47W803-3	TURB 1A-S LUBE OIL CLR	ED 32B*	
1-03B-PKG-118	C	X03F	47W803-3	1A-A LUBE OIL CONSOLE	ED 32A*	
1-03B-PKG-120	C	X03F	47W803-3	1B-B LUBE OIL CONSOLE	EA 32A*	
1-03B-PMP-118-A	C	X03F	47W803-2	AFW MTR DRVN PMP 1A-A	EA 07A* 32A* 33A* 34A*	
1-03B-PMP-128-B	C	X03F	47W803-2	AFW MTR DRVN PMP 1B-B	EA 07A* 32A* 33A* 34B*	

DINERIZI F-808



## TELEPHONE MEMORANDUM

1052001N2115  
10520.15.1000

951

DATE 12/6/83  
TIME 2:16 ~~XPM~~ PM  
(TO) (NAME) H. E. McConnell TELEPHONE (615) 632-4450  
COMPANY Tennessee Valley Authority CC: H. E. McConnell, TVA  
RECORDED BY W. J. Zidziunas *WJZ* R. E. Blaisdell  
PROJECT WBNP-Independent Review PROJ. NO. 10520 PDCA/File \_\_\_\_\_  
SUBJECT Findings Report Responses FILE NO. 15.1000 MJR \_\_\_\_\_

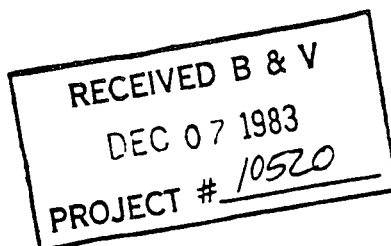
Mr. McConnell was contacted to discuss the information submitted on several Findings as follows.

- F808 - TVA addressed the installation facets of this finding, but did not address the calibration and testing of instrumentation and controls.
- F856 - The computer printout is readable but cannot be reproduced for the report due to the poor quality of the carbon copy. Please provide a reproducible copy.
- F863 - Same comment as for F856 (computer printout not reproducible quality).
- F932 - The partial copy of drawing 47W427-204, R3 is not legible. Please provide a legible copy of the drawing showing the node points discussed in Form 3.
- F935 - We are unable to relate the completion records provided via Form 3 to drawing 85 M 47W427-204, R2 (See DRR 813, DIN 3874). Please provide additional drawings to correlate the documents.
- F948 - Please provide a reproducible copy of the computer printout forwarded via Form 3. We cannot relate the information without copies of 47W427-220 and 47W427-204 (See comment on F935 above).
- F960 - The computer printout forwarded by Form 3 cannot be legibly reproduced. Please forward replacement copy.

Mr. McConnell indicated that he would look into the items and get back to us.

We briefly discussed the status of the project, and he indicated that TVA would like to set up a meeting with the NRC in mid-January. I indicated that we would do everything possible to support a mid-January meeting; however, we were not far enough along to make an accurate prediction of when the final report could be made available.

bam



TENNESSEE VALLEY AUTHORITY  
KNOXVILLE, TENNESSEE 37902

400 West Summit Hill Drive, W10C126

10520 DIN 1066  
10520.14.0000

958

DEC 16 1983

Black & Veatch  
11401 Lamar Avenue  
Overland Park, Kansas 66211

Attention: Mr. W. J. Zidziunas

Gentlemen:

*WSZ MJR*  
RECEIVED B & V  
DEC 16 1983  
PROJECT # 10520

PERSONAL SERVICES CONTRACT NO. TV-60052A

In response to your telephone request to H. E. McConnell, we are providing the following additional information:

*DIN 5011*  
F-129 - TVA has verified that the field installation is complete for unit 1 and is in accordance with the design information provided with Form 3. Installation records are available at the site.

*DIN 5097*  
F-506 - Enclosed is a description of the screening program TVA used to assure that the sample program was adequate to be representative of the worst case likely to be encountered. This information is included in the NCR documentation.

*DIN 5099*  
F-718 - Enclosed are the field inspection records associated with this finding.

*OIN 5103*  
F-803 - TVA has verified that the field installation is complete for unit 1 and is in accordance with the design information provided with Form 3. Installation records are available at the site.

*DIN 5121*  
F-808 - Calibration and testing of the instrumentation and controls is required before system preoperational tests are conducted. This calibration and testing is done using written procedures and the records are reviewed and filed in accordance with TVA's Quality Assurance Plan. These records are available at the site for review.

*OIN 5122*  
F-856 - Enclosed is a reproducible copy of the computer printout for this finding.

*OIN 5124*  
F-863 - Enclosed is a reproducible copy of the computer printout for this finding.

*DIN 5132*  
F-932 - Enclosed are copies of drawings 47W427-204 R3, 47W427-220 R2, and 47W221 R1.

*DIN 5134*  
F-935 - Drawing 85M47W427-204 has been redrawn. The new drawings are enclosed (see F-932).

*DIN 5137*  
F-948 - Enclosed is a reproducible copy of the computer printout for this finding.

959

2

Black & Veatch

DEC 16 1983

*DIN5201*

F-960 - Enclosed is a reproducible copy of the computer printout for this finding.

*DIN5173*

F-818 - Enclosed is a reproducible copy of the computer printout for this finding.

*5233 5171 5172*

F-815, F-816, F-817 - Enclosed are copies of 85M45W427-205 and 45W427-206.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

*L E McConnell*

*for* John A. Raulston  
Chief Nuclear Engineer

Enclosures

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F/8/0/9/

Comments pertinent to finding:

The illegible identification tag for circuit 1-2PM-3-2244-A has been replaced since the time of the Black and Veatch audit with a new legible tag.

Field Verified by: Betsy Shind  
System Engineer

Robert C Mc Kay  
Program Team Member

11/23/83  
Date

Thomas E McConnell  
OEDC Program Manager

11/23/83  
Date

E Gray Beasley  
Chairman, OEDC Policy Committee

11/23/83  
Date

Black & Veatch Based on the verification listed above this item is considered closed

Classification: Type R Category B

W. J. Zikimas  
Black & Veatch Project Manager

12/13/83  
Date

R E Blandell  
Black & Veatch Senior Review Team Chairman

12/23/83  
Date

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEWFinding Number F/8/1/0/

## Comments pertinent to finding:

Installation of flow monitor FM-3-142 has been installed, documented, and tracked per the attached inspection documentation and accountability print-out. Acceptance and documentation of the identification tags referenced in Black and Veatch finding F810 is covered by WBNP QCP-3.13-3, Test 99, and tracked under TVA's accountability program. See mark up of attached print-out and inspection documentation for the status of identifiers on panel 1-L-381. The print-out is a Quality Assurance document and will be retained as life of plant document.

<u>Robert C McKay</u> Program Team Member	<u>11/23/83</u> Date
<u>James E McConnell</u> OEDC Program Manager	<u>11/23/83</u> Date
<u>E Gray Beasley</u> Chairman, OEDC Policy Committee	<u>11/23/83</u> Date

Black &amp; Veatch

*The attached documentation supports close out of the specific item based on completed work on a number of outstanding items*

Classification: Type R Category A

<u>W.J. Zibianan</u> Black & Veatch Project Manager	<u>12/14/83</u> Date
--------------------------------------------------------	-------------------------

<u>R E Blairickell</u> Black & Veatch Senior Review Team Chairman	<u>12/27/83</u> Date
----------------------------------------------------------------------	-------------------------

IDENTIFICATION DATA SHEET

IDENTIFICATION DATA CARD

WBNP-QCP-3.13-3

TEST NO. 99

Level A

Attachment A

LOP

Unique Identifier 1-FM-3-142C-S

Reference Drawings

47B601-3-SC-R 15

N/A R

A R

N/A R

N/A R

B. Lee 9/15/83  
REU Engineer Date

Remarks:

TURB AUX FW PMP

OUTLET FLOW MOD

The above listed component has been inspected in accordance with QCP-3.13-3 Rev. 0 and is acceptable.

Greg Birmingham 9/28/83  
Inspector Date

IDENTIFICATION DATA SHEET

IDENTIFICATION DATA CARD

WBNP-QCP-3.13-3

TEST NO. 99

Level A

Attachment A

LOP

Unique Identifier 1-FM-3-142B

Reference Drawings

47B601-3-SC-R 15

N/A R

N/A R

N/A R

N/A R

B. Lee 9/15/83  
REU Engineer Date

Remark

TURB DRIV AUX FW PMP

OUTLET FLOW MOD

The above listed component has been inspected in accordance with QCP-3.13-3 Rev. 0 and is acceptable.

Greg Birmingham 9/28/83  
Inspector Date

IDENTIFICATION DATA SHEET

IDENTIFICATION DATA CARD

WBNP-QCP-3.13-3

TEST NO. 99

Level A

Attachment A

LOP

Unique Identifier 1-FM-3-142A-5

Reference Drawings

47B601-3-43 R 14

47W600-120 R 4

BECKMAN DWG R N/A

N 797492 R 3

N/A R

Ron Pawley 6-1-83  
REU Engineer Date

Remarks: TURB DRIV AUX  
FW PMP/OUTLET  
FLOW MOD

The above listed component has been inspected in accordance with QCP-3.13-3 Rev. 0 and is acceptable.

Eddy Hays 8/1/83  
Inspector Date

WATTS BAR NUCLEAR POWER PLANT

11/06/03

CXMBINSS: ABBREV. INSTRUMENT RPT-FULL FILE SYS/UNIT SURT

PAGE 0072

UNIT 1

SYSTEM 3

TITLE

MAIN AND AUXILIARY FEEDWATER

IDENTIFIER	RV	PANEL	CONTRACT NO.	PURCHASE NO	WORK	IFER	CURR	TST	TEST SEQUENCE
	ICI			NOI	IAIPKG	IBNDY	IAC	IAT	
1-1S-3-136B/B-A	04	E			Q			*	11A*,25A*
1-1S-3-136B/C-A	04	E			Q			*	25A*
1-1-3-137	05	H	L-215A		N	1219		IXFR	*
1-1-3-138	04	H	L-215A		N	1219		IXFR	*
1-1S-3-138A-A	03	C	L-431	830616	Q	1219		IXFR	*
1-1S-3-138B-B	04	C	L-432	830616	Q	1219		IXFR	*
1-1S-3-139A-A	07	C	L-214	830616	Q			IXFR	H1
1-1S-3-139B-A	07	C	L-214	830616	Q			IXFR	H1
1-1S-3-139C-A	07	C	L-214	830616	Q			IXFR	H1
1-1S-3-140A-A	11	C	L-342	833871	Q			IXFR	*
1-1S-3-140B-A	10	C	L-382	830616	Q			IXFR	99A
1-1-E-3-142	03	H		83520-1	ADON	Q		IXFR	*
1-1-T-3-142-S	11	C	L-215A	830570	Q			IXFR	99A
1-1-F-3-142-A	06	E	L-381		Q			IXFR	99A
1-1-T-3-142-A	03	C	L-4		N			IXFR	H1
1-1-F-3-142-B	06	E	L-381		Q			IXFR	*
1-1-F-3-142-C	02	E	L-381		Q			IXFR	*
1-1-3-142-D	02	E	L-10		N			IXFR	*
1-1-F-3-142-E	01	E	L-381		Q			IXFR	*
1-1-E-3-143	04	E			N			IXFR	99A
1-1-F-3-143	02	H			Q			IXFR	99A
1-1S-3-144A-B	07	C	L-222	830616	Q			IXFR	H1
1-1S-3-144B-B	07	C	L-222	830616	Q			IXFR	H1
1-1S-3-144D-B	07	C	L-222	830616	Q			IXFR	H1
1-1-T-3-145	07	C	L-218		N			IXFR	*
1-1-X-3-145	04	E	L-123		N			IXFR	*
1-1-E-3-147	03	H		83520-1	ADON	Q		IXFR	*
1-1-T-3-147A-J	05	E	L-4		Q			IXFR	H1
1-1-T-3-147A-A	07	C	L-217	830570	Q			IXFR	*
1-1-X-3-147A-A	03	E	L-143		Q			IXFR	99A
1-1-H-3-147AA-A	05	E	L-143		Q			IXFR	*
1-1-H-3-147AB-A	05	E	L-143		Q			IXFR	*
1-1-H-3-147AD-A	01	E	L-143		Q			IXFR	*
1-1-F-3-147B-K	05	C	L-3	92309	ADON	J		IXFR	H1
1-1-T-3-147B-S	07	C	L-54S	830570	Q			IXFR	99A
1-1-X-3-147B-B	03	E	L-11B		Q			IXFR	99A
1-1-H-3-147BA-B	04	E	L-11B		Q			IXFR	*
1-1-H-3-147BC-B	02	E	L-11B		Q			IXFR	99A
1-1-3-147C	02	E	L-10		N			IXFR	*
1-1-F-3-147D	02	E	L-381		Q			IXFR	*
1-1-F-3-147D-B	06	C	L-29B	831326	Q			IXFR	99A
1-1-CV-3-148-B	03	C		83577	Q			IXFR	*
1-1-L-3-148	08	E	L-3	92309	ADON	N		IXFR	H1
1-1-LC-3-148-B	06	E	L-11B		Q			IXFR	*
1-1-H-3-148-B	05	E	L-11B		Q			IXFR	99A
1-1-SV-3-148-C	04	C		627551	Q			IXFR	99A
1-1-T-3-148-B	08	C	L-183		Q			IXFR	*
1-1S-3-148-D	04	C	L-440	830616	Q			IXFR	*
1-1-X-3-148-B	05	E	L-11B		Q			IXFR	99A
1-1XS-3-148-B	03	E	L-11B		Q			IXFR	99A
1-1XX-3-148	01	E	L-4		N			IXFR	*
1-1S-3-148A-B	04	E	L-4		Q			IXFR	H1

905



IDENTIFICATION DATA SHEET

IDENTIFICATION DATA CARD

WBNP-QCP-3.13-3

TEST NO. 99 Level A

Attachment A LOP

Unique Identifier 1-LIC-3-173-B

Reference Drawings

47B-601-3-54 R 14

47W600-120 R 4

BECKMAN DWG R N/A

# 797492 R 3

N/A

Ron Pawley 6-1-83  
REU Engineer Date

Remarks: SG 2 LEVEL  
IND Controller

The above listed component has been inspected in accordance with QCP-3.13-3 Rev. 0 and is acceptable.

Eldij Hays 6/20/83  
Inspector Date

IDENTIFICATION DATA SHEET

IDENTIFICATION DATA CARD

WBNP-QCP-3.13-3

TEST NO. 99 Level A

Attachment A LOP

Unique Identifier 1-LIC-3-174-B

Reference Drawings

47B-601-3-55 R 14

47W600-120 R 4

BECKMAN DWG R N/A

# 797492 R 3

N/A

Ron Pawley 6-1-83  
REU Engineer Date

Remarks: SG 1 LEVEL  
IND CONTROLLER

The above listed component has been inspected in accordance with QCP-3.13-3 Rev. 0 and is acceptable.

Eldij Hays 6/20/83  
Inspector Date

IDENTIFICATION DATA SHEET

IDENTIFICATION DATA CARD

WBNP-QCP-3.13-3

TEST NO. 99 Level A

Attachment A LOP

Unique Identifier 1-LIC-3-175-A

Reference Drawings

47B-601-3-55 R 14

47W600-120 R 4

BECKMAN DWG R N/A

# 797492 R 3

Ron Pawley 6-1-83  
REU Engineer Date

Remarks: SG 4 LEVEL  
IND CONTROLLER

The above listed component has been inspected in accordance with QCP-3.13-3 Rev. 0 and is acceptable.

Eldij Hays 6/20/83  
Inspector Date

IDENTIFICATION DATA SHEET

IDENTIFICATION DATA CARD

WBNP-QCP-3.13-3

TEST NO. 99

Level A

Attachment A

LOP

Unique Identifier 1-LM-3-173-B

Reference Drawings

47W601-3-54 R 14

47W600-120 R 4

BECKMAN DWG R N/A

# 797492 R 3

N/A R

Ron Paulley 6-1-83  
REU Engineer Date

Remarks: SG 2 LEVEL  
MOD

The above listed component has been inspected in accordance with QCP-3.13-3 Rev. 0 and is acceptable.

Edij. Hoge 6/20/83  
Inspector Date

IDENTIFICATION DATA SHEET

IDENTIFICATION DATA CARD

WBNP-QCP-3.13-3

TEST NO. 99

Level A

Attachment A

LOP

Unique Identifier 1-LM-3-174-B

Reference Drawings

47W601-3-55 R 14

47W600-120 R 4

BECKMAN DWG R N/A

# 797492 R 3

N/A R

Ron Paulley 6-1-83  
REU Engineer Date

Remarks: SG 1 LEVEL  
MOD

The above listed component has been inspected in accordance with QCP-3.13-3 Rev. 0 and is acceptable.

Edij. Hoge 6/20/83  
Inspector Date

IDENTIFICATION DATA SHEET

IDENTIFICATION DATA CARD

WBNP-QCP-3.13-3

TEST NO. 99

Level A

Attachment A

LOP

Unique Identifier 1-LM-3-175-A

Reference Drawings

47W601-3-55R 14

47W600-120 R 4

BECKMAN DWG R N/A

# 797492 R 3

N/A R

Ron Paulley 6-1-83  
REU Engineer Date

Remarks: SG 4 LEVEL  
MOD

The above listed component has been inspected in accordance with QCP-3.13-3 Rev. 0 and is acceptable.

Edij. Hoge 6/20/83  
Inspector Date

505







1.02-1 Re: <u>5</u>	Attachment A	IPN No. <u>I-PKH-38</u>	Unit File
<u>1-LN-3-172-A</u>	Wk Pkg/Plan/ F. F. No. <u>545-3</u>	Inst. <u>QEP 3.13-3K</u> Test No. <u>99</u>	Inspector's Name <u>ENGR DAKE LEE</u>
INSTRUMENT TAG IS INCORRECT COLOR CODE		LOCATION: <u>PANEL 381</u> <u>EL 692 A2/T</u>	
REF: <u>47B601-3-54 R18</u> <u>47B601-3 R5</u>		Date Detected <u>11/10/83</u> Inspector _____ Date _____	
Accepted by: _____ Inspector _____ Date _____			

1.02-1 Re: <u>5</u>	Attachment A	IPN No. <u>I-PKH-35</u>	Unit File
<u>1-FM-46-57-5</u>	Wk Pkg/Plan/ F. F. No. <u>540-46</u>	Inst. <u>QEP 3.13-3 R0</u> Test No. <u>99</u>	Inspector's Name <u>ENGR DAKE LEE</u>
INSTRUMENT IS NOT TAGGED AS SHOWN ON DRAWING.		REF: <u>47B601-46-15 R6</u> <u>LOCATED: PANEL 381 EL 692 A2/T</u>	
<input checked="" type="checkbox"/> Referred to responsible engineer for disposition		Date Detected <u>11/9/83</u> Inspector _____ Date _____	
Accepted by: _____ Inspector _____ Date _____			

E.B.L.  
11/10/83

170

E.B.L.  
11/10/83

E.B.L.  
11/10/83





WATTS BAR NUCLEAR POWER PLANT

11/06/83

CXWDINGS: ABBREV. INSTRUMENT RPT-FULL FILE SYS/UNIT SORT  
 MAIN AND AUXILIARY FEEDWATER

PAGE 0073

IDENTIFIER	VIEW/PANEL   IGA	CONTRACT NO.	PURCHASE NO   I	WORK   I/ PKG	IXFER   BNDY	CURR   ACT	TEST   STAT	TEST SEQUENCE
1-LCV-3-148A-B	02 C	07379		Q		IXFR	*	00A*, 25A*, 49A*, 84A*, 92A*
1-LM-3-148A-B	01 C	07379		Q		IXFR	99A	00A*, 25A*, 84A*, 92A*, 99A
1-LSV-3-148A-B	01 C	07379		Q		IXFR	99A	00A*, 25A*, 11A*, 49A*, 75A*, 86A*, 99A
1-LA-3-148B	06 E M-3	54114		H		*		25A*
1-LH-3-148B-B	01 E L-306	07352		Q	LH-03-101	IXFR	00A	00A, 25A, 84A*, 92A*, 99A
1-LS-3-148B/D-B	02 E L-110	92784		Q		IXFR	*	00A*, 25A*, 84A*, 92A*, 99A*
1-LI-3-148C	01 E L-10	92809		P		IXFR	00A	00A, 25A, 84A*, 92A*, 99A
1-LA-3-148D	06 E M-3	54114		H		00A		00A, 25A*
1-LS-3-148D/B-B	01 E L-110	92784		Q		IXFR	*	00A*, 25A*, 84A*, 92A*, 99A*
1-LS-3-150A-B	11 C L-341	033871		P		IXFR	*	00A*, 25A*, 49A*, 84A*, 92A*, 99A*
1-LS-3-150B-B	10 C L-383	030616		P		IXFR	*	00A*, 25A*, 49A*, 84A*, 92A*, 99A*
1-TE-3-151	04 E	03521		H		IXFR	99A	00A*, 25A*, 84A*, 92A*, 99A
1-TW-3-151	02 M	03521		Q		IXFR	99A	00A*, 25A*, 99A
1-PT-3-153	08 C L-218	92784		H		IXFR	*	00A*, 25A*, 49A*, 84A*, 92A*, 99A*
1-PT-3-153	03 E L-123	92784		H		IXFR	*	00A*, 25A*, 84A*, 92A*, 99A*
1-TE-3-155	03 H	83520-1		Q		IXFR	*	00A*, 25A*, 99A*
1-FI-3-155A-J	05 E M-4	92809		Q		IXFR	H1	00A*, 25A*, 84A*, 92A*, 99A*
1-TT-3-155A-A	07 C L-217	030570		Q		IXFR	*	00A*, 25A*, 49A*, 84A*, 92A*, 99A*
1-PT-3-155A-A	03 E L-11A	92784		Q		IXFR	*	00A*, 25A*, 84A*, 92A*, 99A*
1-FM-3-155AA-A	03 E L-11A	92784		Q		IXFR	*	00A*, 25A*, 84A*, 92A*, 99A*
1-FM-3-155AB-A	04 E L-11A	92784		Q		IXFR	*	00A*, 25A*, 84A*, 92A*, 99A*
1-FI-3-155B-K	05 E M-3	92809	ADDN	Q		IXFR	H1	00A*, 25A*, 84A*, 92A*, 99A*
1-TT-3-155B-B	07 C L-549	030570		Q		IXFR	*	00A*, 25A*, 49A*, 84A*, 92A*, 99A*
1-PT-3-155B-B	02 E R-140	07352		Q		IXFR	*	00A*, 25A*, 84A*, 92A*, 99A*
1-FM-3-155BA-B	04 E R-140	07352		Q		IXFR	*	00A*, 25A*, 84A*, 92A*, 99A*
1-FM-3-155BB-B	05 E R-140	07352		Q		IXFR	*	00A*, 25A*, 84A*, 92A*, 99A*
1-FM-3-155BD-B	01 E R-140	07352		Q		IXFR	*	00A*, 25A*, 84A*, 92A*, 99A*
1-FI-3-155C	02 E L-10	92809		H		IXFR	*	00A*, 25A*, 84A*, 92A*, 99A*
1-FI-3-155D	04 E L-381	92809		H	PI-3-57	IXFR	*	00B*, 25A*, 84A*, 92A*, 99A*
1-FM-3-155D-A	00 E L-297	031326		Q		00A		00A, 25A, 84A, 92A, 99A
1-LCV-3-156-A	04 C	03577		Q		IXFR	*	00A*, 25A*, 49A*, 84A*, 92A*
1-LI-3-156	06 E M-3	92809	ADDN	H		IXFR	H1	00A*, 25A*, 84A*, 92A*, 99A*
1-LI-3-156-A	05 E L-11A	820498		Q		IXFR	99A	00A*, 25A*, 84A*, 92A*, 99A
1-FM-3-156-A	03 E L-11A	92784		Q		IXFR	99A	00A*, 25A*, 84A*, 92A*, 99A
1-LSV-3-156-A	03 C	027551		Q		IXFR	*	00A*, 25A*, 11A*, 49A*, 75A*, 86A*, 99A*
1-LT-3-156-A	06 C L-184	92784		Q	1219	IXFR	99A	00A*, 25A*, 49A*, 84A*, 92A*, 99A
1-LS-3-156-A	04 C L-439	330616		Q		IXFR	*	00A*, 25A*, 49A*, 84A*, 92A*, 99A*
1-PT-3-156-A	03 E L-11A	92784		Q		IXFR	99A	00A*, 25A*, 84A*, 92A*, 99A
1-LS-3-156-A	05 E L-11A	BY ELEC		Q		*		00A*, 25A*
1-LS-3-156A-A	05 E M-4	BY ELEC		Q		*		25A*
1-LCV-3-156A-A	01 C	07379		Q		IXFR	*	00A*, 25A*, 49A*, 84A*, 92A*
1-LM-3-156A-A	00 C	07379		Q		IXFR	92A	00A*, 25A*, 84A*, 92A, 99A
1-LSV-3-156A-A	00 C	07379		Q		IXFR	99A	00A*, 25A*, 11A*, 49A*, 75A*, 86A*, 99A
1-LA-3-156B	04 E M-3	54114		Q		*		00A*, 25A*
1-LM-3-156B-A	01 E L-379	07352		Q	LH-03-45B	IXFR	00A	00A, 25A, 84A*, 92A*, 99A
1-LS-3-156B/D-A	03 E L-11A	92784		H		IXFR	*	00A*, 25A*, 84A*, 92A*, 99A*
1-LI-3-156C	01 E L-10	92809		P		IXFR	00A	00A, 25A, 84A*, 92A*, 99A
1-LA-3-156D	04 E M-3	54114		Q		*		00A*, 25A*
1-LS-3-156D/B-A	02 E L-11A	92784		H		IXFR	*	00A*, 25A*, 84A*, 92A*, 99A*
1-TE-3-159	04 E	03521		Q		IXFR	99A	00A*, 25A*, 84A*, 92A*, 99A
1-TW-3-159	02 M	03521		Q		IXFR	99A	00A*, 25A*, 99A
1-LS-3-	12 C L-383	033871		Q		IXFR	*	00A*, 25A*, 49A*, 84A*, 92A*, 99A*

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WATTS BAR NUCLEAR POWER PLANT

11/06/83

CXWBINSS: ADDR. INSTRUMENT RPT-FULL FILE SYS/UNIT SURT

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IDENTIFIER	RV/EI/PANEL ICI	CONTRACT NO.	PURCHASE NO I/IMPKG	WORK IBNDRY	ICURR I/ACT	TST I/STA	TEST SEQUENCE
1-S-3-100B-B	12 C L-383	833871		Q			IXFR * 00A*, 25A*, 49A*, 84A*, 92A*, 99A*
1-T-3-101	06 C L-218		92784	N			IXFR * 00A*, 25A*, 49A*, 84A*, 92A*, 99A*
1-X-3-101	02 E R-123		92784	N			IXFR * 00A*, 25A*, 84A*, 92A*, 99A*
1-PE-3-103	03 H	83520-1 ADDN		Q			IXFR * 00A*, 25A*, 99A*
1-I-3-103A-J	05 E M-4		92809	Q			IXFR HI 00A*, 25A*, 84A*, 92A*, 99A*
1-FT-3-103A-A	09 C L-216	830570		Q 1219			IXFR * 00A*, 25A*, 49A*, 84A*, 92A*, 99A*
1-X-3-103A-A	06 E R-143		87352	Q			IXFR * 00A*, 25A*, 84A*, 92A*, 99A*
1-M-3-103AA-A	07 E R-143		87352	Q			IXFR * 00A*, 25A*, 84A*, 92A*, 99A*
1-M-3-103AB-A	05 E R-143		87352	Q			IXFR * 00A*, 25A*, 84A*, 92A*, 99A*
1-M-3-103AD-A	01 E R-143		87352	Q			IXFR * 00A*, 25A*, 84A*, 92A*, 99A*
1-I-3-103B-K	06 E M-3	92809 ADDN		Q			IXFR HI 00A*, 25A*, 84A*, 92A*, 99A*
1-T-3-103B-B	08 C L-548	830570		Q			IXFR * 00A*, 25A*, 47A*, 84A*, 92A*, 99A*
1-X-3-103B-B	03 E L-118		92784	Q			IXFR 99A 00A*, 25A*, 84A*, 92A*, 99A*
1-M-3-103BA-B	04 E L-118		92784	Q			IXFR * 00A*, 25A*, 84A*, 92A*, 99A*
1-M-3-103BB-B	02 E L-118		92784	Q			IXFR 99A 00A*, 25A*, 84A*, 92A*, 99A*
1-I-3-103C	02 E L-10		92809	H			IXFR * 00A*, 25A*, 84A*, 92A*, 99A*
1-M-3-103D	03 E L-201		92809	N 1219			IXFR * 00B*, 25A*, 84A*, 92A*, 99A*
1-M-3-103U-B	06 E L-298	831326	FI-72-34	N 1219			00A 00A, 25A, 84A, 92A, 99A
1-CV-3-104-A	05 C		83577	Q			IXFR * 00A*, 25A*, 49A*, 84A*, 92A*
1-I-3-104	06 E M-3	72809 ADDN		N			IXFR HI 00A*, 25A*, 84A*, 92A*, 99A*
1-I-3-104-A	05 E L-11A		820498	Q			IXFR 25A 00A*, 25A, 84A*, 92A*, 99A
1-M-3-104-A	03 E L-11A		92784	Q			IXFR 25A 00A*, 25A, 84A*, 92A*, 99A
1-S-3-104-A	05 C	827551		Q			IXFR * 00A*, 25A*, 11A*, 49A*, 75A*, 86A*, 99A*
1-T-3-104-A	06 C L-184		92784	Q 1219			IXFR 99A 00A*, 25A*, 49A*, 84A*, 92A*, 99A
1-S-3-104-A	04 C L-439	830616		Q			IXFR * 00A*, 25A*, 49A*, 84A*, 92A*, 99A*
1-X-3-104-A	07 E L-11A		92784	Q			IXFR 99A 00A*, 25A*, 84A*, 92A*, 99A
1-S-3-104-A	04 E L-11A			Q			* 00A*, 25A*
1-S-3-104A-A	05 E M-4		BY ELEC	Q			* 25A*
1-CV-3-104A-A	01 C		87379	Q			IXFR * 00A*, 25A*, 49A*, 84A*, 92A*
1-M-3-104A-A	00 C		87379	Q			IXFR 99A 00A*, 25A*, 84A*, 92A*, 99A
1-S-3-104A-A	00 C		87379	Q			IXFR * 00A*, 25A*, 11A*, 49A*, 75A*, 86A*, 99A*
1-A-3-104B	04 E M-3		54114	N			* 00A*, 25A*
1-LH-3-104B-A	01 E L-379	87352		Q			IXFR 00A 00A, 25A, 84A*, 92A*, 99A
1-S-3-104B/D-A	03 E L-11A		92784	Q			IXFR * 00A*, 25A*, 84A*, 92A*, 99A*
1-I-3-104L	01 E L-10	92809		P			IXFR 00A 00A, 25A, 84A*, 92A*, 99A
1-A-3-104D	04 E M-3		54114	N			00A*, 25A*
1-S-3-104D/E-A	02 E L-11A		92784	Q			IXFR * 00A*, 25A*, 84A*, 92A*, 99A*
1-S-3-105A-A	12 C L-302	831871		Q			IXFR * 00A*, 25A*, 49A*, 84A*, 92A*, 99A*
1-S-3-105B-A	12 C L-302	833671		Q			IXFR * 00A*, 25A*, 49A*, 84A*, 92A*, 99A*
1-PE-3-106	04 F		83521	N			IXFR 99A 00A*, 25A*, 84A*, 92A*, 99A
1-M-3-106	02 H		83521	N			IXFR 99A 00A*, 25A*, 99A
1-PT-3-108	06 C L-218		92784	H			IXFR * 00A*, 25A*, 49A*, 84A*, 92A*, 99A*
1-X-3-108	02 E R-123		92784	H			IXFR * 00A*, 25A*, 84A*, 92A*, 99A*
1-PE-3-170	03 H	83520-1 ADDN		Q			IXFR * 00A*, 25A*, 99A*
1-I-3-170A-J	05 E M-4		92809	Q			IXFR HI 00A*, 25A*, 84A*, 92A*, 99A*
1-FT-3-170A-A	06 C L-216	830570		Q			IXFR * 00A*, 25A*, 49A*, 84A*, 92A*, 99A*
1-X-3-170A-A	02 E L-11A		92784	Q			IXFR 99A 00A*, 25A*, 84A*, 92A*, 99A
1-M-3-170AA-A	07 E L-11A		92784	Q			IXFR 99A 00A*, 25A*, 84A*, 92A*, 99A
1-M-3-170AB-A	03 E L-11A		92784	Q			IXFR 99A 00A*, 25A*, 84A*, 92A*, 99A
1-I-3-170B-K	06 E M-3	92809 ADDN		Q			IXFR HI 00A*, 25A*, 84A*, 92A*, 99A*
1-T-3-170B-B	06 C L-548	830570		Q			IXFR * 00A*, 25A*, 49A*, 84A*, 92A*, 99A*
1-X-3-170B-B	02 E R-143		87352	Q			IXFR * 00A*, 25A*, 84A*, 92A*, 99A*

WATTS BAR NUCLEAR POWER PLANT

11/06/83

CXWDINSS; ABBREV. INSTRUMENT RPT-FULL FILE SYS/UNIT SORT  
MAIN AND AUXILIARY FEEDWATER

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IDENTIFIER	IRVIE/PANEL I/C	CONTRACT NO.	IPURCHASE NO	IQWORK I/PKG	IXFR IBNDY	ICURR I/ACT	ITST I/STAT	ITEST SEQUENCE
1--M-3-1708A-B	04 E R-140	87352		Q		IXFR *		00A*, 25A*, 84A*, 92A*, 99A*
1--M-3-1708B-B	04 E R-140	87352		Q		IXFR *		00A*, 25A*, 84A*, 92A*, 99A*
1--M-3-1708D-B	00 E R-140	87352		Q		IXFR *		00A*, 25A*, 84A*, 92A*, 99A*
1--I-3-170C	02 E L-10	92809		N		IXFR *		00A*, 25A*, 84A*, 92A*, 99A*
1--M-3-1700-A	03 E L-381	92809	FJ-72-13	N 1219		IXFR *		00B*, 25A*, 84A*, 92A*, 99A*
1--CV-3-170-A	00 E L-297	831326				IXFR 00A		00A, 25A, 84A, 92A, 99A
1--CV-3-171-B	05 C	83577		Q		IXFR 04A		00A*, 25A*, 49A*, 84A*, 92A*
1--T-3-171	06 E H-3	92007 ADDN		N		IXFR HI		00A*, 25A*, 84A*, 92A*, 99A*
1--LCV-3-171-3	05 E L-118	820498		Q		IXFR *		00A*, 25A*, 84A*, 92A*, 99A*
1--M-3-171-B	03 E L-118	92784		Q		IXFR *		00A*, 25A*, 84A*, 92A*, 99A*
1--SV-3-171-B	05 C	827551		Q		IXFR *		00A*, 25A*, 11A*, 49A*, 75A*, 86A*, 99A*
1--T-3-171-G	06 C L-183	92784		Q		IXFR *		00A*, 25A*, 49A*, 84A*, 92A*, 99A*
1--PS-3-171-B	04 C L-440	830616		Q		IXFR 99A		00A*, 25A*, 49A*, 84A*, 92A*, 99A
1--X-3-171-C	03 E L-118	92784		Q		IXFR 99A		00A*, 25A*, 84A*, 92A*, 99A
1--S-3-171-B	05 E L-118	BY ELEC		Q		*		00A*, 25A*
1--IS-3-171-A-B	06 E H-4	BY ELEC		Q		*		25A*
1--LCV-3-171A-B	01 C	87379		Q		IXFR *		00A*, 25A*, 49A*, 84A*, 92A*
1--M-3-171A-B	00 C	87379		Q		IXFR 99A		00A*, 25A*, 84A*, 92A*, 99A
1--SV-3-171A-B	00 C	87379		Q		IXFR 99A		00A*, 25A*, 11A*, 49A*, 75A*, 86A*, 99A
1--A-3-171B	05 E H-3	54114		N		*		00A*, 25A*
1--LM-3-171B-D	01 E L-386	87352	LH-03-44	Q		IXFR 00A		00A, 25A, 84A*, 92A*, 99A
1--S-3-171B/U-B	02 E L-118	92784		Q		IXFR 99A		00A*, 25A*, 84A*, 92A*, 99A
1--I-3-171C	01 E L-10	92809		P		IXFR 00A		00A, 25A, 84A*, 92A*, 99A
1--A-3-171D	05 E H-3	54114		N		*		00A*, 25A*
1--LS-3-171D/B-B	01 E L-118	92784		Q		IXFR 99A		00A*, 25A*, 84A*, 92A*, 99A
1--CV-3-172-A	03 C	83577 ADDN		Q		IXFR *		00A*, 25A*, 49A*, 84A*, 92A*
1--I-3-172	05 E H-3	92709		N		IXFR *		00A*, 25A*, 84A*, 92A*, 99A*
1--TC-3-172-A	04 E L-381	820498		Q		IXFR 99A		00A*, 25A*, 84A*, 92A*, 99A
1--LM-3-172-A	03 E L-381	820498		Q		IXFR 99A		00A*, 25A*, 84A*, 92A*, 99A
1--SV-3-172-A	03 C	827551		Q		IXFR *		00A*, 25A*, 11A*, 49B*, 75A*, 86A*, 99A*
1--T-3-172-A	06 C L-417	92784		Q		IXFR 99A		00A*, 25A*, 49A*, 84A*, 92A*, 99A
1--X-3-172-A	03 E L-11A	92784		Q		IXFR 99A		00A*, 25A*, 84A*, 92A*, 99A
1--XS-3-172-A	04 E L-11A	BY ELEC		Q		*		00A*, 25A*
1--IS-3-172A-A	04 E H-3	BY ELEC		Q		*		25A*
1--A-3-172B	04 E H-3	54114		N		*		00A*, 25A*
1--S-3-172B/U-A	01 E L-11A	92784		Q		IXFR *		00A*, 25A*, 84A*, 92A*, 99A*
1--A-3-172D	04 E H-3	54114		N		*		00A*, 25A*
1--S-3-172D/B-A	01 E L-11A	92784		Q		IXFR 99A		00A*, 25A*, 84A*, 92A*, 99A
1--CV-3-173-B	03 C	83577 ADDN		Q		IXFR *		00A*, 25A*, 49A*, 84A*, 92A*
1--I-3-173	06 E H-3	92809		N		IXFR HI		00A*, 25A*, 84A*, 92A*, 99A*
1--LCV-3-173-D	04 E L-381	820498		Q		IXFR *		00A*, 25A*, 84A*, 92A*, 99A*
1--M-3-173-B	03 E L-381	820498		Q		IXFR *		00A*, 25A*, 84A*, 92A*, 99A*
1--S-3-173-B	05 C	827551		Q		IXFR *		00A*, 25A*, 11A*, 49B*, 75A*, 86A*, 99A*
1--T-3-173-B	06 C L-178	92784		Q		IXFR *		00A*, 25A*, 49A*, 84A*, 92A*, 99A*
1--X-3-173-C	03 E L-118	92784		Q		IXFR 99A		00A*, 25A*, 84A*, 92A*, 99A
1--XS-3-173-B	05 E L-110	BY ELEC		Q		*		00A*, 25A*
1--IS-3-173A 3	05 E H-3	BY ELEC		Q		*		25A*
1--A-3-173B	04 E H-3	54114		N		*		00A*, 25A*
1--S-3-173D/B-B	01 E L-118	92784		Q		IXFR 99A		00A*, 25A*, 84A*, 92A*, 99A
1--A-3-173D	04 E L-3	54114		N		*		00A*, 25A*
1--S-3-173D/A-1	01 E L-118	92784		Q		IXFR 99A		00A*, 25A*, 84A*, 92A*, 99A
1--CV-3-	03 C	83577 ADDN		Q		IXFR *		00A*, 25A*, 49A*, 84A*, 92A*

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WATTS BAR NUCLEAR POWER PLANT

11/30/83  
UNIT 1

CXW015501: ADDR. INSTRUMENT RPT-FULL FILE SYS/UNIT SURT  
MAIN AND AUXILIARY FEEDWATER

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IDENTIFIER	IRVIE/PANEL ICI	CONTRACT NO.	PURCHASE H01Q1WORK IAIPKG	IXFR IBNDRY	CURR IACT	TEST ISTAT	TEST SEQUENCE
1-LI-3-174	07 E M-3	92809	H		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-LS-3-174-B	04 E L-381	820498	Q		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-LM-3-174-B	03 E L-381	820498	Q		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-LSV-3-174-B	02 C	83577 ADDN	Q		IXFR	*	00A*,25A*,11A*,49B*,75A*,86A*,99A*
1-LT-3-174-B	06 C L-170	92784	Q		IXFR	*	00A*,25A*,49A*,84A*,92A*,99A*
1-LX-3-174-B	03 E L-118	92784	Q		IXFR	99A	00A*,25A*,84A*,92A*,99A
1-LY-3-174-B	04 E L-118	RY ELEC	Q		*		00A*,25A*
1-IS-3-174A-B	04 E M-3	RY ELEC	Q		*		25A*
1-LA-3-174B	04 E M-3	54114	H		*		00A*,25A*
1-LS-3-174B/D-B	01 E L-118	92784	Q		IXFR	99A	00A*,25A*,84A*,92A*,99A
1-LA-3-174D	04 E M-3	54114	H		*		00A*,25A*
1-LS-3-174D/B-B	01 E L-118	92784	Q		IXFR	99A	00A*,25A*,84A*,92A*,99A
1-LCV-3-175-A	03 C	83577 ADDN	Q		IXFR	*	00A*,25A*,49A*,84A*,92A*
1-LI-3-175	07 E M-3	92809	H		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-LIC-3-175A	04 E L-381	820498	Q		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-LM-3-175-A	04 E L-381	820498	Q		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-LSV-3-175-A	02 C	83577 ADDN	Q		IXFR	*	00A*,25A*,11A*,49B*,75A*,86A*,99A*
1-LT-3-175-A	06 C L-417	92784	Q		IXFR	*	00A*,25A*,49A*,84A*,92A*,99A*
1-LX-3-175-A	03 E L-11A	92784	Q		IXFR	99A	00A*,25A*,84A*,92A*,99A
1-LY-3-175-A	03 E L-11A	RY ELEC	Q		*		00A*,25A*
1-IS-3-175A-A	05 E M-3	RY ELEC	Q		*		25A*
1-LA-3-175B	04 E M-3	54114	H		*		00A*,25A*
1-LS-3-175D/D-A	01 E L-11A	92784	Q		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-LA-3-175D	04 E M-3	54114	H		*		00A*,25A*
1-LS-3-175D/D-A	01 E L-11A	92784	Q		IXFR	99A	00A*,25A*,84A*,92A*,99A
1-LE-3-176	01 E	820638	H		IXFR	99A	00A*,25A*,84A*,92A*,99A
1-LW-3-176	02 H	820638	Q		IXFR	99A	00A*,25A*,99A
1-LE-3-177	01 E	820638	H		IXFR	99A	00A*,25A*,84A*,92A*,99A
1-LV-3-177	02 H	820638	Q		IXFR	99A	00A*,25A*,99A
1-LE-3-178	01 E	820638	H		IXFR	99A	00A*,25A*,84A*,92A*,99A
1-LW-3-178	02 H	820638	Q		IXFR	99A	00A*,25A*,99A
1-LCV-3-179A-B	04 R	83015	47W427-5	Q	04A		25A*,04A,61B*,67A,68A,75B
1-LY-3-179A-B	04 E	RY ELEC	Q		*		00A*,25A*,75A*
1-IS-3-179A/A-B	05 E M-3	RY ELEC	Q		*		25A*
1-IS-3-179A/B-B	04 E	RY ELEC	Q		*		11A*,25A*
1-IS-3-179A/C-B	04 E	RY ELEC	Q		*		25A*
1-LCV-3-179B-B	04 R	83015	47W427-6	Q	04A		25A*,04A,61B*,67A,68A,75B
1-LY-3-179B-B	04 E	RY ELEC	Q		*		00A*,25A*,75A*
1-IS-3-179B/A-B	04 E	RY ELEC	Q		*		25A*
1-IS-3-179B/B-B	04 E	RY ELEC	Q		*		11A*,25A*
1-IS-3-179B/C-B	04 E	RY ELEC	Q		*		25A*
1-LE-3-180	01 E	820638	H		IXFR	99A	00A*,25A*,84A*,92A*,99A
1-LW-3-180	02 H	820638	Q		IXFR	99A	00A*,25A*,99A
1-PCV-3-183	02 H	83074	H 1219		IXFR	04A	00A*,25A*,49B*,84A,92A
1-LC-3-183	01 H	83094	H		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-LI-3-185	04 H L-215	83074	H 1219		IXFR	*	00A*,25A*,49A*,84A*,92A*,99A*
1-LCV-3-185	01 C	822950	Q		IXFR	*	00A*,25A*,49A*,86A*
1-LSV-3-185-B	00 C	822950	Q		IXFR	75B	00A*,25A*,11A*,49A*,75B,99A*
1-LC-3-185	01 C	822950	Q		IXFR	*	00A*,25A*,49A*,86A*
1-LSV-3-186-A	00 C	822950	Q		IXFR	75B	00A*,25A*,11A*,49A*,75B,99A*
1-LCV-3-187	01 C	822950	Q		IXFR	*	00A*,25A*,49A*,86A*
1-LSV-3-187-B	00 C	822950	Q		IXFR	11A	00A*,25A*,11A,49A*,75B,99A*

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WATT BAR NUCLEAR POWER PLANT

11/06/83  
UNIT 1

CXWBINSS: ABBREV. INSTRUMENT RPT-FULL FILE SYS/UNIT SURT

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SYSTEM 46 TITLE FEEDWATER CONTROL

IDENTIFIER	IRVIE IC	PANEL	CONTRACT NO.	PURCHASE NO	WORK PKG	IFER ONRY	CURR ACT	TEST STAT	TEST SEQUENCE
1-15V-46-44A	04	C	83046		N		IXFR *		00A*, 25A*, 49A*, 99A*
1-15V-46-44A	04	E H-3	2		N		*		11A*, 25A*
1-15V-46-44B	04	C	83046		N		IXFR *		00A*, 25A*, 49A*, 99A*
1-15V-46-44B	03	E	2		N		*		25A*
1-1CV-46-44D	00	M	83046		N		IXFR *		00A*, 25A*, 49A*, 80A*
1-1PI-46-45	08	E H-3	92809		N		IXFR HI		00A*, 25A*, 84A*, 92A*, 99A*
1-1PT-46-45	05	C L-276	83046	63-UOTR	N		IXFR *		00A*, 25A*, 47A*, 84A*, 92A*, 99A*
1-1TA-46-46	08	E	54114		N		*		00A*, 25A*, 72A*
1-XE-46-46	05	C	83046		N		IXFR *		00A*, 25A*, 04A*, 99A*
1-XI-46-46	07	E H-3	83046		N		IXFR *		00A*, 25A*, 84A*, 92A*, 99A*
1-XI-46-46	02	E L-276	83046		N		IXFR *		00A*, 25A*, 04A*, 99A*
1-XE-46-47	05	C	83046		N		IXFR 99A		00A*, 25A*, 04A*, 99A
1-XI-46-47	02	E L-276	83046		N		IXFR *		00A*, 25A*, 04A*, 49A*, 99A*
1-1I-46-49	04	M	83046		N		IXFR *		00A*, 25A*, 04A*, 49A*, 99A*
1-1I-46-50	04	M	83046		N		IXFR *		00A*, 25A*, 04A*, 49A*, 99A*
1-1PS-46-51A	00	E	83046	63/UF-1	N		IXFR *		00A*, 25A*, 04A*, 99A*
1-1PS-46-51B	00	E	83046	63/UF-2	N		IXFR *		00A*, 25A*, 04A*, 99A*
1-1PI-46-52A	03	H L-276	83046		N		IXFR *		00A*, 25A*, 49A*, 84A*, 92A*, 99A*
1-1PI-46-52B	04	H L-276	83046		N		IXFR *		00A*, 25A*, 49A*, 84A*, 92A*, 99A*
1-1SA-46-53	05	E H-3	54114		N		*		00A*, 25A*, 72A*
1-1SS-46-53-S	09	E	83094		Q		IXFR 99A		00A*, 25A*, 84A*, 92A*, 99A
1-1TC-46-54-S	02	E L-381	83094		Q		IXFR 99A		00A*, 25A*, 04A*, 99A
1-1XI-46-54A-S	07	E H-3	83094		Q		IXFR 99A		00A*, 25A*, 84A*, 92A*, 99A
1-1XI-46-54B-S	09	E L-326	83094		Q		IXFR 99A		00A*, 25A*, 84A*, 92A*, 99A
1-1IS-46-55A-S	05	E H-3	2		Q		*		11A*, 25A*
1-1IS-46-55B-S	07	E	2		Q		*		25A*
1-1A-46-56	06	E H-3	54114		N		*		00A*, 25A*, 72A*
1-1SE-46-56-S	07	E	83094		Q		IXFR C4A		00A*, 25A*, 04A*, 99A
1-1SH-46-56-S	04	E L-326	83094		Q		IXFR *		00A*, 25A*, 84A*, 92A*, 99A*
1-1IS-46-56A-S	04	E H-3	2		Q		*		11A*, 25A*
1-1SI-46-56A-S	06	E H-3	83094		Q		IXFR *		00A*, 25A*, 84A*, 92A*, 99A*
1-1IS-46-56B-S	04	E	2		Q		11A		11A*, 25A*
1-1SI-46-56B-S	09	E L-326	83094		Q		IXFR *		00A*, 25A*, 84A*, 92A*, 99A*
1-1FI-46-57	05	E H-3	92809		N		IXFR HI		00A*, 25A*, 84A*, 92A*, 99A*
1-1FI-46-57-S	03	E L-381	820498		Q		IXFR 99A		00A*, 25A*, 84A*, 92A*, 99A
1-1FI-46-57-S	03	E L-381	820498		Q		IXFR 99A		00A*, 25A*, 84A*, 92A*, 99A
1-1PS-46-57-S	05	E L-381	820498		Q		IXFR 99A		00A*, 25A*, 84A*, 92A*, 99A
1-1IC-46-57-S	00	E H-3	(2)		Q		IXFR 00A		00A*, 25A*, 61A*, 04A*, 99A
1-1SC-46-57-S	07	E L-326	83094		Q		IXFR 99A		00A*, 25A*, 84A*, 92A*, 99A
1-1SE-46-57-S	07	C	83094		Q		IXFR 04A		00A*, 25A*, 04A*, 99A
1-1SS-46-57-S	00	E	(2)		Q		*		00A*, 25A*, 75A*, 99A*
1-1SS-46-57	06	E	83094		Q		IXFR 99A		00A*, 25A*, 99A
1-1SH-46-57A-S	02	E L-326	83094		Q		IXFR 99A		00A*, 25A*, 84A*, 92A*, 99A
1-1SM-46-57B-S	01	C	83094		Q		IXFR 92A		00A*, 25A*, 84A*, 92A*, 99A
1-1I-46-58	01	M	83094		Q		IXFR 99A		00A*, 25A*, 84A*, 92A*, 99A
1-1TA-46-59	09	E H-3	54114		N		*		00A*, 25A*, 72A*
1-1E-46-59	02	E	83046		N		IXFR 99A		00A*, 25A*, 84A*, 92A*, 99A
1-1FIS-46-59	05	E L-275	83046	23-0CD	N		IXFR *		00A*, 25A*, 84A*, 92A*, 99A*
1-1W-46-59	02	M	83046		N		IXFR *		00A*, 25A*, 99A*
1-1TA-46-60	03	E H-3	54114		N		*		00A*, 25A*, 72A*
1-1E-46-60	02	E	83046		N		IXFR 99A		00A*, 25A*, 84A*, 92A*, 99A
1-1FIS-46	06	C L-276	83046	23-0CD	N		IXFR *		00A*, 25A*, 84A*, 92A*, 99A*

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WATTS BAR NUCLEAR POWER PLANT

11/06/83  
UNIT 1

CXWDINSS: ABBREV. INSTRUMENT RPT-FULL FILE SYS/UNIT SORT  
MAIN AND AUXILIARY FEEDWATER

PAGE 0070

IDENTIFIER	RVIE IC	PANEL	CONTRACT NO.	PURCHASE NO	WORK IPKG	XFER BNDRY	CURR I ACT	TST I STAT	TEST SEQUENCE
1-S-3-111-F	03	E R-10	54114	LS/304	Q			*	COA*,25A*,75A*
1-I-3-111A-J	05	E H-4	54114	LI-304A	Q		IXFR	H1	COB*,25B*,84A*,92A*,99A*
1-M-3-111A-F	01	E R-10	54114	LY-304A	Q		IXFR	*	COA*,25A*,84A*,92A*,99A*
1-L-3-111B-F	02	E R-10	54114	LI-304	N		IXFR	*	COB*,25A*,84A*,92A*,99A*
1-M-3-111B-F	02	E R-10	54114	LY-304B	Q		IXFR	*	COA*,25A*,84A*,92A*,99A*
1-TE-3-112	01	E	820638		N		IXFR	99A	COA*,25A*,84A*,92A*,99A
1-TM-3-112	02	H	820638		Q		IXFR	*	COA*,25A*,99A*
1-TS-3-112AA	02	E R-147	824105		N		IXFR	*	COA*,25A*,84A*,92A*,99A*
1-S-3-112AB	02	E R-147	824105		N		IXFR	*	COA*,25A*,84A*,92A*,99A*
1-TS-3-112AD	02	E R-147	824105		N		IXFR	*	COA*,25A*,84A*,92A*,99A*
1-TE-3-113	01	E	820638		H		IXFR	99A	COA*,25A*,84A*,92A*,99A
1-TM-3-113	02	H	820638		Q		IXFR	*	COA*,25A*,99A*
1-TS-3-113AA	02	E R-147	824105		N		IXFR	*	COA*,25A*,84A*,92A*,99A*
1-TS-3-113AB	02	E R-147	824105		N		IXFR	*	COA*,25A*,84A*,92A*,99A*
1-TS-3-113AD	02	E R-147	824105		N		IXFR	*	COA*,25A*,84A*,92A*,99A*
1-TE-3-114	01	E	820638		N		IXFR	99A	COA*,25A*,84A*,92A*,99A
1-TM-3-114	02	H	820638		Q		IXFR	*	COA*,25A*,99A*
1-TS-3-114AA	02	E R-147	824105		N		IXFR	*	COA*,25A*,84A*,92A*,99A*
1-S-3-114AB	02	E R-147	824105		N		IXFR	*	COA*,25A*,84A*,92A*,99A*
1-TS-3-114AD	02	E R-147	824105		N		IXFR	*	COA*,25A*,84A*,92A*,99A*
1-TE-3-115	01	E	820638		N		IXFR	99A	COA*,25A*,84A*,92A*,99A
1-TM-3-115	02	H	820638		Q		IXFR	*	COA*,25A*,99A*
1-TS-3-115AA	02	E R-147	824105		N		IXFR	*	COA*,25A*,84A*,92A*,99A*
1-S-3-115AB	02	E R-147	824105		N		IXFR	*	COA*,25A*,84A*,92A*,99A*
1-TS-3-115AD	02	E R-147	824105		N		IXFR	*	COA*,25A*,84A*,92A*,99A*
1-FCV-3-116A-A	04	R	83015	47H427-7	Q			67A	25A*,01C*,67A,68B*,75C
1-S-3-116A-A	05	E	BY ELEC		Q			*	COA*,25A*,75A*
1-TS-3-116A/A-A	06	E H-3	BY ELEC		Q			*	25A*,61A*
1-TS-3-116A/B-A	04	E	BY ELEC		Q			*	25A*
1-TS-3-116A/C-A	05	E	BY ELEC		Q			*	25A*
1-FCV-3-116C-A	04	R	83015	47H427-7	Q			04A	25A*,04A,61C*,67A,68C*,75D
1-TS-3-116B-A	05	E	BY ELEC		Q			*	COA*,25A*,75A*
1-TS-3-116B/A-A	06	E H-3	BY ELEC		Q			*	25A*
1-TS-3-116B/B-A	04	E	BY ELEC		Q			*	25A*
1-TS-3-116B/C-A	05	E	BY ELEC		Q			*	25A*
1-TI-3-117	04	H L-214	83530-3		H		IXFR	*	COA*,25A*,49A*,84A*,92A*,99A*
1-TS-3-117-A	04	E	BY ELEC		Q			*	COA*,25A*
1-TS-3-118A-A	05	E H-4	BY ELEC		Q			*	25A*,61B*
1-TS-3-118B-A	04	E	BY ELEC		Q			*	25A*
1-TS-3-118C-A	04	E	BY ELEC		Q			*	25A*
1-EI-3-119A	08	E H-4	92809		H		IXFR	H1	COA*,25A*,84A*,92A*,99A*
1-EI-3-119B	08	E	74C2-84376		N		IXFR	H1	COA*,25A*,84A*,92A*,99A*
1-II-3-120A	03	H	8309A		N		IXFR	*	COA*,25A*,84A*,92A*,99A*
1-TI-3-120B	03	H	8309A		N		IXFR	*	COA*,25A*,84A*,92A*,99A*
1-TA-3-121	00	E H-3	54114		N			*	25A*
1-TS-3-121A-A	08	C L-215A	330616		Q	1219	IXFR	H1	COA*,25A*,49A*,84A*,92A*,99A*
1-TS-3-121B-A	08	C L-215A	830616		Q	1219	IXFR	H1	COA*,25A*,49A*,84A*,92A*,99A*
1-TS-3-121D-A	06	C L-215A	330616		Q	1219	IXFR	H1	COA*,25A*,49A*,84A*,92A*,99A*
1-FCV-3-122	05	H	84577	ADDN	Q		IXFR	*	COB*,25B*,49B*,84A*,92A*
1-TM-3-122-A	01	C	84577	ADDN	Q		IXFR	99A	COA*,25A*,84A*,92A*,99A
1-TS-3-122-A	04	E L-11A	BY ELEC		Q			*	COA*,25A*
1-PDI-3-122A	00	E H-4	92809	PI-3-122A	N		IXFR	*	COA*,25A*,84A*,92A*,99A*

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WATTS BAR NUCLEAR POWER PLANT

11/06/83

CXWDINSS: ABBREV. INSTRUMENT RPT-FULL FILE SYS/UNIT SURT

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UNIT 1

SYSTEM

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TITLE

MAIN AND AUXILIARY FEEDWATER

IDENTIFIER	IRVIE/PANEL I, LCI	CONTRACT NO.	PURCHASE NO	WORK IAIPKG	IXFER IBNDRY	CURR FACT	TST ISTAT	TEST SEQUENCE
1-M-3-98A-C	01 E R-13	54114	LY-503A	Q				IXFR * 00A*,25A*,84A*,92A*,99A*
1-M-3-98B-C	01 E L-301	54114	LI-503	N				IXFR * 99A 00A*,25A*,84A*,92A*,99A*
1-M-3-98C-G	02 E R-13	54114	LY-503B	Q				IXFR * 00A*,25A*,84A*,92A*,99A*
1-LR-3-981-001	03 E H-4	54114	LR-503-1	N				IXFR H1 00A*,25A*,84A*,92A*,99A*
1-LR-3-981-002	02 E H-4	54114	LR-503-2	N				IXFR H1 00A*,25A*,84A*,92A*,99A*
1-LR-3-981-003	00 E H-4	54114	LR-503-3	N				IXFR * 00A*,25A*,84A*,92A*,99A*
1-IS-3-99A-A	04 E H-3		BY ELEC	Q				11A 11A,25A*
1-IS-3-99B-B	03 E H-3		BY ELEC	Q				11A 11A,25A*
1-FCV-3-100-B	05 R	83015	47H01-14	Q				04A 25A*,04A,61A*,67A*,68A*,75B*
1-IS-3-100-D	03 E		BY ELEC	Q				* 00A*,25A*,75A*
1-IS-3-100A-B	05 E H-4		BY ELEC	Q				H1 11A*,25A*
1-IS-3-100B-B	03 E		BY ELEC	Q				* 11A*,25A*
1-IS-3-100C-B	03 E		BY ELEC	Q				* 25A*
1-PT-3-101	00 E	54114						IXFR 00A 00A,25A,84A,92A,99A
1-M-3-101A	00 E	54114						IXFR 00A 00A,25A,84A,92A,99A
1-M-3-101B	00 E	54114						IXFR 00A 00A,25A,84A,92A,99A
1-FC-3-103	10 E R-23	54114	FC-540	N				IXFR * 00A*,25A*,84A*,92A*,99A*
1-FCV-3-103	06 C	54114	FCV-540	N				IXFR * 00A*,25A*,49A*,84A*,92B*
1-FE-3-103	11 H	54114	FE-540	N				IXFR * 00A*,25A*,99A*
1-FK-3-103	08 E H-3	54114	FK-540	N				IXFR * 00A*,25A*,84A*,92A*,99A*
1-M-3-103	08 C L-87	54114		N				IXFR * 00A*,25A*,49A*,84A*,92A*,99A*
1-SV-3-103-A	05 C	54114		Q				IXFR 11A 00A*,25A*,11A,49A*,75B,86A*,99A*
1-S-3-103	04 E	54114		N				IXFR * 00A*,25A*,84A*,92A*,99A*
1-FCV-3-103A	07 H	826860		N				IXFR * 00A*,25A*,49A*,84A*,92A*
1-FI-3-103A	12 E H-4	54114	FI-540A	N				IXFR H1 00A*,25A*,84A*,92A*,99A*
1-FM-3-103A-D	08 E R-4	54114	FY-540A	Q				IXFR * 00A*,25A*,84A*,92A*,99A*
1-S-3-103A-D	13 E R-4	54114	FD-540A/B	Q				IXFR 99B 00A*,25A*,84A*,92A*,99B
1-SV-3-103A-A	06 C	54114		Q				IXFR 11A 00A*,25A*,11A,49A*,75B,86A*,99A*
1-T-3-103A-D	14 C L-68	54114	FT-540	Q				IXFR * 00A*,25A*,49A*,84A*,92A*,99A*
1-HC-3-103A	03 E H-4	87352		N				IXFR H1 00A*,25B,84A*,92A*,99A*
1-IS-3-103A-A	00 E		BY ELEC	Q				* 25A*
1-FX-3-103A-D	08 E R-4	54114	FQ-540	Q				IXFR * 00A*,25A*,84A*,92A*,99A*
1-XS-3-103A-D	09 E R-4	54114	FS/540	N				* 00A*,25A*,75A*
1-FA-3-103B	07 E H-6	54114		N				* 25A*
1-FI-3-103B	13 E H-4	54114	FI-541	Q				IXFR H1 00A*,25A*,84A*,92A*,99A*
1-FM-3-103B-D	08 E R-4	54114	FY-540B	Q				IXFR * 00A*,25A*,84A*,92A*,99A*
1-FS-3-103B-D	12 C R-4	54114	FB-540B/A	Q				IXFR 99B 00A*,25A*,84A*,92A*,99B
1-FSV-3-103B-B	06 C	54114		Q				IXFR 11A 00A*,25A*,11A,49A*,75B,86A*,99A*
1-T-3-103B-L	13 C L-58	54114	FT-541	Q				IXFR * 00A*,25A*,49A*,84A*,92A*,99A*
1-IS-3-103B-B	09 E		BY ELEC	Q				* 75A*
1-FX-3-103B-C	07 E R-8	54114	FQ-541	Q				IXFR * 00A*,25A*,84A*,92A*,99A*
1-XS-3-103B-E	08 E R-8	54114	FS/541	Q				* 00A*,25A*,75A*
1-ZS-3-103B	00 E			N				IXFR * 00A*,25A*,84A*,92A*,99A*
1-FM-3-103D-E	07 E R-8	54114	FY-541A	Q				IXFR * 00A*,25A*,84A*,92A*,99A*
1-S-3-103D-L	11 E R-8	54114	FB-541B/A	Q				IXFR 99D 00A*,25A*,84A*,92A*,99B
1-FSV-3-103D	01 C	824133		N				IXFR * 00A*,25A*,49A*,75A*,86A*,99A*
1-XS-3-103D	08 E H-4	54114	FS/540C	N				* 00A*,25A*
1-FM-3-103E-E	07 E R-8	54114	FY-541B	N				IXFR * 00A*,25A*,84A*,92A*,99A*
1-S-3-103E-L	09 E H-6	54114	FB-541A/B	Q				IXFR 99D 00A*,25A*,84A*,92A*,99B
1-FSV-3-103E	01 C	824133		N				IXFR * 00A*,25A*,49A*,75A*,86A*,99A*
1-M-3-103E-L	07 E R-8	54114	FY-541C	Q				IXFR * 00A*,25A*,84A*,92A*,99A*
1-FM-3-103	08 C L-87	54114		N				IXFR * 00A*,25A*,49A*,84A*,92A*,99A*

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WATTS BAR NUCLEAR POWER PLANT

11/06/03

CXWBINSS: ABBREV. INSTRUMENT RPT-FULL FILE SYS/UNIT SORT

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UNIT 1 SYSTEM 3 TITLE MAIN AND AUXILIARY FEEDWATER

IDENTIFIER	RVIE IC1	PANEL	CONTRACT NO.	PURCHASE NO	QWORK AIPKG	XFER IBNDRY	CURR ACT	TST TSTAT	TEST SEQUENCE
1-TW-3-53A	02	H	820638		H		IXFR	*	00A*,25A*,99A*
1-TS-3-53AA	02	E R-147	824105		N		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-TS-3-53AB	02	E R-147	824105		H		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-TS-3-53AD	02	E R-147	824105		N		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-TE-3-53B	01	E	820638		N		IXFR	99A	00A*,25A*,84A*,92A*,99A
1-TW-3-53B	02	H	820638		N		IXFR	*	00A*,25A*,99A*
1-TS-3-53BA	02	E R-147	824105		N		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-TS-3-53BB	02	E R-147	824105		N		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-TS-3-53BU	02	E R-147	824105		N		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-TE-3-54A	01	E	820638		N		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-TW-3-54A	02	H	820638		N		IXFR	*	00A*,25A*,99A*
1-TS-3-54AA	02	E R-147	824105		N		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-TS-3-54AB	02	E R-147	824105		N		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-TS-3-54AD	02	E R-147	824105		N		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-TE-3-54B	01	E	820638		H		IXFR	99A	00A*,25A*,84A*,92A*,99A
1-TW-3-54B	02	H	820638		N		IXFR	*	00A*,25A*,99A*
1-TS-3-54BA	02	E R-147	824105		N		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-TS-3-54BB	02	E R-147	824105		H		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-TS-3-54BD	02	E R-147	824105		H		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-EC-3-55	10	E R-19	54114	LC-527	N		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-LI-3-55-K	15	E H-4	54114	LI-527	Q		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-LT-3-55-G	13	C L-185	54114	LT-527	Q		IXFR	99A	00B*,25C*,49A*,84A*,92A*,99A
1-X-3-55-G	07	E R-12	54114	LQ-527	Q		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-XS-3-55-G	08	E R-12	54114	LS/527	Q			*	00A*,25A*,75A*
1-LH-3-55A-G	02	E R-12	54114	LY-527	Q		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-LS-3-55A-G	12	B R-12	54114	LB-527A	Q		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-LM-3-55B-G	01	E R-12	54114	LY-527A	Q		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-LN-3-55B-G	12	E R-12	54114	LD-527B/C	Q		IXFR	99B	00A*,25A*,84A*,92A*,99B
1-LS-3-55B	11	E R-19	54114	LB-527D/E	H		IXFR	99B	00A*,25A*,84A*,92A*,99B
1-LS-3-55C	12	E R-19	54114	LB-527E/D	N		IXFR	99B	00A*,25A*,84A*,92A*,99B
1-LS-3-55D-G	11	E R-12	54114	LB-527C/B	Q		IXFR	99B	00A*,25A*,84A*,92A*,99B
1-LS-3-55G1	01	E R-146	87352		N		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-LS-3-55G2	01	E R-146	87352		N		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-LT-3-56-G	15	C L-185	54114	LT-502	Q		IXFR	99A	00B*,25B*,49A*,84B*,92A*,99A
1-X-3-56-G	09	E R-13	54114	LQ-502	Q		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-XS-3-56-G	03	E R-13	54114	LS/502	Q			*	00A*,25A*,75A*
1-LI-3-56A-K	05	E H-4	54114	LI-502A	Q		IXFR	III	00A*,25A*,84A*,92A*,99A*
1-LH-3-56A-G	02	E R-13	54114	LY-502A	Q		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-LI-3-56B	02	E L-361	54114	LI-502	N		IXFR	99A	00B*,25A*,84A*,92A*,99A
1-LM-3-56B-G	02	E R-13	54114	LY-502B	Q		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-TE-3-57	02	H	86785		H		IXFR	99A	00A*,25A*,84A*,92A*,99A
1-TI-3-57	04	M L-33	86785		H		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-TE-3-58	02	H	86785		N		IXFR	99A	00A*,25A*,84A*,92A*,99A
1-TI-3-58	04	M L-34	86785		N		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-TE-3-59A	01	E	820638		H		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-TW-3-59A	02	H	820638		H		IXFR	*	00A*,25A*,99A*
1-TS-3-59AA	02	E R-147	824105		N		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-TS-3-59AB	02	E R-147	824105		H		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-TS-3-59AD	02	E R-147	824105		N		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-TE-3-59B	01	E	820638		H		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-TW-3-59D	02	H	820638		N		IXFR	99A	00A*,25A*,99A
1-TS-3-59BA	02	E R-147	824105		H		IXFR	*	00A*,25A*,84A*,92A*,99A*



WATTS BAR NUCLEAR POWER PLANT

11/06/83

CXWDINSS: ABBREV. INSTRUMENT RPT-FULL FILE SYS/UNIT SURT  
 MAIN AND AUXILIARY FEEDWATER

PAUL 0061

UNIT 1 SYSTEM 3 TITLE

IDENTIFIER	IRVIE/PANEL I/CI	CONTRACT NO.	PURCHASE NO	Q/WORK A/PKG	IXFER I/BNDRY	CURR I/ACT	TST I/STATI	TEST SEQUENCE
1-T-3-42-G	14 C L-185	54114	LT-517	Q 1219		IXFR	99A	00A*,25B*,49A*,84B*,92B*,99A
1-X-3-42-G	07 E R-12	54114	LQ-517	Q		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-XS-3-42-G	08 E R-12	54114	LS/517	Q		*	*	00A*,25A*,75A*
1-M-3-42A-G	02 E R-12	54114	LY-517	Q		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-LS-3-42A-G	11 E R-12	54114	LB-517A	Q		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-M-3-42B-G	01 E R-12	54114	LY-517A	Q		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-LS-3-42B-G	12 E R-12	54114	LB-517B/C	Q		IXFR	99B	00A*,25A*,84A*,92A*,99B
1-S-3-42D	17 E R-15	54114	LB-517D/E	N		IXFR	99B	00A*,25A*,84A*,92A*,99B
1-S-3-42E	13 E R-15	54114	LB-517E/D	N		IXFR	99D	00A*,25A*,84A*,92A*,99D
1-S-3-42F-G	12 E R-12	54114	LB-517C/B	Q		IXFR	99B	00A*,25A*,84A*,92A*,99B
1-S-3-42G	01 E R-146	87352		N		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-S-3-42G	01 E R-146	87352		N		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-T-3-43-F	16 G L-177	54114	LT-501	Q		IXFR	99A	00B*,25B*,49A*,84B*,92A*,99A
1-X-3-43-F	09 E R-9	54114	LQ-501	Q		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-XS-3-43-F	05 E R-9	54114	LS/501	Q		*	*	00A*,25A*,75A*
1-LI-3-43A-J	04 E R-4	54114	LI-501A	Q		IXFR	H1	00A*,25A*,84A*,92A*,99A*
1-M-3-43A-F	01 E R-9	54114	LY-501A	Q		IXFR	*	00A*,25A*,84A*,92A*,99A*
3-43A-F	01 E L-381	54114	LI-501	N		IXFR	*	00B*,25A*,84A*,92A*,99A*
1-M-3-43B-F	02 E R-9	54114	LY-501B	Q		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-R-3-43P001	03 E R-4	54114	LR-501-1	N		IXFR	H1	00A*,25A*,84A*,92A*,99A*
1-R-3-43P002	02 E R-4	54114	LR-501-2	H		IXFR	H1	00A*,25A*,84A*,92A*,99A*
1-R-3-43P003	00 E R-4	54114	LR-501-3	H		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-IS-3-43	00 E R-147	BY ELEC		H		*	*	25A*
1-FI-3-46P001	00 E R-147	824105		H		IXFR	99A	00A*,25A*,84A*,92A*,99A
1-FI-3-46P002	00 E R-147	824105		H		IXFR	99A	00A*,25A*,84A*,92A*,99A
1-FI-3-46P003	00 E R-147	824105		H		IXFR	99A	00A*,25A*,84A*,92A*,99A
1-FI-3-46P004	00 E R-147	824105		H		IXFR	99A	00A*,25A*,84A*,92A*,99A
1-FI-3-46P005	00 E R-147	824105		H		IXFR	99A	00A*,25A*,84A*,92A*,99A
1-FI-3-46P006	00 E R-147	824105		H		IXFR	99A	00A*,25A*,84A*,92A*,99A
1-FI-3-46P007	00 E R-147	824105		H		IXFR	99A	00A*,25A*,84A*,92A*,99A
1-CV-3-47-B	04 R	83015	47H901-14	Q		04A	*	05A*,04A*,61A*,67A*,68A*,75B*
1-XS-3-47-B	02 E	BY ELEC		Q		*	*	00A*,25A*,75A*
1-IS-3-47A-B	04 E H-4	BY ELEC		Q		*	*	11A*,25A*
1-IS-3-47C-B	02 E	BY ELEC		Q		*	*	25A*
1-C-3-48	10 E R-19	54114	FC-520	N		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-FCV-3-48	07 C	54114	FCV-520	N		IXFR	*	00A*,25A*,49A*,84A*,92B*
1-FE-3-48	11 H	54114	FE-520	H		IXFR	*	00A*,25A*,99A*
1-FICV-3-48	00 E H-3	54114	FK-920	H		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-M-3-48	06 C L-87	54114		H		IXFR	*	00A*,25A*,49A*,84A*,92A*,99A*
1-FSV-3-48A	03 C	54114		Q		IXFR	11A	00A*,25A*,11A*,49A*,75B*,66A*,99A*
1-IS-3-48	03 E	54114		H		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-CV-3-48A	08 H	826860		H		IXFR	*	00A*,25A*,49A*,84A*,92A*
1-LI-3-48A	12 E H-4	54114	FI-520A	N		IXFR	H1	00A*,25A*,84A*,92A*,99A*
1-M-3-48A-D	08 E R-3	54114	FY-520A	Q		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-S-3-48A-D	13 E R-3	54114	FB-520A/B	Q		IXFR	99B	00A*,25A*,84A*,92A*,99B
1-FSV-3-48A-A	05 C	54114		Q		IXFR	75B	00A*,25A*,11A*,49A*,75B*,86A*,99A*
1-T-3-48A-D	14 C L-6B	54114	FT-920	U		IXFR	*	00A*,25A*,49A*,84A*,92A*,99A*
1-HU-3-48A	02 C H-4	87352		H		IXFR	H1	00A*,25B*,84A*,92A*,99A*
1-IS-3-48A-A	09 E	BY ELEC		Q		*	*	25A*
1-X-3-48A-D	08 E R-3	54114	FQ-520	Q		IXFR	*	00A*,25A*,84A*,92A*,99A*
1-XS-3-48A-D	09 E R-3	54114	FS/520	Q		*	*	00A*,25A*
1-FA-3-48	09 E H-6	54114		H		*	*	00A*,25A*

DL

490

WATTS BAR NUCLEAR POWER PLANT

11/06/83  
UNIT 1

CXWBINSS: ABBREV. INSTRUMENT RPT-FULL FILE SYS/UNIT SORT  
MAIN STEAM

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IDENTIFIER	IRVIC PANEL	CONTRACT NO.	PURCHASE NO.	WORK	EXFER	CURR	TEST	TEST	SEQUENCE
				LAIPKG	BNDRY	ACT	STAT		
1-PX-1-26C-B	02 E-L-118	92784		P		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-PI-1-27A-J	10 E-M-4	71062-54114	PI-348A	Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-PT-1-27A-D	07 C-L-196	71062-54114	PT-349	Q 1219		IXFR	*		00A*,25A*,49A*,84A*,92A*,99A*
1-PX-1-27A-D	05 E-R-4	71062-54114	PQ-344	Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-XS-1-27A-D	08 E-R-4	71062-54114	PS/344	Q			*		00A*,25A*,75A*
1-PH-1-27A1-J	02 E-R-4	71062-54114	PY-345	Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-PH-1-27A2-D	02 E-R-4	71062-54114	PY-344A	Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-PI-1-27B-K	10 E-M-4	71062-54114	PI-343A	Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-PT-1-27B-L	06 C-L-197	71062-54114	PT-343	Q 1219		IXFR	*		00A*,25A*,49A*,84A*,92A*,99A*
1-PX-1-27B-E	04 E-R-8	71062-54114	PQ-343	Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-XS-1-27B-E	05 E-R-8	71062-54114	PS/343	Q			*		00A*,25A*,75A*
1-PH-1-27B1-E	02 E-R-8	71062-54114	PY-343	Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-PH-1-27B2-E	02 E-R-8	71062-54114	PY-343A	Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-PI-1-27D	07 E-L-381	71062-54114	PI-344B	N		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-S-1-27D1	01 E-R-146	87352		N		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-S-1-27D2	01 E-R-146	87352		N		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-S-1-27E1	01 E-R-146	87352		N		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-FS-1-27E2	01 E-R-146	87352		H		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-E-1-28	03 H	71062-54114	FE-342	Q		IXFR	*		00A*,25A*,99A*
1-A-1-28A	06 E-M-6	71062-54114		H			*		00A*,25A*
1-I-1-28A	05 E-M-4	71062-54114	FI-342	N		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-M-1-28A-D	05 E-P-4	71062-54114	FY-342A	Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-S-1-28A-D	08 E-R-4	71062-54114	FB-342B	Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-T-1-28A-D	08 C-L-182	71062-54114	FT-342	Q 1219		IXFR	250		00A*,25B,49A*,84A*,92A*,99A*
1-X-1-28A-D	05 E-E-4	71062-54114	FQ-342	Q		IXFR	*		00B*,25B*,84A*,92A*,99A*
1-XS-1-28A-D	06 E-F-4	71062-54114	FS/342	C			*		00A*,25A*,75A*
1-I-1-28B	05 E-M-4	71062-54114	FI-343	N		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-M-1-28B-E	04 E-R-8	71062-54114	FY-343A	Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-S-1-28B-E	07 E-R-8	71062-54114	FB-343B	Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-T-1-28B-E	07 C-L-183	71062-54114	FT-343	Q		IXFR	92A		00A*,25B,49A*,84A*,92A*,99A*
1-X-1-28B-E	04 E-R-8	71062-54114	FQ-343	Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-XS-1-28B-E	05 E-R-8	71062-54114	FS/343	Q			*		00A*,25A*,75A*
1-M-1-28B-E	04 E-R-8	71062-54114	FY-343E	Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-S-1-28D	03 E-M-4	71062-54114	FS/342C	C			*		00A*,25A*
1-M-1-28L-D	05 E-R-4	71062-54114	FY-342B	Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-M-1-28F-E	04 E-R-8	71062-54114	FY-343D	Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-M-1-28G-D	05 E-R-4	71062-54114	FY-342C	Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-M-1-28H-E	04 E-R-8	71062-54114	FY-343C	Q		IXFR	99A		00A*,25B*,84A*,92A*,99A
1-M-1-28J-D	05 E-R-4	71062-54114	FY-342D	Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-M-1-28K-E	04 E-R-8	71062-54114	FY-343D	Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-M-1-28L-D	05 E-R-4	71062-54114	FY-342E	Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-FCV-1-29-T	06 C	76K33-83080		Q		IXFR	86A		00A*,25A*,49A*,84A*
1-ZI-1-2V	00 E-M-4	(4)		N		IXFR	*		00A*,25A*,84A*,99A*
1-FSV-1-29A-A	06 C	76K33-83080		Q 1219		IXFR	*		00A*,25A*,11A*,49A*,75A*,99A*
1-IS-1-29A-T	01 E-M-4	(4)		Q			*		25A*
1-XS-1-29A-A	02 E-L-11A	(4)		Q			*		00A*,25A*
1-FSV-1-29B-B	06 C	76K33-83080		C 1219		IXFR	*		00A*,25A*,11A*,49A*,75A*,99A*
1-IS-1-29B-A	04 E	(4)		Q			*		11A*,25A*
1-XS-1-29B-B	02 E-L-11B	(4)		Q			*		00A*,25A*
1-FSV-1-29D-A	05 C	76K33-83080		Q 1219		IXFR	*		00A*,25A*,11A*,49A*,75A*,99A*
1-IS-1-29D-B	00 E	(4)		Q			*		11A*,25A*
1-FSV-1-29E-A	06 C	76K33-83080		Q 1219		IXFR	*		00A*,25A*,11A*,49A*,75A*,99A*

WATTS BAR NUCLEAR POWER PLANT

11/06/83

CXWBINSS: ABBREV. INSTRUMENT RPT-FULL FILE SYS/UNIT SURT

PAGE 0005

UNIT 1

SYSTEM 1

TITLE

MAIN STEAM

IDENTIFIER	VIEW PANEL ICI	CONTRACT NO.	PURCHASE NO.	NOI I/IFKG	WORK IBNDRY	IFXR I/ACT	CURR I/STAT	TEST SEQUENCE
1-PS-1-170-A	05 E	86422			Q		IXFR	99A 00A*, 25A*, 84A*, 92A*, 99A
1-PS-1-170-A	01 E	(4)			Q		*	25A*
1-FCV-1-18-B	02 R	03015	47W427-12		Q		*	25A*, 61B*, 67A*, 68A*, 75A*
1-KS-1-18-B	01 E	(4)			Q		*	00A*, 25A*, 99A*
1-MS-1-18A-C	02 E H-4	(4)			Q		*	25A*, 61B*
1-PS-1-18A-D	05 E	86422			Q		IXFR	99A 00A*, 25A*, 84A*, 92A*, 99A
1-PS-1-18B-B	05 E	86422			Q		IXFR	99A 00A*, 25A*, 84A*, 92A*, 99A
1-PS-1-18C-B	01 E	(4)			Q		*	25A*
1-PI-1-19C	02 E L-10	92809			N		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*
1-PM-1-19C-A	01 E L-11A	92784			P		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*
1-PT-1-19C-A	04 C L-252	92784			Q		IXFR	* 00A*, 25A*, 49A*, 84A*, 92A*, 99A*
1-PT-1-19C-A	01 E L-11A	92784			P		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*
1-PI-1-20A-J	10 E H-4	71C62-54114	PI-534A		Q		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*
1-PS-1-20A-D	08 E R-4	71C62-54114	PB-534A		Q		IXFR	99B 00A*, 25A*, 84A*, 92A*, 99B
1-PT-1-20A-D	09 C L-194	71C62-54114	PT-534		Q		IXFR	* 00A*, 25B*, 49B*, 84A*, 92A*, 99A*
1-PT-1-20A-D	05 E R-4	71C62-54114	PQ-534		Q		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*
1-KS-1-20A-D	06 E R-4	71C62-54114	PS-534		Q		*	00A*, 25A*, 75A*
1-PM-1-20A1-D	02 E R-4	71C62-54114	PY-534		Q		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*
1-PM-1-20A2-D	02 E R-4	71C62-54114	PY-534A		Q		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*
1-PI-1-20B-K	10 E R-4	71C62-54114	PI-534A		Q		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*
1-PS-1-20B-D	08 E R-4	71C62-54114	PB-534B		Q		IXFR	99B 00A*, 25A*, 84A*, 92A*, 99B
1-PT-1-20B-E	00 C L-195	71C62-54114	PT-535		Q		IXFR	* 00A*, 25B*, 49B*, 84A*, 92A*, 99A*
1-PT-1-20B-E	04 E R-7	71C62-54114	PQ-535		Q		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*
1-PS-1-20B-E	05 E R-7	71C62-54114	PS-535		Q		*	00A*, 25A*, 75A*
1-PM-1-20B1-E	02 E R-7	71C62-54114	PY-535		Q		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*
1-PM-1-20B2-E	02 E R-7	71C62-54114	PY-535A		Q		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*
1-PI-1-20D*	05 E L-381	71C62-54114	PI-534B		N		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*
1-PS-1-20D1	01 E R-146	87352			H		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*
1-PS-1-20D2	01 E R-146	87352			H		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*
1-PS-1-20L1	01 E R-146	87352			H		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*
1-PS-1-20L2	01 E R-146	87352			N		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*
1-FE-1-21	03 H	71C62-54114	FE-532		Q		IXFR	* 00A*, 25A*, 99A*
1-FA-1-21A	05 E H-6	71C62-54114			N		*	00A*, 25A*
1-FI-1-21A	05 E H-4	71C62-54114	FI-532		H		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*
1-FM-1-21A-D	06 E R-4	71C62-54114	FY-532A		Q		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*
1-PS-1-21A-D	07 E R-4	71C62-54114	FZ-532B		Q		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*
1-PT-1-21A-D	07 C L-182	71C62-54114	FT-532		Q	1219	IXFR	* 00A*, 25C*, 49A*, 84A*, 92A*, 99A*
1-PT-1-21A-D	05 E R-4	71C62-54114	FQ-532		Q		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*
1-KS-1-21A-D	06 E R-4	71C62-54114	FS-532		Q		*	00A*, 25A*, 75A*
1-PI-1-21C	05 E H-4	71C62-54114	FI-533		H		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*
1-FM-1-21B-L	04 E R-7	71C62-54114	FY-533A		Q		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*
1-PS-1-21B-E	06 E R-7	71C62-54114	FZ-533B		Q		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*
1-PT-1-21B-E	06 C L-183	71C62-54114	FT-533		Q		IXFR	* 00A*, 25C*, 49A*, 84A*, 92A*, 99A*
1-PT-1-21B-E	06 E R-7	71C62-54114	FQ-533		Q		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*
1-KS-1-21B-E	05 E R-7	71C62-54114	FS-533		Q		*	00A*, 25A*, 75A*
1-FM-1-21D-E	04 E R-7	71C62-54114	FY-533E		Q		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*
1-KS-1-21D	03 E H-4	71C62-54114	FS-532C		N		*	00A*, 25A*
1-FM-1-21C-D	05 E R-4	71C62-54114	FY-532B		Q		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*
1-FM-1-21F-L	04 E R-7	71C62-54114	FY-533B		Q		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*
1-FM-1-21G-D	05 E R-4	71C62-54114	FY-532C		Q		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*
1-FM-1-21H-E	04 E R-7	71C62-54114	FY-533C		Q		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*
1-FM-1-21I-E	05 E R-4	71C62-54114	FY-532D		Q		IXFR	* 00A*, 25A*, 84A*, 92A*, 99A*

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WATTS BAR NUCLEAR POWER PLANT

11/06/83

CXWBIN55: ABBREV. INSTRUMENT RPT-FULL FILE SYS/UNIT SORT

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UNIT 1

SYSTEM

TITLE

MAIN STEAM

IDENTIFIER	IRVIEIPANEL ICI	CONTRACT NO.	PURCHASE I	NOT I	WORK I	IXFER I	CURR I	TEST I	TEST I	SEQUENCE
1-PI-1-1C	02 E L-10	92809			N		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-PM-1-1C-A	01 E L-11A	92784			P		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-T-1-1C-A	10 C L-200	92784			Q		IXFR	99A		00A*,25A*,49A*,84A*,92A*,99A
1-X-1-1C-A	01 E L-11A	92784			P		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-A-1-2A	07 E M-6	71C62-54114			N			*		00A*,25A*
1-PI-1-2A-J	10 E M-4	71C62-54114	PI-514A		Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-S-1-2A-D	08 E R-3	71C62-54114	PB-514A		Q		IXFR	99B		00A*,25A*,84A*,92A*,99B
1-T-1-2A-U	06 C L-196	71C62-54114	PT-514	Q	1219		IXFR	*		00A*,25B*,49B*,84A*,92A*,99A*
1-X-1-2A-U	05 E R-3	71C62-54114	PQ-514		Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-S-1-2A-D	06 E R-3	71C62-54114	PS-514		Q			*		00A*,25A*,75A*
1-M-1-2A1-D	02 E R-3	71C62-54114	PY-514		Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-M-1-2A2-D	03 E K	71C62-54114	PI-514A		Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-PI-1-2B-K	11 E M-4	71C62-54114	PI-515A		Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-S-1-2B-E	07 E R-7	71C62-54114	PB-515A		Q		IXFR	99B		00A*,25A*,84A*,92A*,99B
1-T-1-2B-E	07 C L-197	71C62-54114	PT-515	Q	1219		IXFR	*		00A*,25A*,49A*,84A*,92A*,99A*
1-X-1-2B-E	04 E R-7	71C62-54114	PQ-515		Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-S-1-2B-E	05 E R-7	71C62-54114	PS-515		Q			*		00A*,25A*,75A*
1-M-1-2B1-E	02 E R-7	71C62-54114	PY-515		Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-M-1-2B2-E	02 E R-7	71C62-54114	PY-515A		Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-A-1-2U	07 E M-6	71C62-54114			N			*		00A*,25A*
1-PT-1-20	08 E L-301	71C62-54114	PI-515B		N		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-S-1-20	08 E R-3	71C62-54114	PB-515B		Q		IXFR	99B		00A*,25A*,84A*,92A*,99B
1-A-1-2E	08 E M-6	71C62-54114			N			*		00A*,25A*
1-S-1-2E-L	10 E R-7	71C62-54114	PB-515B		Q		IXFR	99B		00A*,25A*,84A*,92A*,99B
1-S-1-2F1	01 E R-146	87352			N		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-S-1-2F2	01 E R-146	87352			N		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-S-1-2G1	01 E R-146	87352			N		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-S-1-2U2	01 E R-146	87352			N		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-R-1-2PC01	00 E M-4	71C62-54114	PR-515		N		IXFR	*		00B*,25B*,84C*,92B*,99A*
1-R-1-2PC02	00 E M-4	71C62-54114	PR-515		N		IXFR	*		00B*,25B*,84B*,92A*,99A*
1-E-1-3	03 M	71C62-54114	FE-512		Q		IXFR	*		00A*,25A*,99A*
1-PA-1-3A	05 E M-6	71C62-54114			N			III		00A*,25A*
1-PI-1-3A	05 E M-4	71C62-54114	FI-512		N		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-PM-1-3A-D	05 E R-3	71C62-54114	FY-512A		Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-S-1-3A-U	11 E R-3	71C62-54114	FD-512B		Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-T-1-3A-U	08 C L-182	71C62-54114	FT-512		Q		IXFR	*		00A*,25C*,49A*,84A*,92A*,99A*
1-X-1-3A-D	05 E R-3	71C62-54114	FQ-512		Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-XS-1-3A-D	06 E R-3	71C62-54114	FS-512		Q			*		00A*,25A*,75A*
1-I-1-3B	05 E M-4	71C62-54114	FI-513		N		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-PM-1-3B-E	04 E R-7	71C62-54114	FY-513A		Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-S-1-3B-E	09 E R-7	71C62-54114	FB-513B		Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-T-1-3B-E	07 C L-183	71C62-54114	FT-513		Q		IXFR	*		00A*,25C*,49A*,84A*,92A*,99A*
1-X-1-3B-E	04 E R-7	71C62-54114	FQ-513		Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-XS-1-3B-E	05 E R-7	71C62-54114	FS-513		Q			*		00A*,25A*,75A*
1-M-1-3U-E	04 E R-7	71C62-54114	FY-513C		Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-S-1-3U	03 E M-4	71C62-54114	FS-512C		N			*		00A*,25A*
1-M-1-3E-D	06 E R-3	71C62-54114	FY-512B		Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-M-1-3F-C	04 E R-7	71C62-54114	FY-513B		Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-M-1-3G-D	05 E R-3	71C62-54114	FY-512C		Q		IXFR	99A		00A*,25B*,84A*,92A*,99A
1-M-1-3H-E	04 E R-7	71C62-54114	FY-513C		Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-M-1-3J-D	05 E R-3	71C62-54114	FY-512D		Q		IXFR	*		00A*,25A*,84A*,92A*,99A*
1-M-1-3K-E	04 E R-7	71C62-54114	FY-513D		Q		IXFR	*		00A*,25A*,84A*,92A*,99A*

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WATTS BAR NUCLEAR POWER PLANT

11/06/83  
UNIT 1

SYSTEM

TITLE

CXWDINSS: ADDR. INSTRUMENT RPT-FULL FILE SYS/UNIT SORT  
MAIN STEAM

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IDENTIFIER	IRVMPANEL ICI	CONTRACT NO.	PURCHASE NO	WORK IAIPKG	IXFER IBNDY	ICURR IACT	ITST ISTAT	TEST SEQUENCE
1-PM-1-8C-B	01 E L-11B	92784		P		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-PT-1-8C-B	03 C L-253	92784		Q		IXFR *	*	00A*, 25A*, 49A*, 84A*, 92A*, 99A*
1-X-1-8C-B	01 E L-11B	92784		P		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-PI-1-9A-J	10 E M-4	71C62-54114	PI-524A	Q		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-PS-1-9A-E	00 E R-8	71C62-54114	PB-525A	Q		IXFR 99B	*	00A*, 25A*, 84A*, 92A*, 99B
1-T-1-9A-D	07 C L-194	71C62-54114	PT-524	Q		IXFR *	*	00A*, 250*, 49B*, 84A*, 92A*, 99A*
1-X-1-9A-D	05 E R-3	71C62-54114	PQ-524	Q		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-KS-1-9A-D	06 E R-3	71C62-54114	PS/524	Q		IXFR *	*	00A*, 25A*, 75A*
1-PM-1-9A1-D	02 E R-3	71C62-54114	PY-524	Q		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-PM-1-9A2-D	02 E R-3	71C62-54114	PY-524A	Q		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-PI-1-9B-K	10 E M-4	71C62-54114	PI-525A	Q		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-PS-1-9B-E	07 E R-8	71C62-54114	PB-525B	Q		IXFR 99B	*	00A*, 25A*, 84A*, 92A*, 99B
1-PT-1-9B-E	06 C L-195	71C62-54114	PT-525	Q		IXFR *	*	00A*, 250*, 49B*, 84A*, 92A*, 99A*
1-X-1-9B-E	04 E R-8	71C62-54114	PQ-525	Q		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-KS-1-9B-E	05 E R-8	71C62-54114	PS/525	Q		IXFR *	*	00A*, 25A*, 75A*
1-PM-1-9B1-E	02 E R-8	71C62-54114	PY-525	Q		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-PM-1-9B2-E	02 E R-8	71C62-54114	PY-525A	Q		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-PT-1-9B2-E	05 E L-381	71C62-54114	PT-524B	H		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-S-1-901	01 E R-146	87352		H		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-S-1-902	01 E R-146	87352		H		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-S-1-9E1	01 E R-146	87352		N		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-S-1-9E2	01 E R-146	87352		N		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-E-1-10	03 H	71C62-54114	FE-522	Q		IXFR *	*	00A*, 25A*, 99A*
1-A-1-10A	05 E M-6	71C62-54114		H		IXFR *	*	00A*, 25A*
1-I-1-10A	06 E M-4	71C62-54114	FI-522	H		IXFR 111	*	00A*, 25A*, 84A*, 92A*, 99A*
1-PM-1-10A-D	05 E R-3	71C62-54114	FY-522A	Q		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-S-1-10A-D	07 E R-3	71C62-54114	FB-522B	Q		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-T-1-10A-D	07 C L-182	71C62-54114	FT-522	Q		IXFR *	*	00A*, 25C*, 49A*, 84A*, 92A*, 99A*
1-X-1-10A-D	05 E R-3	71C62-54114	FQ-522	Q		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-XS-1-10A-D	06 E R-3	71C62-54114	FS/522	Q		IXFR *	*	00A*, 25A*, 75A*
1-I-1-10B	05 E M-4	71C62-54114	FI-523	H		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-PM-1-10B-E	04 E R-8	71C62-54114	FY-523A	Q		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-PS-1-10B-L	08 E R-6	71C62-54114	FB-523B	Q		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-PT-1-10B-E	06 C L-183	71C62-54114	FT-523	Q		IXFR 25C	*	00A*, 25C*, 49A*, 84A*, 92A*, 99A*
1-X-1-10B-E	04 E R-3	71C62-54114	FQ-523	Q		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-XS-1-10B-E	05 E R-8	71C62-54114	FS/523	Q		IXFR *	*	00A*, 25A*, 75A*
1-PM-1-10B-L	04 E R-8	71C62-54114	FY-523E	Q		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-XS-1-10B	05 E R-4	71C62-54114	FS-522C	H		IXFR *	*	00A*, 25A*
1-PM-1-10L-D	05 E R-3	71C62-54114	FY-522B	Q		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-PM-1-10J-E	04 E R-8	71C62-54114	FY-523B	Q		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-PM-1-10C-P	05 E R-3	71C62-54114	FY-522C	Q		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-PM-1-10H-E	04 E R-8	71C62-54114	FY-523C	Q		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-PM-1-10J-D	05 E R-3	71C62-54114	FY-522D	Q		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-PM-1-10K-E	04 E R-8	71C62-54114	FY-523D	Q		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-PM-1-10L-D	05 E R-3	71C62-54114	FY-522E	Q		IXFR *	*	00A*, 25A*, 84A*, 92A*, 99A*
1-FCV-1-11-T	06 C	76K39-83080		C		IXFR	26A	00A*, 25A*, 49A*, 84A*
1-PI-1-11	00 E M-4	(4)		H		IXFR *	*	00A*, 25A*, 84A*, 99A*
1-SV-1-11A-A	06 C	76K39-83080		Q	121V	IXFR *	*	00A*, 25A*, 11A*, 49A*, 75A*, 99A*
1-S-1-11A-T	01 E M-4	(4)		Q		IXFR *	*	25A*
1-S-1-11A-A	04 E L-11B	(4)		Q		IXFR *	*	00A*, 25A*
1-SV-1-11B-B	06 C	76K39-83080		C	121V	IXFR *	*	00A*, 25A*, 11A*, 49A*, 75A*, 99A*
1-S-1	06 E	(4)		Q		IXFR *	*	11A*, 25A*

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WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F/8/1/1/

Comments pertinent to finding:

LM-3-172 and LM-3-175 were deleted per ECN 3647. 47W600-57 R4 was issued to reflect this. (copy attached)

Transfer switch XS-3-164 is now properly tagged.

Field Verified by: *Robert C. Mc Kay*  
System Engineer

*Robert C. Mc Kay*  
Program Team Member

11/23/83  
Date

*James E. McConnell*  
OEDC Program Manager

11/23/83  
Date

*Gray Beasley*  
Chairman, OEDC Policy Committee

11/23/83  
Date

*deletion of the device from the panel is in keeping with the Black & Veatch F102 basis and is documented by the attached partial drawing and closed ECN. The tag installation is verified above*

Classification: Type \_\_\_\_\_ R Category A

*W.J. Zukerman*  
Black & Veatch Project Manager

12/14/83  
Date

*RE Blasbell*  
Black & Veatch Senior Review Team Chairman

12/27/83  
Date

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# ENGINEERING CHANGE NOTICE COVER SHEET SWP 83 0214 569

(BEFORE ISSUANCE OF OPERATING LICENSE)

TENNESSEE VALLEY AUTHORITY  
DIVISION OF ENGINEERING DESIGN Watts Bar Nuclear Plant, Spring City, TN ECN NO. 3647

To: Construction Project Manager SWP 204 GB-R 83082026434 (10)

From: Design Project Manager \_\_\_\_\_ Budget Item: 211

DATE FEB 14 1983

Was U Analysis Required: Yes \_\_\_\_\_ No

Prepared by: Ross T. Graham Section: ELECTRICAL #1 Section Leader: J. Williams  
Project Engineer: G. D. Collins Released: J. C. Starnes Design Project Manager: \_\_\_\_\_ Date: 4/4/83

### SCOPE

Project: WATTS BAR NUCLEAR PLANT Affected Unit(s): 1 & 2  
System or Feature: ADDUCTION FEEDWATER SYSTEM (3) NCR WBN SWP 8267  
Reference & Description of Change: REVISE CONTROL AND LOGIC DRAWINGS AND THE FSAR TO INCORPORATE BUNKER VENTILATION FINDINGS E101, E102, E103, E104, E107, E180, E106. NO XER PKGS AFFECTED (WBN SWP 8267)

**CLOSURE**  
CLOSURE SHEET  
DATE: FEB 14 1983  
BY: [Signature]

DRAWINGS OR BRANCHES INVOLVED:	Yes or No (as required)	Date Branch Data Sheet Available
Electrical EESB #3	NO	
Mechanical	NO	
Nuclear	NO	
NUCLEAR PROJECTS DESIGN GROUPS		
Civil	NO	
Electrical E1	YES	
Mech	NO	

DESCRIPTION SUPPORT BRANCHES Approval Required	Yes or No
ECN is ready for branch review:	
Design Project Manager	<u>1-24-83</u> Date
Approved:	
Civil Engr. Chief	<u>2-7-83</u> Date
Electrical Engr. Chief	<u>2-2-83</u> Date
Mechanical Engr. Chief	<u>2-11-83</u> Date

FOSSIL, WIND & SPECIAL PROJECTS DESIGN	Yes or No
SPECIAL DESIGN PROJECTS	NO
ARCHITECTURAL SUPPORT BRANCH	NO

Required for PSAR or FSAR	YES
Required for Preoperational Test:	NO YES <u>NO</u>
If Yes, Test No.	<u>IVA 22 2-11-83</u>
Vendor Backcharges Involved	NO
Seismic Analysis Required	NO
Nonconformance Report Required	NO YES <u>NO</u>
QA Applies	YES <u>NO</u>
Security System Modified	NO
Vendor(s) involved:	NONE

PHYSICAL WORK MUST BE DONE BEFORE:	UNIT(S)					
	Pre-Op Test	1st Fuel Load	1st Therm Power	Comm'l Oper'n	1st Refuel	
Unit(s) <u>1 &amp; 2</u>		<input checked="" type="checkbox"/>				
Unit(s)						

CC (Attachments): WBP 83-0826-516 WBP 830624-520

CHIEF, ARCHITECTURAL SUPPORT BRANCH, WDC226 C-4  
 CHIEF, CIVIL ENGINEERING BRANCH, WDC226 C-4  
 CHIEF, ELECTRICAL ENGINEERING BRANCH, WDC226 C-4  
 CHIEF, MECHANICAL ENGINEERING BRANCH, WDC226 C-4  
 CHIEF, NUCLEAR ENGINEER, WDC226 C-4  
 CHIEF, QUALITY ASSURANCE BRANCH, BLDG 818-B

CHIEF, COST PLANNING AND CONTROL STAFF, WDC226 C-4  
 CHIEF, SPECIAL DESIGN PROJECTS, WDC226 C-4  
 MANAGER OF CONSTRUCTION, WDC226 C-4  
 PLANT SUPERINTENDENT  
 BLDG 818-B C-4

TENNESSEE VALLEY AUTHORITY  
DIVISION OF ENGINEERING DESIGN

ENGINEERING CHANGE NOTICE NO. 3647  
DATA SHEET NO. 1

BRANCH SWP

PAGE 1

To: Watts Bar Nuclear Plant, Spring City, TN

From: Design Project Manager SWP 204 CLK  
# FEB 14 1983

Released By: G. D. Collins  
602 Design Project Manager

Preparing Section	MEIS Accession No.	MEIS Accession No.
<u>ELECTRICAL #1</u>	R 0 SWP 83 0214 570	R 4
Prepared By: <u>ROSS T. GRAHAM</u>	R 1 SWP 83 0412 523	R 5
Total Pages (RO): <u>2</u>	R 2	R 6
Section Supervisor: <u>J. Morris</u>	R 3	R 7
Staff Eng. or Architect: <u>N/A</u>		
Group Mgr.: <u>G. D. Collins</u>		
Branch Chief: _____		

Project WATTS BAR NUCLEAR PLANT SCOPE \_\_\_\_\_ Affected Units 1, 2

System or Feature AUXILIARY FEEDWATER SYSTEM (3)

Reference & Description of Change REVISE CONTROL AND LOGIC DRAWINGS TO INCORPORATE BLACK & VEATCH FINDINGS F101, F102, F103, F104, F107, F130, F106. (NCR WBN SWP 8267)

**CLOSED**  
DATE AUG 28 1983

SEE ASSOCIATED DRAWINGS LIST, REVERSE SIDE

REV. NO.	DATE ISSUED	PREPARED	SECT. SUPV.	GROUP HEAD	BRANCH CHIEF	ECN CLERK	D.P. MGR.	DESCRIPTION OF REVISION	TOTAL PAGES
<u>1</u>	<u>4-12-83</u>	<u>RTG</u>	<u>EA</u>	<u>9L</u>	<u>N/A</u>	<u>XX</u>	<u>JCS</u>	<u>ADDED 1 DWG.</u>	<u>2</u>

R: No. N/A  
F: Materials as follows: SEE ATTACH. 1 to DATA 54.  
Additional Information: \_\_\_\_\_

- CHIEF, COST PLANNING AND CONTROL STAFF, VES276 C-4
- CHIEF, ARCHITECTURAL SUPPORT BRANCH, WAC228 C-4
- CHIEF, CIVIL ENGINEERING BRANCH, WUP226 C-4
- CHIEF, ELECTRICAL ENGINEERING BRANCH, WEC236 C-4
- CHIEF, SPECIAL DESIGN PROJECTS, VES226 C-4
- PLANT SUPERINTENDENT
- CONSTRUCTION PROJECT MANAGER
- WBS, VSMJ C-4
- ADM, 646 C-72-C





WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F/8/1/2/

Comments pertinent to finding:

LM-3-173 and LM-3-174 were deleted per ECN 3647. 47W600-60 R4 was issued to reflect this. (copy attached)

Transfer switches 1-XS-3-132, 1-XS-3-148, and 1-XS-3-171 are now properly tagged. Proper tags are white with black background and train B symbol.

Field Verified by: [Signature]  
System Engineer

Robert C Mc Kay  
Program Team Member

11/23/83  
Date

Thomas E Mc Connell  
OEDC Program Manager

11/23/83  
Date

E Gray Beasley  
Chairman, OEDC Policy Committee

11/23/83  
Date

*Proper tagging has been completed per verification above. The Black & Veatch attached documentation supports close out and is in keeping with information provided in form I & F102*

Classification: Type R Category A

W.J. Ziberman  
Black & Veatch Project Manager

12/14/83  
Date

R E Blairbell  
Black & Veatch Senior Review Team Chairman

12/27/83  
Date

# ENGINEERING CHANGE NOTICE

COVER SHEET SWP **83 0214 569**

(BEFORE ISSUANCE OF OPERATING LICENSE)

TENNESSEE VALLEY AUTHORITY  
DIVISION OF ENGINEERING DESIGN

ECN NO. 3647

To: Construction Project Manager Watts Bar Nuclear Plant, Spring City, TN  
SWP 204 G-R

83092026454 (10)

From: Design Project Manager \_\_\_\_\_

DATE FEB 14 1983

Budget Item: 211

Was LI Analysis Required: Yes \_\_\_\_\_ No

Prepared by Russ T. Graham Section ELECTRICAL #1 Section Leader J. G. Collins  
Project Engineer J. G. Collins Released: J. G. Collins Design Project Manager J. G. Collins Date 4/1/83

SCOPE

Project WATTS BAR NUCLEAR PLANT Affected Unit(s) 1 & 2  
System or Feature AUXILIARY FEEDWATER SYSTEM (3) NCR WBN SWP 8267  
Reference & Description of Change REVISE CONTROL AND LOGIC DRAWINGS AND THE FSAR TO INCORPORATE BLACK & VEATCH FINDINGS F101, F102, F103, F107, F120, F106. NO YER PKGT AFFECTED (NCR WBN SWP 8267)

DRAWINGS OR DOCUMENTS INVOLVED: YES (if not required) \_\_\_\_\_  
Date Branch Data Sheet Available \_\_\_\_\_

DESIGNING SUPPORT BRANCHES Approval Required	Yes or No <u>YES</u>
----------------------------------------------	-------------------------

ECN is ready for branch review: <u>J. G. Collins</u> Design Project Manager	Date <u>1-24-83</u>
--------------------------------------------------------------------------------	------------------------

Approved:	Date
<u>F. W. Mandelkern</u> Chief Nuclear Engineer	<u>2-7-83</u>
<u>J. G. Collins</u> Chief Nuclear Engineer	<u>2-2-83</u>
<u>K. Wilder</u> Chief Nuclear Engineer	<u>2-11-83</u>

CLOSING SIGNATURE

NUCLEAR PROJECTS DESIGN BRANCHES

Civil	<u>NO</u>
Electrical E1	<u>YES</u>
Mech	<u>NO</u>

FORSTL, DYWID & SPECIAL PROJECTS DESIGN

SPECIAL DESIGN PROJECTS	<u>NO</u>
ARCHITECTURAL SUPPORT BRANCH	<u>NO</u>

Required for PSAR or FSAR	Yes or No <u>YES</u>
Required for Preoperational Test: If Yes, Test No.	<u>NO YES</u> Ref <u>TVA 270 2-11-83</u>
Vendor Backcharges Involved	<u>NO</u>
Seismic Analysis Required	<u>NO</u>
Nonconformance Report Required	<u>NO YES</u> m
QA Applies	<u>YES</u>
Security System Modified	<u>NO</u>
Vendor(s) involved:	<u>NONE</u>

PHYSICAL WORK MUST BE DONE BEFORE:						
	Pre-Op Test	1st Full Load	1st Therm Power	Comm'l Oper'n	1st Refuel	
Unit(s) <u>1 &amp; 2</u>		<input checked="" type="checkbox"/>				
Unit(s)						

CC (Attachment): YES WBP 830826-516 WBP 830624-520

- CHIEF, ARCHITECTURAL SUPPORT BRANCH, WAC126 C-4
- CHIEF, CIVIL ENGINEERING BRANCH, W00270 C-4
- CHIEF, ELECTRICAL ENGINEERING BRANCH, W00270 C-4
- CHIEF, MECHANICAL ENGINEERING BRANCH, W00270 C-4
- CHIEF, NUCLEAR ENGINEER, W00270 C-4
- CHIEF, QUALITY ASSURANCE BRANCH, 8190 010-4

- CHIEF, COST PLANNING AND CONTROL STAFF, W00270 C-4
- CHIEF, SPECIAL DESIGN PROJECTS, W00270 C-4
- MANAGER OF CONSTRUCTION, 01000 C-4
- PLANT SUPERVISOR
- BRDL 01000 C-4

To: Watts Bar Nuclear Plant, Spring City, TN  
From: Design Project Manager SWP 201 GBX  
Date: FEB 14 1983

Released By: G. D. Collins  
Design Project Manager

Preparing Section <u>ELECTRICAL #1</u>	R 0	MEDS Accession No. <u>SWP 83 0214 570</u>	R 4	MEDS Accession No.
Prepared By <u>ROSS T. GRAHAM</u>	R 1		R 5	
Total Pages (RO): <u>2</u>	R 2	<u>SWP 83 0412 523</u>	R 6	
Section Supervisor <u>J. Morris</u>	R 3		R 7	
Staff Eng. <u>N/A</u>				
Architects <u>N/A</u>				
Group Head <u>G. D. Collins</u>				
Branch Chief <u>      </u>				

Project WATTS BAR NUCLEAR PLANT Affected Units 1 & 2  
 System or Feature AUXILIARY FEEDWATER SYSTEM (3)  
 Reference & Description of Change REVISE CONTROL AND LOGIC DRAWINGS TO INCORPORATE BLACK & VEATCH FINDINGS F101, F102, F103, F104, F107, F130, F106. (NCR WBN SWP 8267)

**CLOSED**  
DATE AUG 26 1983

SEE ASSOCIATED DRAWINGS LIST, REVERSE SIDE

REV. NO.	DATE ISSUED	PREPARED	SECT. SUPV.	GROUP HEAD	BRANCH CHIEF	ECN CLERK	D.P. MGR.	DESCRIPTION OF REVISION	TOTAL PAGES
<u>1</u>	<u>4-12-83</u>	<u>RTG</u>	<u>HA</u>	<u>GL</u>	<u>WA</u>	<u>TH</u>	<u>JCS</u>	<u>ADDED 1 DWG.</u>	<u>2</u>

R. No. N/A  
 F. Materials as follows:  
 Additional Information: SEE A NACH. 1 to Data SH.

- CHIEF, COST PLANNING AND CONTROL STAFF, VECTS C-4
- CHIEF, ARCHITECTURAL SUPPORT BRANCH, VACLES C-4
- CHIEF, CIVIL ENGINEERING BRANCH, WPP226 C-4
- CHIEF, ELECTRICAL ENGINEERING BRANCH, WELCIN C-4
- CHIEF, SPECIAL DESIGN PROJECTS, WPP226 C-4
- PLANT SUPERINTENDENT
- CONSTRUCTION PROJECT MANAGER
- DESG. VISIONS C-4
- ASMS, 646 ESTE-C



WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEWFinding Number F/ 8/ 1/ 5/

## Comments pertinent to finding:

The Unit 1 designated portion of ISO. 47W427-205 has been incorporated into ISO. 47W427-206, and was walked down by the 79-14 Task Force as 47W427-206 on 6/5/83. Reference Form 3, WBNP independent review finding number F818.

Rand C. McRay  
Program Team Member

11/2/83  
Date

Thomas E. McConnell  
OEDC Program Manager

11/9/83  
Date

E. Gray Beverly  
Chairman, OEDC Policy Committee

11/22/83  
Date

*Examination of the original findings in light of the attached Black & Veatch drawings and attachments to F818 indicates that no temporary changes are currently installed*

Classification: Type R Category A

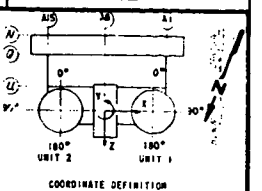
W. J. Zitzewas  
Black & Veatch Project Manager

12/21/83  
Date

R. E. Blansell  
Black & Veatch Senior Review Team Chairman

12/27/83  
Date

DESIGN MODES				OPERATING CONDITIONS				
MODE	PERIOD (SEC)	ACCEL (G)	RESPONSE (IN)	COND. 1	COND. 2	COND. 3	COND. 4	COND. 5
1	1.00	0.20	0.001	1.00	1.00	1.00	1.00	1.00
2	1.00	0.20	0.001	1.00	1.00	1.00	1.00	1.00
3	1.00	0.20	0.001	1.00	1.00	1.00	1.00	1.00
4	1.00	0.20	0.001	1.00	1.00	1.00	1.00	1.00
5	1.00	0.20	0.001	1.00	1.00	1.00	1.00	1.00

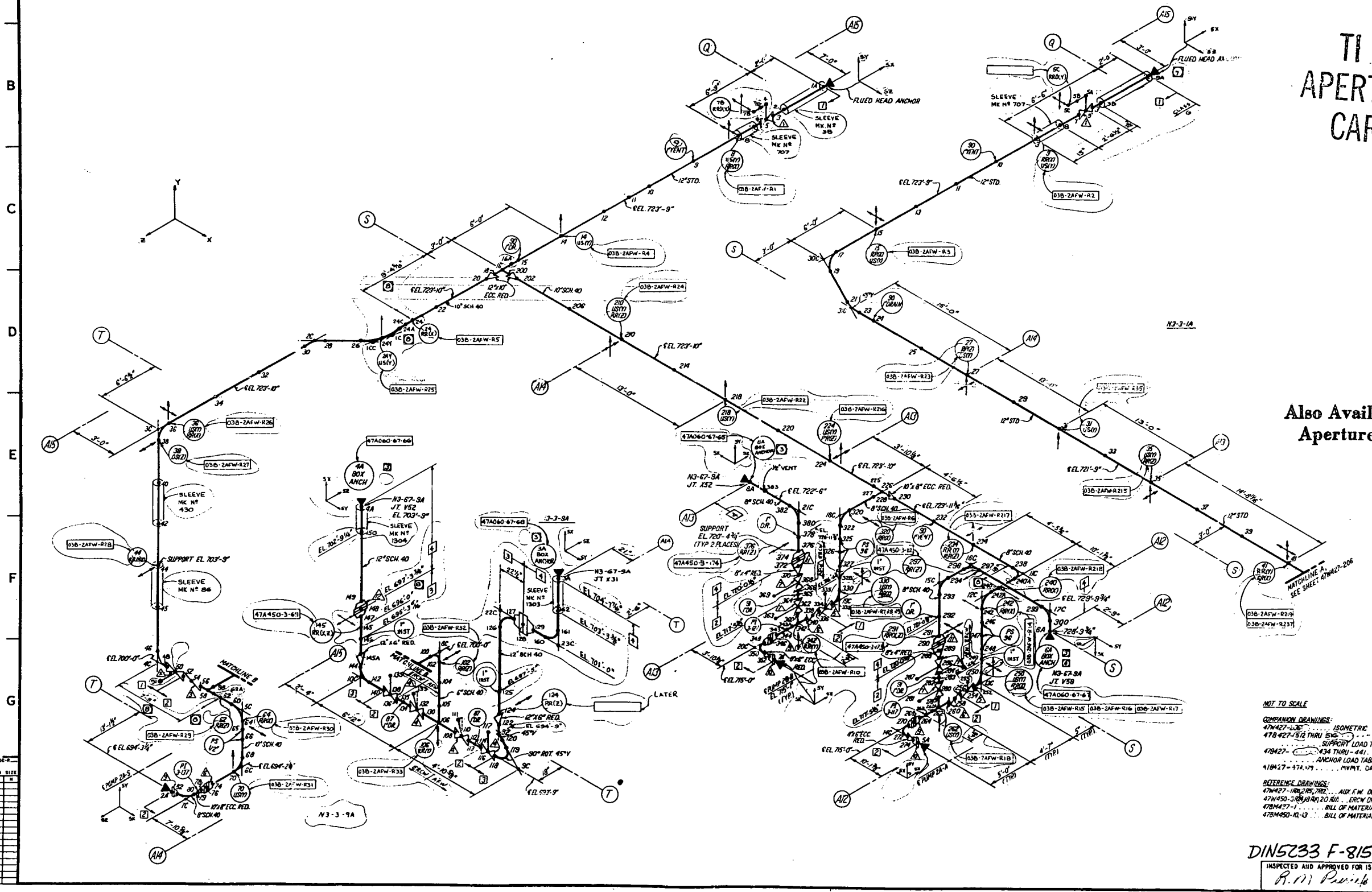


SYMBOL	DEFINITION
RR(YZ)	RIGID RESTRAINT
US(YZ)	UNIT RESTRAINT SUPPORT
DS(YZ)	DYNAMIC SPRING
VS(YZ)	VARIABLE SPRING SUPPORT
CS(YZ)	CONSTANT FORCE SUPPORT
---	FICTITIOUS RESTRAINT
▲	ANCHOR
■	FICTITIOUS ANCHOR
△	VALVE IDENTIFICATION NUMBER
□	MODE NUMBER-SEE TABLE
○	NOTE NUMBER
—	COLUMN LINE
+	TARGET INTERSECT POINT
+	JOINT IDENTIFICATION NUMBER
L.P. (D)	DYNAMIC LAP POINT
—	HANGER NUMBER

# TI APERTURE CARD

Also Available On Aperture Card

- NOTES:
- MODE TABLE IS FOR SYSTEMS N3-3-1A, 2A, 9A
  - THERE IS NO INSULATION ON THIS PIPING.
  - THESE ANCHORS WILL BE DESIGNED IN THIS ANALYSIS BY COMBINING THE LOADS FROM N3-3-1A ANALYSIS.
  - THE LOCAL COORDINATE DEFINITION FOR THE ANCHORS IN THIS ANALYSIS IS THE SAME AS THE GLOBAL COORDINATES.
  - MODE 1 PIPING IS TYPICAL. MODES 2, 3, 4 PIPING IS TYPICAL. ALL PIPING IS MODERATE ENERGY.
  - SEE ANALYSIS DOCUMENTATION FOR MODE NUMBER-SEE TABLE.
  - PIPING BEYOND THIS POINT IS SUPPORTED BY DEAD WEIGHT SUPPORT.
  - HANGER LOCATION WAS DETERMINED UNDER PROGRAM IDENTIFIED BY TVA REPORT N° CEB-81-30.
  - ALL SUPPORTS ARE IN ONE ZONE WHICH ARE ATTACHED TO AUXILIARY BUILDING.
  - UNLESS OTHERWISE NOTED, ALL 2" OR LARGER PIPING HAVE 90° LR BUTT WELD ELBOWS.



5	REVISION	DATE	BY	CHKD	APP'D
5	REANALYSIS PER 81-30 EVALUATION AND THERMAL COLD LOAD CASE				
4	ADDED 1/2 INCH VENT LINE PER FOR M4330				
3	ADDED COMPANION DWS.				
2	REVISED PER ECH M38				
1	RELEASE OF UNIT 2 ANALYSIS DATA AND ANCHOR LOAD DATA				

**AUXILIARY BUILDING UNITS 1&2**

**SYSTEM N3-3-1A, 2A, 9A**

**ISOMETRIC - STATIC, THERMAL, DYNAMIC ANALYSIS OF AUX. F.W. PIPING SYSTEM**

**WATTS BAR NUCLEAR PLANT TENNESSEE VALLEY AUTHORITY**

DIVISION OF ENGINEERING DESIGN

SUBMITTED: *William* RECOMMENDED: *William* APPROVED: *William*

INSPECTED AND APPROVED FOR ISSUE: *R.M. P...*

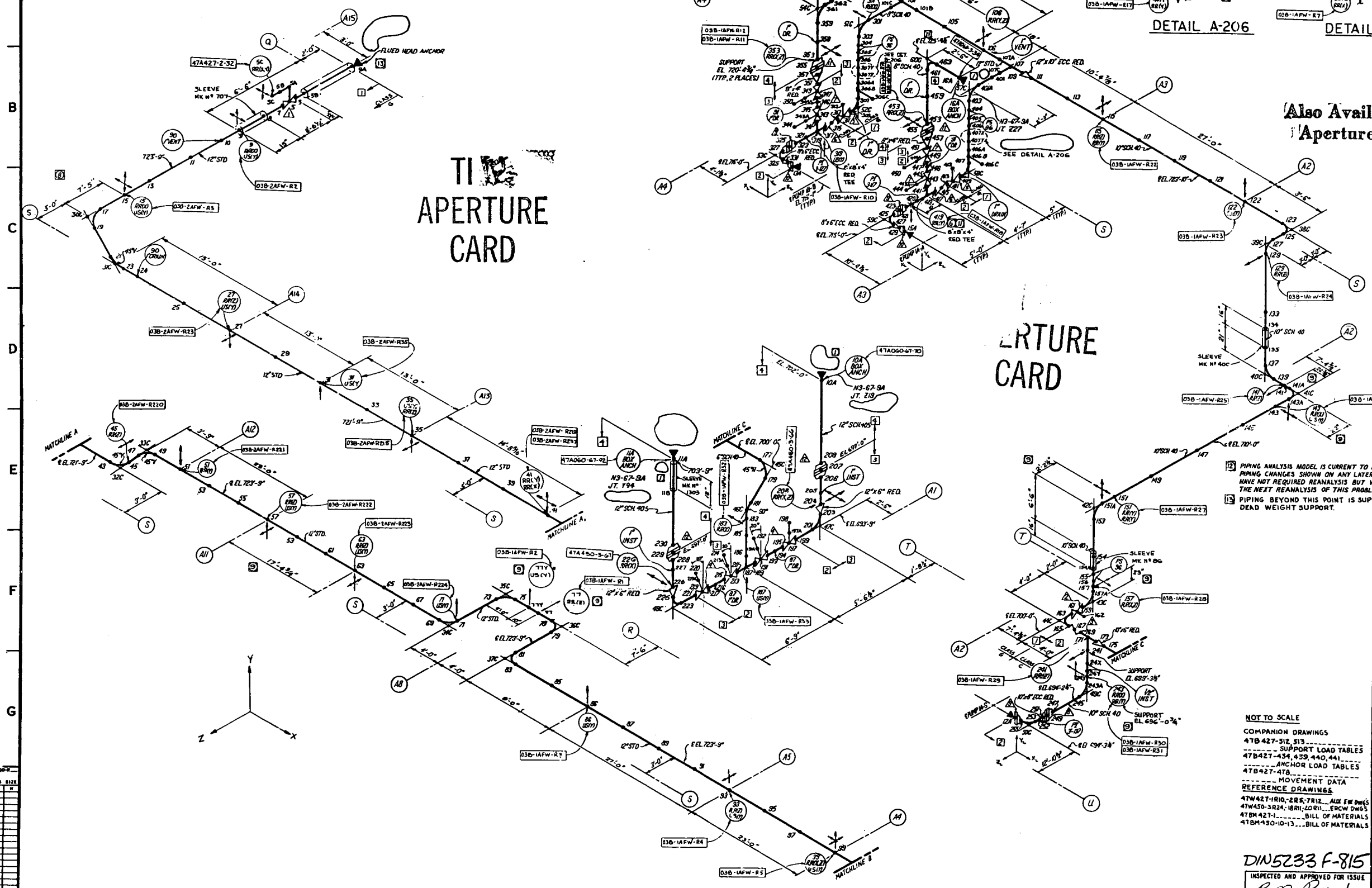
KNOXVILLE, TN 37902 85 M 47W427-205 85

NOT TO SCALE

COMPANION DRAWINGS:  
 47W427-205 ISOMETRIC  
 47W427-206 SUPPLY LOAD TABLE  
 47W427-207 SUPPLY LOAD TABLE  
 47W427-208 ANCHOR LOAD TABLES  
 47W427-209 ANCHOR LOAD TABLES

REFERENCE DRAWINGS:  
 47W427-100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

DESIGN NOTES				OPERATING CONDITIONS									
NO.	DESCRIPTION	DATE	BY	CLASS 1	CLASS 2	CLASS 3	CLASS 4	CLASS 5	CLASS 6	CLASS 7	CLASS 8	CLASS 9	CLASS 10
1	...	...	...	...	...	...	...	...	...	...	...	...	...
2	...	...	...	...	...	...	...	...	...	...	...	...	...
3	...	...	...	...	...	...	...	...	...	...	...	...	...
4	...	...	...	...	...	...	...	...	...	...	...	...	...



DETAIL A-206

DETAIL B-206

Also Available On Aperture Card

APERTURE CARD

LEGEND	
SYMBOL	DEFINITION
(R)	RESTRAINT DESIGNATION
RR(RT)	RIGID RESTRAINT
UR(RT)	UNIDIRECTIONAL SUPPORT
DR(RT)	DYNAMIC DRUMMER
VS(RT)	VARIABLE SPRING SUPPORT
CS(RT)	CONSTANT FORCE SUPPORT
---	FICTITIOUS RESTRAINT
▲	ANCHOR
■	FICTITIOUS ANCHOR
△	VALVE IDENTIFICATION NUMBER
□	MODE NUMBER-SEE TABLE
○	NOTE NUMBER
—	COLUMN LINE
+	TARGET INTERSECT POINT
+	JOINT IDENTIFICATION NUMBER
L.P. (D)	DYNAMIC LAP POINT
—	HANGER NUMBER

- NOTES:
- 1) THESE ANCHORS WILL BE DESIGNED IN THIS ANALYSIS BY COMBINING THE LOADS FROM NS-67-3A ANALYSIS.
  - 2) FOR REFERENCE AND COMPANION DRAWINGS, SEE SHEET 47W427-205.
  - 3) THERE IS NO INSULATION ON THIS PIPING.
  - 4) ALL PIPING IS MODERATE ENERGY.
  - 5) RELOCATION OF THIS SUPPORT JT. 41N RR(Y) PER MEMO CEB26617250.
  - 6) FINAL ANALYSIS DOCUMENTATION LOG CEB-ME1-78-5
  - 7) PIPING ANALYSIS MODEL IS CURRENT TO REVISION 4 OF THIS DWG. PIPING CHANGES SHOWN ON ANY LATER REVISION OF THIS DWG. UNLESS OTHERWISE NOTED, ALL 2" AND LARGER PIPING HAVE 90° LR BUTT WELD ELBOWS.
  - 8) PIPING BEYOND THIS POINT IS SUPPORTED BY DEAD WEIGHT SUPPORT.
  - 9) HANGER LOCATION WAS DETERMINED UNDER PROGRAM IDENTIFIED BY VIA REPORT N° CEB-81-30.
  - 10) ALL SUPPORTS ARE IN ONE ZONE WHICH ARE ATTACHED TO AUXILIARY BUILDING.
  - 11) PIPING CHANGES FOR THESE AREAS WERE NOT INCLUDED IN THIS REANALYSIS REVISION (A) BUT SHOULD BE INCORPORATED IN THE NEXT ANALYSIS REVISION.

NO.	DATE	DESCRIPTION	BY	CHKD
5	3/5/11	1727-93 [REDACTED]	[REDACTED]	[REDACTED]
4	3/10/11	REVISION PER BLACK & VEATCH FINDING AND MINOR REVISIONS	[REDACTED]	[REDACTED]
3	1/13/11	REANALYSIS PER 81-30 EVALUATION AND THERMAL COLD LOAD CASE DELAYED SUPPORT @ 401 (REV BY GIC)	[REDACTED]	[REDACTED]
2	1/13/11	REVISION PER FOR 11-109 AND 11-110 MINOR REVISIONS	[REDACTED]	[REDACTED]
1	1/13/11	REVISION PER FOR 11-109 AND 11-110 MINOR REVISIONS	[REDACTED]	[REDACTED]

NOT TO SCALE  
 COMPANION DRAWINGS  
 47B 427-512, 513  
 47B 427-434, 439, 440, 441  
 47B 427-478  
 MOVEMENT DATA  
 REFERENCE DRAWINGS  
 47W427-1R10, 2R5, 7R18... AUX FW DWGS  
 47W430-3R24, 1R11, 2R11... ERCW DWGS  
 47B 427-1... BILL OF MATERIALS  
 47B 430-10-13... BILL OF MATERIALS

AUXILIARY BUILDING UNIT 1 & 2 COMMON CLASS 2 & 3

SYSTEM N3-3-1A.2A

ISOMETRIC - STATIC, THERMAL, DYNAMIC ANALYSIS OF AUX. F.W. PIPING SYSTEM

WATTS BAR NUCLEAR PLANT TENNESSEE VALLEY AUTHORITY DIVISION OF ENGINEERING DESIGN

SUBMITTED: [Signature] RECOMMENDED: [Signature] APPROVED: [Signature]

KNOXVILLE 2-6-76 85 M 47W427-206 R6

DIN5233 F-815  
 INSPECTED AND APPROVED FOR ISSUE  
 R.M. Perrino



WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F181161

Comments pertinent to finding:

Reference Form 3, WBNP Independent Review Finding #F815 & #F818.

Robert C. McKay  
Program Team Member

11/2/83  
Date

James E. McConnell  
OEDC Program Manager

11/6/83  
Date

M. S. Martin / or Ed Beasley  
Chairman, OEDC Policy Committee

11/21/83  
Date

Black & Veatch *Examination of F818 computer print out in light of DRR 763 the original finding and drawings attached to F815 from 3 supports close out of this item on temporary loggers.*

Classification: Type R Category A

W. J. Zickman  
Black & Veatch Project Manager

12/21/83  
Date

R. E. Blawie  
Black & Veatch Senior Review Team Chairman

12/27/83  
Date

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F181171

Comments pertinent to finding:

Reference Form 3, WBNP Independent Review Finding #F815 & #F818

Robert C. McKay  
Program Team Member

11/2/83  
Date

Thomas E. McConnell  
OEDC Program Manager

11/4/83  
Date

M.S. Mauldin / Ed Beasley  
Chairman, OEDC Policy Committee

11/21/83  
Date

Black & Veatch *No temporary installed per F818 computer print out.  
F815 drawings replace the D&R 763 drawing referenced in  
the original finding*

Classification: Type R Category A

W.J. Fitzjames  
Black & Veatch Project Manager

12/21/83  
Date

R.E. Blawie  
Black & Veatch Senior Review Team Chairman

12/27/87  
Date

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEWFinding Number F181181

## Comments pertinent to finding:

Attached is a copy of 79-14 discrepancy print-out confirming no temporary hangers were identified during NRC-IE Bulletin 79-14 Walkdown on isometric 47W427-206 performed 6-5-83. All temporary hangers found on this isometric by Black and Veatch inspection were removed prior to 6-5-83. The print-out is a Quality Assurance document and will be retained as life of plant documentation. To confirm that no temporary hangers were found during 79-14 walkdown, a review of each line item discreption must be performed.

<u>Robert C Mc Kay</u> Program Team Member	<u>11-17-83</u> Date
<u>Thomas E Mc Connell</u> OEDC Program Manager	<u>11-17-83</u> Date
<u>M. S. Mansfield E. H. Beasley</u> Chairman, OEDC Policy Committee	<u>11/21/83</u> Date

Black &amp; Veatch

*This item is considered close out based on the attached documentation*Classification: Type \_\_\_\_\_ R Category A

<u>W. J. Fitzgerald</u> Black & Veatch Project Manager	<u>12/8/83</u> Date
-----------------------------------------------------------	------------------------

<u>R E Blandell</u> Black & Veatch Senior Review Team Chairman	<u>12/19/83</u> Date
-------------------------------------------------------------------	-------------------------

PACKAGE NUMBER CLASS STAT DT ASSMB BLDG TOT HGRS HGRS TO INSTL PIPES VALVES WALKDOWN UNIT 162 BT COMPLETE ASSIGNMENT  
 1803 47A427-206 \*\* 83/05/18 AB 30 3 Y Y Y W2

DISC C/E DT OFFNO DT TO ENDS DT RECD DRAWINGS AFFECTED DESCRIPTION  
 REMARKS  
 RESOL MON RESOLVED  
 DT COMPL ASSIGNMENT

0001 H E 83/06/05 83/06/05 83/08/24 47A427-2-31 ID IS NOT RECD ON ISO  
 LRD  
 2N UAC,DMG 47A427-2-31 REV EST 83/10/15  
 XXXX

0002 H E 83/06/05 83/06/05 83/09/24 038-1AFW-R27 HGR LOC 9" FROM JT 151.  
 LRD,PER REINSP,DTSCP RECORDED IN ERROR (R1)  
 IN UAC,NDRR  
 83/11/01 XXXX

0003 H C 83/06/05 038-1AFW-R27 LATERAL CLR IS 0" NEED TO BE 1/16"  
 LRD,DES RESOL REC'D 83/06/20  
 REWORK FOR CL1008  
 83/07/19 GMMJ

0004 H E 83/09/14 83/09/15 47A060-67-69 R2 EAR ATT. TO BTH. CORNER OF BASE PLATE SHOULD BE 14  
 3/4" PER PCR H 7462, ACTUALLY 16 1/4" LONG, OUT OF  
 TOL PER G-43. ALSO H 7462 SHOWS 364 WELDED ALL  
 AROUND, ACTUALLY 3 SIDES ONLY. SEE DMG.

0005 H C 83/09/14 47A060-67-69 R2  
 BOX HGR HAS NOT BEEN FILLED WITH GROUT.  
 GROUT BOX HGR108  
 83/11/14 14XX

0005 H E 83/10/28 83/10/28 038-2AFW-R219 R902 ITEM #8 IS FLIPPED 90 DEG FROM WHAT SECY. CALLS  
 FOR.  
 HMC,LRH

0007 H C 83/10/28 038-2AFW-R3 R0 CONST TO SHIM FOR PROPER CLR  
 HMC  
 SHIM FOR PROPPER CLR,104,08  
 6HAN

0001 P E 83/06/11 83/06/11 83/08/24 R187/04 CLR. X TO HGR STRUT, LOC. 5" +Z FROM  
 NP-47.  
 DHC  
 10 UAC,NDRR  
 83/08/30 XXXX

0002 P E 83/06/11 83/06/11 83/08/24 1" CLR Z +Y (45 DEG) TO CABLE TRAY SUPPORTS LOC  
 7'0" +X FROM NP 51  
 DHC  
 10 UAC,NDRR  
 83/08/30 XXXX

W6

DATE: 11/15/83 TIME: 8132149 ALL 79 14 DISCREPANCY REPORT REPORT# 0011797 PROGRAM# ZB3003 PAGE# 308

PACKAGE NUMBER CLASS STAT DT ASSHR BLDG TOT HGRS HGRS TO INSTL PIPES VALVES WALKDOWN UNIT 162 DT COMPLETE ASSIGNMENT

1863 47M42T-206 \*\* 83/05/18 AB 30 3 Y Y Y WD

DISC C/B DT DEFND DT TO ENDS DT RECD DRAWINGS AFFECTED

REMARKS  
RESOL HOW RESOLVED  
DT COMPL ASSIGNMENT

DESCRIPTION

0003 P E 83/06/11 83/06/11 83/08/24 3/16" CLR +Y (45 DEG) TO CABLE TRAY SUPPORT; LOC  
4" +X FROM NP 75  
DHC, RESOL REV PER W.H. LEE 83/11/05  
SD UAC, NDRR  
83/11/07 XXXX

0004 P C 83/06/11 3/4" CLR +Y TO TEMPORARY ASSEMBLY LINE (1" ILOC  
1" 2" -Z FROM NODE POINT 301.  
DHC  
REMOVE TEMP LINE  
83/07/13 OAKX

0005 P E 83/06/11 83/06/11 83/08/29 1/8" CLR +Y TO HGR 18427-1-112A-21; LOC AT NP 315.  
DHC, RESOL'D ONSITE, W.H. LEE.  
UAC, NDRR  
83/08/29 XXXX

0006 P E 83/06/11 83/06/11 83/08/24 3/8" CLR +X TO 1" DRAIN FROM NP-346 (WITH CKV.  
FLANGE); LOC AT NP-315.  
DHC  
PROVIDE 1" CLR  
OAKX

0007 P E 83/06/11 83/06/11 83/08/24 3/8" CLR +X TO 1" DRAIN LINE FROM NP 446 (WITH  
CKV FLANGE); LOC AT NP 419.  
DHC  
UAC, NDRR  
83/08/30 XXXX

0008 P E 83/06/11 83/06/11 83/08/24 3/8" CLR +X TO 1" DRAIN LINE FROM NP 446 (WITH  
CHECK FLANGE); LOC. AT NODE POINT 419.  
DJS  
PROVIDE 1-1/16" CLR  
OAKX

0009 P E 83/06/11 83/06/11 83/08/24 3/4" CLR +X TO CONDUIT SUPPORT, LOC 1.7" Z FROM  
NP 473.  
DHC  
UAC, NDRR  
83/08/30 XXXX

0010 P E 83/06/11 83/11/05 1/64" CLR +Z TO 2" CONDUIT (MVC623A) (W/VAL OPER)  
LOC AT NP 454  
DHC, CEB ONSITE TO RESOLVE  
REROUTE CONDUIT TO PROVIDE 2" CLR  
OAKX

0011 P E 83/06/11 83/06/11 83/08/24 3/4" CLR +Z TO 1-1/2" CONDUIT (MVC620A) (WITH  
VALVE OPERATOR); AT NODE POINT 444.  
DHC  
UAC, NDRR  
83/08/30 XXXX

DATE: 11/15/83 TIME: 0132149 ALL 79 14 DISCREPANCY REPORT REPORT: 0011797 PROGRAM: ZR3003 PAGE: 309

PACKAGE NUMBER CLASS STAT DT ASSMB BLDG TOT HGRS HGRS TO INSTL PIPES VALVES WALKDOWN UNIT 102 DT COMPLETE ASSIGNMENT  
 1R03 47W427-206 \*\* 83/05/18 A0 30 3 Y Y Y W0

DISC	C/E	DT	DEFND	DT TO ENDS	DT RECD	DRAWINGS AFFECTED	DESCRIPTION
							REMARKS RESOL HOW RESOLVED DT COMPL ASSIGNMENT
0012	P	E	83/06/11	83/06/11	83/08/24		1" CLR +X TO 2" CONDUIT (#1VC620A) WITH VALVE OPERATOR LOC AT NP 444.
							DHC 1D UAC,NDRR 83/08/30 XXXX
0013	P	E	83/06/11	83/06/11	83/08/24		1" CLR +X TO 1-1/2" CONDUIT (#1VC620A) WITH VALVE OPERATOR LOC AT NP 444.
							DHC 1D UAC,NDRR 83/08/30 XXXX
0014	P	E	83/06/11	83/06/11	83/08/24		1/2" CLR +Z, X(45 DEG) TO CABLE TRAY SUPPORT LOC 2' 3" - Y FROM NP 129.
							DHC,RESOL REV PER W.H. LEE 83/11/09 5D UAC,NDRR 83/11/07 XXXX
0015	P	E	83/06/11	83/06/11	83/08/24		3/4" CLR +Z, +Y (45 DEG) TO CABLE TRAY SUPPORT, LOC -Y FROM NODE POINT 129 TO 127.
							DHC 1D UAC,NDRR 83/08/30 XXXX
0016	P	E	83/06/11	83/06/11	83/08/24		3/16" CLR +X TO CABLE TRAY SUPPORT LOC AT NP 143A.
							DHC 1D UAC,NDRR 83/08/30 XXXX
0017	P	E	83/06/11	83/06/11	83/08/24		3/8" CLR +X TO HGR (#427-1-10 24) LOC 4' 0" Z FROM NODE POINT 151.
							DHC,RESOL RE PER W.H. LEE 83/10/11 5D PROVIDE 1 1/16" CLR 83/10/13 XXXX
0018	P	E	83/06/11	83/06/11	83/08/24		3/16" X TO HGR (#427 1 10 23) LOC 6' 0" Z FROM NP-151.
							DHC,RESOL REV PER W.H. LEE 83/10/11 5D PROVIDE 1 1/16" CLR 83/10/13 XXXX
0001	X	C	83/06/05			03B-1AFW-R2	HGR NOT INSTALLED
							LAD XXHC X
0002	X	C	83/06/05			03B-1AFW-P9	HGR NOT INSTALLED
							LAD XXHC X

609

PACKAGE NUMBER CLASS STAT DT ASSMB BLDG TOT HGPS HGRS TO INSTL PIPES VALVES WALKDOWN UNIT 122 DT COMPLETE ASSIGNMENT

1R03-47W427-206 \*\* 83/05/18 AB 30 3 Y Y Y NO

DISC C/E DT DEFND DT TO ENDS DT RECD DRAWINGS AFFECTED  
 REMARKS DESCRIPTION  
 RESOL HOW RESOLVED  
 DT COMPL ASSIGNMENT

0003 X C 83/06/05 038-1AFW-R17 HGR NOT INSTALLED  
 LRO

XXHC X

0004 X C 83/06/05 038-1AFW-R26 HGR NOT INSTALLED  
 LRO

XXHC X

0005 X C 83/06/05 67A490-3-66 HGR NOT INSTALLED  
 LRO

XXHC X

0006 X C 83/06/05 67A490-3-67 HGR NOT INSTALLED  
 LRO

XXHC X

0007 X C 83/06/05 67A427-2-36 HGR NOT INSTALLED  
 LRO

XXMH X

0008 X C 83/10/28 038-2AFW-R215 RO  
 HGR NOT INSTALLED.

XXMH X

0001 Y C 83/06/05 67A427-2-31 PENDING FCR H-8935  
 LRO

XXEH Y

0001 Z C 83/06/05 038-2AFW-R222 RO INSP MADE FROM DES APPRV'D FCR H-7598  
 JAF

XXDM Z

0002 Z C 83/06/05 038-2AFW-R223 R901 INSP MADE FROM DES APPRV'D FCR H-7613  
 JAF

XXDM Z

1000

DATE: 11/15/83 TIME: 0132145 ALL 79-14 DISCREPANCY REPORT REPORT# 0011797 PROGRAM# 28303 PAGE# 311

PACKAGE NUMBER CLASS STAT DT ASSMB BLOC TOT HGRS HGRS TO INSTL PIPES VALVES WALKDOWN UNIT 162 DT COMPLETE ASSIGNMENT

1803-47W427-206 \*\* 83/05/18 AD 30 3 Y Y Y Y WD

DISC C/B DT DEFNO DT TO ENDS DT RECD DRAWINGS AFFECTED DESCRIPTION

REMARKS  
RESOL HOW RESOLVED  
DT COMPL ASSIGNMENT

0033 Z C 83/06/05 47W427-2-34 FCR H 9913  
LRD

XNDW Z

0034 Z C 83/06/05 038-1AFW-R3 R902 INSP MADE FROM DES APPROV'D FCR H-9218  
JAF

XNDW Z

0035 Z C 83/06/05 038-1AFW-R5 INSP MADE FROM DES APPROVED FCR H 9117  
LRD

XNDW Z

0036 Z C 83/06/05 038-1AFW-R12 INSP MADE FROM DES APPROV'D FCR H-8922  
JAF

XNDW Z

0037 Z C 83/06/05 038-1AFW-R18 R902 INSP MADE FROM DES APPROV'D FCR H-9124  
JAF

XNDW Z

0038 Z C 83/06/05 038-1AFW-R19 R901 INSP MADE FROM DES APPROV'D FCR H-8923  
JAF

XNDW Z

0039 Z C 83/06/05 038-1AFW-R20 R901 INSP MADE FROM DES APPROV'D FCR H-8924  
JAF

XNDW Z

0040 Z C 83/06/05 038-1AFW-R25 R903 INSP MADE FROM DES APPROV'D FCR H-9322  
JAF

XNDW Z

0041 Z C 83/06/05 038-1AFW-R30 R901 INSP MADE FROM DES APPROV'D FCR H-8256  
JAF

XNDW Z



DATE: 11/15/83 TIME: 0132155 ALL 79 14 D I S C R E P A N C Y R E P O R T REPORT: 0011797 PROGRAM: 203003 PAGE: 3/2

PACKAGE NUMBER CLASS STAT DT ASSMB BLDG TOY HGRS HGRS TO INSTL PIPES VALVES WALKDOWN UNIT 162 BY COMPLETE ASSIGNMENT  
 1R03 474527 206 \*\* 03/05/18 AB 30 3 Y Y Y WD

DISC	C/E	DT DEFND	DT TO ENDS	DT RECD	DRAWINGS AFFECTED	DESCRIPTION
		REMARKS				
		RESOL HOW				
		DT COMPL			ASSIGNMENT	
0012	Z	C	03/09/14		47A060-67-70 R5	FCR H 7273 NOT ON DWG.
			RAW			
			XXDN			
0013	Z	C	03/09/14		47A060-67-92 R4	FCR H 7432 NOT ON DWG.
			RAW			
			XXDN			
0014	Z	C	03/09/14		47A060-67-69 R2	FCR H 7462 NOT ON DWG.
			RAW			
			XXDN			

TOTALS FOR PACKAGE 1R03-474527-206				
	OVERALL	HANGERS	PIPING	VALVES
TOTAL DISCREPANCIES	29	7	18	0
TOTAL REMAINING TO RESOLVE	7	4	3	0
TOTAL RESOLVED	18	3	15	0

818-7

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEWFinding Number F / 8 / 1 / 9 /

## Comments pertinent to finding:

Finding number F819 is being resolved with NCR 4486. Hanger 03B-1AFW-R24 is being tracked by the accountability program and will be inspected when NCR 4486 is closed. Attached is a copy of NCR 4486 and hanger accountability program print-out. The print-out is a Quality Assurance document and will be retained as life of plant documentation.

<u>Robert C. McRae</u> Program Team Member	<u>11/18/83</u> Date
<u>Thomas E. McConnell</u> OEDC Program Manager	<u>11/18/83</u> Date
<u>M.S. Martin for Ed Beasley</u> Chairman, OEDC Policy Committee	<u>11/21/83</u> Date

The attached document *in* indicates that appropriate Black & Veatch *action* (in modification of cable tray and supports) has been initiated. The existing NCR tracking program should *assume* close out.

Classification: Type R Category A

<u>W.J. Zibjurnas</u> Black & Veatch Project Manager	<u>12/16/83</u> Date
<u>R.E. Blairdell</u> Black & Veatch Senior Review Team Chairman	<u>12/27/83</u> Date

UNITED STATES GOVERNMENT

Memorandum assigned to Civil Tennessee Valley Authority

*Check, should this NCR be for closure?*

1004

SWP '83 0211 025

TO : G. Wadewitz, Project Manager, Watts Bar Nuclear Plant, CONST (3)

FROM : J. C. Standifer, Project Manager, Sequoyah/Watts Bar Design Projects, 204 GB-K

DATE : February 10, 1983

SUBJECT: WATTS BAR NUCLEAR PLANT UNIT 1 - NONCONFORMANCE REPORT 4486R

*Handwritten notes:*  
AJ - wadewitz  
W W W  
W W W  
I'll contact the 'guy'

Reference: NCR 4486R (WBN 821207 101)

We have reviewed the subject NCR and disposition as follows:

The thermal growth of the pipe horizontally would cause the pipe to come into contact with the cable tray support and at the same time the vertical thermal movement would bring the pipe support itself into contact with the cable tray directly below it.

The cable tray support will be moved 2 inches away from the pipe; civil drawings 48W1296-1 and -3 will be revised to show new location of the affected supports. The cable tray will be moved down 2 inches to clear any vertical movement of the pipe. Conduit and grounding drawing 45W880-12A will be revised to show new elevation of the cable tray.

Drawing revisions will be made on ECN 3511

*Handwritten notes:*  
Shut it on  
ECN 3511  
Mount Area  
Prohibited

*Signature:*  
EJG  
for J. C. Standifer

WBNP  
Const. Engr's. Office

JCS:EJP:LB

Attachment

cc (Attachment):

- C. Bonine, E7B24 C-K
- J. D. Collins, W3A7 C-K -- Coordinated with A. F. Nestasia
- L. J. Cooney, W6D224 C-K
- R. A. Costner, M173 MIB-K
- A. Jonsson, W2D220 C-K -- Coordinated with W. W. Wilson
- MEDS, W5B63 C-K
- R. M. Pierce, 104 ESTA-K
- M. N. Sprouse, W11A9 C-K

*Handwritten:*  
3818  
↓

Principally prepared by: E. J. Patrick, extension 4891

FEB 1 5 1983

Note	Distribution	In:
	Asst. Const Engr.	
	Civil Engr.	
	Elect. Engr.	
	Mech. Engr.	
	Inst. Engr.	
	QC&R Engr.	
	ST&C Engr.	
<input checked="" type="checkbox"/>	Hanger Engr.	
	Welding Engr.	
	Unit 2	
	Procedures	

4002

1005

WBNP-QCI-1.02 R5  
Attachment A  
LOP  
Page 1 of 2

WBNP '82 1207 101 DIVISION OF CONSTRUCTION  
NONCONFORMING CONDITION REPORT

1A. Item and CAQ Description, and Apparent Cause:

The identification of the following nonconforming condition of seismic pipe support 1003B-03B-1AFW-R24 resulted subsequent to the Black and Veatch F819 finding.

The support clamp has only 1/8" clearance with existing tube steel which will interfere with thermal movement of pipe in the "X" direction. The support strut (item no. 1) has only 1/8" clearance with a cable tray which will impede thermal movement in the "Y" direction (reference: support load drawing 47B-427-513 R/O).

See Attachments.

1B. NCR No.:	4486R	Rev.:	0
1C. REF. NR. or AUDIT No.:	N/A		
1D. PLANT:	WBNP		
1E. UNIT:	1		
1F. SYSTEM:	103		
1G. ASME CODE:	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
1H. CONTRACT No.:	N/A		
1I. INITIATING UNIT:	HEU		

1J. Vendor Name N/A Address (City and State) N/A

2. Initiator Charles Gentry Date 11/24/82 Approved James R. Brown Date 12/2/82

3A. Significant CAQ:  Yes  No Construction Engineer Ed Burke Date 12-7-82

Signature \_\_\_\_\_ Title & Organization \_\_\_\_\_ Date \_\_\_\_\_

Authorization to Upgrade NCR to Significant \_\_\_\_\_

If Significant, NEB-NLS Contact \_\_\_\_\_ Date \_\_\_\_\_ By \_\_\_\_\_

3B. For Significant CAQ:

1. Describe Root Cause \_\_\_\_\_

2. This is a Generic CAQ:  Yes  No (If yes, describe) \_\_\_\_\_

Prepared by: \_\_\_\_\_ Date \_\_\_\_\_ Supervisor \_\_\_\_\_ Date \_\_\_\_\_

1006

4A. Disposition:  Rework  Repair  Use-As-Is  Reject  Other  
(Check Block and Detail Below)

Use-As-Is

4E. Action Required to Prevent Recurrence: (For Significant CAQ's Only)

N/A

4C. Date for Completion of all actions to close NCR (For Significant CAQ's only) \_\_\_\_\_

Recommended By Charles Gentry Date 11/24/82  
Thomas R. Brown 12/2/82

5.  Approved:  As Detailed in 4 above  Other (See Continuation Page)

Referred to Design Project Organization (DPO): DPO Coordination Contact Doug Shaffer

Construction Engineer Ed Burke Date 12-2-82

6. Concurrence of Designated QA Reviewer for Action Required to Prevent Recurrence \_\_\_\_\_ Date \_\_\_\_\_

7.  Approved:  As Detailed in 4 above  Other (See Continuation Page) See memo from JCS to GW dated February 10, 1983

Design Project Organization: ENCL Date 2/10/83 (SWP 830211 025)

8. Approved Disposition Completed, and if applicable, Item released from Nonconforming Status

Responsible Individual \_\_\_\_\_ Date \_\_\_\_\_ Approved by \_\_\_\_\_ Date \_\_\_\_\_

9. NCR Closed (Includes completion of action required to prevent recurrence for significant NCR's)

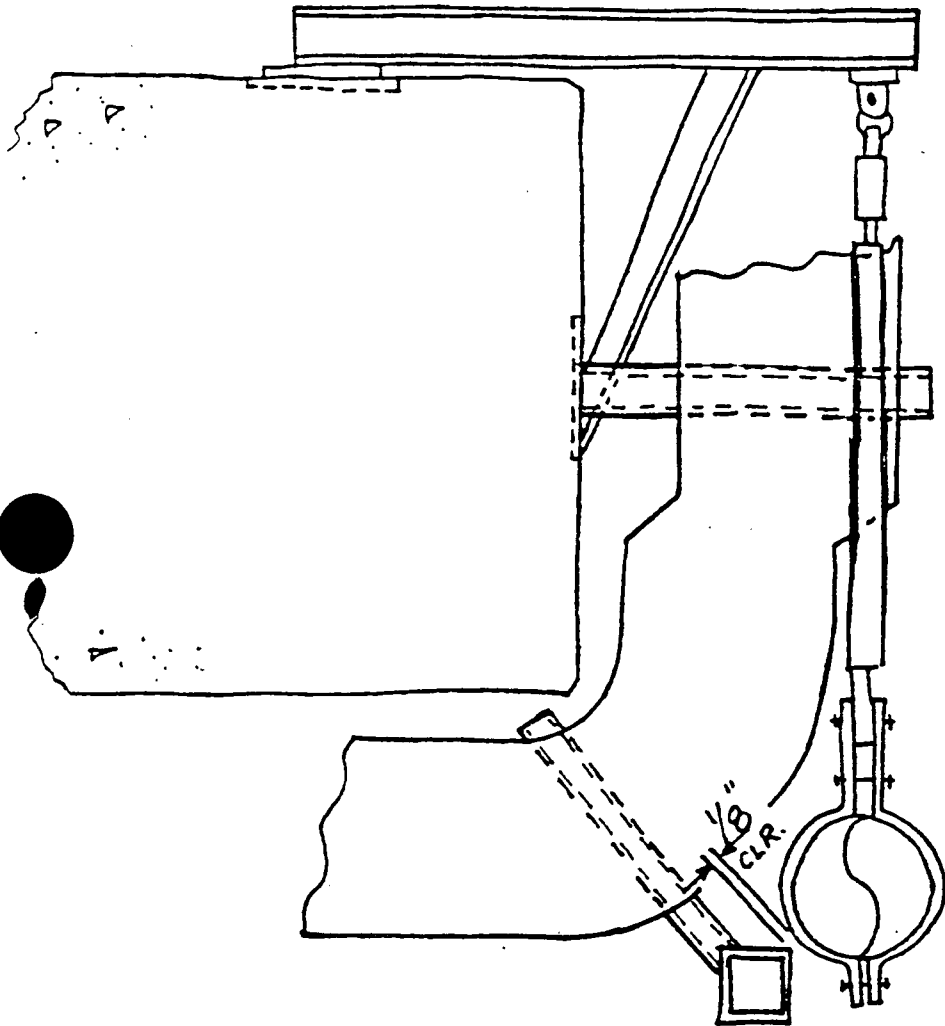
Construction Engineer \_\_\_\_\_ Date \_\_\_\_\_

10. Reviewed and Accepted By:

\_\_\_\_\_  
Authorized Nuclear Inspector Date

11. Distribution:  
Site QA Records File  
Construction Engineer  
CONST QA Branch  
QA Manager, OEDC  
MEDS  
Design Project Organization  
EN DES NEB - Codes, Standards,  
and Materials Section (Code Items Only)  
NRC Resident Inspector  
(Significant NCR's Only)  
ANI (Code Items Only)  
EN DES NEB-NLS  
(Significant NCR's Only)  
NSRS (Significant NCR's Only)

1007



PLAN



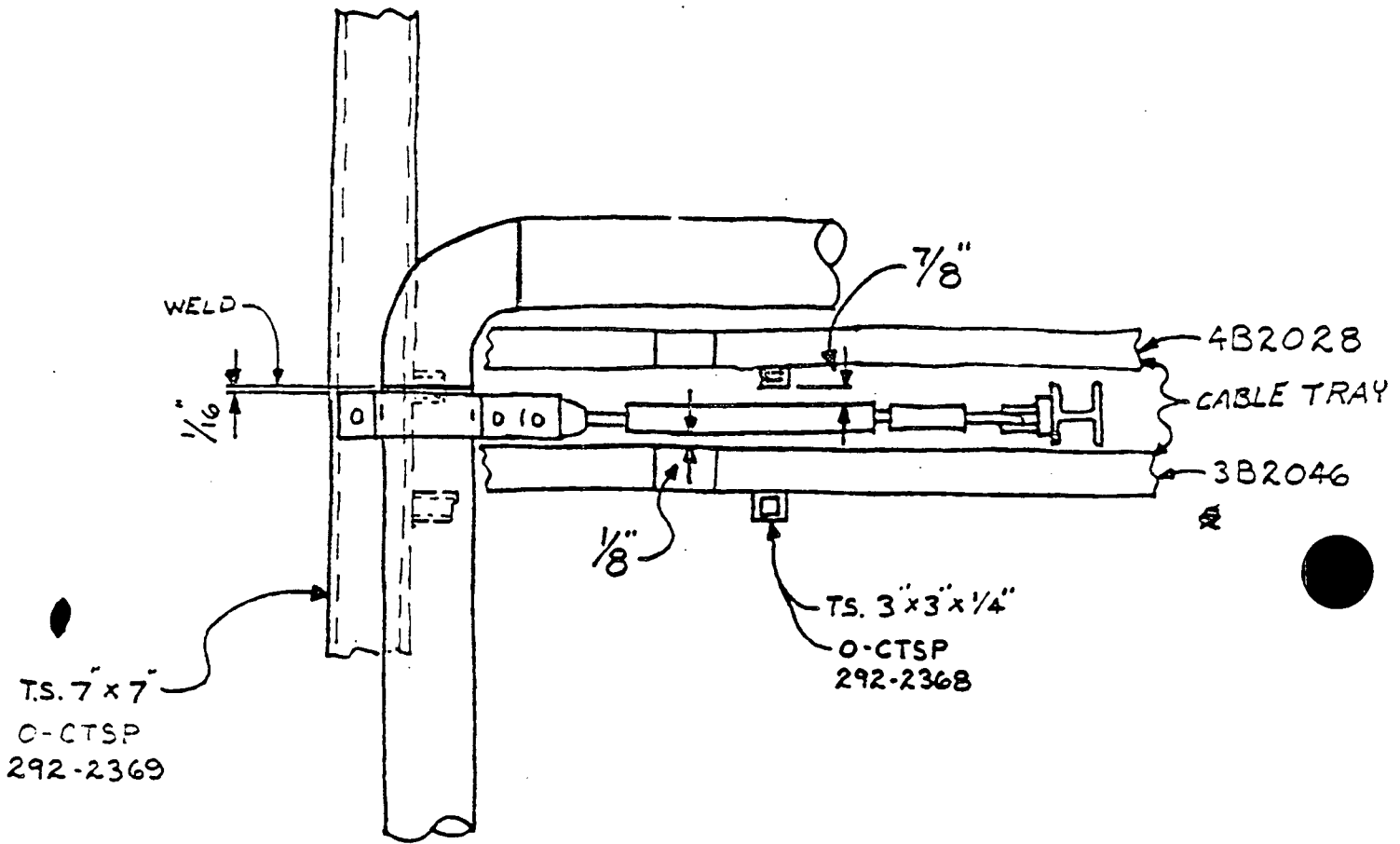
NCR 4486 R  
ATTACHMENT 1 OF 2

03B-IAFW-R24

12-2-82

*LR*

1008



ELEVATION A-A  
LOOKING EAST

NCR 4486 R  
ATTACHMENT 2

03B-1AFW-R24  
12-2-92

PROGRAM: 755020  
DATE: 11 01 83

MBNE MANGER INFORMATION AND TRACKING  
REPORT: FULL-FILE BY SYSTEM, MANGER ID <BREAK ON: SYSTEM>

SYSTEM: 003  
PAGE: 69

IDENTIFIER	CL	REF	PKG/PLN	TRAINING	REV	DESCRIPTION	STAT	TEST	LID	SEQUENCE	CF	TESTS
1003B-03B-IAFM-R229	X003-2		1-47M427-215		901							* MB 02A* 03A* 04A* 08B*
1003B-03B-IAFM-R23	X003-2		1-47M427-206									* HD 03A* 04A* 08A* 09A*
1003B-03B-IAFM-R230	X003-2		1-47M427-215		000	M-4567						* HA 01A* 02A* 03A* 04B* 08B*
1003B-03B-IAFM-R231	X003-2		1-47M427-215		903							* HD 03A* 04C* 08C*
1003B-03B-IAFM-R232	X003-2		1-47M427-215		903	4455H						* MB 03B* 04A* 08C*
1003B-03B-IAFM-R233	X003-2		1-47M427-215		001	M-8211						* MB 02A* 03A* 04A* 08A* 01A*
1003B-03B-IAFM-R234	X003-2		1-47M427-215		001	M-5940						* MB 02A* 03A* 04A* 08A*
1003B-03B-IAFM-R235	X003-2	9592	1-47M427-201		903	M-9822						* HA 03B* 04B* 08C*
1003B-03B-IAFM-R236	X003-2		1-47M427-201		001	M-6554/H-7589						* HA 01A* 02A* 03A* 04A* 08B* 09A*
1003B-03B-IAFM-R237	X003-2	9617	1-47M427-201		903							* HF 02A* 03B* 04E* 05B* 08B*
1003B-03B-IAFM-R238	X003-2		1-47M427-202		902							* HF 02A* 03A* 04A* 05B* 08B*
1003B-03B-IAFM-R239	X003-2		1-47M427-202									* HE 01A* 02A* 03A* 04A* 05A* 08A*
1003B-03B-IAFM-R24	X003-2		1-47M427-206		901	M-9322/4923R						* HA 01C* 02B* 03A* 04B* 08B* 09A*
1003B-03B-IAFM-R26	X003-2		1-47M427-206		906							* HA 03B* 04A* 08C* 09A*
1003B-03B-IAFM-R27	X003-2		1-47M427-206		902	M-4947/H-4702 SP						* HD 03A* 04A* 08B* 09A*
1003B-03B-IAFM-R28	X003-2		1-47M427-206		903							* HA 01A* 02A* 03A* 04A* 08B* 09A*
1003B-03B-IAFM-R29	X003-2		1-47M427-206		902							* HA 01A* 02A* 03A* 04B* 08B* 09A*
1003B-03B-IAFM-R3	X003-2		1-47M427-206		902	M-9218						* HA 01A* 02A* 03A* 04B* 08B*
1003B-03B-IAFM-R30	X003-2		1-47M427-206		000	M-8256 REF M-8436						* HA 01A* 02A* 03B* 04B* 08B* 09A*
1003B-03B-IAFM-R31	X003-2		1-47M427-206		902							* HA 01A* 02A* 03B* 04B* 08B* 09A*
1003B-03B-IAFM-R32	X003-2		1-47M427-206		903							* HA 01A* 02A* 03B* 04B* 08B* 09A*
1003B-03B-IAFM-R33	X003-2		1-47M427-206		000							* HA 01A* 02A* 03B* 04A* 08B* 09A*
1003B-03B-IAFM-R34	I		1-47M427-206		901							* HA 01A* 02A* 03A* 04A* 08A*
1003B-03B-IAFM-R35	I		1-47M427-206		901							* HD 08A*
1003B-03B-IAFM-R36	X003-2		1-47M427-200									* HD 08A*
1003B-03B-IAFM-R38	X003-2		1-47M427-200		901							* HA 01A* 02A* 03A* 04A* 08A* 09A*
1003B-03B-IAFM-R39	X003-2		1-47M427-200		901							* MB 02A* 03B* 04A* 08B* 09A*
1003B-03B-IAFM-R4	X003-2		1-47M427-200		901							* HA 01A* 02A* 03B* 04A* 08B* 09A*
1003B-03B-IAFM-R41	X003-2		1-47M427-200		000							* HA 01A* 02A* 03B* 04A* 08B* 09A*
1003B-03B-IAFM-R42	X003-2		1-47M427-200		000							* HD 03A* 04A* 08A* 09A*
1003B-03B-IAFM-R43	X003-2		1-47M427-200									* MB 02A* 03B* 04A* 08B* 09A*

DIN5234 F-8B

100



FORM 3

10520DIN5174  
10520.92.0000  
ref: 10520DIN4146

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F1812101

Comments pertinent to finding:

Reference Form 3, WBNP Independent Review Finding # F818

Rand McRy  
Program Team Member

11/2/83  
Date

Thomas E. McConnell  
OEDC Program Manager

11/4/83  
Date

MS Martin & E. J. Beasley  
Chairman, OEDC Policy Committee

11/21/83  
Date

Black & Veatch *No temporary changes indicated on the F818 list.  
This item is considered to be closed*

Classification: Type R Category B

W. J. Zidzeman  
Black & Veatch Project Manager

12/8/83  
Date

R. E. Blandell  
Black & Veatch Senior Review Team Chairman

12/19/83  
Date

WATTS BAR NUCLEAR PLANT  
INDEPENDENT REVIEW

Finding Number F/8/2/1/

O-PL

Comments pertinent to finding:

03B-1AFW-R52 was revised under ECN 3198, Rev 902, to void this support on 2/28/83. Corrective action is complete.

References: - ECN 3198  
03B-1AFW-R52 R902

*E.H. Cole*

Program Team Member

*11/17/83*

Date

*Harmon E. McConnell*

OEDC Program Manager

*11/17/83*

Date

*M.S. Marden for E. A. Brasley*

Chairman, OEDC Policy Committee

*11/21/83*

Date

Black & Veatch

*The attached sketch when removed along with the drawings provided with F932, the sketches in the original finding and the computer print out supports close out of this larger item*

Classification: Type

R

Category

A

*W.J. Fitzmaurice*

Black & Veatch Project Manager

*12/22/83*

Date

*R.E. Blairbell*

Black & Veatch Senior Review Team Chairman

*12/27/83*

Date

COVER SHEET SWP 02 0813 500 <sup>1012</sup>

(BEFORE ISSUANCE OF OPERATING LICENSE)

ECN NO. 3198

TENNESSEE VALLEY AUTHORITY  
DIVISION OF ENGINEERING DESIGN

To: Construction Project Manager Watts Bar Nuclear Plant, Spring City, TN

From: Design Project Manager SWP 204 GB-K

DATE AUG 13 1982

Budget Items: 221  
Transfer Package: X-03(2), 12/82

Was IJ Analysis Required: Yes  No

W.B. Harrison  
Prepared by

W.M.G. #2  
Section

J. R. Rieley  
Section Leader

[Signature]  
Project Engineer

Released:

H.B. Rankin  
Design Project Manager

8-12-82  
Date

SCOPE [initials]

WORK PACKAGES - M003 F20  
M003 F29  
1 & 2

Project Watts Bar Nuclear

Affected Unit(s) 1 & 2

System or Feature Aux Feedwater, Sys 3B

(NCR 3755 R<sub>3</sub> rev 1)

Reference & Description of Change In the Aux Feedwater Sys. Revise various piping & drawings to specify Code class and vendor package boundaries and reanalyze code piping on the Aux Feedwater pump packages  
(work packages M003 F20 & M003 F29)

DRAWINGS OR B/M'S INVOLVED: Yes  No   
(Data Sheets Required)

Date Branch Data Sheet Available

Thermal Power Engineering Branches Approval Required Yes or No Yes

ECN is ready for TPE branch review: [Signature] 6-29-82  
Design Project Manager Date

Thermal Power Engineering Branches  
Civil N/A #2 Yes  
Electrical No  
Mechanical No  
Nuclear No

Thermal Power Engineering Des Project  
Civil No  
Electrical No  
Mech #2 Yes  
Analysis -

Approved:  
TPE Civil Br. Chief N/A Date  
TPE Electrical Br. Chief N/A Date  
TPE Mechanical Br. Chief T.B. Zarnier 7/27/82 Date  
Chief Nuclear Engineer N/A Date

Arch, Hydro, & Spec Proj Eng & Des  
Arch No  
Civil No  
Electrical No  
Mech No

Required for PSAR or FSAR Yes  
Required for Preoperational Test: Yes  
If Yes, Test No. TVA 22  
Vendor Backcharges Involved No  
Seismic Analysis Required Yes  
Nonconformance Report Required Yes  
QA Applies Yes  
Security System Modified No  
Vendor(s) involved: Yes NO

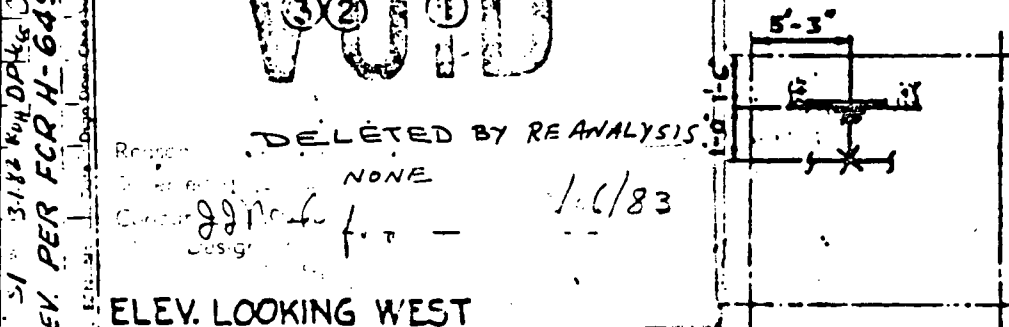
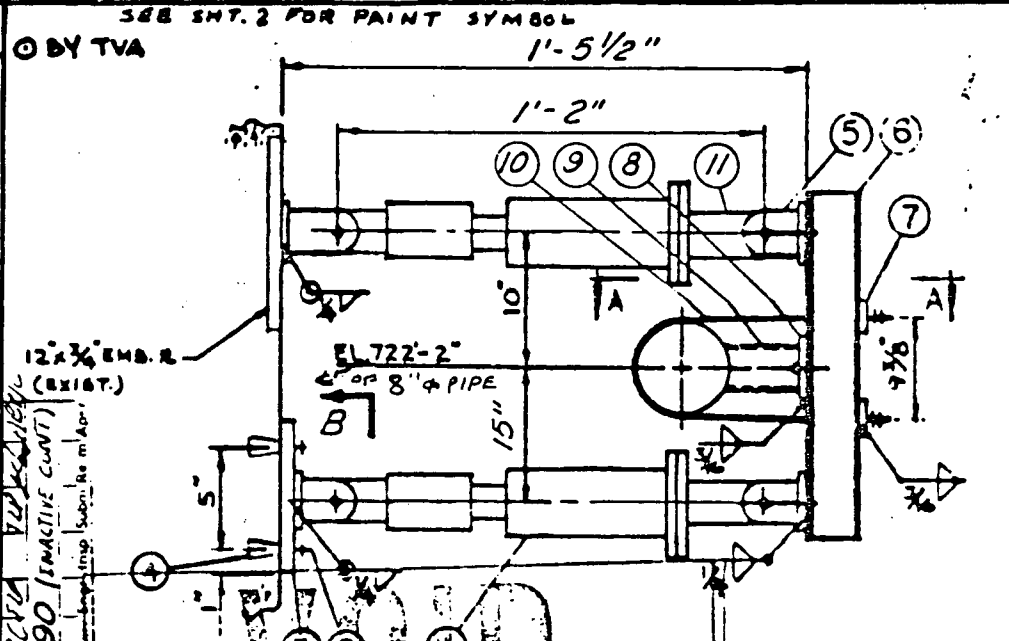
PHYSICAL WORK MUST BE DONE BEFORE:

	Pre-Op Test	1st Fuel Load	1% Thrm Power	Comm'l Oper'n	1st Retuel
Unit(s) <u>1</u>	<input checked="" type="checkbox"/>				
Unit(s) <u>2</u>	<input checked="" type="checkbox"/>				

- CC (Attachments): Yes (2)  
 Chief, Architectural Design Branch, W4C126 C-K  
 Chief, Civil Engineering Branch, W9D224 C-K  
 Chief, Civil Engineering & Design Branch, W3C126 C-K  
 Chief, Electrical Engineering Branch, W6C126 C-K  
 Chief, Electrical Engineering & Design Branch, W2D224 C-K  
 100 UB-K

- Chief, Nuclear Engineer, W10C126 C-K  
 Chief, Mechanical Engineering Branch, W7C126 C-K  
 Chief, Mechanical Engineering & Design Branch, 102 SPT-K  
 Chief, Quality Assurance Branch, W11C126 C-K  
 Manager of Construction, E7B24 C-K  
 Chief, Cost Planning and Control Staff, W12C74 C-K  
 Plant Superintendent

ITEM	QTY	UNIT	SIZE	DESCRIPTION	REV
10	2	SOP	PSA-1 W/4" TRAVEL O-A (COLD) = 14"		
			3/16" THERMAL MOVEMENT		
			GOV. LOAD = 900# (FAULTED)		
2	4	-	1/2" φ · 1 1/4" LG BOLT		
3	1	C50	7" A 1/2" R × 7" LG W/(4) 3/8" φ HOLES	7	
4	4	5120	1/2" CONCRETE FASTENER (PHILLIPS REDHEAD)		
5	2	SOP	REAR BRACKET FOR PSA-1 (SEE SHT. 2 OF 2)		
6	2	CS	4 C5.4 × LENGTH AS REQ'D b-b = 1"	22	
7	2	260	5 WASHER PLATE		
8	1	CS	5" × 3/8" R × 5" LG	3	
9	1	CS	2 1/2" φ STD. PIPE × LENGTH AS REQ'D.	6	
10	1	283A	8" PIPE SIZE U-BOLT D = 1 1/8"		
11	2		FORWARD BRACKET		



DELETED BY REANALYSIS  
 NONE  
 1/6/83

NUCLEAR  
 T. V. A. CLASS C

DRAWING ISO #E-2879-IC-17-2  
 DRAWING CORPORATION P.O. #E-2879-  
 T.V.A. CONTRACT # 74C38-83015  
 WATTS BAR NUCLEAR PLANT - UNIT # 1

3198 22813 ME ME JAC P. 118 - 10 2 2 2 2  
 SUPPORT DELETED BY REANALYSIS

10/1 51 3182 FOR DP 46 22VA VEP 22/10/83  
 REV. PER FCR H-6490 (INACTIVE CONT)

PROJECT WBNP CONTRACT 83015  
 DRAWING 03B-1AFW-R052  
 902

MT  
 R1  
 R2

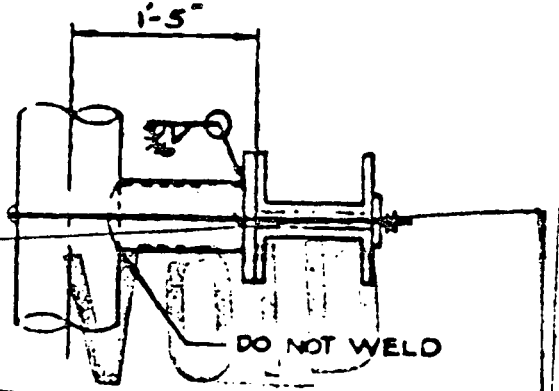
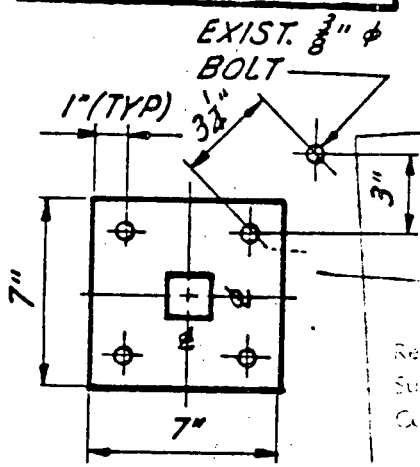
BERGEN-PATERSON PIPESUPPORT CORP			
SYSTEM	AUX. FEEDWATER		
DATE	47/427-7-4	48/1231-2-9	
JOB NO	3604	FIG NO	09
DATE	03B-1AFW-R52	SHEET	10F2
REV		REV	902

TVA900 = VENDOR RO

REV	NO	DATE	DESCRIPTION	BY
			Q WELD STD PAINT (PN TO PN) INSERT REAR AND FORWARD BELTS TO BE COATED W/ CARBONIZED II (EMER BY TVA) SHIP BARS METAL PAINT CARBONIZED II PRIMER BY TVA.	
-	1	306	(2) HAS	
-	1	300		
-	1	06T		

ISO 47W437-209-RQ  
 JOINT: 23  
 DIRECTION: Z  
 TYPE: DS  
 + 1500 #  
 DESIGN LOAD:  
 - 1500 #

902 3198 22883 MB REF TO SUPPLN - JMM  
 SUPPORT DELETED BY RE-ANALYSIS  
 Rev: FCN No: Date: Design: Draw: Check: Supp: Insp: Intp: Subm: Recm: App:



Reason: DELETED BY RE ANALYSIS  
 Superseded: NONE  
 Concur: J. J. Nash  
 Design Project Manager  
 for Branch Chief  
 Date: 2/26/83

REV PER FOR H-6490 (INACTIVE CONTRACT)  
 3/11/81 51 B/12 4011 DPL/ky CL/DA  
 FCN No: Date: Design: Draw: Check: Supp: Insp: Intp: Subm: Recm: App:

SECTION B-B

PROJECT WBNP CONTRACT 83015 R2  
 DRAWING 038-1AFW-R052  
 SHEET 2/2 REV 902 UNIT 1

T.V.A. CLASS C

DRAW ISO REF. 2879-IC-17-2  
 DRAGO CORPORATION P.O. # 2-2879  
 T.V.A. CONTRACT # 74C30-82015  
 WATTS BAR NUCLEAR PLANT - UNIT # 1

LOAD:  
 PIPING SYSTEM AIR, DEIONIZED  
 REFERENCE Dwg. 038-1AFW-R52  
 MAKE NO 038-1AFW-R52



BERGEN-PATERSON PIPESUPPORT CORP.

BERGEN-PATERSON PIPESUPPORT CORP.  
 1000 W. 10TH ST. NEW YORK, N.Y. 10014

LR 22 47 050  
 3608 (2 OF 2)  
 038-1AFW-R52 R902

TVA 900 = VENDOR RO