TMI-10-033
April 21, 2010

ENCLOSURE 1

FORM NIS-1 OWNER'S REPORT FOR INSERVICE INSPECTIONS
As required by the Provisions of the ASME Code Rules

1. Owner Exelon Nuclear, 200 Exelon Way, Kennett Square, PA
(Name and Address of Owner)

2. Plant Three Mile Island Nuclear Generating Station, Rt 441 South Middletown, PA
(Name and Address of Plant)

3. Plant Unit 1 4. Owner Certificate of Authorization (if required) N/A

5. Commercial Service Date September 2, 1974 6. National Board Number for Unit Reactor Vessel N-109

7. Components Inspected

Component or Appurtenance	Manufacturer or Installer	Manufacturer or Installer Serial No.	State or Province No.	National Board No.
		NA		

Note: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

This Form (E00029) may be obtained from the ASME Order Dept., 22 Law Drive, Box 2300, Fairfield, NJ 07007-2300

FORM NIS-1 (Back)

8. Examination Dates: November 16, 2007 to January 24 , 2010

9. Inspection Interval from: April 20, 2001 to April 19, 2012, 3rd Interval, 3rd Period for IWB, IWC, IWD, IWF and 1st Interval, 3rd Period for IWE and IWL

10. Applicable Editions of Section XI: Section XI 1995 w/ Addenda 1996 for IWB, IWC, IWD, and IWF
Section XI 1992 Edition with Addenda 1992 for IWE and IWL
Applicable Code Cases: N-416-3, N-460, N-491-2, N-496-2, N-498-4, N-504-2, N-513-2, N-522, N-523-2, N-526, N-533-1, N-537, N-545, N-548, N-568-2, N-583, N-586-1, N-593, N-600, N-613-1, N-616, N-619, N-624, N-638-1, N-643, N-648-1, N-649, N-651, N-652, N-661, N-685, N-686, N-695, N-696, N-700,N-706, N-722, N-729-1.

11. Date/Revision of Inspection Plan: July 7, 2008, Revision 7

12. Abstract of Examinations and Tests. Include a list of examinations and a statement concerning status of work required for the Inspection Plan.
See Enclosure 1, Tab 2 for replacement steam generator eddy current examinations and Enclosure 1, Tabs 3 through 6 for all other examinations. Approximately 83% (1266) of the total number of examinations required to be completed during the interval have been completed.

13. Abstract of Results of Examinations and Tests.
See Enclosure 1, Tab 2 for OTSG eddy current examinations. See Enclosure 1, Tabs 3 through 5 for other components.

14. Abstract of Corrective Measure.
See Enclosure 1, Tab 2 for OTSG eddy current examinations. See Enclosure 1, Tab 6 for other components.

We certify that a) the statements made in this report are correct, b) the examinations and test meet the Inspection Plan as required by the ASME Code, Section XI, and c) corrective measures taken conform to the rules of the ASME Code, Section XI.

Certification of Authorization No. (if applicable) N/A Expiration Date N/A

Date 4/15/2010 Signed Exelon Nuclear By [signature]
Owner

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by H.S.B.I.& I. Company of CT of Hartford, Connecticut have inspected the components described in this Owner's Report during the period November 16, 2005 to January 24 , 2010 , and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

[signature] Commissions NB5478 A.N.I.
Inspector's Signature National Board, State, Province, and Endorsements

Date April 16, 2010

Cycle 17 Refueling (T1R18) Inservice Inspection (ISI) Summary Report

Enclosure 1 Table of Contents

The ASME Code and TMI Technical Specifications required eddy current examinations were completed at the Areva fabrication facility in Chalon France. A full-length examination on 100% of the tubing was performed using techniques that are expected to be employed during future inservice inspections. All recorded bobbin coil indications were characterized using the array probe technology. The examinations did not identify any indications of tube wall degradation.

The ASME Code requires the results of the examinations be reported on a Form NIS-1 within 90 days of the completion of the outage. The following information satisfies the reporting criteria of both the TMI-1 Technical Specifications and the ASME Code.

a. The scope of the examinations performed on each SG.

The examinations were performed as a pre-service examination. The examinations included a pre-service examination of 100% of the 15,597 tubes in each SG. The examinations included 100% of the length of each tube. There were no obstructions or scanning limitations.

b. Active degradation mechanisms found.

The examinations did not reveal any active degradation mechanisms.

c. Nondestructive examination techniques utilized for each degradation mechanism.

The examinations were performed using bobbin/array combination probes (X-Probes) to examine 100 percent of the tubing. The specific techniques used for various potential damage mechanisms are shown in Table 2-1.

All of the bobbin data were analyzed full length. The array data were analyzed for specific areas which included: 3 inches above and below the upper and the lower tube sheet transitions (includes expansion transitions) and all anomalies detected by the bobbin coil. In addition, the array probe data were evaluated for the area from 3 inches outside the tube sheet transition to the corresponding tube end for approximately 7.9% of the tubes, including the first and last tubes in each calibration group.

Figures 1 through 8 show the data analyzed for each technique.

d. Location, orientation (if linear), and measured sizes (if available) of service induced indications.

There were no service induced indications recorded. The recorded indications were limited to manufacturing anomalies. Table 2-2 is a summary of the recorded indications. Figures 9 and 10 show the locations of the indications.

e. Number of tubes plugged during the inspections outage for each active degradation mechanism.

There were no tubes plugged during this inspection outage.

f. Total number and percentage of tubes plugged to date.

There are currently no tubes (0%) plugged in either SG.

g. The results of the condition monitoring, including the results of tube pulls and in-situ testing.

There was no previous degradation and no degradation recorded during this inspection. Therefore no condition monitoring was performed. No tubes were pulled and no in-situ pressure testing was performed.

h. The effective plugging percentage for all plugging in each OTSG.

There are currently no plugs or sleeves installed in either SG. Therefore, the effective plugging percentage is zero.

Table 2-1
Inspection Techniques Targeting Potential Damage Mechanisms and Conditions

Damage mechanism or condition	Location	Inspection Technique	TMI-1 PSI ETSS	EPRI ETSS (includes information for integrity assessment)
Thinning	TSP, top of tubesheet	Bobbin	1	96001.1 rev 11
Wear	TSP	Bobbin	1	96004.1 rev 12
Pitting	Freespan	Bobbin	1	96005.1 rev 9
		X-Probe	2	24998.1 rev 1
IGA/ODSCC	Entire tube length	Bobbin	1	96007.1 rev 12
		X-Probe	2	20400.1 rev 5 20402.1 rev 5 20403.1 rev 5
PWSCC	TSP, expansion transition	X-Probe		20500.1 rev 4 20501.1 rev 4 20502.1 rev 4
Fabrication Flaws	Entire tube length	Bobbin	1	96005.2 rev 9
		X-Probe	2	24998.1 rev 1
Fabrication Deposits	Freespan	Bobbin	1	N/A
Foreign Objects	Freespan, TSP	Bobbin	1	N/A
		X-Probe	2	N/A
Tube or Tie Rod Proximity	Freespan	Bobbin	1	N/A
Ding/Bulge	Freespan, TSP	Bobbin	1	N/A
MBM	Freespan	Bobbin	1	96010.1 rev 7
		X-Probe	2	N/A

Table 2-2
Indications Recorded During PSI Examinations

Probe	Indication	# Tubes	# Entries	Max Voltage	Comments
SG "A" 510 Bobbin	BLG	8	8	163.3	One indication was large amplitude and coded a GMD on the array probe. The remaining seven indications were 20.4 volts or less.
	DNG	612	622	1.04	
	MBM	26	27	0.56	
SG "A" 510 Array	GMD	1	1		One indication was recorded and correlated to a tubesheet drilling anomaly that had previously been determined to be acceptable.
	MBM	21	22		These indications were screened by bobbin coil and confirmed by the array probe.
	NDF	622	634		Array probe examination of bobbin coil indications.
SG "B" 510 Bobbin	BLG	60	63	18.7	
	DNG	324	378	4.62	
	MBM	26	27	0.47	
	NQI	4	4		The array probe did not identify any degradation in the areas of the NQIs. The indications are attributed to the relationship between the expansion transition and the tubesheet face.
	SSA	1	1		Determined to be non-flaw like. Attributed to conductive condition on the tube outside surface.
510 Array	MBM	22	23		These indications were screened by bobbin coil and confirmed by the array probe.
	NDF	388	449		Array probe examination of bobbin coil indications.
	SSA	1	1		Determined to be non-flaw like.

BLG – Bulge – Localized tube diameter increase.
DNG – Ding – Localized tube diameter decrease.
MBM – Manufacturing Burnish Mark - A shallow volumetric signal from manual buffing of the tube outside surface.
GMD - Geometric Distortion- a localized non-nominal condition not meeting the criteria of a dent or ding.
NDF – No Defect Found – Code used to show array of bobbin indication was examined with array probe with no recordable condition.
NQI – Non Quantifiable Indication – Represents a bobbin coil indication that shows p0reliminary evidence of a potential defect and requires an X-probe diagnostic examination.
SSA – Secondary Side Anomaly – A non-flaw low frequency response reported during the X-Probe examination.

Figure 1

TMI Unit 1 Repl
PSI 06/2009
Tubes Examined
with 510 Bobbin

S/G A
PRIMARY FACE
INLET
TOTAL TUBES: 15597
TUBES SELECTED: 15597
OUT OF SERVICE (#): 0

GROUP TUBES
F F/L Bobbin 15597

SCALE: 0.0666538 X
Fri Jul 03 11:05:52 2009

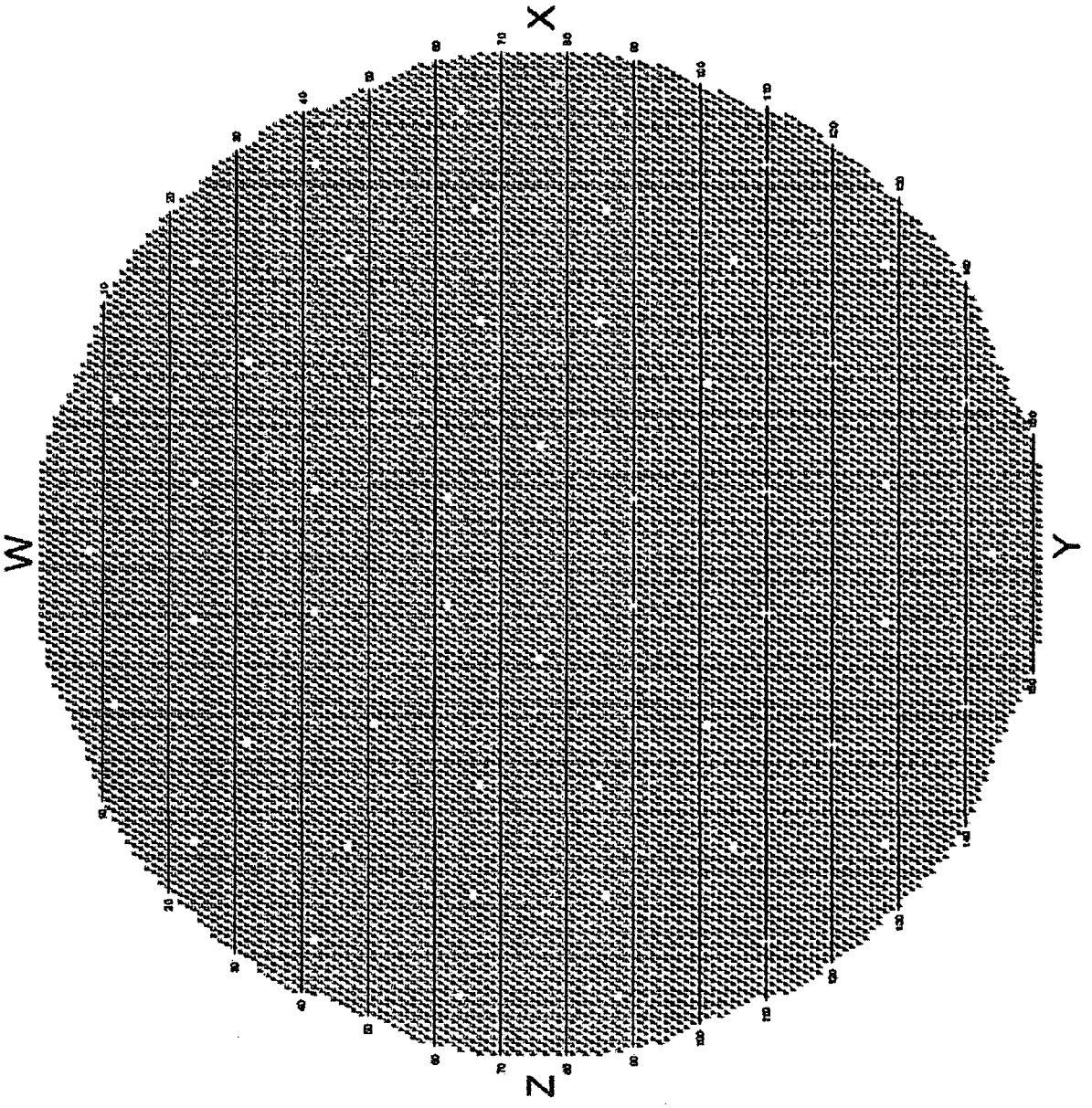


Figure 2

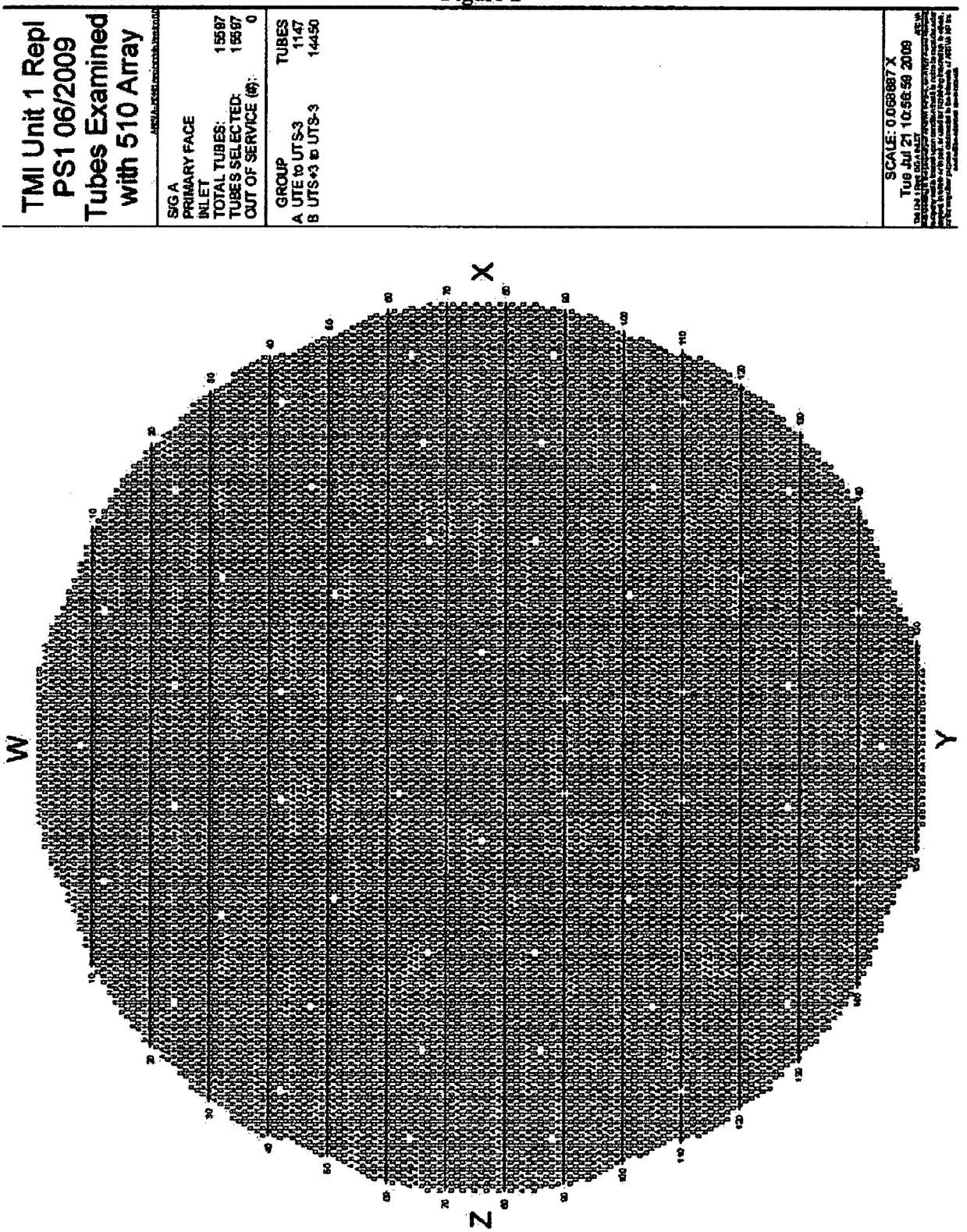

TMI Unit 1 Repl
PS1 06/2009
Tubes Examined
with 510 Array
SIG A
PRIMARY FACE
INLET
TOTAL TUBES: 15597
TUBES SELECTED: 15597
OUT OF SERVICE (#): 0
GROUP TUBES
A UTE to UTS-3 1147
B UTS+3 to UTS-3 14450
SCALE: 0.068887 X
Tue Jul 21 10:58:58 2009
X
Y
Z
W

Figure 3

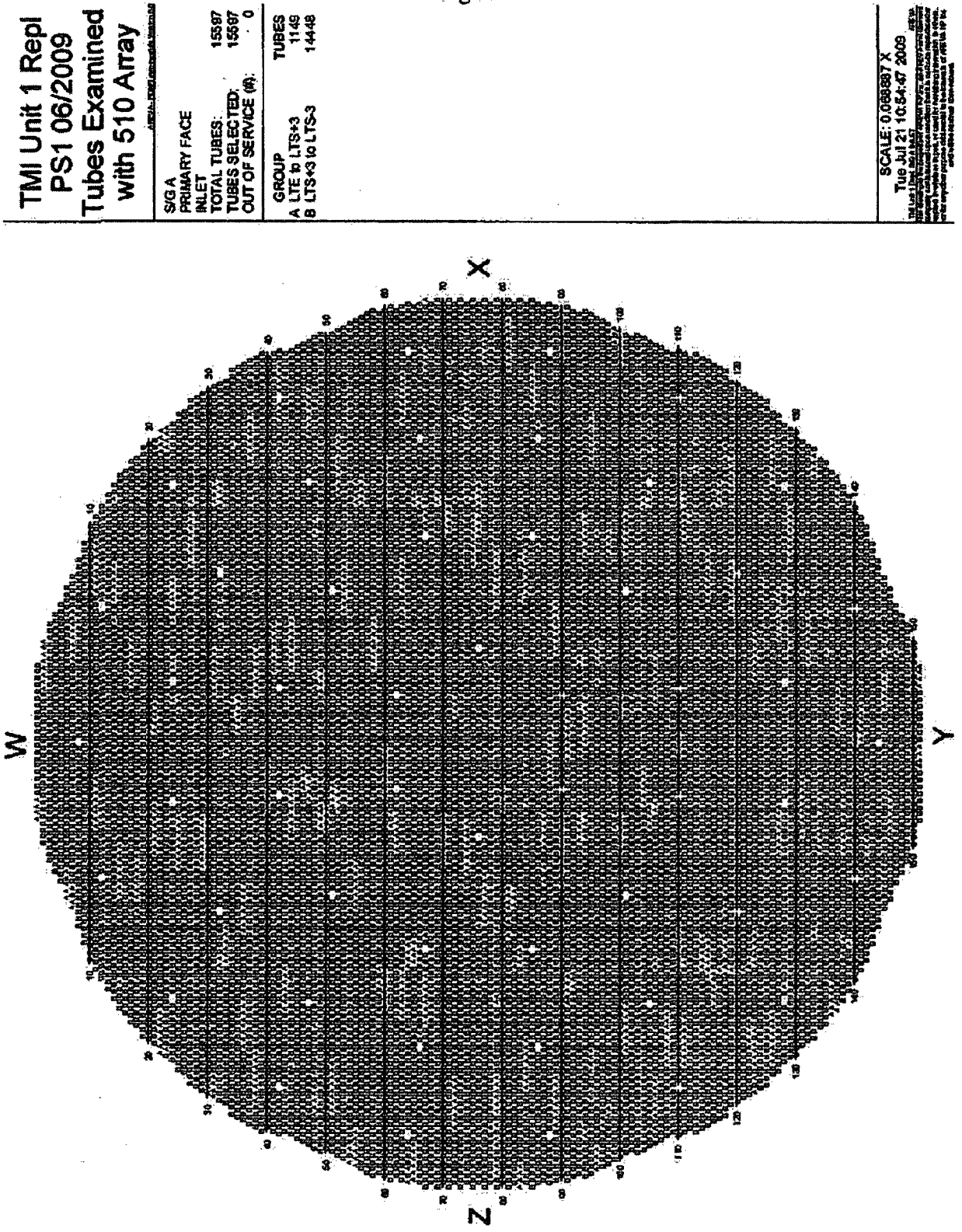

TMI Unit 1 Repl
PS1 06/2009
Tubes Examined
with 510 Array
S/G A
PRIMARY FACE
INLET
TOTAL TUBES: 15597
TUBES SELECTED: 15597
OUT OF SERVICE (#): 0
GROUP TUBES
A LTE to LTS+3 1149
B LTS+3 to LTS-3 14448
SCALE: 0.068887 X
Tue Jul 21 10:54:47 2009
X
Y
W
N

Figure 4

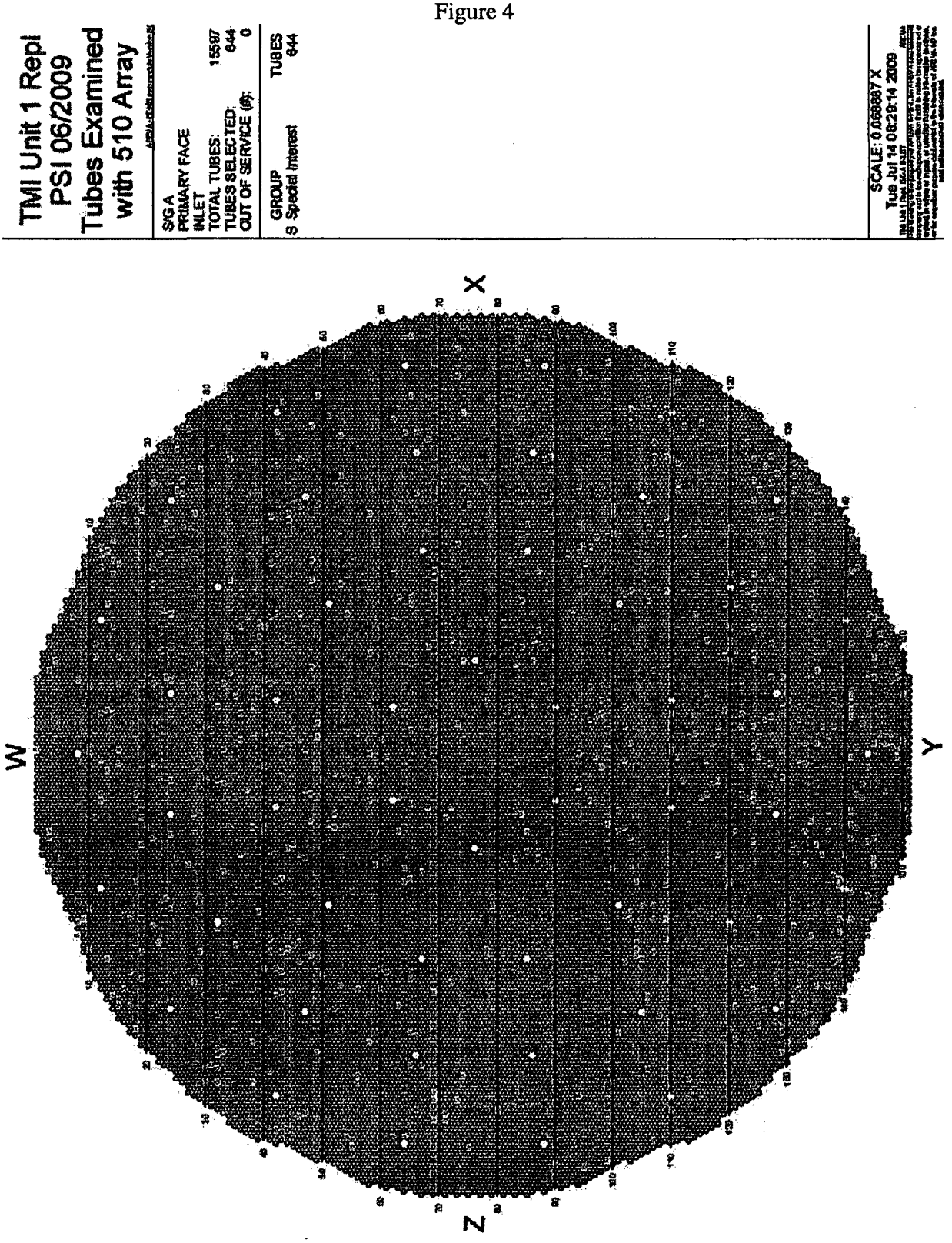

TMI Unit 1 Repl
PSI 06/2009
Tubes Examined
with 510 Array
S/G A
PRIMARY FACE
INLET
TOTAL TUBES: 15597
TUBES SELECTED: 644
OUT OF SERVICE (#): 0
GROUP
Special Interest
TUBES
644
SCALE: 0.068887 X
Tue Jul 14 08:29:14 2009
X
Y
W
N

Figure 5

TMI Unit 1 Repl
PSI 06/2009
Tubes Examined
with 510 Bobbin

S/G B
PRIMARY FACE
INLET
TOTAL TUBES: 15597
TUBES SELECTED: 15597
OUT OF SERVICE (#): 0

GROUP TUBES
F F/L Bobbin 15597

SCALE: 0.066538 X
Mon Jul 06 14:53:25 2009

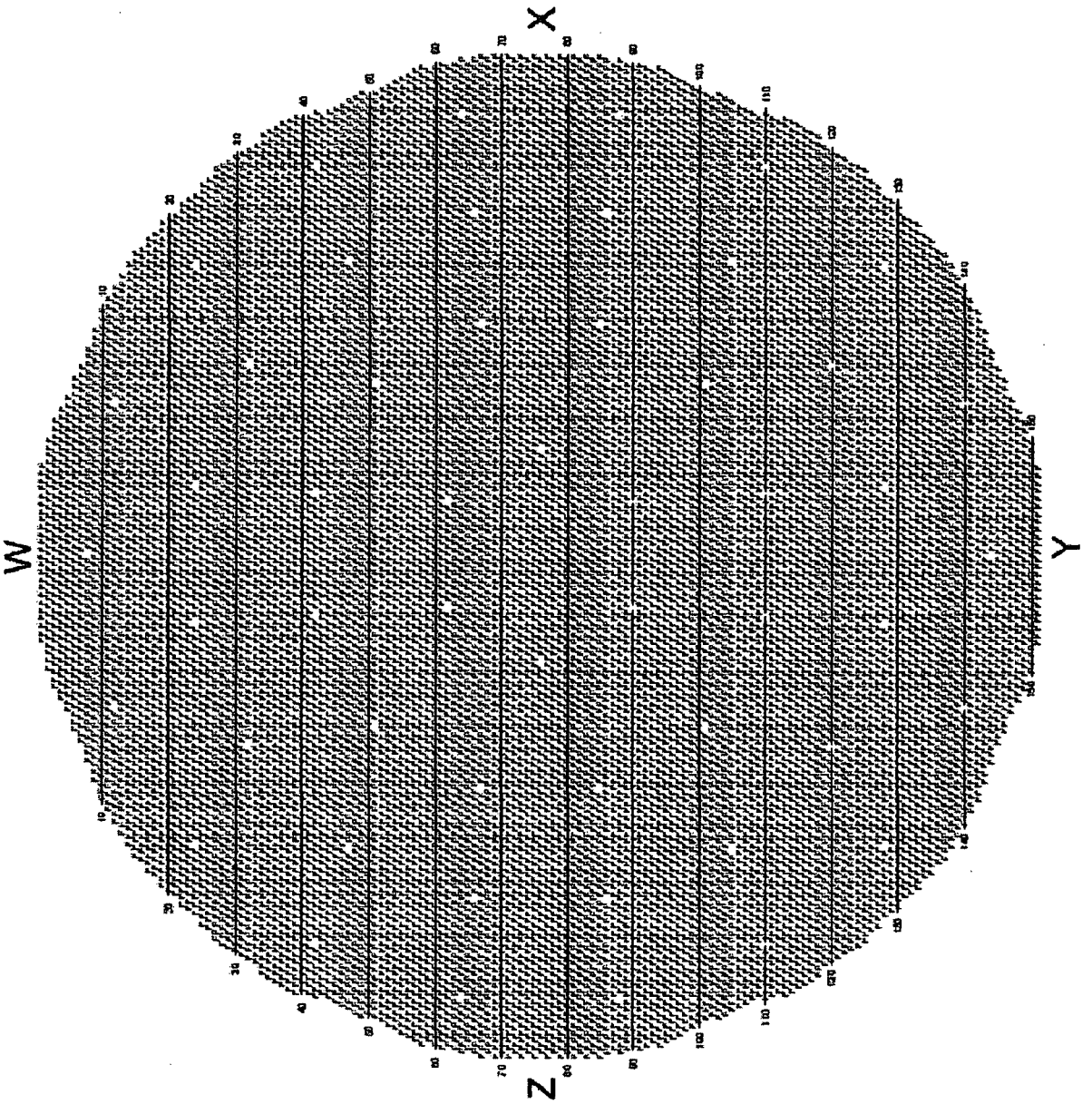


Figure 6

TMI Unit 1 Repl
PS1 06/2009
Tubes Examined
with 510 Array

S/G B
PRIMARY FACE
INLET
TOTAL TUBES: 15597
TUBES SELECTED: 15597
OUT OF SERVICE (#): 0

GROUP	TUBES
A UTE to UTS-3	1121
B UTS+3 to UTS-3	14476

SCALE: 0.068887 X
Tue Jul 21 10:59:32 2009

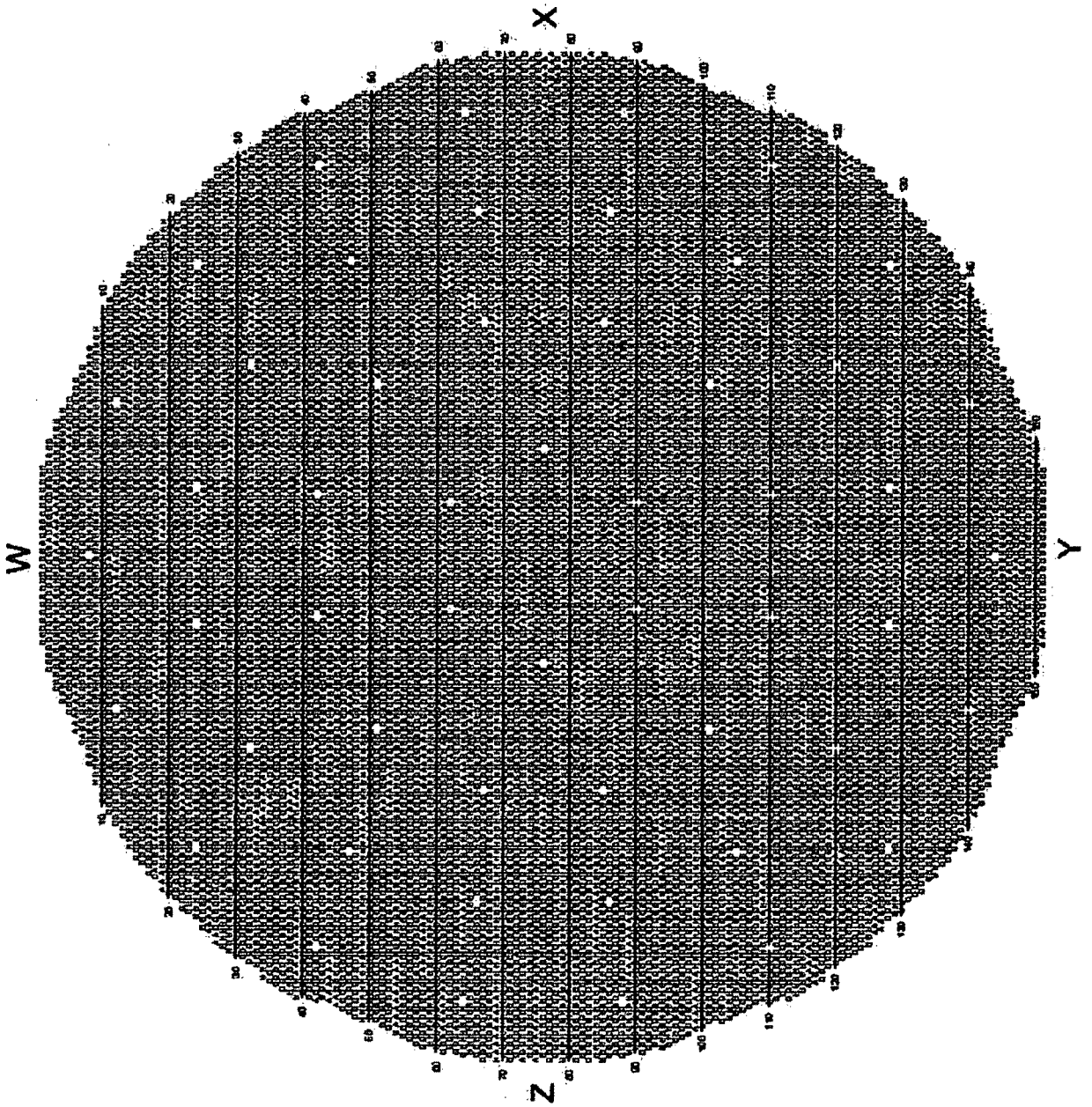


Figure 7

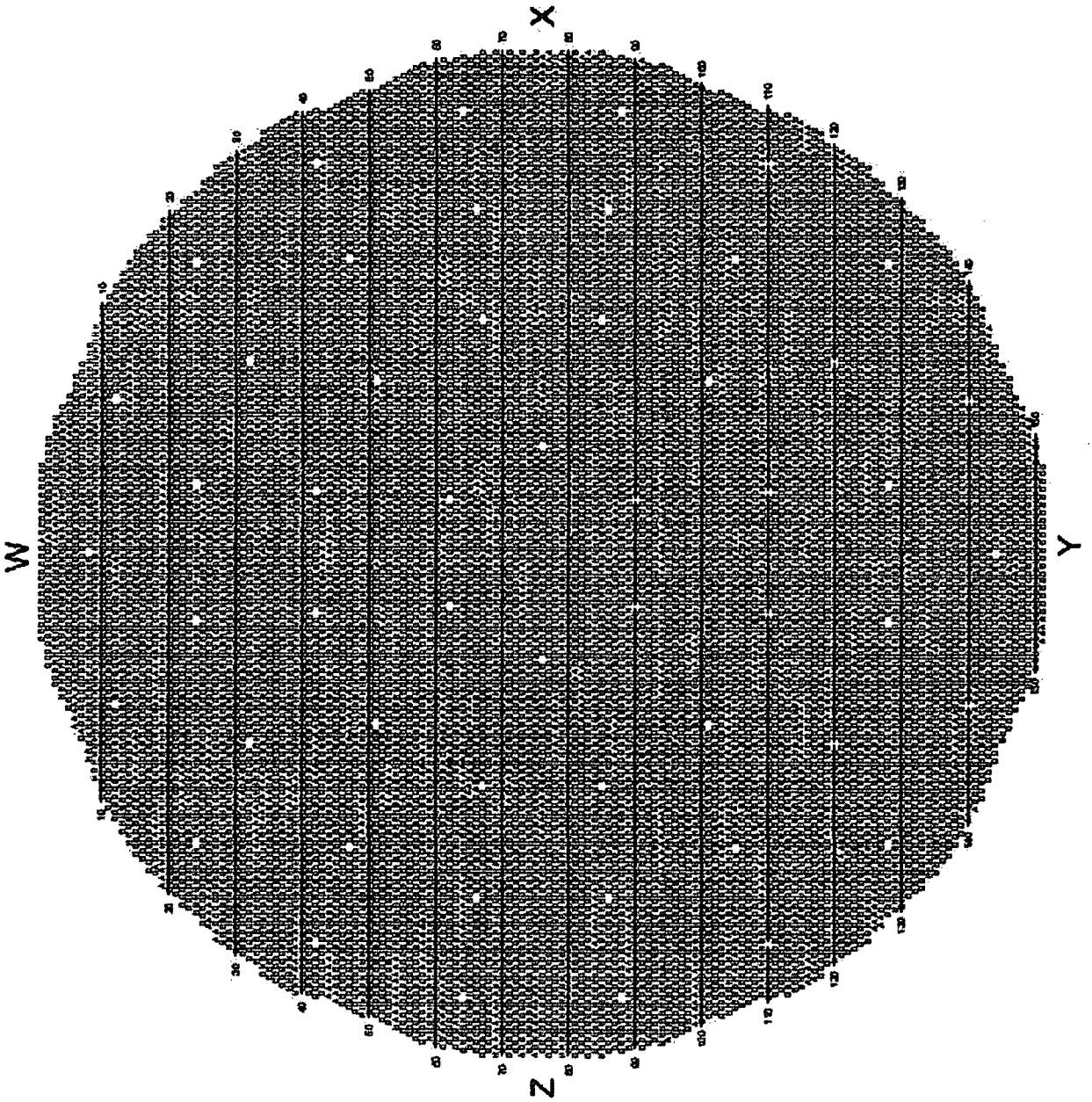

TMI Unit 1 Repl
PS1 06/2009
Tubes Examined
with 510 Array
SG B
PRIMARY FACE
INLET
TOTAL TUBES: 15597
TUBES SELECTED: 15597
OUT OF SERVICE (#): 0
GROUP TUBES
A LTE to LTS+3 1108
B LTS+3 to LTS-3 14489
SCALE: 0.068687 X
Tue Jul 21 11:01:12 2009
X
Y
Z
W

Figure 8

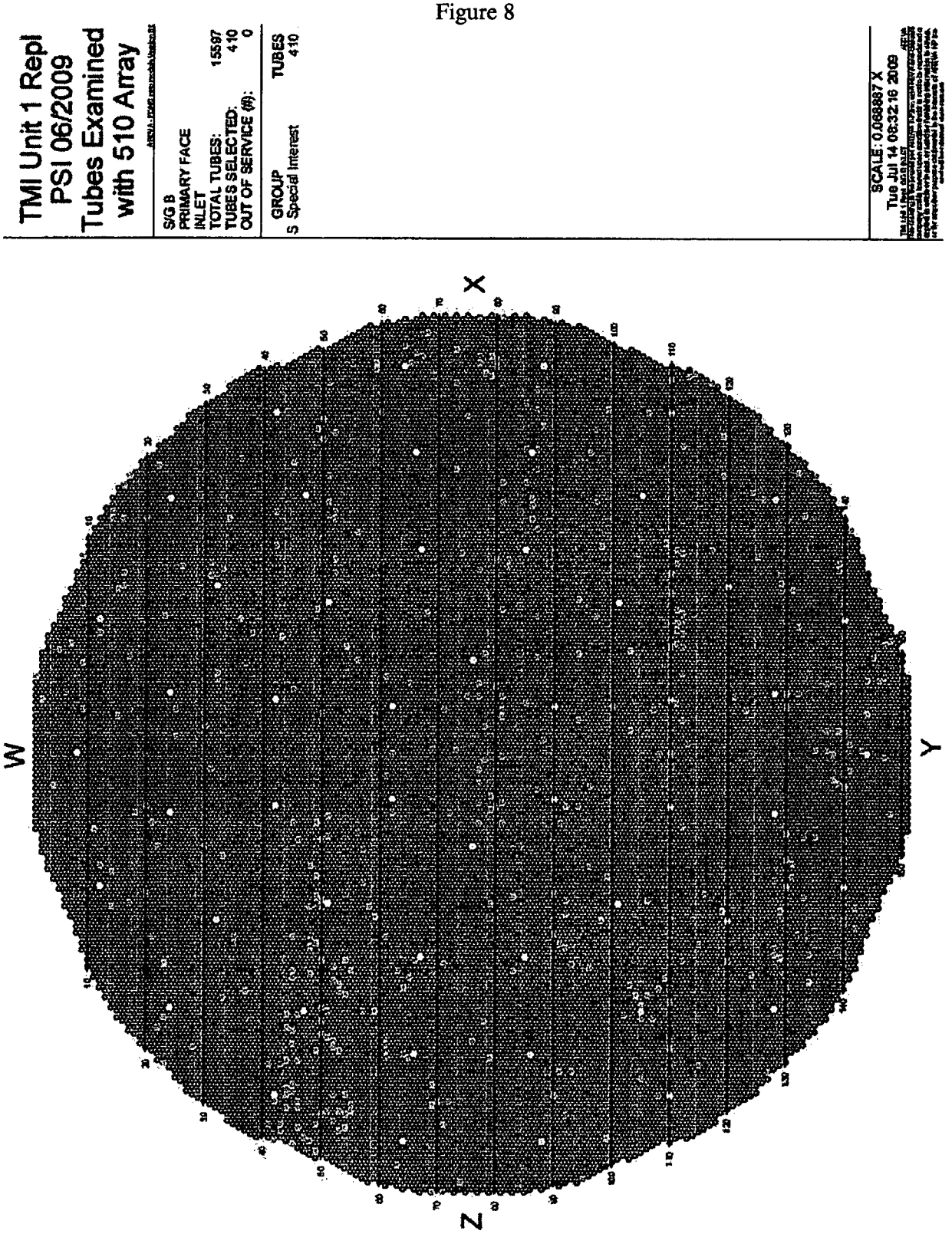

TMI Unit 1 Repl
PSI 06/2009
Tubes Examined
with 510 Array
S/G B
PRIMARY FACE
INLET
TOTAL TUBES: 15597
TUBES SELECTED: 410
OUT OF SERVICE (#): 0
GROUP TUBES
S Special Interest 410
SCALE: 0.068887 X
Tue Jul 14 08:32:16 2009
X
Y
Z
W

Figure 9

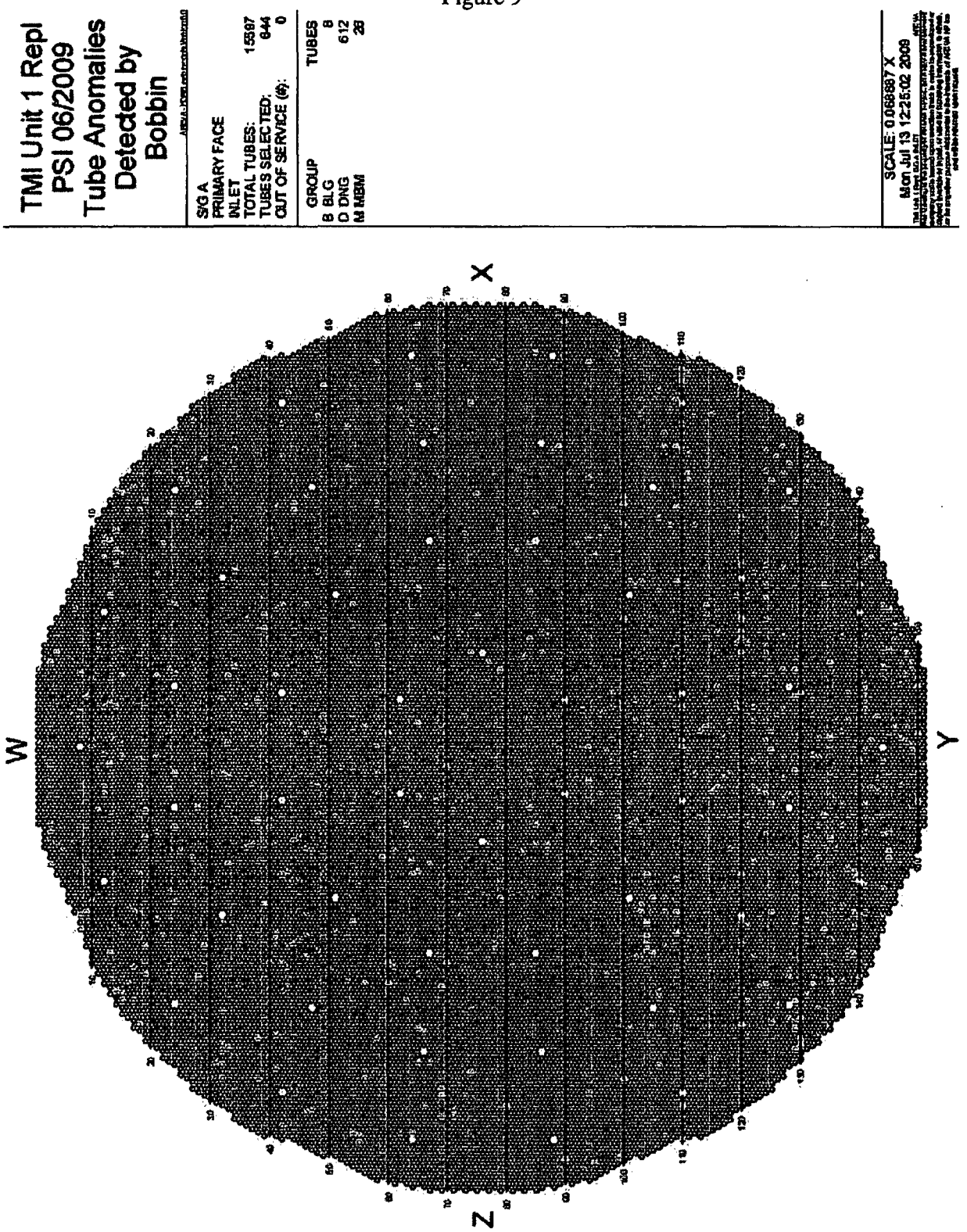
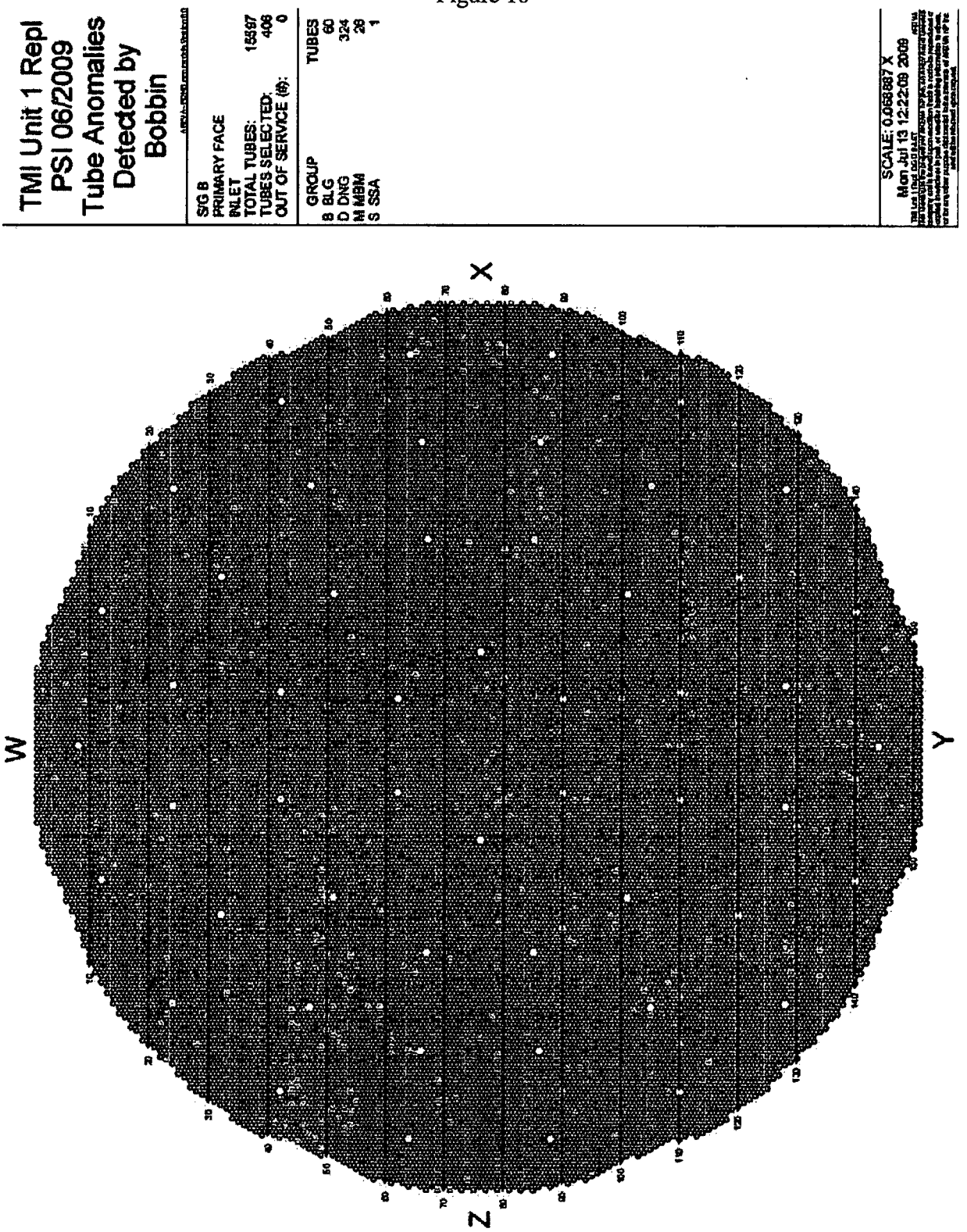

TMI Unit 1 Repl
PSI 06/2009
Tube Anomalies
Detected by
Bobbin
SIG A
PRIMARY FACE
INLET
TOTAL TUBES: 15397
TUBES SELECTED: 644
OUT OF SERVICE (#): 0
GROUP TUBES
B BLG 8
D DNG 612
M MBM 28
SCALE: 0.066887 X
Mon Jul 13 12:25:02 2009
X
Y
Z
W

Figure 10


TMI Unit 1 Repl
PSI 06/2009
Tube Anomalies
Detected by
Bobbin
S/G B
PRIMARY FACE
INLET
TOTAL TUBES: 15397
TUBES SELECTED: 408
OUT OF SERVICE (#): 0
GROUP TUBES
B BLG 60
D DNG 324
M MBM 28
S SSA 1
SCALE: 0.068837 X
Mon Jul 13 12:22:09 2009
X
Y
Z
W

TERMS AND DEFINITIONS
(EXCLUDING OTSG EDDY CURRENT)

1. Explanation of Columnar Information
   - A. **Identification** – Provides the component identification.
   - B. **Component** – Provides a description of the component.
   - C. **Basis** – Provides the basis for the examination as described below:
     - i. **PSI** indicates a preservice examination
     - ii. **SU** indicates a required Section XI follow-up examination
     - iii. **XI** indicates a Section XI inservice examination
   - D. **Coverage** – Provides the obtained examination coverage.
   - E. **NDE Method** – Provides examination method as indicated below:
     - i. VT-1 - Visual examination technique defined in ASME Section XI
     - ii. VT-2 - Visual examination technique defined in ASME Section XI
     - iii. VT-3 - Visual examination technique defined in ASME Section XI
     - iv. UT - Ultrasonic examination
     - v. PT - Dye penetrant examination
     - vi. MT - Magnetic particle examination
     - vii. UT-E - A UT examination note to define that the Risk Informed ISI (RISI) UT examination extent is to be applied
     - viii. UT-WT - A UT examination note that defines that a RISI wall thickness examination is to be performed
     - ix. BMV - Bare metal visual examination
     - x. FT - Snubber functional test
     - xi. RT - Radiographic examination
     - xii. ET - Eddy current examination
     - xiii. EVT - Enhanced visual examination
   - F. **Exam Date** – Provides the date of the examination.
   - G. **Code Coverage** – Provides a percentage of the required examination area/volume actually examined.
   - H. **Results** – Provides examination disposition results.
   - I. **Drawing**- Provides the component drawing associated with the examination.
   - J. **Item Numbers** – Provides the ASME Section XI Item Number associated with the examination.
   - K. **Cat. Number** – Provides the ASME Section XI Category Number associated with the Examination.

Enclosure 1, Tab 4, Examinations Performed
Owner: Exelon Nuclear, 200 Exelon Way, Kennett Square, PA
Plant: Three Mile Island Nuclear Generating Station, Route 441 South Middletown, PA
Plant Unit: 1
Owner Certificate of Authorization: NA
Commercial Service Date: September 2, 1974
National Board number for Unit: Reactor Vessel N-109

Identification	Component	Basis	% Coverage	% Coverage	% Coverage	NDE Method	NDE Method	NDE Method	Exam Date	Exam Date	Exam Date	Results	Drawing	Item Numbers	Cat. Number
06-00759-W-01	WELD	PSI	100			UT-E			1/9/2010			Acceptable	1D-ISI-RC-001	R1.20	R-A
06-00759-W-02	WELD	PSI	100			UT-E			1/7/2010			Acceptable	1D-ISI-RC-001	R1.20	R-A
06-00759-W-03	WELD	PSI	100			UT-E			1/8/2009			Acceptable	1D-ISI-RC-003	R1.20	R-A
06-00759-W-04	WELD	PSI	100			UT-E			12/31/2009			Acceptable	1D-ISI-RC-003	R1.20	R-A
06-00759-W-45	WELD	PSI	100			UT-E			1/2/2010			Acceptable	1D-ISI-RC-001	R1.20	R-A
06-00759-W-46	WELD	PSI	100			UT-E			1/2/2010			Acceptable	1D-ISI-RC-001	R1.20	R-A
06-00759-W-47	WELD	PSI	100			UT-E			1/3/2010			Acceptable	1D-ISI-RC-003	R1.20	R-A
06-00759-W-48	WELD	PSI	100			UT-E			1/3/2010			Acceptable	1D-ISI-RC-003	R1.20	R-A
07-00576-W-15	WELD	PSI	100	100		UT-E	MT		10/7/2009	10/6/2009		Acceptable	1D-ISI-RC-001	R1.20	R-A
07-00576-W-16	WELD	PSI	100	100		UT-E	MT		10/7/2009	10/6/2009		Acceptable	1D-ISI-RC-001	R1.20	R-A
07-00576-W-17	WELD	PSI	96.4	100		UT-E	MT		10/7/2009	10/6/2009		Acceptable	1D-ISI-RC-001	R1.20	R-A
07-00576-W-18	WELD	PSI	100	100		UT-E	MT		10/7/2009	10/6/2009		Acceptable	1D-ISI-RC-001	R1.20	R-A
07-00576-W-19	WELD	PSI	100	100		UT-E	MT		10/7/2009	10/26/2009		Acceptable	1D-ISI-RC-001	R1.20	R-A
07-00576-W-26	WELD	PSI	100	100		UT-E	MT		10/7/2006	10/6/2009		Acceptable	1D-ISI-RC-001	R1.20	R-A
07-00576-W-27	WELD	PSI	100	100		UT-E	MT		10/7/2009	10/6/2009		Acceptable	1D-ISI-RC-001	R1.20	R-A
07-00576-W-30	WELD	PSI	100	100		UT-E	MT		10/8/2009	10/6/2009		Acceptable	1D-ISI-RC-003	R1.20	R-A
07-00576-W-31	WELD	PSI	100	100		UT-E	MT		10/8/2009	10/6/2009		Acceptable	1D-ISI-RC-003	R1.20	R-A
07-00576-W-32	WELD	PSI	96.4	100		UT-E	MT		10/8/2009	10/6/2009		Acceptable	1D-ISI-RC-003	R1.20	R-A
07-00576-W-33	WELD	PSI	100	100		UT-E	MT		10/8/2009	10/6/2009		Acceptable	1D-ISI-RC-003	R1.20	R-A
07-00576-W-34	WELD	PSI	100	100		UT-E	MT		10/8/2009	10/6/2009		Acceptable	1D-ISI-RC-003	R1.20	R-A
07-00576-W-41	WELD	PSI	100	100		UT-E	MT		10/8/2009	10/6/2009		Acceptable	1D-ISI-RC-003	R1.20	R-A
07-00576-W-42	WELD	PSI	100	100		UT-E	MT		10/8/2009	10/6/2009		Acceptable	1D-ISI-RC-003	R1.20	R-A
BS0021SUPPORT	SUPPORT	PSI	100			VT-3			2/15/2008			Acceptable	1D-ISI-BS-002	F1.20	F-A
BS0021SUPPORT	SUPPORT	XI	100			VT-3			6/8/2009			Acceptable	1D-ISI-BS-002	F1.20	F-A

Enclosure 1, Tab 4, Examinations Performed
Owner: Exelon Nuclear, 200 Exelon Way, Kennett Square, PA
Plant: Three Mile Island Nuclear Generating Station, Route 441 South Middletown, PA
Plant Unit: 1
Owner Certificate of Authorization: NA
Commercial Service Date: September 2, 1974
National Board number for Unit: Reactor Vessel N-109

Identification	Component	Basis	% Coverage	% Coverage	% Coverage	NDE Method	NDE Method	NDE Method	Exam Date	Exam Date	Exam Date	Results	Drawing	Item Numbers	Cat Number
BS0021WELD	WELD	XI	100			UT-E			10/19/2009			Acceptable	1D-ISI-BS-001	R1.20	R-A
BS0022WELD	WELD	XI	100			UT-E			10/19/2009			Acceptable	1D-ISI-BS-001	R1.20	R-A
BS0037WELD	WELD	XI	100			UT-E			10/12/2009			Acceptable	1D-ISI-BS-001	R1.20	R-A
CF0004SUPPORT	SUPPORT	XI	100			VT-3			11/4/2009			Acceptable	1D-ISI-CF-002	F1.10	F-A
CF0004SUPPORT	SUPPORT	PSI	100			VT-3			1/13/2009			Acceptable	1D-ISI-CF-002	F1.10	F-A
CF0005SUPPORT	SUPPORT	PSI	100			VT-3			1/13/2010			Acceptable	1D-ISI-CF-002	F1.10	F-A
CF0006SUPPORT	SUPPORT	PSI	100			VT-3			1/5/2010			Acceptable	1D-ISI-CF-002	F1.10	F-A
CF0007SUPPORT	SUPPORT	XI	100			VT-3			10/31/2009			Acceptable	1D-ISI-CF-002	F1.10	F-A
CF0007SUPPORT	SUPPORT	PSI	100			VT-3	FT		1/11/2020			Acceptable	1D-ISI-CF-002	F1.10	F-A
CF0008SUPPORT	SUPPORT	PSI	100			VT-3			1/11/2010			Acceptable	1D-ISI-CF-002	F1.10	F-A
CF0011SUPPORT	SUPPORT	PSI	100			VT-3			1/13/2010			Acceptable	1D-ISI-CF-001	F1.10	F-A
CF0012SUPPORT	SUPPORT	PSI	100			VT-3			1/5/2010			Acceptable	1D-ISI-CF-001	F1.10	F-A
CF0013SUPPORT	SUPPORT	PSI	100			VT-3			1/5/2010			Acceptable	1D-ISI-CF-001	F1.10	F-A
CF0014SUPPORT	SUPPORT	PSI	100			VT-3	FT		1/13/2010			Acceptable	1D-ISI-DH-002	F1.10	F-A
CF0015SUPPORT	SUPPORT	PSI	100			VT-3			1/13/2010			Acceptable	1D-ISI-CF-001	F1.10	F-A
CF0016ASUPPORT	SUPPORT	PSI	100			VT-3	FT		1/13/2010			Acceptable	1D-ISI-FD-001	F1.10	F-A
CF0016SUPPORT	SUPPORT	PSI	100			VT-3	FT		1/13/2009			Acceptable	1D-ISI-CF-001	F1.10	F-A
CF0091WAWELD	WELD	XI	100			PT			11/3/2009			Acceptable	1D-ISI-CF-002	B10.20	B-K
CF0092WAWELD	WELD	XI	100			PT			11/3/2009			Acceptable	1D-ISI-CF-002	B10.20	B-K
CF0093WAWELD	WELD	XI	100			PT			11/3/2009			Acceptable	1D-ISI-CF-002	B10.20	B-K
CF0094WAWELD	WELD	XI	100			PT			11/3/2009			Acceptable	1D-ISI-CF-002	B10.20	B-K
CF0095WELD	WELD	PSI	100			UT-E			1/4/2009			Acceptable	1D-ISI-CF-001	R1.20	R-A
CF0096WELD	WELD	PSI	100			UT-E			1/4/2009			Acceptable	1D-ISI-CF-001	R1.20	R-A
CF0097WELD	WELD	PSI	100			UT-E			1/4/2010			Acceptable	1D-ISI-CF-001	R1.20	R-A

Enclosure 1, Tab 4, Examinations Performed
Owner: Exelon Nuclear, 200 Exelon Way, Kennett Square, PA
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Plant Unit: 1
Owner Certificate of Authorization: NA
Commercial Service Date: September 2, 1974
National Board number for Unit: Reactor Vessel N-109

Identification	Component	Basis	% Coverage	% Coverage	% Coverage	NDE Method	NDE Method	NDE Method	Exam Date	Exam Date	Exam Date	Results	Drawing	Item Numbers	Cat. Number
CF0098WELD	WELD	PSI	100			UT-E			1/4/2010			Acceptable	1D-ISI-CF-001	R1.20	R-A
CFV0005ABOLT	BOLT	XI	100			VT-1			11/14/2009			Acceptable	1D-ISI-CF-001	B7.70	B-G-2
CFV0005ABOLT	BOLT	PSI	100			VT-1			1/5/2010			Acceptable	1D-ISI-CF-001	B7.70	B-G-2
CFV0005AINTER	INTER	XI	100			VT-3			11/14/2009			Acceptable	1D-ISI-CF-001	B12.50	B-M-2
CFV0005BBOLT	BOLT	PSI	100			VT-1			1/6/2010			Acceptable	1D-ISI-CF-002	B7.70	B-G-2
DH0008SUPPORT	SUPPORT	PSI	100			VT-3			1/13/2010			Acceptable	1D-ISI-DH-003	F1.20	F-A
DH0009SUPPORT	SUPPORT	PSI	100			VT-3			1/13/2010			Acceptable	1D-ISI-DH-003	F1.20	F-A
DH0011SUPPORT	SUPPORT	PSI	100			VT-3	FT		11/14/2009			Acceptable	1D-ISI-DH-003	F1.20	F-A
DH0021SUPPORT	SUPPORT	PSI	100			VT-3	FT		11/6/2009			Acceptable	1D-ISI-DH-002	F1.20	F-A
DH0023SUPPORT	SUPPORT	PSI	100			VT-3	FT		11/11/2009			Acceptable	1D-ISI-DH-002	F1.20	F-A
DH0024SUPPORT	SUPPORT	PSI	100			VT-3	FT		11/11/2009			Acceptable	1D-ISI-DH-002	F1.20	F-A
DH0053WELD	WELD	XI	100			UT-WT			10/21/2009			Acceptable	1D-ISI-DH-004	R1.13	R-A
DH0075WELD	WELD	XI	100			UT-E			10/23/2009			Acceptable	1D-ISI-DH-004	R1.20	R-A
DH0160WAWELD	WELD	XI	100			PT			10/20/2009			Acceptable	1D-ISI-DH-005	C3.20	C-C
DH0223WAWELD	WELD	XI	100			PT			10/15/2009			Acceptable	1D-ISI-DH-023	C3.20	C-C
DH0414WAWELD	WELD	XI	100			PT			10/13/2009			Acceptable	1D-ISI-DH-024	C3.20	C-C
DH0415WAWELD	WELD	XI	100			PT			10/13/2009			Acceptable	1D-ISI-DH-024	C3.20	C-C
DH0416WAWELD	WELD	XI	100			PT			10/13/2009			Acceptable	1D-ISI-DH-024	C3.20	C-C
DHC0001BDH0403BWELD	WELD	XI	100			PT			10/15/2009			Acceptable	1D-ISI-DH-025	C2.32/C2.31	C-B
DHH0116SUPPORT	SUPPORT	XI	100			VT-3			6/8/2009			Acceptable	1D-ISI-DH-009	F1.20	F-A
DHH0125ASUPPORT	SUPPORT	XI	100			VT-3			10/12/2009			Acceptable	1D-ISI-DH-007	F1.20	F-A
DHH0126SUPPORT	SUPPORT	XI	100			VT-3			10/12/2009			Acceptable	1D-ISI-DH-007	F1.20	F-A
DHH0132SUPPORT	SUPPORT	XI	100			VT-3			9/13/2009			Acceptable	1D-ISI-DH-006	F1.20	F-A
DHH0133SUPPORT	SUPPORT	XI	100			VT-3			10/23/2009			Acceptable	1D-ISI-DH-004	F1.20	F-A

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National Board number for Unit: Reactor Vessel N-109

Identification	Component	Basis	% Coverage	% Coverage	% Coverage	NDE Method	NDE Method	NDE Method	Exam Date	Exam Date	Exam Date	Results	Drawing	Item Numbers	Cat Number
DHH0181SUPPORT	SUPPORT	XI	100			VT-3			6/8/2009			Acceptable	1D-ISI-DH-020	F1.20	F-A
DHH0188SUPPORT	SUPPORT	PSI	100			VT-3			4/29/2008			Acceptable	1D-ISI-DH-019	F1.20	F-A
DHP0001ASUPPORT	SUPPORT	XI	100			VT-3			6/29/2009			Acceptable	1D-ISI-DH-021	F1.40	F-A
EF0004SUPPORT	SUPPORT	XI	100			VT-3			10/31/2009			Acceptable	1D-ISI-EF-002	F1.20	F-A
EF0010SUPPORT	SUPPORT	SU	100			VT-3			10/30/2009			Acceptable	1D-ISI-EF-002	F1.20	F-A
EF0011SUPPORT	SUPPORT	XI	100			VT-3			12/7/2009			Acceptable	1D-ISI-EF-002	F1.20	F-A
EF0012SUPPORT	SUPPORT	PSI	100			VT-3			1/10/2010			Acceptable	1D-ISI-EF-002	F1.20	F-A
EF0020SUPPORT	SUPPORT	PSI	100			VT-3			1/9/2010			Acceptable	1D-ISI-EF-001	F1.20	F-A
EF0021SUPPORT	SUPPORT	SU	100			VT-3			11/14/2009			Recordable	1D-ISI-EF-001	F1.20	F-A
EF0021SUPPORT	SUPPORT	PSI	100			VT-3			12/29/2009			Acceptable	1D-ISI-EF-001	F1.20	F-A
EF0022SUPPORT	SUPPORT	SU	100			VT-3			11/14/2009			Recordable	1D-ISI-EF-001	F1.20	F-A
EF0022SUPPORT	SUPPORT	PSI	100			VT-3			12/29/2009			Acceptable	1D-ISI-EF-001	F1.20	F-A
EF0023SUPPORT	SUPPORT	SU	100			VT-3			10/31/2009			Recordable	1D-ISI-EF-001	F1.20	F-A
EF0023SUPPORT	SUPPORT	PSI	100			VT-3			1/9/2010			Acceptable	1D-ISI-EF-001	F1.20	F-A
EF0024SUPPORT	SUPPORT	SU	100			VT-3			11/2/2009			Recordable	1D-ISI-EF-001	F1.20	F-A
EF0024SUPPORT	SUPPORT	PSI	100			VT-3			12/29/2009			Acceptable	1D-ISI-EF-001	F1.20	F-A
EF0025SUPPORT	SUPPORT	SU	100			VT-3			10/31/2009			Recordable	1D-ISI-EF-001	F1.20	F-A
EF0025SUPPORT	SUPPORT	PSI	100			VT-3			12/30/2009			Acceptable	1D-ISI-EF-001	F1.20	F-A
EF0026SUPPORT	SUPPORT	SU	100			VT-3			11/2/2009			Recordable	1D-ISI-EF-001	F1.20	F-A
EF0026SUPPORT	SUPPORT	PSI	100			VT-3			1/11/2010			Acceptable	1D-ISI-EF-001	F1.20	F-A
EF0076SUPPORT	SUPPORT	XI	100			VT-3			10/29/2009			Acceptable	1D-ISI-EF-004	F1.20	F-A
EF0112SUPPORT	SUPPORT	PSI	100			VT-3			1/1/2010			Acceptable	1D-ISI-EF-001	F1.20	F-A
EF0113SUPPORT	SUPPORT	PSI	100			VT-3	FT		12/30/2009			Acceptable	1D-ISI-EF-001	F1.20	F-A
EF0114SUPPORT	SUPPORT	PSI	100			VT-3			12/30/2009			Acceptable	1D-ISI-EF-001	F1.20	F-A

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Identification	Component	Basis	% Coverage	% Coverage	% Coverage	NDE Method	NDE Method	NDE Method	Exam Date	Exam Date	Exam Date	Results	Drawing	Item Numbers	Cat. Number
EF0115ASUPPORT	SUPPORT	PSI	100			VT-3			12/30/2009			Acceptable	1D-ISI-EF-002	F1.20	F-A
EF0115SUPPORT	SUPPORT	PSI	100			VT-3			12/30/2009			Acceptable	1D-ISI-EF-002	F1.20	F-A
FW0091SUPPORT	SUPPORT	PSI	100			VT-3			1/13/2010			Acceptable	1D-ISI-FW-002	F1.20	F-A
FW0092SUPPORT	SUPPORT	PSI	100			VT-3			1/13/2010			Acceptable	1D-ISI-FW-002	F1.20	F-A
FW0093SUPPORT	SUPPORT	PSI	100			VT-3			1/13/2010			Acceptable	1D-ISI-FW-002	F1.20	F-A
FW0094SUPPORT	SUPPORT	PSI	100			VT-3			1/13/2010			Acceptable	1D-ISI-FW-002	F1.20	F-A
FW0101SUPPORT	SUPPORT	PSI	100			VT-3			1/11/2010			Acceptable	1D-ISI-FW-001	F1.20	F-A
FW0105SUPPORT	SUPPORT	PSI	100			VT-3			1/13/2010			Acceptable	1D-ISI-FW-001	F1.20	F-A
FW0106SUPPORT	SUPPORT	PSI	100			VT-3			1/14/2010			Acceptable	1D-ISI-FW-001	F1.20	F-A
FW0107SUPPORT	SUPPORT	PSI	100			VT-3			1/14/2010			Acceptable	1D-ISI-FW-001	F1.20	F-A
FW0110SUPPORT	SUPPORT	PSI	100			VT-3	FT		1/7/2010			Acceptable	1D-ISI-FW-002	F1.20	F-A
FW0112SUPPORT	SUPPORT	PSI	100			VT-3	FT		1/10/2010			Acceptable	1D-ISI-FW-001	F1.20	F-A
FW0113SUPPORT	SUPPORT	PSI	100			VT-3	FT		1/14/2010			Acceptable	1D-ISI-FW-001	F1.20	F-A
FW0114SUPPORT	SUPPORT	PSI	100			VT-3			1/4/2010			Acceptable	1D-ISI-FW-001	F1.20	F-A
FW0115SUPPORT	SUPPORT	PSI	100			VT-3			1/4/2010			Acceptable	1D-ISI-FW-001	F1.20	F-A
FW0214WAWELD	WELD	XI	100			MT			11/9/2009			Acceptable	1D-ISI-FW-004	C3.20	C-C
FW0215WAWELD	WELD	XI	100			MT			11/9/2009			Acceptable	1D-ISI-FW-004	C3.20	C-C
FW0216WAWELD	WELD	XI	100			MT			11/9/2009			Acceptable	1D-ISI-FW-004	C3.20	C-C
FW0217WAWELD	WELD	XI	100			MT			11/9/2009			Acceptable	1D-ISI-FW-004	C3.20	C-C
FW0218WAWELD	WELD	XI	100			MT			11/9/2009			Acceptable	1D-ISI-FW-004	C3.20	C-C
FW0219WAWELD	WELD	XI	100			MT			11/9/2009			Acceptable	1D-ISI-FW-004	C3.20	C-C
FW0220WAWELD	WELD	XI	100			MT			11/9/2009			Acceptable	1D-ISI-FW-004	C3.20	C-C
FW0221WAWELD	WELD	XI	100			MT			11/9/2009			Acceptable	1D-ISI-FW-004	C3.20	C-C
FW0222WAWELD	WELD	XI	100			MT			11/9/2009			Acceptable	1D-ISI-FW-004	C3.20	C-C

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Identification	Component	Basis	% Coverage	% Coverage	% Coverage	NDE Method	NDE Method	NDE Method	Exam Date	Exam Date	Exam Date	Results	Drawing	Item Numbers	Cat. Number
FW0223WAWELD	WELD	XI	100			MT			11/9/2009			Acceptable	1D-ISI-FW-004	C3.20	C-C
FW0224WAWELD	WELD	XI	100			MT			11/9/2009			Acceptable	1D-ISI-FW-004	C3.20	C-C
FW0225WAWELD	WELD	XI	100			MT			11/9/2009			Acceptable	1D-ISI-FW-004	C3.20	C-C
FW0254WAWELD	WELD	XI	100			MT			11/5/2009			Acceptable	1D-ISI-XX-001	C3.20	C-C
FW0255WAWELD	WELD	XI	100			MT			11/5/2009			Acceptable	1D-ISI-XX-001	C3.20	C-C
FW0256WAWELD	WELD	XI	100			MT			11/5/2009			Acceptable	1D-ISI-XX-001	C3.20	C-C
FW0257WAWELD	WELD	XI	100			MT			11/5/2009			Acceptable	1D-ISI-XX-001	C3.20	C-C
FW0258WAWELD	WELD	XI	100			MT			11/5/2009			Acceptable	1D-ISI-XX-001	C3.20	C-C
FW0259WAWELD	WELD	XI	100			MT			11/5/2009			Acceptable	1D-ISI-XX-001	C3.20	C-C
FW0260WAWELD	WELD	XI	100			MT			11/9/2009			Acceptable	1D-ISI-XX-001	C3.20	C-C
FW0261WAWELD	WELD	XI	100			MT			11/5/2009			Acceptable	1D-ISI-XX-001	C3.20	C-C
FW0262WAWELD	WELD	XI	100			MT			11/5/2009			Acceptable	1D-ISI-XX-001	C3.20	C-C
FW0263WAWELD	WELD	XI	100			MT			11/5/2009			Acceptable	1D-ISI-XX-001	C3.20	C-C
MS0183SUPPORT	SUPPORT	PSI	100			VT-3			1/18/2010			Acceptable	1D-ISI-MS-002	F1.20	F-A
MS0184SUPPORT	SUPPORT	PSI	100			VT-3			1/1/2010			Acceptable	1D-ISI-MS-002	F1.20	F-A
MS0198SUPPORT	SUPPORT	PSI	100			VT-3			1/5/2010			Acceptable	1D-ISI-MS-001	F1.20	F-A
MS0199SUPPORT	SUPPORT	PSI	100			VT-3			1/5/2010			Acceptable	1D-ISI-MS-001	F1.20	F-A
MS0201SUPPORT	SUPPORT	PSI	100			VT-3	FT		1/6/2010			Acceptable	1D-ISI-MS-001	F1.20	F-A
MS0211SUPPORT	SUPPORT	PSI	100			VT-3	FT		11/5/2009			Acceptable	1D-ISI-MS-002	F1.20	F-A
MS0212SUPPORT	SUPPORT	PSI	100			VT-3	FT		11/19/2009			Acceptable	1D-ISI-MS-002	F1.20	F-A
MS0217SUPPORT	SUPPORT	PSI	100			VT-3	FT		11/06/2009			Acceptable	1D-ISI-MS-003	F1.20	F-A
MS0219SUPPORT	SUPPORT	PSI	100			VT-3	FT		12/21/2009			Acceptable	1D-ISI-MS-003	F1.40	F-A
MS0220SUPPORT	SUPPORT	PSI	100			VT-3	FT		11/11/2009			Acceptable	1D-ISI-MS-003	F1.40	F-A
MS0223SUPPORT	SUPPORT	PSI	100			VT-3	FT		11/5/2009			Acceptable	1D-ISI-MS-004	F1.20	F-A

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Identification	Component	Basis	% Coverage	% Coverage	% Coverage	NDE Method	NDE Method	NDE Method	Exam Date	Exam Date	Exam Date	Results	Drawing	Item Numbers	Cat. Number
MS0224SUPPORT	SUPPORT	PSI	100			VT-3	FT		11/18/2009			Acceptable	1D-ISI-MS-004	F1.40	F-A
MS0224WELD	WELD	XI	100			UT-E			11/10/2009			Acceptable	1D-ISI-MS-005	R1.11/R1.18	R-A
MS0225WELD	WELD	XI	100			UT-E			11/10/2009			Acceptable	1D-ISI-MS-005	R1.11/R1.18	R-A
MS0226SUPPORT	SUPPORT	PSI	100			VT-3	FT		12/21/2009			Acceptable	1D-ISI-MS-003	F1.40	F-A
MS0227SUPPORT	SUPPORT	XI	100			VT-3	FT		10/29/2009			Acceptable	1D-ISI-MS-003	F1.40	F-A
MS0227WELD	WELD	XI	100			UT-E			11/10/2009			Acceptable	1D-ISI-MS-005	R1.11R1.18	R-A
MS0228WELD	WELD	XI	100			UT-E			11/10/2009			Acceptable	1D-ISI-MS-005	R1.11R1.18	R-A
MS0229SUPPORT	SUPPORT	PSI	100			VT-3	FT		11/9/2009			Acceptable	1D-ISI-MS-004	F1.20	F-A
MS0229WELD	WELD	XI	100			UT-E			11/8/2009			Acceptable	1D-ISI-MS-005	R1.11R1.18	R-A
MS0232SUPPORT	SUPPORT	XI	100			VT-3			11/6/2009			Acceptable	1D-ISI-MS-006	F1.20	F-A
MS0233SUPPORT	SUPPORT	PSI	100			VT-3	FT		11/9/2009			Acceptable	1D-ISI-MS-006	F1.20	F-A
MS0243WELD	WELD	XI	100			UT-E			11/11/2009			Acceptable	1D-ISI-MS-006	R1.11/R1.18	R-A
MS0244WELD	WELD	XI	100			UT-E			11/7/2009			Acceptable	1D-ISI-MS-006	R1.11/R1.18	R-A
MS0247WELD	WELD	XI	100			UT-E			11/14/2009			Acceptable	1D-ISI-MS-006	R1.11/R1.18	R-A
MS0289SUPPORT	SUPPORT	PSI	100			VT-3	FT		11/25/2009			Acceptable	1D-ISI-MS-004	F1.40	F-A
MS0292SUPPORT	SUPPORT	PSI	100			VT-3	FT		11/19/2009			Acceptable	1D-ISI-MS-001	F1.20	F-A
MU0042WELD	WELD	PSI	100			RT			1/3/2010			Acceptable	1D-ISI-MU-033	R1.11	R-A
MU0135WELD	WELD	PSI	100			RT			1/3/2010			Acceptable	1D-ISI-MU-034	R1.11	R-A
MU0139WELD	WELD	PSI	100			RT			1/3/2010			Acceptable	1D-ISI-MU-034	R1.11	R-A
MU0556SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0557SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0558SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0559SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0560SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A

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MU0561SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0562SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0563SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0564SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0565SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0566SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0567SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0568SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0569SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0570SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0571SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0572SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0573SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0574SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0575SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0576SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0577SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0578SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0579SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0580SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0581SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0582SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0583SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0584SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A

Enclosure 1, Tab 4, Examinations Performed
Owner: Exelon Nuclear, 200 Exelon Way, Kennett Square, PA
Plant: Three Mile Island Nuclear Generating Station, Route 441 South Middletown, PA
Plant Unit: 1
Owner Certificate of Authorization: NA
Commercial Service Date: September 2, 1974
National Board number for Unit: Reactor Vessel N-109

Identification	Component	Basis	% Coverage	% Coverage	% Coverage	NDE Method	NDE Method	NDE Method	Exam Date	Exam Date	Exam Date	Results	Drawing	Item Numbers	Cat. Number
MU0585SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0586SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0587SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-022	R1.20	R-A
MU0589SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-023	R1.20	R-A
MU0590SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-023	R1.20	R-A
MU0591SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-023	R1.20	R-A
MU0592SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-023	R1.20	R-A
MU0593SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-023	R1.20	R-A
MU0594SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-023	R1.20	R-A
MU0595SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-023	R1.20	R-A
MU0596SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-023	R1.20	R-A
MU0597SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-023	R1.20	R-A
MU0598SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-023	R1.20	R-A
MU0599SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-023	R1.20	R-A
MU0600SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-023	R1.20	R-A
MU0601SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-023	R1.20	R-A
MU0602SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-023	R1.20	R-A
MU0603SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-023	R1.20	R-A
MU0604SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-023	R1.20	R-A
MU0605SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-023	R1.20	R-A
MU0606SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-023	R1.20	R-A
MU0607SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-023	R1.20	R-A
MU0608SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-023	R1.20	R-A
MU0609SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-023	R1.20	R-A

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National Board number for Unit: Reactor Vessel N-109

Identification	Component	Basis	% Coverage	% Coverage	% Coverage	NDE Method	NDE Method	NDE Method	Exam Date	Exam Date	Exam Date	Results	Drawing	Item Numbers	Cat Number
MU0610SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-023	R1.20	R-A
MU0613SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-023	R1.20	R-A
MU0614SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-023	R1.20	R-A
MU0631SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-024	R1.20	R-A
MU0632SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-024	R1.20	R-A
MU0633SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-024	R1.20	R-A
MU0634SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-024	R1.20	R-A
MU0635SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-024	R1.20	R-A
MU0636SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-024	R1.20	R-A
MU0637SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-025	R1.20	R-A
MU0638SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-025	R1.20	R-A
MU0900BMWELD	WELD	PSI	100			UT-E			12/4/2009			Acceptable	1D-ISI-MU-033	R1.11	R-A
MU0901BMWELD	WELD	PSI	50			UT-E			12/14/2009			Acceptable	1D-ISI-MU-033	R1.11	R-A
MU0902BMWELD	WELD	PSI	100			UT-E			12/9/2009			Acceptable	1D-ISI-MU-033	R1.11	R-A
MU0903BMWELD	WELD	PSI	50			UT-E			12/14/2009			Acceptable	1D-ISI-MU-033	R1.11	R-A
MU0907BMWELD	WELD	PSI	50			UT-E			1/4/2010			Acceptable	1D-ISI-MU-034	R1.11	R-A
MU0908BMWELD	WELD	PSI	100			UT-E			12/5/2009			Acceptable	1D-ISI-MU-034	R1.11	R-A
MU0952BMWELD	WELD	PSI	50			UT-E			12/17/2009			Acceptable	1D-ISI-MU-034	R1.11	R-A
MU0953BMWELD	WELD	PSI	100			UT-E			12/4/2009			Acceptable	1D-ISI-MU-034	R1.11	R-A
MUC0001AMU1036LWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-036	1.11/B2.70	B-B
MUC0001AMU1037LWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-MU-036	1.11/B2.70	B-B
MUE0004SUPPORT	SUPPORT	XI	100			VT-3			6/15/2009			Acceptable	1D-ISI-MU-035	F1.20	F-A
MUE0006SUPPORT	SUPPORT	XI	100			VT-3			7/13/2009			Acceptable	1D-ISI-MU-035	F1.20	F-A
MUE0008SUPPORT	SUPPORT	XI	100			VT-3			7/13/2009			Acceptable	1D-ISI-MU-035	F1.20	F-A

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National Board number for Unit: Reactor Vessel N-109

Identification	Component	Basis	% Coverage	% Coverage	% Coverage	NDE Method	NDE Method	NDE Method	Exam Date	Exam Date	Exam Date	Results	Drawing	Item Numbers	Cat. Number
MUE0038SUPPORT	SUPPORT	PSI	100			VT-3	FT		1/6/2010			Acceptable	1D-ISI-MU-034	F1.10	F-A
MUE0039SUPPORT	SUPPORT	PSI	100			VT-3			1/6/2010			Acceptable	1D-ISI-MU-034	F1.10	F-A
MUE0043SUPPORT	SUPPORT	PSI	100			VT-3	FT		1/13/2010			Acceptable	1D-ISI-MU-033	F1.10	F-A
MUE0044SUPPORT	SUPPORT	PSI	100			VT-3			1/11/2010			Acceptable	1D-ISI-MU-033	F1.10	F-A
MUH0050SUPPORT	SUPPORT	PSI	100			VT-3			1/11/2010			Acceptable	1D-ISI-MU-034	F1.10	F-A
MUH0051SUPPORT	SUPPORT	PSI	100			VT-3			1/11/2010			Acceptable	1D-ISI-MU-034	F1.10	F-A
MUH0052SUPPORT	SUPPORT	PSI	100			VT-3			1/11/2010			Acceptable	1D-ISI-MU-034	F1.10	F-A
MUH0053SUPPORT	SUPPORT	PSI	100			VT-3			1/11/2010			Acceptable	1D-ISI-MU-034	F1.10	F-A
MUH0054SUPPORT	SUPPORT	PSI	100			VT-3			1/11/2010			Acceptable	1D-ISI-MU-034	F1.10	F-A
MUH0070SUPPORT	SUPPORT	PSI	100			VT-3			1/11/2010			Acceptable	1D-ISI-MU-034	F1.10	F-A
MUH0075SUPPORT	SUPPORT	XI	100			VT-3			7/13/2009			Acceptable	1D-ISI-MU-039	F1.20	F-A
MUH0085SUPPORT	SUPPORT	XI	100			VT-3			7/13/2009			Acceptable	1D-ISI-MU-039	F1.20	F-A
MUH0203SUPPORT	SUPPORT	PSI	100			VT-3			1/11/2010			Acceptable	1D-ISI-MU-033	F1.10	F-A
MUH0204SUPPORT	SUPPORT	PSI	100			VT-3			1/11/2010			Acceptable	1D-ISI-MU-033	F1.10	F-A
MUH0205SUPPORT	SUPPORT	PSI	100			VT-3			1/11/2010			Acceptable	1D-ISI-MU-033	F1.10	F-A
MUH0206SUPPORT	SUPPORT	PSI	100			VT-3			1/11/2010			Acceptable	1D-ISI-MU-033	F1.10	F-A
MUH0218SUPPORT	SUPPORT	PSI	100			VT-3			1/11/2010			Acceptable	1D-ISI-MU-033	F1.10	F-A
MUH0219SUPPORT	SUPPORT	PSI	100			VT-3			1/11/2010			Acceptable	1D-ISI-MU-033	F1.10	F-A
MUH0220SUPPORT	SUPPORT	PSI	100			VT-3			1/11/2010			Acceptable	1D-ISI-MU-033	F1.10	F-A
MUH0221SUPPORT	SUPPORT	PSI	100			VT-3			1/11/2010			Acceptable	1D-ISI-MU-033	F1.10	F-A
MUH0331SUPPORT	SUPPORT	XI	100			VT-3			6/25/2009			Acceptable	1D-ISI-MU-039	F1.20	F-A
MUP0001BSUPPORT	SUPPORT	XI	100			VT-3			10/29/2009			Acceptable	1D-ISI-MU-042	F1.40	F-A
RC0007SUPPORT	SUPPORT	PSI	100			VT-3	FT		10/30/2009			Acceptable	1D-ISI-RC-004	F1.10	F-A
RC0014SUPPORT	SUPPORT	PSI	100			VT-3	FT		1/13/2010			Acceptable	1D-ISI-RC-005	F1.10	F-A

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National Board number for Unit: Reactor Vessel N-109

Identification	Component	Basis	% Coverage	% Coverage	% Coverage	NDE Method	NDE Method	NDE Method	Exam Date	Exam Date	Exam Date	Results	Drawing	Item Numbers	Cat. Number
RC0017SUPPORT	SUPPORT	PSI	100			VT-3	FT		10/31/2009			Acceptable	1D-ISI-RC-004	F1.40	F-A
RC0019SUPPORT	SUPPORT	PSI	100			VT-3	FT		10/31/2009			Acceptable	1D-ISI-RC-004	F1.10	F-A
RC0024BMWELD	WELD	AUG	100	100		BMV			11/27/2009	11/11/2009		Acceptable	1D-ISI-RC-001	R1.20/B15.215	R-A
RC0043BMWELD	WELD	AUG	100	100		BMV			11/9/2009	11/27/2009		Acceptable	1D-ISI-RC-001	R1.20/B15.215	R-A
RC0078BMWELD	WELD	AUG	100	94		BMV			11/10/2009	11/30/2009		Acceptable	1D-ISI-RC-003	R1.20/B15.215	R-A
RC0097BMWELD	WELD	AUG	100	100		BMV			11/10/2009	12/1/2009		Acceptable	1D-ISI-RC-003	R1.20/B15.215	R-A
RC0122BMWELD	WELD	AUG	100	100		BMV			11/6/2009	12/1/2009		Acceptable	1D-ISI-RC-002	R1.20/B15.215	R-A
RC0134BMWELD	WELD	AUG	100	100		BMV			11/10/2009	11/20/2009		Acceptable	1D-ISI-RC-001	R1.20/B15.215	R-A
RC0155BMWELD	WELD	AUG	100	100		BMV			11/6/2009	11/27/2009		Acceptable	1D-ISI-RC-004	R1.20/B15.215	R-A
RC0160BMWELD	WELD	AUG	100	100		BMV			11/6/2009	11/26/2009		Acceptable	1D-ISI-RC-004	R1.20/B15.215	R-A
RC0291BMWELD	WELD	AUG	100			BMV			10/30/2009			Acceptable	1D-ISI-RC-005	B15.180	NA
RC0292BMWELD	WELD	AUG	100			BMV			10/30/2009			Acceptable	1D-ISI-RC-005	B15.180	NA
RC0293BMWELD	WELD	AUG	100			BMV			10/30/2009			Acceptable	1D-ISI-RC-005	B15.180	NA
RC0294BMWELD	WELD	AUG	100			BMV			10/30/2009			Acceptable	1D-ISI-RC-005	B15.180	NA
RC0295BMWELD	WELD	AUG	100			BMV			10/30/2009			Acceptable	1D-ISI-RC-005	B15.180	NA
RC0296BMWELD	WELD	AUG	100			BMV			10/30/2009			Acceptable	1D-ISI-RC-005	B15.180	NA
RC0297BMWELD	WELD	AUG	100			BMV			11/3/2009			Acceptable	1D-ISI-RC-005	B15.180	NA
RC0298BMWELD	WELD	AUG	100			BMV			11/3/2009			Acceptable	1D-ISI-RC-005	B15.180	NA
RC0299BMWELD	WELD	AUG	100			BMV			11/3/2009			Acceptable	1D-ISI-RC-005	B15.180	NA
RC0300BMWELD	WELD	AUG	100			BMV			11/3/2009			Acceptable	1D-ISI-RC-005	B15.180	NA
RC0301BMWELD	WELD	AUG	100			BMV			11/3/2009			Acceptable	1D-ISI-RC-005	B15.180	NA
RC0302BMWELD	WELD	AUG	100			BMV			11/3/2009			Acceptable	1D-ISI-RC-005	B15.180	NA
RC0311BMWELD	WELD	AUG	100			BMV			10/30/2009			Acceptable	1D-ISI-RC-005	B15.180	NA
RC0312BMWELD	WELD	AUG	100			BMV			10/30/2009			Acceptable	1D-ISI-RC-005	B15.180	NA

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Commercial Service Date: September 2, 1974
National Board number for Unit: Reactor Vessel N-109

Identification	Component	Basis	% Coverage	% Coverage	% Coverage	NDE Method	NDE Method	NDE Method	Exam Date	Exam Date	Exam Date	Results	Drawing	Item Numbers	Cat. Number
RC0348SWWELD	WELD	AUG	100			BMV			11/2/2009			Acceptable	1D-ISI-RC-012	B15.140	NA
RC0349BWELD	WELD	AUG	100			BMV			10/30/2009			Acceptable	1D-ISI-RC-012	B15.180	NA
RC0350SWWELD	WELD	AUG	100			BMV			11/2/2009			Acceptable	1D-ISI-RC-012	B15.140	NA
RCH0001ARCH1A1SUPPORT	SUPPORT	PSI	100			VT-3			12/15/2009			Acceptable	1D-ISI-RC-008	F1.40	F-A
RCH0001ARCH1A2SUPPORT	SUPPORT	PSI	100			VT-3			12/17/2009			Acceptable	1D-ISI-RC-008	F1.40	F-A
RCH0001ARCH1A3SUPPORT	SUPPORT	PSI	100			VT-3			12/17/2009			Acceptable	1D-ISI-RC-008	F1.40	F-A
RCH0001ARCH1A4SUPPORT	SUPPORT	PSI	100			VT-3			12/17/2009			Acceptable	1D-ISI-RC-008	F1.40	F-A
RCH0001ARCH1A5SUPPORT	SUPPORT	PSI	100			VT-3			12/22/2009			Acceptable	1D-ISI-RC-008	F1.40	F-A
RCH0001BRCH1B1SUPPORT	SUPPORT	PSI	100			VT-3			12/30/2009			Acceptable	1D-ISI-RC-009	F1.40	F-A
RCH0001BRCH1B2SUPPORT	SUPPORT	PSI	100			VT-3			12/18/2009			Acceptable	1D-ISI-RC-009	F1.40	F-A
RCH0001BRCH1B3SUPPORT	SUPPORT	PSI	100			VT-3			12/18/2009			Acceptable	1D-ISI-RC-009	F1.40	F-A
RCH0001BRCH1B4SUPPORT	SUPPORT	PSI	100			VT-3			12/18/2009			Acceptable	1D-ISI-RC-009	F1.40	F-A
RCH0001BRCH1B5SUPPORT	SUPPORT	PSI	100			VT-3			12/22/2009			Acceptable	1D-ISI-RC-009	F1.40	F-A
RCP0001ARC0257SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-RC-006	R1.20	R-A
RCP0001ARCP0001A10SUPPORT	SUPPORT	PSI	100			VT-3			12/30/2009			Acceptable	1D-ISI-RC-006	F1.40	F-A
RCP0001ARCP0001A11SUPPORT	SUPPORT	PSI	100			VT-3			12/30/2009			Acceptable	1D-ISI-RC-006	F1.40	F-A
RCP0001BRCP0001B10SUPPORT	SUPPORT	PSI	100			VT-3			12/30/2009			Acceptable	1D-ISI-RC-006	F1.40	F-A
RCP0001BRCP0001B11SUPPORT	SUPPORT	PSI	100			VT-3			12/30/2009			Acceptable	1D-ISI-RC-006	F1.40	F-A
RCP0001CRCP0001C10SUPPORT	SUPPORT	PSI	100			VT-3			12/30/2009			Accepted	1D-ISI-RC-007	F1.40	F-A
RCP0001CRCP0001C11SUPPORT	SUPPORT	PSI	100			VT-3			12/30/2009			Acceptable	1D-ISI-RC-007	F1.40	F-A
RCP0001DRCP0001D10SUPPORT	SUPPORT	PSI	100			VT-3			12/30/2009			Acceptable	1D-ISI-RC-007	F1.40	F-A
RCP0001DRCP0001D11SUPPORT	SUPPORT	PSI	100			VT-3			1/3/2010			Acceptable	1D-ISI-RC-007	F1.40	F-A
RCT0001INCORENOZZLES	WELD	AUG	100			BMV			10/29/2009			Acceptable	1D-ISI-RC-010	B15.80	NA
RCT0001RH0001FFLANGE	FLANGE	XI	96.54			UT			10/31/2009			Acceptable	1D-ISI-RC-010	B6.40	B-G-1

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RCT0001RH0001M&QBOLT	BOLT	XI	100	100		UT	VT-1		11/12/2009	11/18/2009		Acceptable	1D-ISI-RC-010	B6.30/B6.10	B-G-1
RCT0001RH0001WBOLT	BOLT	XI	100			VT-1			11/18/2009			Acceptable	1D-ISI-RC-010	B6.50	B-G-1
RCT0001RH0002FFLANGE	FLANGE	XI	96.54			UT			10/31/2009			Acceptable	1D-ISI-RC-010	B6.40	B-G-1
RCT0001RH0002M&QBOLT	BOLT	XI	100	100		UT	VT-1		11/12/2009	11/18/2009		Acceptable	1D-ISI-RC-010	B6.30/B6.10	B-G-1
RCT0001RH0002WBOLT	BOLT	XI	100			VT-1			11/18/2009			Acceptable	1D-ISI-RC-010	B6.50	B-G-1
RCT0001RH0003FFLANGE	FLANGE	XI	96.54			UT			10/31/2009			Acceptable	1D-ISI-RC-010	B6.40	B-G-1
RCT0001RH0003M&QBOLT	BOLT	XI	100	100		UT	VT-1		11/12/2009	11/18/2009		Acceptable	1D-ISI-RC-010	B6.30/B6.10	B-G-1
RCT0001RH0003WBOLT	BOLT	XI	100			VT-1			11/18/2009			Acceptable	1D-ISI-RC-010	B6.50	B-G-1
RCT0001RH0004FFLANGE	FLANGE	XI	96.54			UT			10/31/2009			Acceptable	1D-ISI-RC-010	B6.40	B-G-1
RCT0001RH0004M&QBOLT	BOLT	XI	100	100		UT	VT-1		11/12/2009	11/18/2009		Acceptable	1D-ISI-RC-010	B6.30/B6.10	B-G-1
RCT0001RH0004WBOLT	BOLT	XI	100			VT-1			11/18/2009			Acceptable	1D-ISI-RC-010	B6.50	B-G-1
RCT0001RH0005FFLANGE	FLANGE	XI	96.54			UT			10/31/2009			Acceptable	1D-ISI-RC-010	B6.40	B-G-1
RCT0001RH0005M&QBOLT	BOLT	XI	100	100		UT	VT-1		11/12/2009	11/18/2009		Acceptable	1D-ISI-RC-010	B6.30/B6.10	B-G-1
RCT0001RH0005WBOLT	BOLT	XI	100			VT-1			11/18/2009			Acceptable	1D-ISI-RC-010	B6.50	B-G-1
RCT0001RH0006FFLANGE	FLANGE	XI	96.54			UT			10/31/2009			Acceptable	1D-ISI-RC-010	B6.40	B-G-1
RCT0001RH0006M&QBOLT	BOLT	XI	100	100		UT	VT-1		11/12/2009	11/18/2009		Acceptable	1D-ISI-RC-010	B6.30/B6.10	B-G-1
RCT0001RH0006WBOLT	BOLT	XI	100			VT-1			11/18/2009			Acceptable	1D-ISI-RC-010	B6.50	B-G-1
RCT0001RH0007FFLANGE	FLANGE	XI	96.54			UT			10/31/2009			Acceptable	1D-ISI-RC-010	B6.40	B-G-1
RCT0001RH0007M&QBOLT	BOLT	XI	100	100		UT	VT-1		11/11/2009	11/18/2009		Acceptable	1D-ISI-RC-010	B6.30/B6.10	B-G-1
RCT0001RH0007WBOLT	BOLT	XI	100			VT-1			11/18/2009			Acceptable	1D-ISI-RC-010	B6.50	B-G-1
RCT0001RH0008FFLANGE	FLANGE	XI	96.54			UT			10/31/2009			Acceptable	1D-ISI-RC-010	B6.40	B-G-1
RCT0001RH0008M&QBOLT	BOLT	XI	100	100		UT	VT-1		11/11/2009	11/18/2009		Acceptable	1D-ISI-RC-010	B6.30/B6.10	B-G-1
RCT0001RH0008WBOLT	BOLT	XI	100			VT-1			11/18/2009			Acceptable	1D-ISI-RC-010	B6.50	B-G-1
RCT0001RH0009FFLANGE	FLANGE	XI	96.54			UT			10/31/2009			Acceptable	1D-ISI-RC-010	B6.40	B-G-1

Enclosure 1, Tab 4, Examinations Performed
Owner: Exelon Nuclear, 200 Exelon Way, Kennett Square, PA
Plant: Three Mile Island Nuclear Generating Station, Route 441 South Middletown, PA
Plant Unit: 1
Owner Certificate of Authorization: NA
Commercial Service Date: September 2, 1974
National Board number for Unit: Reactor Vessel N-109

Identification	Component	Basis	% Coverage	% Coverage	% Coverage	NDE Method	NDE Method	NDE Method	Exam Date	Exam Date	Exam Date	Results	Drawing	Item Numbers	Cat. Number
RCT0001RH0009M&QBOLT	BOLT	XI	100	100		UT	VT-1		11/11/2009	11/18/2009		Acceptable	1D-ISI-RC-010	B6.30/B6.10	B-G-1
RCT0001RH0009WBOLT	BOLT	XI	100			VT-1			11/18/2009			Acceptable	1D-ISI-RC-010	B6.50	B-G-1
RCT0001RH0010FFLANGE	FLANGE	XI	96.54			UT			10/31/2009			Acceptable	1D-ISI-RC-010	B6.40	B-G-1
RCT0001RH0010M&QBOLT	BOLT	XI	100	100		UT	VT-1		11/11/2009	11/18/2009		Acceptable	1D-ISI-RC-010	B6.30/B6.10	B-G-1
RCT0001RH0010WBOLT	BOLT	XI	100			VT-1			11/18/2009			Acceptable	1D-ISI-RC-010	B6.50	B-G-1
RCT0001RH0011FFLANGE	FLANGE	XI	96.54			UT			10/31/2009			Acceptable	1D-ISI-RC-010	B6.40	B-G-1
RCT0001RH0011M&QBOLT	BOLT	XI	100	100		UT	VT-1		11/11/2009	11/18/2009		Acceptable	1D-ISI-RC-010	B6.30/B6.10	B-G-1
RCT0001RH0011WBOLT	BOLT	XI	100			VT-1			11/18/2009			Acceptable	1D-ISI-RC-010	B6.50	B-G-1
RCT0001RH0012FFLANGE	FLANGE	XI	96.54			UT			10/31/2009			Acceptable	1D-ISI-RC-010	B6.40	B-G-1
RCT0001RH0012M&QBOLT	BOLT	XI	100	100		UT	VT-1		11/11/2009	11/18/2009		Acceptable	1D-ISI-RC-010	B6.30/B6.10	B-G-1
RCT0001RH0012WBOLT	BOLT	XI	100			VT-1			11/18/2009			Acceptable	1D-ISI-RC-010	B6.50	B-G-1
RCT0001RH0013FFLANGE	FLANGE	XI	96.54			UT			10/31/2009			Acceptable	1D-ISI-RC-010	B6.40	B-G-1
RCT0001RH0013M&QBOLT	BOLT	XI	100	100		UT	VT-1		11/13/2009	11/18/2009		Acceptable	1D-ISI-RC-010	B6.30/B6.10	B-G-1
RCT0001RH0013WBOLT	BOLT	XI	100			VT-1			11/18/2009			Acceptable	1D-ISI-RC-010	B6.50	B-G-1
RCT0001RH0014FFLANGE	FLANGE	XI	96.54			UT			10/31/2009			Acceptable	1D-ISI-RC-010	B6.40	B-G-1
RCT0001RH0014M&QBOLT	BOLT	XI	100	100		UT	VT-1		11/13/2009	11/18/2009		Acceptable	1D-ISI-RC-010	B6.30/B6.10	B-G-1
RCT0001RH0014WBOLT	BOLT	XI	100			VT-1			11/18/2009			Acceptable	1D-ISI-RC-010	B6.50	B-G-1
RCT0001RH0015FFLANGE	FLANGE	XI	92.58			UT			10/31/2009			Acceptable	1D-ISI-RC-010	B6.40	B-G-1
RCT0001RH0015M&QBOLT	BOLT	XI	100	100		UT	VT-1		11/13/2009	11/18/2009		Acceptable	1D-ISI-RC-010	B6.30/B6.10	B-G-1
RCT0001RH0015WBOLT	BOLT	XI	100			VT-1			11/18/2009			Acceptable	1D-ISI-RC-010	B6.50	B-G-1
RCT0001RH0016FFLANGE	FLANGE	XI	96.54			UT			10/31/2009			Acceptable	1D-ISI-RC-010	B6.40	B-G-1
RCT0001RH0016M&QBOLT	BOLT	XI	100	100		UT	VT-1		11/13/2009	11/18/2009		Acceptable	1D-ISI-RC-010	B6.30/B6.10	B-G-1
RCT0001RH0016WBOLT	BOLT	XI	100			VT-1			11/18/2009			Acceptable	1D-ISI-RC-010	B6.50	B-G-1
RCT0001RH0017FFLANGE	FLANGE	XI	96.54			UT			10/31/2009			Acceptable	1D-ISI-RC-010	B6.40	B-G-1

Enclosure 1, Tab 4, Examinations Performed
Owner: Exelon Nuclear, 200 Exelon Way, Kennett Square, PA
Plant: Three Mile Island Nuclear Generating Station, Route 441 South Middletown, PA
Plant Unit: 1
Owner Certificate of Authorization: NA
Commercial Service Date: September 2, 1974
National Board number for Unit: Reactor Vessel N-109

Identification	Component	Basis	% Coverage	% Coverage	% Coverage	NDE Method	NDE Method	NDE Method	Exam Date	Exam Date	Exam Date	Results	Drawing	Item Numbers	Cat. Number
RCT0001RH0017M&QBOLT	BOLT	XI	100	100		UT	VT-1		11/13/2009	11/18/2009		Acceptable	1D-ISI-RC-010	B6.30/B6.10	B-G-1
RCT0001RH0017WBOLT	BOLT	XI	100			VT-1			11/18/2009			Acceptable	1D-ISI-RC-010	B6.50	B-G-1
RCT0001RH0018FFLANGE	FLANGE	XI	96.54			UT			10/31/2009			Acceptable	1D-ISI-RC-010	B6.40	B-G-1
RCT0001RH0018M&QBOLT	BOLT	XI	100	100		UT	VT-1		11/13/2009	11/18/2009		Acceptable	1D-ISI-RC-010	B6.30/B6.10	B-G-1
RCT0001RH0018WBOLT	BOLT	XI	100			VT-1			11/18/2009			Acceptable	1D-ISI-RC-010	B6.50	B-G-1
RCT0001RH0019FFLANGE	FLANGE	XI	96.54			UT			10/31/2009			Acceptable	1D-ISI-RC-010	B6.40	B-G-1
RCT0001RH0019M&QBOLT	BOLT	XI	100	100		UT	VT-1		11/11/2009	11/18/2009		Acceptable	1D-ISI-RC-010	B6.30/B6.10	B-G-1
RCT0001RH0019WBOLT	BOLT	XI	100			VT-1			11/18/2009			Acceptable	1D-ISI-RC-010	B6.50	B-G-1
RCT0001RH0020FFLANGE	FLANGE	XI	96.54			UT			10/31/2009			Acceptable	1D-ISI-RC-010	B6.40	B-G-1
RCT0001RH0020M&QBOLT	BOLT	XI	100	100		UT	VT-1		11/11/2009	11/18/2009		Acceptable	1D-ISI-RC-010	B6.30/B6.10	B-G-1
RCT0001RH0020WBOLT	BOLT	XI	100			VT-1			11/18/2009			Acceptable	1D-ISI-RC-010	B6.50	B-G-1
RCT0001RV0009BMWELD	WELD	XI	100	100	100	UT	ET	PT	12/3/2009	12/4/2009	12/4/09	Acceptable	1D-ISI-RC-010	R1.20B15.95	R-A
RCT0001RV0009BMWELD	WELD	PSI	100	100	100	ET	PT	UT	12/31/2009	12/31/2009	12/30/09	Acceptable	1D-ISI-RC-010	R1.20/B15.95	R-A
RCT0001RV0010BMWELD	WELD	XI	96	100	100	UT-E	PT	ET	11/24/2009	11/24/2009	11/24/09	Acceptable	1D-ISI-RC-010	R1.20B15.95	R-A
RCT0001RV0010BMWELD	WELD	PSI	100	100	100	PT	UT-E	ET	12/23/2009	12/23/2009	12/23/09	Acceptable	1D-ISI-RC-010	R1.20/B15.95	R-A
RCT0002PR0008BTFLANGE	FLANGE	PSI	100			VT-1			12/3/2009			Acceptable	1D-ISI-RC-005	B7.20	B-G-2
RCT0002PR0009BMWELD	WELD	AUG	100			BMV			10/30/2009			Acceptable	1D-ISI-RC-012	R1.15/B15.150	R-A
SG-325-LPMBLTNG	BOLTING	PSI	100			VT-1			7/8/2009			Acceptable	1D-ISI-RC-008	B7.30	B-G-2
SG-325-R/D-028A	WELD	PSI	100			EVT			6/18/2009			Acceptable	1D-ISI-RC-008	B3.140	B-D
SG-325-R/D-028B	WELD	PSI	100						6/18/2009			Acceptable	1D-ISI-RC-008	B3.140	B-D
SG-325-R/D-035	WELD	PSI	100			EVT			6/19/2009			Acceptable	1D-ISI-RC-008	B3.140	B-D
SG-325-S/C-001	WELD	PSI	100						6/19/2009			Acceptable	1D-ISI-RC-008	B10.10	B-K
SG-325-S/C-002	WELD	PSI	97.4			UT			7/7/2009			Acceptable	1D-ISI-RC-008	B2.31	B-B
SG-325-S/C-003	WELD	PSI	97.8			UT			7/7/2009			Acceptable	1D-ISI-RC-008	B2.40	B-B

Enclosure 1, Tab 4, Examinations Performed
Owner: Exelon Nuclear, 200 Exelon Way, Kennett Square, PA
Plant: Three Mile Island Nuclear Generating Station, Route 441 South Middletown, PA
Plant Unit: 1
Owner Certificate of Authorization: NA
Commercial Service Date: September 2, 1974
National Board number for Unit: Reactor Vessel N-109

Identification	Component	Basis	% Coverage a	% Coverage	% Coverage	NDE Method	NDE Method	NDE Method	Exam Date	Exam Date	Exam Date b	Results	Drawing	Item Numbers	Cat. Number
SG-325-S/C-004	WELD	PSI	98.1			UT			7/3/2009			Acceptable	1D-ISI-RC-008	C1.30	C-A
SG-325-S/C-008	WELD	PSI	99.8			UT			7/2/2009			Acceptable	1D-ISI-RC-008	C1.30	C-A
SG-325-S/C-009	WELD	PSI	97			UT			7/4/2009			Acceptable	1D-ISI-RC-008	B2.40	B-B
SG-325-S/C-010	WELD	PSI	100			UT			7/4/2009			Acceptable	1D-ISI-RC-008	B2.31	B-B
SG-325-S/C-011	WELD	PSI	90.1			UT			6/24/2009			Acceptable	1D-ISI-RC-008	B2.31	B-B
SG-325-S/C-015A	WELD	PSI	100	100		UT-E	MT		7/4/2009	6/19/2009		Acceptable	1D-ISI-RC-001	R1.20	R-A
SG-325-S/C-015B	WELD	PSI	100	100		UT-E	MT		7/4/2009	6/18/2009		Acceptable	1D-ISI-RC-001	R1.20	R-A
SG-325-S/C-016A	WELD	PSI	100	100		UT-E	MT		7/4/2009	6/19/2009		Acceptable	1D-ISI-RC-001	R1.20	R-A
SG-325-S/C-016B	WELD	PSI	100	100		UT-E	MT		7/4/2009	6/18/2009		Acceptable	1D-ISI-RC-001	R1.20	R-A
SG-325-S/T-003A	WELD	PSI	100			UT			6/17/2009			Acceptable	1D-ISI-RC-008	C2.21	C-B
SG-325-S/T-003B	WELD	PSI	100			UT			6/20/2009			Acceptable	1D-ISI-RC-008	C2.21	C-B
SG-325-UPIBLTNG	BOLTING	PSI	100			VT-1			7/8/2009			Acceptable	1D-ISI-RC-008	B7.30	B-G-2
SG-325-UPMBLTNG	BOLTING	PSI	100			VT-1			7/8/2009			Acceptable	1D-ISI-RC-008	B7.30	B-G-2
SG-326-LPMBLTNG	BOLTING	PSI	100			VT-1			7/8/2009			Acceptable	1D-ISI-RC-009	B7.30	B-G-2
SG-326-R/D-028C (198° Azimuth)	WELD	PSI	100			EVT			6/27/2009			Acceptable	1D-ISI-RC-009	B3.140	B-D
SG-326-R/D-028D (337° Azimuth)	WELD	PSI	100			EVT			6/27/2009			Acceptable	1D-ISI-RC-009	B3.140	B-D
SG-326-R/D-035	WELD	PSI	100			EVT			6/27/2009			Acceptable	1D-ISI-RC-009	B3.140	B-D
SG-326-S/C-001	WELD	PSI	100			MT			6/25/2009			Acceptable	1D-ISI-RC-009	B10.10	B-K
SG-326-S/C-002	WELD	PSI	97.4			UT			7/2/2009			Acceptable	1D-ISI-RC-009	B2.31	B-B
SG-326-S/C-003	WELD	PSI	97.8			UT			7/2/2009			Acceptable	1D-ISI-RC-009	B2.40	B-B
SG-326-S/C-004	WELD	PSI	98.1			UT			7/3/2009			Acceptable	1D-ISI-RC-009	C1.30	C-A
SG-326-S/C-008	WELD	PSI	99.8			UT			6/29/2009			Acceptable	1D-ISI-RC-009	C1.30	C-A
SG-326-S/C-009	WELD	PSI	94.3			UT			7/2/2009			Acceptable	1D-ISI-RC-009	B2.40	B-B
SG-326-S/C-010	WELD	PSI	100			UT			7/2/2009			Acceptable	1D-ISI-RC-009	B2.31	B-B

Enclosure 1, Tab 4, Examinations Performed
Owner: Exelon Nuclear, 200 Exelon Way, Kennett Square, PA
Plant: Three Mile Island Nuclear Generating Station, Route 441 South Middletown, PA
Plant Unit: 1
Owner Certificate of Authorization: NA
Commercial Service Date: September 2, 1974
National Board number for Unit: Reactor Vessel N-109

Identification	Component	Basis	% Coverage	% Coverage	% Coverage	NDE Method	NDE Method	NDE Method	Exam Date	Exam Date	Exam Date	Results	Drawing	Item Numbers	Cat Number
SG-326-S/C-011	WELD	PSI	90.1			UT			7/3/2009			Acceptable	1D-ISI-RC-009	B2.31	B-B
SG-326-S/C-015C (198° Azimuth)	WELD	PSI	100	100		UT-E	MT		6/25/2009	6/25/2009		Acceptable	1D-ISI-RC-003	R1.20	R-A
SG-326-S/C-015D (337° Azimuth)	WELD	PSI	100	100		UT-E	MT		7/4/2009	6/24/2009		Acceptable	1D-ISI-RC-003	R1.20	R-A
SG-326-S/C-016C (198° Azimuth)	WELD	PSI	100	100		UT-E	MT		7/4/2009	6/26/2009		Acceptable	1D-ISI-RC-003	R1.20	R-A
SG-326-S/C-016D (337° Azimuth)	WELD	PSI	100	100		UT-E	MT		7/4/2009	6/24/2009		Acceptable	1D-ISI-RC-003	R1.20	R-A
SG-326-S/T-003C (28° Azimuth)	WELD	PSI	100	100		UT	MT		6/24/2009	6/24/2009		Acceptable	1D-ISI-RC-009	C2.21	C-B
SG-326-S/T-003D (151° Azimuth)	WELD	PSI	100	100		UT	MT		6/24/2009	6/24/2009		Acceptable	1D-ISI-RC-009	C2.21	C-B
SG-326-UPIBLTNG	BOLTING	PSI	100			VT-1			7/8/2009			Acceptable	1D-ISI-RC-009	B7.30	B-G-2
SG-326-UPMBLTNG	BOLTING	PSI	100			VT-1			7/8/2009			Acceptable	1D-ISI-RC-009	B7.30	B-G-2
SP0021BMWELD	WELD	AUG	100			BMV			11/2/2009			Acceptable	1D-ISI-RC-005	R1.11/R1.15/ B15.150	R-A
SP0062SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-RC-005	R1.11	R-A
SP0063SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-RC-005	R1.11	R-A
SP0064SWELD	WELD	XI	100			VT-2			1/20/2010			Acceptable	1D-ISI-RC-005	R1.11	R-A
SPSE0004SUPPORT	SUPPORT	XI	100			VT-3			6/29/2009			Acceptable	1D-ISI-BS-001	F1.20	F-A
SPSE0005SUPPORT	SUPPORT	PSI	100			VT-3			5/6/2008			Acceptable	1D-ISI-BS-001	F1.20	F-A
SPSE0011SUPPORT	SUPPORT	PSI	100			VT-3			1/6/2008			Acceptable	1D-ISI-BS-001	F1.20	F-A

1. OWNER: Exelon Nuclear
2. PLANT: Three Mile Island Nuclear Generating Station, Route 441 South, Middletown, Pennsylvania
3. PLANT UNIT: 1
4. OWNER CERTIFICATION OF AUTHORIZATION (if required): NONE
5. COMMERCIAL SERVICE DATE: 9/02/74
6. NATIONAL BOARD NUMBER FOR UNIT: Reactor Vessel N-109

CYCLE 17 AND OUTAGE T1R18

IDENTIFICATION	Work Order	SYSTEM	NDE Method	EXAM DATE	REASON	REMARKS
1300-6A	R2080313	RB, IC, CA	VT-2	04/21/23009	ISI	Minor surface corrosion identified on piping near valve RB-V-2A. No wall reduction observed. AR# A2222657 to clean and coat corroded area.
1300-6F	R2071183	SF	VT-2	04/01/2009	ISI	None
OP-TM-211-261	R2112838	MU	VT-2	01/09/2010	ISI	Packing leak on MU-V-12 acceptable.
OP-TM-211-251	R2109101	MU	VT-2	09/20/2009	ISI	Packing leak on MU-V-64A acceptable
OP-TM-211-251	R2111146	MU	VT-2	10/26/2009	ISI	None
OP-TM-211-251	R2107715	MU	VT-2	02/12/2008	ISI	None
OP-TM-211-251	R2108936	MU	VT-2	08/31/2009	ISI	Boron noted at valve MU-V-112 bonnet (acceptable).
OP-TM-211-262	R2043724	MU	VT-2	01/22/2010	ISI	Packing leaks observed and acceptable.
OP-TM-212-215	R2077941	DH	VT-2	01/18/2010	ISI	Acceptable. Minor mechanical joint leakage previously accepted.
OP-TM-212-217	R2113091	DH	VT-2	11/15/2009	ISI	None
OP-TM-212-218	R2113090	DH	VT-2	11/15/2009	ISI	None
OP-TM-212-251	R2134679	DH	VT-2	12/13/2009	ISI	None
OP-TM-212-251	R2092584	DH	VT-2	11/04/2008	ISI	None
OP-TM-212-251	R2085475	DH	VT-2	10/13/2008	ISI	None
OP-TM-212-261	R2043698	DH	VT-2	01/20/2010	ISI	None
OP-TM-213-251	R2077789	CF	VT-2	02/27/2009	ISI	None
OP-TM-213-252	R2077790	CF	VT-2	02/27/2009	ISI	None
OP-TM-213-261	R2043696	CF	VT-2	01/19/2010	ISI	None
OP-TM-213-261	R2043696	CF	VT-2	01/21/2010	ISI	None

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IDENTIFICATION	Work Order	SYSTEM	NDE Method	EXAM DATE	REASON	REMARKS
OP-TM-213-262	R2043697	CF	VT-2	01/21/2010	ISI	None
OP-TM-214-253	R2107865	BS	VT-2	07/15/2009	ISI	None
OP-TM-214-254	R2106713	BS	VT-2	07/14/2009	ISI	None
OP-TM-220-261	R2113285	RC, MU, DH, CF	VT-2	01/20/2010	ISI	No through wall leakage detected. Mechanical joint leakage addressed by noted Issue Reports and evaluated as acceptable.
OP-TM-220-263	R2042978	RC	VT-2	01/21/2010	ISI	None
OP-TM-411-251	R2113489	MS, FW, EF	VT-2	01/20/2010	ISI	None

Component / Surveillance Identification	Condition(s) Noted and Corrective Actions
Reactor building electrical penetration 202E is missing paint on the exterior side of the penetration	The penetration condition is currently acceptable per IWE-3000 requirements. No reduction in material thickness was identified. Work action request A2240830 has been issued to apply paint in the missing paint location.
Minor rust/corrosion was identified on reactor building penetration 409	The rust did not reduce the wall thickness of the component and is acceptable per IWE-3000 requirements. Work action request A2236718 has been issued to apply paint in the missing paint location.
Minor rust/corrosion was identified on reactor building penetration 410	The rust did not reduce the wall thickness of the component and is acceptable per IWE-3000 requirements. Work action request A2236719 has been issued to apply paint in the missing paint location.
Minor rust/corrosion was identified on reactor building penetration 407	The rust did not reduce the wall thickness of the component and is acceptable per IWE-3000 requirements. Work action request A2236720 has been issued to apply paint in the missing paint location.
Rust and coating failure present on reactor building equipment hatch	The rust did not reduce the wall thickness of the component and is acceptable per IWE-3000 requirements. The failed coating was removed per work order C2022436. Future coating repairs are being tracked per Passport assignment 997631-04.
Rust, corrosion, coating failures noted during reactor building containment liner examinations	The rust noted was accepted per IWE-3000. Coating conditions were evaluated and corrected per work order C2022436. Previously identified and accepted containment liner corrosion at the basement moisture barrier region was restored to >90% nominal thickness under work order C2020603.
Support EF0011 had a loose nut on one guide bolt.	The loose nut was acceptable per ASME Code Case N-491-2. The nut was subsequently tightened and a post tightening VT-3 performed to verify acceptability.
Constant supports EF0021, EF0022, EF0023, EF0024, EF0025, and EF0026 travel settings were out of tolerance	The condition was evaluated under issue report 997421. The segment of emergency feedwater piping where these supports are located was changed during steam generator replacement under ECR 07-00638. This modification changed the line configuration slightly to eliminate interferences that prevented appropriate line movement.
Nuclear Services River Water, Reactor Building Emergency Cooling Water, and Decay Heat River Water Systems	Implemented Code Case N-513-2 during operating cycle and completed required code repairs prior to restart from Outage T1R18.

Component / Surveillance Identification	Condition(s) Noted and Corrective Actions
Reactor Building Tendon Grease Leakage	The lower end tendon end cap gaskets on nine tendons were replaced due to observed leakage and the tendons were re-greased. There was no change in previously observed grease seepage at vertical small cracks in the lower wall near the equipment hatch. This seepage has no structural significance and does not warrant re-greasing.

TMI-10-033
April 21, 2010

ENCLOSURE 2

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner Exelon Nuclear (Name) — Date March 18, 2010

   200 Exelon Way, Kennett Square, PA (Address) — Sheet 1 of 1

2. Plant Three Mile Island Generating Station (Name) — Unit TMI-1

   (Address) — C2020536 and C2020537 (Repair Organization P.O. No., Job No., etc.)

3. Work Performed by Exelon Nuclear (Name) — Type Code Symbol Stamp N/A

   Authorization No. N/A

   200 Exelon Way, Kennett Square, PA (Address) — Expiration Date NA

4. Identification of System 221 -- REACTOR VESSEL

5. (a) Applicable Construction Code ASME Section III 1965 Class A 1965 Edition, Summer 1967, Addenda, 1337-4 and 1337-5 Code Case
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Reactor Vessel	Babcock & Wilcox Company	620-0005-51	N-109	NA	1970	Repaired	Yes

7. Description of Work: Applied cladding to the inside surface of two core flood nozzle to safe end welds.
8. Tests Conducted Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒

   Other ☐ Pressure 2176 psig Test Temp. 532°F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

This Form (E00030) may be obtained from the Order Dept., 22 Law drive, Box 2300, Fairfield, NJ 07007-2300. , New York, NY 10017

FORM NIS-2 (Back)

9. Remarks: cladding to the inside surface of two core flood nozzle to safe end welds.
Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil/ISI Program Specialist Date March 18, 2010
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT. 06102 have inspected the components described in this Owner's Report during the period 9-15-09 to 3-23-10, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Joseph L Shelly Commissions PA NB 5478 A. N. I.
Inspector's Signature National Board, State, Province, and Endorsements

Date MARCH 23 20 10

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner Exelon Nuclear (Name) — Date March 19, 2010

   200 Exelon Way, Kennett Square, PA (Address) — Sheet 1 of 1

2. Plant Three Mile Island Generating Station (Name) — Unit TMI-1

   (Address) — C2022594 (Repair Organization P.O. No., Job No., etc.)

3. Work Performed by Exelon Nuclear (Name) — Type Code Symbol Stamp N/A

   Authorization No. N/A

   200 Exelon Way, Kennett Square, PA (Address) — Expiration Date NA

4. Identification of System 211 – HPI/MAKEUP & PURIFICATION SYSTEM

5. (a) Applicable Construction Code B31.1 Edition, 1967, Addenda, NA Code Case
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
NA	NA	NA	NA	NA	NA	NA	No

7. Description of Work: Replaced one bonnet stud and two bonnet nuts on valve MU-V-112.
8. Tests Conducted Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐

   Other ☐ Pressure ...159.. psig Test Temp. Ambient

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

This Form (E00030) may be obtained from the Order Dept., 22 Law drive, Box 2300, Fairfield, NJ 07007-2300. , New York, NY 10017

FORM NIS-2 (Back)

9. Remarks: one bonnet stud and two bonnet nuts on valve MU-V-112.
Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil/ISI Program Specialist Date March 19, 2010
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT. 06102 have inspected the components described in this Owner's Report during the period 12-31-09 to 3-22-10, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Inspector's Signature Commissions PA NB 5478 A. N. I.
National Board, State, Province, and Endorsements

Date 3/22 2010

-FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner Exelon Nuclear (Name) — Date January 21, 2010

   200 Exelon Way, Kennett Square, PA (Address) — Sheet 1 of 1

2. Plant Three Mile Island Generating Station (Name) — Unit TMI-1

   Rt. 441 South, Middletown, PA, 17057 (Address) — For EOTSG 1002556-00001, UHL 00417645 (Repair Organization P.O. No., Job No., etc.)

3. Work Performed by SGT (Name) — Type Code Symbol Stamp N/A

   Authorization No. N/A

   200 Exelon Way, Kennett Square, PA (Address) — Expiration Date NA

4. Identification of System NSSS See Attachment 1 for additional systems, WO's and applicable Codes.

5. (a) Applicable Construction Code ASME Section III, 2001 Edition , 03 Addenda, N-725 Code Case
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
"A" Steam Generator	Areva NP, Inc.	GV/TM325	5	NA	2009	Replaced	Yes
"A" UHL	Taylor Forge	0199-1A	N/A	NA	2009	Replaced	Yes

7. Description of Work: 1A Steam Generator Replacement
8. Tests Conducted Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒

   Other ☐ Pressure NOP (Ref. Section 9) psig Test Temp NOT

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

This Form (E00030) may be obtained from the Order Dept., 22 Law drive, Box 2300, Fairfield, NJ 07007-2300. , New York, NY 10017

FORM NIS-2 (Back)

9. Remarks: See Attachment 1 for systems and applicable Codes, Utilized Code Case N-416-3 for pressure tests except for Blowdown System which received Section XI Hydrostatic Test at 1.25 Design Pressure.
Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil/ISI Program Specialist Date March 9, 2010
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of - and employed by. Hartford Steam Boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 10-1-09 to 3-9-10, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Joseph F Hurley Commissions NB 5478 N I A PA 1887
Inspector's Signature National Board, State, Province, and Endorsements

Date March 9 20 10

NIS-2 SGT EOTSG A & ASSOCIATED SYSTEMS REPLACEMENT ACTIVITIES

TMI Unit 1

ATTACHMENT 1

System/Component	Const Code	R & R Code	Description
Emergency Feedwater	B31.1 1967	ASME Sec. III 2001 Ed/03 Add, Class 2	WO# C2017971, WP# 3083A, Reinstallation of 6" EFW riser piping up to feed ring per ECR-06-00709 & ECR 07-00638 in support of TMI-1 EOTSG replacement activities
Reactor Coolant	USAS B31.7, Feb 1968 Draft with June 1968 Errata	USAS B31.7, Feb 1968 Draft with June 1968 Errata, Class 1	WO# C2018069, WO# C2018071, WP# 3065C, 3065A, Replacement of 36 I.D. Hot Leg riser piping and 28" I.D. Cold Leg elbow at primary outlet per ECR-06-00759 in support of TMI-1 EOTSG replacement activities
Feedwater	B31.1 1967	ASME Sec. III 2001 Ed/03 Add, Class 2	WO# C2017973, WP# 3085A, Replacement of 14" FW riser piping up to feed ring per ECR-06-00709 in support of TMI-1 EOTSG replacement activities
Main Steam	B31.1 1967	ASME Sec. III 2001 Ed/03 Add, Class 2	WO# C2017934, WP# 3080A, Replacement of 24" Main Steam elbows per ECR-06-00708 in support of TMI-1 EOTSG replacement activities
Blowdown	B31.1 1967	B31.1 1967 Class 2	WO# C2020047, WP# 3521A, Modify existing Hot Drain and SG Sampling system to create an independent Steam Generator Blowdown system per ECR-07-00259 in support of TMI-1 EOTSG replacement activities
RCS Hot Leg Instrumentation	USAS B31.7, Feb 1968 Draft with June 1968 Errata	ASME Sec. III 2001 Ed/03 Add, Class 1	WO# C2017991, WP# 3527A & PIMS work activity C2018571 Items 33, 34, 35, 36, Replacement of existing ½" & 1" Hot Leg Instrumentation lines and elbows per ECR-07-00576 & work activity C2018571 in support of TMI-1 EOTSG replacement activities
RCS High point Vent	USAS B31.7, Feb 1968 Draft with June 1968 Errata	ASME Sec. III 2001 Ed/03 Add, Class 1	WO# C2017989, WP# 3526A, Replacement of existing Hot Leg High Point Vent from 1" NPS nozzle extension to ½" NPS existing pipe in support of TMI-1 EOTSG replacement activities
EOTSG Secondary Drain	B31.1 1967	ASME Sec. III 2001 Ed/03 Add, Class 2	WO# C2017925, WP# 3522A, Reinstallation of 1-1/2" Secondary Drain piping from EOTSG drain nozzle extension per ECR-07-00638 in support of TMI-1 EOTSG replacement activities.
EOTSG Upper Tubesheet Vent	B31.1 1967	ASME Sec. III 2001 Ed/03 Add, Class 2	WO# C2017384, WP# 3524A, Reinstallation of 1-1/2" Upper Tubesheet Vent piping between EOTSG nozzle and valves MS-V-23A per ECR-07-00638 in support of TMI-1 EOTSG replacement activities

FORM N-1 CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR VESSELS*
As Required by the Provisions of the ASME Code, Section III, Division 1 Pg. 1 of 5

1. Manufactured and certified by AREVA NP, Inc. - 3315 Old Forest Road, Lynchburg, VA 24501 (name and address of N Certificate Holder)
2. Manufactured for Exelon Generation, LLC - 200 Exelon Way, Kennett Square, PA 19348 (name and address of Purchaser)
3. Location of installation Three Mile Island Nuclear Station Unit 1 - Route 441 South, Middletown, PA 17057 (name and address)
4. Type: Vertical (horiz. or vert.) | Heat Exch. (tank, jacketed, heat ex.) | GV/TM325 (Cert. Holder's serial no.) | N/A (CRN) | See Page 3 (drawings no.) | 5 (Nat'l Bd. No.) | 2009 (year built)
5. ASME Code, Section III, Division 1: 2001 See Pg 3 (edition) | 2003 See Pg 3 (addenda date) | Class 1/2 See Pg 3 (class) | N-725 (Code Case no.)

Items 6-10 inclusive to be completed for single wall vessels, jackets of jacketed vessels, or shells of heat exchangers.

6. Shell: SA-508 G3C2 (mat'l spec. no.) | 90 ksi (tensile strength) | 5.31 and 3.31 (nom. thickness (in.)) | 5.13 and 3.13 (min. design thickness (in.)) | 11 ft 8 in. (dia. ID (ft. & in.)) | 52 Ft. – 1.38 in. (length (overall) (ft & in))
7. Seams: N/A (long.) | N/A (HT) | N/A (RT) | N/A (eff.%) | Single (girth) | Yes (HT) | Full (RT) | Four (no. of courses)
8. Heads: N/A (a) mat'l spec. no. | N/A (tensile strength) | N/A (b) mat'l. spec. no.) | N/A (tensile strength)

	Location (top, bottom, ends)	Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (convex or concave)
(a)	N/A									
(b)	N/A									

If removable, bolts used N/A (mat'l. spec. no., size, quantity) Other fastening N/A (describe or attach sketch)

9. Jacket closure: N/A (Describe as ogee & weld, bar, etc. If bar, give dimensions, describe or sketch)
10. Design pressure[2] 1150 (psi) at max. temp. 605 (°F). Min. pressure-test temp. 70 (°F). Pneu., hydro., or comb. test pressure 1438 (psi)

Items 11 and 12 to be completed for tube sections.

11. Tubesheets: SA-508 G3C2 (Page 3) (stationary, mat'l. spec. no) | 140" I.D. (dia. in. (subject to press.)) | 24 in. min. (thickness (in.)) | Welded (attachment (welded, bolted))
N/A (floating, mat'l spec. no.) | N/A (dia. (in.)) | N/A (thickness (in.)) | N/A (attachment)
12. Tubes: SB-163 Alloy 690 (mat'l. spec. no.) | 0.625 in. (OD (in.)) | 0.0368 in. (thickness (inches or gage)) | 15,597 (no.) | Straight (type (straight or U))

Items 13 to 16 inclusive to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

13. Shell: SA-508 G3C2 (mat'l. spec. no) | 90 ksi (tensile strength) | N/A (nom. thickness (in.)) | 8.0" (min. design thickness (in.)) | 9' – 11.06" (dia. ID (ft & in.)) | 0' – 9.733" (length (overall) (ft & in))
14. Seams: N/A (long. (welded, dbl., single)) | N/A (HT (yes or no)) | N/A (RT) | N/A (eff.%) | Single/Double (girth) | Yes (HT) | Full (RT) | One each (no. of courses)
15. Heads: SA-508 G3C2 (a) mat'l spec. no.) | 90 ksi (tensile strength) | SA-508 G3C2 (b) mat'l spec. no.) | 90 ksi (tensile strength) | N/A (c) mat'l spec. no.) | N/A (tensile strength)

Location	Thickness	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (convex or concave)
(a) Top, ~~bottom, ends~~	8.0" Min.					65.63"		Concave
(b) ~~Channel~~ Bottom	8.0" Min.					60.88"		Concave
(c) Floating	N/A							

If removable, bolts used N/A (mat'l spec. no., size, quantity) Other fastening N/A (describe or attach sketch)

16. Design pressure[2] 2500 (psi) at 650 (°F). Min. pressure-test temp. 70 (°F). Pneu., hydro., or comb. test pressure 3125 (psi)

[1] If postweld heat treated. [2] List other internal or external pressure with coincident temperature when applicable.

*Supplemental information in form of lists, sketches, or drawings may be used provided (1) size is 8½ x 11, (2) information in items 1 through 4 on this Data Report is included on each sheet, (3) each sheet is numbered and number of sheets is recorded at top of this form.

FORM N-1 (Back – Pg. 2 of 5)

Certificate Holder's Serial No. GV/TM325

17. Nozzles, inspection and safety valve openings:

Purpose (inlet, outlet, drain, etc.)	Quantity	Dia. or Size	Type	How Attached	Mat'l	Thickness	Reinforcement Material	Location
Primary Inlet	1	36.13" I.D.	N/A	Integral	SA-508 G3C2	3.25"	Integral	Top Head
Primary Outlet	2	28.63" I.D.	N/A	Integral	SA-508 G3C2	2.56"	Integral	Bottom Hd
Steam Outlet	2	21.75" I.D.	N/A	Welded	SA-508 G3C2	1.25"	Integral	Shell
Primary Manway	1	16.0" I.D.	Blt Cov	Integral	SA-508 G3C2	6.25"	Integral	Top Head
Primary Manway	1	16.0" I.D.	Blt Cov	Integral	SA-508 G3C2	6.25"	Integral	Bottom Hd
Secondary Manway	1	16.0" I.D.	Blt Cov	Welded	SA-508 G3C2	5.0"	Integral	Shell
(continued on page 4)					(See Pg 3)			

18. Supports:

Skirt:	Lugs:	Legs:	Other:	Attached:
Yes	48	N/A	N/A	Welded to Lower Head
(yes or no)	(quantity)	(quantity)	(describe)	(where and how)

19. Remarks:

14" Sch. 80 Main Feedwater Header consists of two half-torus sections and includes (32) 3" Sch. 80 Risers – See page 5

6" Sch. 80 Emergency Feedwater Header includes (7) 3" Sch. 80 Risers – See page 5

N-2 Data Report for completed item attached. Performance of component hydrostatic pressure test and subsequent Code stamping conducted at NPT Certificate Holder's Shop location in Saint-Marcel, France. – NCA-8322(b)

CERTIFICATION OF DESIGN

Design specification certified by P. A. Opsal P.E. State VA Reg. no. 014498

Design report certified by T.M. Wiger P.E. State CA Reg. no. M33816

CERTIFICATE OF SHOP COMPLIANCE

We certify that the statements made in this report are correct and that this nuclear vessel conforms to the rules for construction of the ASME Code, Section III, Division 1.

N Certificate of Authorization No. _____ Expires _____

Date _____ Name _____ (N Certificate Holder) Signed _____ (authorized representative)

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the Sate or Province of _____ and employed by _____ of _____ have inspected the component described in this Data Report on _____, and state that to the best of my knowledge and belief, the Certificate Holder has constructed this component in accordance with the ASME Code, Section III, Division 1.

By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the component described in this Data Report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date _____ Signed _____ (Authorized Nuclear Inspector) Commissions _____ (Nat'l. Bd. (incl. endorsements) and state or prov. and no.)

CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the statements on this report are correct and that the field assembly construction of all parts of this nuclear vessel conforms to the rules of construction of the ASME Code, Section III, Division 1.

N Certificate of Authorization No. N-1650 Expires June 12, 2012

Date July 31, 2009 Name AREVA NP Inc. (N Certificate Holder) Signed MJ McInerney (authorized representative)

CERTIFICATE OF FIELD ASSEMBLY INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of OHIO and employed by HARTFORD STEAM BOILER of CT of HARTFORD (CT) have compared the statements in this Data Report with the described component and state that parts referred to as data items in item 19, not included in the certificate of shop inspection, have been inspected by me on May 29, 2009 and that to the best of my knowledge and belief the Certificate Holder has constructed and assembled this component in accordance with the ASME Code, Section III, Division 1.

By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the component described in this Data Report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date July 31, 2009 Signed _____ (Authorized Nuclear Inspector) Commissions 11452, A N, OH 193 (Nat'l Bd. (incl. endorsements) and state or prov. and no.)

FORM N-1 CERTIFICATE HOLDERS' DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code, Section III, Division 1 **Pg. 3 of 5**

Certificate Holder's Serial No. GV/TM325

1. Manufactured and certified by AREVA NP, Inc. - 3315 Old Forest Road, Lynchburg, VA 24501 (name and address of N Certificate Holder)
2. Manufactured for Exelon Generation, LLC - 200 Exelon Way, Kennett Square, PA 19348 (name and address of Purchaser)
3. Location of installation Three Mile Island Nuclear Station Unit 1 - Route 441 South, Middletown, PA 17057 (name and address)
4. Type Vertical (horiz. or vert.) | Heat Exch. (tank, jacketed, heat ex.) | GV/TM325 (Cert. Holder's serial no.) | N/A (CRN) | See Page 3 (drawings no.) | 5 (Nat'l. Bd. no.) | 2009 (year built)

SUPPLEMENTAL INFORMATION

Line	Item	Description
4	Drawing No's	02-5056245E-005, TMI EOTSG Specification Drawing 02-5056246E-005, TMI EOTSG General Outline Drawing 02-5056247E-005, TMI EOTSG General Outline – Cross Sections Drawing 02-5056248E-009, TMI EOTSG List of Material Drawing 02-5056249E-007, TMI EOTSG Shell Outline Drawing 02-5056252E-008, TMI EOTSG Primary Side Openings 02-5056253E-005, TMI EOTSG Secondary Openings Sections 02-5056254E-006, TMI EOTSG Upper Tubesheet Details 02-5056256E-004, TMI EOTSG Lower Tubesheet Details 02-5056260E-002, TMI EOTSG Lower Head Outlet Nozzle Details 02-5056264E-003, TMI EOTSG Drain, Temperature and Sensing Nozzles. 02-5056267E-001, TMI EOTSG Longitudinal Section and Opening Sections 02-5056280E-003, TMI EOTSG SG-A Main Feedwater Assembly and Details 02-5056281F-003, TMI EOTSG MFW Header Additional Details 02-5056283E-003, TMI EOTSG Emergency Feedwater Header Assembly and Details
5	ASME Code	ASME Code Section III, Division I, 2001 Edition with Addenda through 2003 for the complete Steam Generator excluding Alloy 690 tube bundle material. ASME Code Section III, 1998 Edition with Addenda through 2000 for Alloy 690 tube bundle material for procurement and design analysis.
5	Addenda	As noted above.
5	Class	Within the jurisdictional boundaries specified on Drawing 02-5056245: ◦ The entire EOTSG primary side and secondary side pressure boundary are classified, designed, and fabricated in accordance with the ASME Code as a Class 1 Vessel. ◦ The Primary outlet elbows and extension pieces are Class 1 Piping. ◦ The integrally welded Support Skirt is a Class 1 Support. ◦ The Main Feedwater Header / Riser Assemblies are Class 2 Piping. ◦ The Emergency Feedwater Header / Riser Assembly is Class 2 Piping.
Lines 6, 11, 13 & 15		The material specification number for these items is SA-508 Grade 3 Class 2.
Lines 17		On pages 2 and 4, the material designated as SA-508 G3C2 is Grade 3 Class 2.

AREVA NP Inc. Date July 31, 2009 Name AREVA NP Inc. (N Certificate Holder) Signed [signature]

ANI Date July 31, 2009 Name [signature] (Authorized Nuclear Inspector) Commissions 11452, A-N1, OH193 (Nat'l. Bd. (incl. endorsements) and state or prov. and no.)

FORM N-1 CERTIFICATE HOLDERS' DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code, Section III, Division 1 **Pg. 4 of 5**

Certificate Holder's Serial No. GV/TM325

1. Manufactured and certified by AREVA NP, Inc. - 3315 Old Forest Road, Lynchburg, VA 24501 (name and address of N Certificate Holder)
2. Manufactured for Exelon Generation, LLC - 200 Exelon Way, Kennett Square, PA 19348 (name and address of Purchaser)
3. Location of installation Three Mile Island Nuclear Station Unit 1 - Route 441 South, Middletown, PA 17057 (name and address)
4. Type Vertical (horiz. or vert.) | Heat Exch. (tank, jacketed, heat ex.) | GV/TM325 (Cert. Holder's serial no.) | N/A (CRN) | See Page 3 (drawings no.) | 5 (Nat'l. Bd. no.) | 2009 (year built)

SUPPLEMENTAL INFORMATION

Line Item Description

17. Nozzles, inspection and safety valve openings:

Purpose (inlet, outlet, drain, etc.)	Quantity	Nominal Dia. or Size	Type	How Attached	Mat'l	Thickness	Reinforcement Material	Location
Main Feedwater Nozzles	32	2.9" I.D.	N/A	Bolted with seal weld	SB-564 Alloy 690	0.3"	Integral	Shell
Emergency FW Nozzles	7	2.9" I.D.	N/A	Bolted with seal weld	SB-564 Alloy 690	0.3"	Integral	Shell
Handholes	8	8.0" I.D.	Bolted Cover	Integral	SA508 G3C2	3.88"	Integral	Shell
Primary Inspection Port	1	5.0" I.D.	Bolted Cover	Integral	SA508 G3C2	N/A	Integral	Top Head
Inspection Openings	9	3" I.D.	Bolted Cover	Welded	SA508 G3C2	3.25"	Integral	Thin Shell
Inspection Openings	8	3" I.D.	Bolted Cover	Integral	SA508 G3C2	N/A.	Integral	Thick Shell
Vent Conn.	1	1.5" I.D.	N/A	F.P Weld	SA-105	0.57"	Integral	Upper TS
Drain Conn.	2	1.5" I.D.	N/A	P.P. Weld	SA-105	0.2"	Integral	Shell
Temp. Sensing Conn.	2	1.4" O.D.	N/A	P.P. Weld	SB-166 Alloy 690	0.51"	None Req'd	Thin Shell
Temp. Sensing Conn.	1	1.4" O.D.	N/A	P.P. Weld	SB-166 Alloy 690	0.51"	Integral	Thick Shell
Tubesheet Drain Conn.	4	1.94" I.D.	N/A	F.P Weld	SA-105	0.435"	Integral	Lower TS
Shroud Drain Conn.	2	0.96" I.D.	N/A	P.P. Weld	SA-105	0.18"	Integral	Shell
Sensing Conn. Nozzle	6	2" O.D.	N/A	F.P Weld	SA-105	0.483"	Integral	Shell
UHL Sensing Conn.	2	0.96" I.D.	N/A	P.P. Weld	SA-105	0.18"	Integral	Shell
LHL Sensing Conn.	2	0.96" I.D.	N/A	P.P. Weld	SA-105	0.18"	Integral	Shell
ULL Sensing Conn.	2	0.96" I.D.	N/A	P.P. Weld	SA-105	0.18"	Integral	Shell
LLL Sensing Conn.	2	0.96" I.D.	N/A	P.P. Weld	SA-105	0.18"	Integral	Shell

AREVA NP Inc. Date July 31, 2009 Name AREVA NP Inc. (N Certificate Holder) Signed

ANI Date July 31, 2009 Name (Authorized Nuclear Inspector) Commissions 11452, A-N, OH193 (Nat'l. Bd. (incl endorsements) and state or prov. and no.)

FORM N-1 CERTIFICATE HOLDERS' DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code, Section III, Division 1 **Pg. 5 of 5**

Certificate Holder's Serial No. GV/TM325

1. Manufactured and certified by AREVA NP, Inc. - 3315 Old Forest Road, Lynchburg, VA 24501 (name and address of N Certificate Holder)
2. Manufactured for Exelon Generation, LLC - 200 Exelon Way, Kennett Square, PA 19348 (name and address of Purchaser)
3. Location of installation Three Mile Island Nuclear Station Unit 1 - Route 441 South, Middletown, PA 17057 (name and address)
4. Type

Vertical	Heat Exch.	GV/TM325	N/A	See Page 3	5	2009
(horiz. or vert.)	(tank, jacketed, heat ex.)	(Cert. Holder's serial no.)	(CRN)	(drawings no.)	(Nat'l Bd. no.)	(year built)

SUPPLEMENTAL INFORMATION

Line Item Description

19. Remarks:

Main Feedwater Header Parts:	Materials:
◦ 14" Sch. 80 MFW Header pipe and cap, Riser branch conn., Tee conn., Inspection Port	SA-182 F22 Class 3
◦ Riser pipe inspection port, plug, 4" x 3" Reducer and 3" Sch. 80 LR Elbows	SB-564 Alloy 690
◦ 3" Sch. 80 Riser pipe	SB-167 Alloy 690
◦ 14" Dia. x 3" long Safe End at Header Inlet	SA-105
◦ 3" Inspection Port Cover	SA-533 Gr. B Class 2

Emergency Feedwater Header Parts:	Materials:
◦ 6" Sch. 80 EFW Header pipe, 6" Sch. 80 LR Elbow, Spool Piece, Riser branch conn.	SA-182 F22 Class 3
◦ 6" – 900# Weld Neck Flange and Blind Flange	SA-182 F22 Class 3
◦ 3" Sch. 80 Riser pipe, 4" Sch. 40 Inlet pipe	SB-167 Alloy 690
◦ 3" Sch. 80 LR Elbows	SB-564 Alloy 690
◦ 6" Sch. 80 x 3" long Safe End at Header Inlet	SA-105

All ferritic steel surfaces exposed to primary reactor coolant are clad. Primary heads are internally clad with type 308L stainless steel; the primary face of tubesheets are clad with UNS number N06052.

Hydrostatic Testing
As permitted by NB-3226, up to 10 cycles of hydrostatic tests may be excluded from the SG component fatigue analysis. For compliance with that requirement, the actual test cycles used were as follows:

- 1 cycle – Primary Side Hydrostatic test
- 2 cycles – Secondary Side Hydrostatic test

AREVA NP Inc. Date July 31, 2009 Name AREVA NP Inc. (N Certificate Holder) Signed [signature]

ANI Date July 31, 2009 Name [signature] (Authorized Nuclear Inspector) Commissions 11452, A-N, 014193 (Nat'l Bd. (incl. endorsements) and state or prov. and no.)

01 0009

FORM N-2 CERTIFICATE HOLDERS' DATA REPORT FOR IDENTICAL NUCLEAR PARTS AND APPURTENANCES
As Required by the Provisions of the ASME Code Section III
Not to Exceed One Day's Production

Certificate Holder's Data Report Ref : 8UERTM/NGV0325 rev A

1. Manufactured and certified by AREVA NP Usine de Chalon/Saint Marcel
(Name and address of Certificate Holder)
BP 40001 – St Marcel – Zone Industrielle et Portuaire Sud - 71328 CHALON SUR SAONE Cedex - FRANCE

2. Manufactured for AREVA NP, Inc
(Name and address of Purchaser)
3315 Old Forest Road – Lynchburg, VA 24501

3. Location of Installation Three Mile Island Nuclear Station Unit 1 – Route 441 South, Middletown, PA 17057USA

4. Type (See supplementary sheets) (drawing no.) (See supplementary sheets) (matl spec no.) (See supplementary sheets) (tensile strength) N/A (CRN) 2009 (year built)

5. ASME Code, Section III, Division 2001 (edition) Addenda through 2003 (addenda) 1&2 (see supp sheets) (class) N-725 (code case no.)

6. Fabricated in accordance with Const. Spec. (Div 2 only) N/A (no.) Revision _____ Date _____

7. Remarks:
- Class 1 : primary and secondary sides
- Class 2 : Main feedwater and Emergency feedwater headers and risers

8. Nom. Thickness (in.) (See supplementary sheets) Min. des thickness (in.) (See supplementary sheets)

Dia. ID (ft & in.) (See supplementary sheets) Length overall (ft & in.) 52 Ft.-1.38 in.

9. When applicable, Certificate Holders' Data Reports are attached for each item on this report:

Part or Appurtenance Serial Number	National Board No. in Numerical Order	Part or Appurtenance Serial Number	National Board No. in Numerical Order
1. GV/TM325	N/A		

10. Design Pressure (See supplementary sheets) psig Temp. (See supplementary sheets) Deg. F

Hydro.Test Pressure @ Temp (See supplementary sheets)

01 0010

FORM N-2 (Back – Pg 2 of 11)

Certificate Holders' Serial Nos GV/TM325

Certificate Holder's Data Report Ref : BUERTM/NGV0325 rev A

CERTIFICATION OF DESIGN

Design Specifications Certified by PHILIP A. OPSAL P.E. State VA Reg. No. 014498

Design Report Certified by T.M WIGER P.E. State CA Reg. No. M33816

CERTIFICATE OF COMPLIANCE

We Certify that the statements made in this report are correct and that this (these) STEAM GENERATOR conforms to the rules of construction of the ASME Code, Section III Division 1

NPT Certification of Authorization No. N-2772 Expires: Jan.29,2012

Date 31 JUL 2009 Name AREVA NP Signed LAINIER P.

CERTIFICATE OF INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of OHIO and employed by HSB CT of CT have inspected these items described in this Data Report on May 29, 2009 and state that to the best of my knowledge and belief, the Certificate Holder has fabricated these parts or Appurtenances in accordance with the ASME Code, Section III, Division 1. Each Part has been authorized for stamping on the date shown above.

By signing this certificate, neither the Inspector nor his Employer makes any warranty expressed or implied concerning the equipment described in this Data Report. Furthermore, neither the Inspector nor his Employer shall be liable for any personal injury or property damage or loss of any kind arising from or connected with this inspection.

Date July 31st, 2009 Signed _____ Commissions 11452, A N, OH 193

(Authorized Nuclear Inspector) (Nat'l Board Endsmts, State or Prov. and no.)

01 0011

CERTIFICATE HOLDERS' DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code Section III

1. Manufactured and certified by AREVA NP – Usine de Chalon/St Marcel
(Name and address of NPT Certificate Holder)
BP 40001 St Marcel – 71328 CHALON SUR SAONE Cedex – France

2. Manufactured for AREVA NP, Inc.
(Name and address of Purchaser)
3315 Old Forest Road, Lynchburg, VA 24501

3. Location of Installation Three Mile Island Nuclear Station Unit 1
(Name and address)
Route 441 South, Middletown, PA 17057 – USA

Item 4

List of drawings

Drawing Number	Title
02-5056245E-005	TMI EOTSG Specification Drawing
02-5056246E-005	TMI EOTSG General Outline Drawing
02-5056247E-005	TMI EOTSG General Outline – Cross section Drawing
02-5056248E-009	TMI EOTSG List of Material Drawing
02-5056249E-007	TMI EOTSG Shell Outline Drawing
02-5056252E-008	TMI EOTSG Primary side Openings
02-5056253E-005	TMI EOTSG Secondary Openings sections
02-5056254E-006	TMI EOTSG Upper Tubesheet Details
02-5056256E-004	TMI EOTSG Lower Tubesheet Details
02-5056260E-002	TMI EOTSG Lower Head Outlet Nozzle Details
02-5056264E-003	TMI EOTSG Drain, Temperature and Sensing Nozzles
02-5056267E-001	TMI EOTSG Longitudinal Section and Opening Sections
02-5056280E-003	TMI EOTSG SG-A Main feedwater Assembly and Details
02-5056281F-003	TMI EOTSG MFW Header additional Details
02-5056283E-003	TMI EOTSG Emergency feedwater Header Assembly and Details

AREVA NP SAS Date 31 JUL 2009 Name AREVA NP Signed LAIGNIER P
(Certificate Holder) (Authorized representative)

ANI Date 7/31/09 Name [illegible] Commissions 11452, A-N, OH 193
(Authorized Nuclear Inspector) [Nat'l Board (Incl. Endorsements), and State or Prov. and No.]

CERTIFICATE HOLDERS' DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code Section III

1. Manufactured and certified by AREVA NP – Usine de Chalon/St Marcel
(Name and address of NPT Certificate Holder)
BP 40001 St Marcel – 71328 CHALON SUR SAONE Cedex – France

2. Manufactured for AREVA NP, Inc.
(Name and address of Purchaser)
3315 Old Forest Road, Lynchburg, VA 24501

3. Location of installation Three Mile Island Nuclear Station Unit 1
(Name and address)
Route 441 South, Middletown, PA 17057 – USA

Item 5

ASME Code — ASME Code Section III, Division 1, 2001 Edition with Addenda through 2003 for the complete steam generator excluding Alloy 690 tube bundle material.

ASME Code section III, 1998 Edition with Addenda through 2000 for alloy 690 tube bundle material for procurement and design analysis.

Class — Within the jurisdictional boundaries specified on drawing 02-0506245 :

- The entire EOTSG primary side and secondary side pressure boundary are classified, designed, and fabricated in accordance with the ASME Code as a Class 1 Vessel.
- The primary outlet elbows and extension pieces are Class 1 Piping.
- The integrally welded support skirt is a Class 1 Support.
- The main Feedwater Header/Riser Assemblies are Class 2 Piping.
- The Emergency Feedwater Header/Riser Assembly is Class 2 Piping

AREVA NP SAS Date 7/31/09 Name AREVA NP (Certificate Holder) Signed (Authorized representative)

ANI Date 7/31/09 Name (Authorized Nuclear Inspector) Commissions 11452, A-N, OH 193 [Nat'l Board (Incl. Endorsements), and State or Prov. and No.]

CERTIFICATE HOLDERS' DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code Section III

Certificate Holders' Serial Nos. GV/TM 325 Pg. 5 of 11
Certificate Holder's Data Report Ref : BUERTM/NGV0325 rev A

1. Manufactured and certified by AREVA NP – Usine de Chalon/St Marcel
(Name and address of NPT Certificate Holder)
BP 40001 St Marcel – 71328 CHALON SUR SAONE Cedex – France

2. Manufactured for AREVA NP, Inc.
(Name and address of Purchaser)
3315 Old Forest Road, Lynchburg, VA 24501

3. Location of installation Three Mile Island Nuclear Station Unit 1
(Name and address)
Route 441 South, Middletown, PA 17057 – USA

Items 4 and 8

Part	Mat'l. Spec. no.	Tensile strength (ksi at 70°F) (note a)	Nom. thickness (in.)	Min.design thickness (in.)	Nom. Dia. ID (in.)
Upper shell	SA-508 Gr3 cl 2	90 ksi	5.31" (note b) 3.31" (note c)	5.13" 3.13"	140.00"
Nozzle shell	SA-508 Gr3 cl 2		3.31" (note d) 5.31" (note e) 3.31" (note f)	3.13" 5.13" 3.13"	140.00"
Intermediate shell	SA-508 Gr3 cl 2		3.31"	3.13"	140.00"
Lower shell	SA-508 Gr3 cl 2		3.31" (note g) 5.31" (note h)	3.13" 5.13"	140.00"
Lower head	SA-508 Gr3 cl 2		8.12"	8" 8.03" (flat bottom)	R=65.63" (note l)
Upper head	SA-508 Gr3 cl 2		8.07"	8"	R=60.88" (note i)
Lower and upper tubesheet	SA-508 Gr3 cl 2		24" (note i)	24" (note i)	119.06" (notes i and j) 140" (note k)
Lower and upper tubesheet extension (ring)	SA-508 Gr3 cl 2		N/A	8"	119.06" (note i)
Tube bundle	SB-163 Alloy 690	85 ksi	0.0368"	0.0340"	0.5514"

a : Tensile strength Su from ASME Code, Section III, Appendix 1, tables
b : Top end (tubesheet side)
c : Bottom end (Nozzle shell side)
d : Top end (Upper shell side)
e : Middle
f : Bottom end (Intermediate shell side)
g : Top end (Intermediate shell side)
h : Bottom end (Tubesheet side)
l : Under cladding
j : Head side
k : Shell side

AREVA NP SAS Date 7/31/09 Name AREVA NP Signed LAIGNIER P.
(Certificate Holder) (Authorized representative)

ANI Date 7/31/09 Name (Authorized Nuclear Inspector) Commissions 11452, A-N, OH 193.
[Nat'l Board (Incl. Endorsements), and State or Prov. and No.]

01 0014

CERTIFICATE HOLDERS' DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code Section III

1. Manufactured and certified by AREVA NP – Usine de Chalon/St Marcel
(Name and address of NPT Certificate Holder)
BP 40001 St Marcel – 71328 CHALON SUR SAONE Cedex – France

2. Manufactured for AREVA NP, Inc.
(Name and address of Purchaser)
3315 Old Forest Road, Lynchburg, VA 24501

3. Location of installation Three Mile Island Nuclear Station Unit 1
(Name and address)
Route 441 South, Middletown, PA 17057 – USA

Items 4 and 8

Part	Mat'l. Spec. no.	Tensile strength (ksi at 70°F) (note a)	Nom. thickness (in.)	Min.design thickness (in.)	Nom. Dia. ID (in.)
Primary inlet nozzle extension	SA-508 Gr3 cl 2	90 ksi	3.25" (note b) 3.50" (note c) 5.25" (note d)	3.25"	36.13" (note e)
Primary inlet nozzle	SA-508 Gr3 cl 2		5.25"	5.25"	46.51" (note e)
Primary manway	SA-508 Gr3 cl 2		N/A	N/A	16.50" (note e)
Primary inspection port	SA-508 Gr3 cl 2		N/A	N/A	5.50" (note e)
Secondary manway	SA-508 Gr3 cl 2		4.97"	2.14"	16.00"
Secondary inspection port welded	SA-508 Gr3 cl 2		3.25"	2.78"	3.00"
Handhole	SA-508 Gr3 cl 2		3.875"	1.58"	8.00"
Steam outlet nozzle	SA-508 Gr3 cl 2		3.66"	3.66"	21.75"
Steam outlet nozzle safe end	SA-105	70 ksi	1.25"	1.25"	21.75"
Primary outlet nozzle	SA-508 Gr3 cl 2	90 ksi	4.31" (note f) 2.56" (note g)	1.51"	28.63"

a : Tensile strength Su from ASME Code, Section III, Appendix 1, tables
b : Top end (pipe side)
c : Middle
d : Bottom end (Primary inlet nozzle side)
e : Under cladding
f : Top end (Head side)
g : Bottom end (extension side)

AREVA NP SAS Date 4 JUL 2007 Name AREVA NP Signed LAINIER P.
(Certificate Holder) (Authorized representative)

ANI Date 7/31/09 Name (Authorized Nuclear Inspector) Commissions 11452, A-N, OH193
[Nat'l Board (Incl. Endorsements), and State or Prov. and No.]

CERTIFICATE HOLDERS' DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code Section III

1. Manufactured and certified by AREVA NP – Usine de Chalon/St Marcel
(Name and address of NPT Certificate Holder)
BP 40001 St Marcel – 71328 CHALON SUR SAONE Cedex – France

2. Manufactured for AREVA NP, Inc.
(Name and address of Purchaser)
3315 Old Forest Road, Lynchburg, VA 24501

3. Location of Installation Three Mile Island Nuclear Station Unit 1
(Name and address)
Route 441 South, Middletown, PA 17057 – USA

Items 4 and 8

Part	Mat'l. Spec. no.	Tensile strength (ksi at 70°F) (note a)	Nom. thickness (in.)	Min.design thickness (in.)	Nom. Dia. ID (in.)
Primary outlet nozzle extension	SA-508 Gr3 cl 2	90 ksi	2.50" (note b) 3.375" (note c)	2.50"	28.75"
Primary outlet nozzle elbow	SA-508 Gr3 cl 2		3.375" (note d) 3.625" (note e)	3.63"	28.75" 28.25"
Nozzles for main and emergency feedwaters (quantity 32+7)	SB-564 Alloy 690	85 ksi	0.3"	0.30"	2.9"
Secondary inspection port (integral)	SA-508 Gr3 cl 2	90 ksi	N/A	N/A	3.00"
Drain connection nozzle	SA-105	70 ksi	0.67" (note f) 0.435" (note g)	0.44"	1.94"
Upper and lower low level sensing connection	SA-105		0.18"	0.18"	0.96"
Temperature sensing connection	SB-166 Alloy 690	85 ksi	0.51 "(note h) 0.4625" (note i) 0.31" (note j)	0.51"	0.38" (note h) 0.257" (note i)

a : Tensile strength Su from ASME Code, Section III, Appendix 1, tables
b : Top end (nozzle side)
c : Bottom end (elbow side)
d : Top end (Extension side)
e : Bottom end (pipe side)
f : Tubesheet side
g : Pipe side
h : Shell side
i : Shroud side end radial thickness
j : shroud side end thickness

AREVA NP SAS Date 31 JUL 2009 Name AREVA NP Signed LAINIER P
(Certificate Holder) (Authorized representative)

ANI Date 7/31/09 Name (Authorized Nuclear Inspector) Commissions 11452, A-N, OH 193
(Nat'l Board (Incl. Endorsements), and State or Prov. and No.)

CERTIFICATE HOLDERS' DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code Section III

1. Manufactured and certified by AREVA NP – Usine de Chalon/St Marcel
(Name and address of NPT Certificate Holder)
BP 40001 St Marcel – 71328 CHALON SUR SAONE Cedex – France

2. Manufactured for AREVA NP, Inc.
(Name and address of Purchaser)
3315 Old Forest Road, Lynchburg, VA 24501

3. Location of installation Three Mile Island Nuclear Station Unit 1
(Name and address)
Route 441 South, Middletown, PA 17057 – USA

Items 4 and 8

Part	Mat'l. Spec. no.	Tensile strength (ksi at 70°F) (note a)	Nom. thickness (in.)	Min.design thickness (in.)	Nom. Dia. ID (in.)
Sensing connection	SA-105	70 ksi	0.18" 0.36" (note b)	N/A	0.96"
Sensing connection nozzle	SA-105		0.483"	0.48"	1.673"
Upper shroud drain connection	SA-105		0.20" (note c) 0.40" (note d)	0.20"	1.50"
Vent and high level nitrogen purge connection	SA-105		0.565" (note e) 0.355" (notec)	0.36"	1.50"

a : Tensile strength Su from ASME Code, Section III, Appendix 1, tables
b : Bottom end with sensing connection nozzle welded (Shell side)
c : Pipe side
d : Shell side
e : Tubesheet side

AREVA NP SAS Date 31 JUL 2009 Name AREVA NP Signed LAURENT P
(Certificate Holder) (Authorized representative)

ANI Date 7/31/09 Name [illegible] Commissions 11452 A-N OH 193.
(Authorized Nuclear Inspector) (Nat'l Board (Incl. Endorsements), and State or Prov. and No.)

01 0017

CERTIFICATE HOLDERS' DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code Section III

1. Manufactured and certified by AREVA NP – Usine de Chalon/St Marcel
(Name and address of NPT Certificate Holder)
BP 40001 St Marcel – 71328 CHALON SUR SAONE Cedex – France

2. Manufactured for AREVA NP, Inc.
(Name and address of Purchaser)
3315 Old Forest Road, Lynchburg, VA 24501

3. Location of installation Three Mile Island Nuclear Station Unit 1
(Name and address)
Route 441 South, Middletown, PA 17057 – USA

Items 4 and 8 – Main Feedwaters accessories

Part	Mat'l. Spec. no.	Tensile strength (ksi at 70°F) (note a)	Nom. thickness (in.)	Min.design thickness (in.)	Nom. Dia. ID (in.)
14.00 sch 80 pipe	SA-182 F22 Cl 3	75 ksi	0.75"	0.66"	12.50"
Caps 14" sch 80	SA-182 F22 Cl 3		0.75"	0.70"	12.50"
Tee connection	SA-182 F22 Cl 3		1.00" min	1.00"	12.40"
Inspection ports	SA-182 F22 Cl 3		1.00" min	1.00"	12.40"
Header riser branch connection	SA-182 F22 Cl 3		0.3" (note b) 0.8" (note c)	0.28"	2.90"
Riser pipe 3.00" sch 80	SB-167 Alloy 690	85	0.3"	0.26"	2.90"
Riser pipe inspection port plug	SB-564 Alloy 690	85	1.50"	0.36"	0.86" OD
Riser pipe inspection port	SB-564 Alloy 690		0.30" min	0.36"	2.90"
Elbow 90° 3.00" sch 80	SB-564 Alloy 690		0.3"	N/A	2.90"
Inspection port cover	SA-533 GrB Cl2	90	2.25"	N/A	9.75" OD
Safe end	SA-105	70	0.75"	0.66"	12.50"

a : Tensile strength Su from ASME Code, Section III, Appendix 1, tables
b : MFW riser side
c : MFW header side

AREVA NP SAS Date 31 JUL 2009 Name AREVA NP (Certificate Holder) Signed LAIGNIER D (Authorized representative)

ANI Date 7/31/09 Name (Authorized Nuclear Inspector) Commissions 11452, A-N, OH193 (Nat'l Board (Incl. Endorsements), and State or Prov. and No.)

01 0018

CERTIFICATE HOLDERS' DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code Section III

1. Manufactured and certified by AREVA NP – Usine de Chalon/St Marcel
(Name and address of NPT Certificate Holder)
BP 40001 St Marcel – 71328 CHALON SUR SAONE Cedex – France

2. Manufactured for AREVA NP, Inc.
(Name and address of Purchaser)
3315 Old Forest Road, Lynchburg, VA 24501

3. Location of installation Three Mile Island Nuclear Station Unit 1
(Name and address)
Route 441 South, Middletown, PA 17057 – USA

Items 4 and 8 – Emergency Feedwaters accessories

Part	Matl. Spec. no.	Tensile strength (ksi at 70°F) (note a)	Nom. thickness (in.)	Min.design thickness (in.)	Nom. Dia. ID (in.)
6" sch 80 pipe	SA-182 F22 Cl3	75	0.43"	0.38"	5.76"
Header to riser branch connection	SA-182 F22 Cl3		0.30" (note b) 0.80" (note c)	0.30"	2.90"
3" sch 80 riser pipe	SB-167 Alloy 690	85	0.3"	0.26"	2.90"
Elbow 3" sch 80	SB-564 Alloy 690		0.3"	N/A	2.90"
6" blind flange	SA-182 F22 Cl3	75	2.20"	N/A	15.00" OD
6" weld neck flange	SA-182 F22 Cl3		0.432"	N/A	5.76"
6.00" sch 80 pipe elbow	SA-182 F22 Cl3		0.43"	N/A	5.76"
6" sch 80 pipe safe end 3" lg	SA-105	70	0.43"	N/A	5.76"

a : Tensile strength Su from ASME Code, Section III, Appendix 1, tables
b : EFW riser side
c : EFW header side

AREVA NP SAS Date 31 JUL 2009 Name AREVA NP (Certificate Holder) Signed LAINIER P (Authorized representative)

ANI Date 7/31/09 Name (Authorized Nuclear Inspector) Commissions 11452, A-N, OH 193. (Nat'l Board (Incl. Endorsements), and State or Prov. and No.)

01 0019

CERTIFICATE HOLDERS' DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code Section III

1. Manufactured and certified by AREVA NP – Usine de Chalon/St Marcel
(Name and address of NPT Certificate Holder)
BP 40001 St Marcel – 71328 CHALON SUR SAONE Cedex – France

2. Manufactured for AREVA NP, Inc.
(Name and address of Purchaser)
3315 Old Forest Road, Lynchburg, VA 24501

3. Location of installation Three Mile Island Nuclear Station Unit 1
(Name and address)
Route 441 South, Middletown, PA 17057 – USA

Item 10

	Steam generator primary side	Steam generator secondary side
Design pressure (psig)	2500	1150
Temp (°F)	650	605
Hydro test pressure (psig)	3125	1438
Min. Temp. hydr test (°F)	70	70

AREVA NP SAS Date 31 JUL 2009 Name AREVA NP Signed LAINIER P
(Certificate Holder) (Authorized representative)

ANI Date 7/31/09 Name [illegible] Commissions 11452, A-N, OH 193
(Authorized Nuclear Inspector) [Nat'l Board (Incl. Endorsements), and State or Prov. and No.]

FORM NPP-1 CERTIFICATE HOLDER'S DATA REPORT FOR FABRICATED NUCLEAR PIPING SUBASSEMBLIES*

As Required by the Provisions of the ASME Code, Section III, Division 1

1. Fabricated and certified by TAYLOR FORGE ENGINEERED SYSTEMS, INC • 208 N. IRON STREET • PAOLA, KANSAS 66071
(name and address of NPT Certificate Holder)

2. Fabricated for AREVA NP, INC., • 155 MILL RIDGE ROAD • LYNCHBURG, VA 24502
(name and address of Purchaser)

3. Location of installation THREE MILE ISLAND, UNIT 1 • RT 441 SOUTH • MIDDLETOWN, PA 17057
(name and address)

4. Type:

0199-1A	—	0199-01-D12, Rev. 1	—	2009
(Certificate Holder's serial no.)	(CRN)	(drawing no.)	(National Bd. no.)	(year built)

5. ASME Code, Section III, Division 1:

2001	2003	Class 1	2142-2
(edition)	(addenda date)	(class)	(Code Case no.)

6. Shop hydrostatic test 3125 psig Minimum / 3400 psig Maximum at 70° F. Minimum / 100° F. Maximum (if performed)

7. Description of piping 36" ID Overlaid Upper Hot Leg Assembly: 180° Elbow (4-45° Elbows)=SA-516-70 Modified to SA-234-WPC S7 & S9; All Pipe= SA-106-C; (2) Pressure Tap Nozzles=SA-105, (3) RTE Mounting Bosses With RTD Weldable Thermowells=SB-166 UNS N06690, (Continued in Remarks)

8. Certificate Holder's Data Reports properly identified and signed by commissioned inspectors have been furnished for the following items of this report: Vent and Pressure Tap Nozzle Forgings - Part Number EG8022796-001, S/N's 01, 03, 04, 05, 06, 07, 08, and Flow Meter Nozzle Forgings - Part Number EG8022801-001, S/N's 01, 02, 03 and 04

9. Remarks (1) Vent Nozzle=SA-105; (2) Flow Meter Nozzles=SA-105, (8) Impulse Nozzles & (2) Flow Meter Rings=SB-166 UNS N06690; (2) Flow Meter, (3) Vent and Pressure Tap Safe Ends=SA-182-F316; Lifting Lug and Insulation Support Lugs=SA-516-70

CERTIFICATE OF SHOP COMPLIANCE

We certify that the statements made in this report are correct and that the fabrication of the described piping subassembly conforms to the rules for construction of the ASME Code, Section III, Division 1.

NPT Certificate of Authorization No. N-1937 Expires November 25, 2010

Date 10/15/09 Name Taylor Forge Engineered Systems, Inc. (NPT Certificate Holder) Signed (authorized representative)

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Kansas and employed by HSB CT of Hartford, CT have inspected the piping subassembly described in this Data Report on 10/7/09, and state that to the best of my knowledge and belief, the Certificate Holder has fabricated this piping subassembly in accordance with the ASME Code, Section III, Division 1.

By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the piping subassembly described in this Data Report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

KS 4/18

Date 10/15/09 Signed (Authorized Nuclear Inspector) Commissions NB11546ABNINS (National Bd. (incl. endorsements), and state or prov. and no.)

* Supplemental information in the form of lists, sketches, or drawings may be used provided: (1) size is 8 ½ x 11; (2) information in items 1 through 4 on this Data Report is included on each sheet; and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

(09/06)

Certificate Holder's Serial No. 0199-1A

). Description of field fabrication _____

1. Pneu., hydro., or comb. test pressure _____ at temp. _____ (if performed)

CERTIFICATE OF FIELD FABRICATION COMPLIANCE

We certify that the statements made in this report are correct and that the field fabrication of the described piping subassembly conforms with the rules for construction of the ASME Code, Section III, Division 1.

NPT Certificate of Authorization No. _____ Expires _____

Date _____ Name _____ (Certificate Holder) Signed _____ (authorized representative)

CERTIFICATE OF FIELD FABRICATION INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of _____ and employed by _____ of _____ have compared the statements in this Data Report with the described piping subassembly and state that parts referred to as data items _____, not included in the Certificate of Shop Inspection, have been inspected by me on _____ and that to the best of my knowledge and belief the Certificate Holder has fabricated this piping subassembly in accordance with the ASME Code, Section III, Division 1.

By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the piping subassembly described in this Data Report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date _____ Signed _____ (Authorized Nuclear Inspector) Commissions _____ (National Bd. (incl. endorsements), and state or prov. and no.)

(09/08)

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner Exelon Nuclear — Date January 21, 2010
   Name

   200 Exelon Way, Kennett Square, PA — Sheet 1 of 1
   Address

2. Plant Three Mile Island Generating Station — Unit TMI-1
   Name

   Rt. 441 South, Middletown, PA, 17057 — For EOTSG 1002556-00001, UHL 00417645
   Address — Repair Organization P.O. No., Job No., etc.

3. Work Performed by SGT — Type Code Symbol Stamp N/A
   Name

   Authorization No. N/A

   200 Exelon Way, Kennett Square, PA — Expiration Date NA
   Address

4. Identification of System NSSS See Attachment 1 for additional systems, WO's and applicable Codes.

5. (a) Applicable Construction Code ASME Section III, 2001 Edition , 03 Addenda, N-725 Code Case
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
"B" Steam Generator	Areva NP, Inc	GV/TM326	6	NA	2009	Replaced	Yes
"B" UHL	Taylor Forge	0199-1B	N/A	NA	2009	Replaced	Yes

7. Description of Work: 1B Steam Generator Replacement
8. Tests Conducted Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒

   Other ☐ Pressure NOP (Ref. Section 9) psig Test Temp NOT

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

This Form (E00030) may be obtained from the Order Dept., 22 Law drive, Box 2300, Fairfield, NJ 07007-2300. , New York, NY 10017

FORM NIS-2 (Back)

9. Remarks: See Attachment 1 for systems and applicable Codes, Utilized Code Case N-416-3 for pressure tests except for Blowdown System which received Section XI Hydrostatic Test at 1.25 Design Pressure.
Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil/ISI Program Specialist Date March 9, 2010
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of - and employed by. Hartford Steam Boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 10-1-09 to 3-9-10, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Inspector's Signature Commissions NB 5478 N.A.I.
National Board, State, Province, and Endorsements

Date MARCH 9 2010

NIS-2 SGT EOTSG B & ASSOCIATED SYSTEMS REPLACEMENT ACTIVITIES

TMI Unit 1

ATTACHMENT 1

System/Component	Const Code	R & R Code	Description
Emergency Feedwater	B31.1 1967	ASME Sec. III 2001 Ed/03 Add, Class 2	WO# C2017972 & C2020006, WP# 3083B, 3083C, Reinstallation of 6" EFW riser piping up to feed ring per ECR-06-00709 & ECR 07-00638 in support of TMI-1 EOTSG replacement activities
Reactor Coolant	USAS B31.7, Feb 1968 Draft with June 1968 Errata	USAS B31.7, Feb 1968 Draft with June 1968 Errata, Class 1	WO# C2018070, WO# C2018072, WP# 3065D, 3065B, Replacement of 36 I.D. Hot Leg riser piping and 28" I.D. Cold Leg elbow at primary outlet per ECR-06-00759 in support of TMI-1 EOTSG replacement activities
Feedwater	B31.1 1967	ASME Sec. III 2001 Ed/03 Add, Class 2	WO# C2017974, WP# 3085B, Replacement of 14" FW riser piping up to feed ring per ECR-06-00709 in support of TMI-1 EOTSG replacement activities
Main Steam	B31.1 1967	ASME Sec. III 2001 Ed/03 Add, Class 2	WO# C2017935, WP# 3080B, Replacement of 24" Main Steam elbows per ECR-06-00708 in support of TMI-1 EOTSG replacement activities
Blowdown	B31.1 1967	B31.1 1967 Class 2	WO# C2020048, WP# 3521B, Modify existing Hot Drain and SG Sampling system to create an independent Steam Generator Blowdown system per ECR-07-00259 in support of TMI-1 EOTSG replacement activities
RCS Hot Leg Instrumentation	USAS B31.7, Feb 1968 Draft with June 1968 Errata	ASME Sec. III 2001 Ed/03 Add, Class 1	WO# C2017992, WP# 3527B & PIMS work activity C2018571 Items 33, 34, 35, 36, Replacement of existing ½" & 1" Hot Leg Instrumentation lines and elbows per ECR-07-00576 & work activity C2018571 in support of TMI-1 EOTSG replacement activities
RCS High point Vent	USAS B31.7, Feb 1968 Draft with June 1968 Errata	ASME Sec. III 2001 Ed/03 Add, Class 1	WO# C2017990, WP# 3526B, Replacement of existing Hot Leg High Point Vent from 1" NPS nozzle extension to ½" NPS existing pipe in support of TMI-1 EOTSG replacement activities
EOTSG Secondary Drain	B31.1 1967	ASME Sec. III 2001 Ed/03 Add, Class 2	WO# C2017926, WP# 3522B, Reinstallation of 1-1/2" Secondary Drain piping from EOTSG drain nozzle extension per ECR-07-00638 in support of TMI-1 EOTSG replacement activities.
EOTSG Upper Tubesheet Vent	B31.1 1967	ASME Sec. III 2001 Ed/03 Add, Class 2	WO# C2017385, WP# 3524B, Reinstallation of 1-1/2" Upper Tubesheet Vent piping between EOTSG nozzle and valves MS-V-23A per ECR-07-00638 in support of TMI-1 EOTSG replacement activities

FORM N-1 CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR VESSELS*
As Required by the Provisions of the ASME Code, Section III, Division 1 Pg. 1 of 5

1. Manufactured and certified by AREVA NP, Inc. - 3315 Old Forest Road, Lynchburg, VA 24501 (name and address of N Certificate Holder)
2. Manufactured for Exelon Generation, LLC - 200 Exelon Way, Kennett Square, PA 19348 (name and address of Purchaser)
3. Location of installation Three Mile Island Nuclear Station Unit 1 - Route 441 South, Middletown, PA 17057 (name and address)
4. Type: Vertical (horiz. or vert.) | Heat Exch. (tank, jacketed, heat ex.) | GV/TM326 (Cert. Holder's serial no.) | N/A (CRN) | See Page 3 (drawings no.) | 6 (Nat'l. Bd. No.) | 2009 (year built)
5. ASME Code, Section III, Division 1: 2001 See Pg 3 (edition) | 2003 See Pg 3 (addenda date) | Class 1/2 See Pg 3 (class) | N-725 (Code Case no.)

Items 6-10 inclusive to be completed for single wall vessels, jackets of jacketed vessels, or shells of heat exchangers.

6. Shell: SA-508 G3C2 (mat'l spec. no.) | 90 ksi (tensile strength) | 5.31 and 3.31 (nom. thickness (in.)) | 5.13 and 3.13 (min. design thickness (in.)) | 11 ft 8 in. (dia. ID (ft. & in.)) | 52 Ft. – 1.38 in. (length (overall) (ft & in.))
7. Seams: N/A (long.) | N/A (HT[1]) | N/A (RT) | N/A (eff.%) | Single (girth) | Yes (HT[1]) | Full (RT) | Four (no. of courses)
8. Heads: N/A (a) mat'l spec. no. | N/A (tensile strength) | N/A (c) mat'l. spec. no.) | N/A (tensile strength)

	Location (top, bottom, ends)	Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (convex or concave)
(a)	N/A									
(b)	N/A									

If removable, bolts used N/A (mat'l. spec. no., size, quantity) Other fastening N/A (describe or attach sketch)

9. Jacket closure: N/A (Describe as ogee & weld, bar, etc. If bar, give dimensions, describe or sketch)
10. Design pressure[2] 1150 (psi) at max. temp. 605 (°F). Min. pressure-test temp. 70 (°F). Pneu., hydro., or comb. test pressure 1438 (psi)

Items 11 and 12 to be completed for tube sections.

11. Tubesheets: SA-508 G3C2 (Page 3) (stationary, mat'l. spec. no) | 140" I.D. (dia. in. (subject to press.)) | 24 in. min. (thickness (in.)) | Welded (attachment (welded, bolted))
N/A (floating, mat'l spec. no.) | N/A (dia. (in.)) | N/A (thickness (in.)) | N/A (attachment)
12. Tubes: SB-163 Alloy 690 (mat'l. spec. no.) | 0.625 in. (OD (in.)) | 0.0368 in. (thickness (inches or gage)) | 15,597 (no.) | Straight (type (straight or U))

Items 13 to 16 inclusive to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

13. Shell: SA-508 G3C2 (mat'l. spec. no) | 90 ksi (tensile strength) | N/A (nom. thickness (in.)) | 8.0" (min. design thickness (in.)) | 9' – 11.06" (dia. ID (ft & in.)) | 0' – 9.733" (length (overall) (ft & in.))
14. Seams: N/A (long. (welded, dbl., single)) | N/A (HT[1] (yes or no)) | N/A (RT) | N/A (eff.%) | Single/Double (girth) | Yes (HT[1]) | Full (RT) | One each (no. of courses)
15. Heads: SA-508 G3C2 (a) mat'l spec. no.) | 90 ksi (tensile strength) | SA-508 G3C2 (b) mat'l spec. no.) | 90 ksi (tensile strength) | N/A (c) mat'l spec. no.) | N/A (tensile strength)

Location	Thickness	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (convex or concave)
(a) Top, ~~bottom, ends~~	8.0" Min.					65.63"		Concave
(b) ~~Channel~~ Bottom	8.0" Min.					60.88"		Concave
(c) Floating	N/A							

If removable, bolts used N/A (mat'l spec. no., size, quantity) Other fastening N/A (describe or attach sketch)

16. Design pressure[2] 2500 (psi) at 650 (°F) Min. pressure-test temp. 70 (°F). Pneu., hydro., or comb. test pressure 3125 (psi)

[1] If postweld heat treated. [2] List other internal or external pressure with coincident temperature when applicable.

*Supplemental information in form of lists, sketches, or drawings may be used provided (1) size is 8½ x 11, (2) information in items 1 through 4 on this Data Report is included on each sheet, (3) each sheet is numbered and number of sheets is recorded at top of this form.

FORM N-1 (Back – Pg. 2 of 5)

Certificate Holder's Serial No. GV/TM326

17. Nozzles, inspection and safety valve openings:

Purpose (inlet, outlet, drain, etc.)	Quantity	Dia. or Size	Type	How Attached	Mat'l	Thickness	Reinforcement Material	Location
Primary Inlet	1	36.13" I.D.	N/A	Integral	SA-508 G3C2	3.25"	Integral	Top Head
Primary Outlet	2	28.63" I.D.	N/A	Integral	SA-508 G3C2	2.56"	Integral	Bottom Hd
Steam Outlet	2	21.75" I.D.	N/A	Welded	SA-508 G3C2	1.25"	Integral	Shell
Primary Manway	1	16.0" I.D.	Blt Cov	Integral	SA-508 G3C2	6.25"	Integral	Top Head
Primary Manway	1	16.0" I.D.	Blt Cov	Integral	SA-508 G3C2	6.25"	Integral	Bottom Hd
Secondary Manway	1	16.0" I.D.	Blt Cov	Welded	SA-508 G3C2	5.0"	Integral	Shell
(continued on page 4)					(See Pg 3)			

18. Supports:

Skirt:	Lugs:	Legs:	Other:	Attached:
Yes	48	N/A	N/A	Welded to Lower Head
(yes or no)	(quantity)	(quantity)	(describe)	(where and how)

19. Remarks:

14" Schedule 80 Main Feedwater Header consists of two half-torus sections and includes (32) 3" Schedule 80 Risers – See page 5

6" Schedule 80 Emergency Feedwater Header includes (7) 3" Schedule 80 Risers – See page 5

N-2 Data Report for completed item attached. Performance of component hydrostatic pressure test and subsequent Code stamping conducted at NPT Certificate Holder's Shop location in Saint-Marcel, France. – NCA-8322(b)

CERTIFICATION OF DESIGN

Design specification certified by P. A. Opsal P.E. State VA Reg. no. 014498

Design report certified by T.M. Wiger P.E. State CA Reg. no. M33816

CERTIFICATE OF SHOP COMPLIANCE

We certify that the statements made in this report are correct and that this nuclear vessel conforms to the rules for construction of the ASME Code, Section III, Division 1.

N Certificate of Authorization No. _____ Expires _____

Date _____ Name _____ (N Certificate Holder) Signed _____ (authorized representative)

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the Sate or Province of _____ and employed by _____ of _____ have inspected the component described in this Data Report on _____, and state that to the best of my knowledge and belief, the Certificate Holder has constructed this component in accordance with the ASME Code, Section III, Division 1.

By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the component described in this Data Report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date _____ Signed _____ (Authorized Nuclear Inspector) Commissions _____ (Nat'l. Bd. (incl. endorsements) and state or prov. and no.)

CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the statements on this report are correct and that the field assembly construction of all parts of this nuclear vessel conforms to the rules of construction of the ASME Code, Section III, Division 1.

N Certificate of Authorization No. N-1650 Expires June 12, 2012

Date Aug 1, 2009 Name AREVA NP Inc. (N Certificate Holder) Signed MJ McInerney (authorized representative)

CERTIFICATE OF FIELD ASSEMBLY INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of OHIO and employed by HARTFORD STEAM BOILER of CT of HARTFORD (CT) have compared the statements in this Data Report with the described component and state that parts referred to as data items in line 19, not included in the certificate of shop inspection, have been inspected by me on June 7, 2009 and that to the best of my knowledge and belief the Certificate Holder has constructed and assembled this component in accordance with the ASME Code, Section III, Division 1.

By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the component described in this Data Report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date August 1, 09 Signed _____ (Authorized Nuclear Inspector) Commissions 11452, A-N, OH 193 (Nat'l Bd. (incl endorsements) and state or prov. and no.)

FORM N-1 CERTIFICATE HOLDERS' DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code, Section III, Division 1 **Pg. 3 of 5**

Certificate Holder's Serial No. GV/TM326

1. Manufactured and certified by AREVA NP, Inc. - 3315 Old Forest Road, Lynchburg, VA 24501 (name and address of N Certificate Holder)
2. Manufactured for Exelon Generation, LLC - 200 Exelon Way, Kennett Square, PA 19348 (name and address of Purchaser)
3. Location of installation Three Mile Island Nuclear Station Unit 1 - Route 441 South, Middletown, PA 17057 (name and address)
4. Type

Vertical	Heat Exch.	GV/TM326	N/A	See Page 3	6	2009
(horiz. or vert.)	(tank, jacketed, heat ex.)	(Cert. Holder's serial no.)	(CRN)	(drawings no.)	(Nat'l. Bd. no.)	(year built)

SUPPLEMENTAL INFORMATION

Line	Item	Description
4	Drawing No's	02-5056245E-005, TMI EOTSG Specification Drawing 02-5056246E-005, TMI EOTSG General Outline Drawing 02-5056247E-005, TMI EOTSG General Outline – Cross Sections Drawing 02-5056248E-009, TMI EOTSG List of Material Drawing 02-5056249E-007, TMI EOTSG Shell Outline Drawing 02-5056250F-003, TMI EOTSG SG-B Main Feedwater Header Assembly and Details 02-5056252E-008, TMI EOTSG Primary Side Openings 02-5056253E-005, TMI EOTSG Secondary Openings Sections 02-5056254E-006, TMI EOTSG Upper Tubesheet Details 02-5056256E-004, TMI EOTSG Lower Tubesheet Details 02-5056260E-002, TMI EOTSG Lower Head Outlet Nozzle Details 02-5056264E-003, TMI EOTSG Drain, Temperature and Sensing Nozzles. 02-5056267E-001, TMI EOTSG Longitudinal Section and Opening Sections 02-5056281F-003, TMI EOTSG MFW Header Additional Details 02-5056283E-003, TMI EOTSG Emergency Feedwater Header Assembly and Details
5	ASME Code	ASME Code Section III, Division I, 2001 Edition with Addenda through 2003 for the complete Steam Generator excluding Alloy 690 tube bundle material. ASME Code Section III, 1998 Edition with Addenda through 2000 for Alloy 690 tube bundle material for procurement and design analysis.
5	Addenda	As noted above.
5	Class	Within the jurisdictional boundaries specified on Drawing 02-5056245: • The entire EOTSG primary side and secondary side pressure boundary are classified, designed, and fabricated in accordance with the ASME Code as a Class 1 Vessel. • The Primary outlet elbows and extension pieces are Class 1 Piping. • The integrally welded Support Skirt is a Class 1 Support. • The Main Feedwater Header / Riser Assemblies are Class 2 Piping. • The Emergency Feedwater Header / Riser Assembly is Class 2 Piping.
Lines 6, 11, 13 & 15		The material specification number for these items is SA-508 Grade 3 Class 2.
Lines 17		On pages 2 and 4, the material designated as SA-508 G3C2 is Grade 3 Class 2.

AREVA NP Inc. Date Aug 1, 2009 Name AREVA NP Inc. (N Certificate Holder) Signed [signature]

ANI Date Aug. 1st 2009 Name [signature] (Authorized Nuclear Inspector) Commissions 11452, A-N, OH 193 (Nat'l. Bd. (incl. endorsements) and state or prov. and no.)

FORM N-1 CERTIFICATE HOLDERS' DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code, Section III, Division 1 Pg. 4 of 5

Certificate Holder's Serial No. GV/TM326

1. Manufactured and certified by AREVA NP, Inc. - 3315 Old Forest Road, Lynchburg, VA 24501 (name and address of N Certificate Holder)
2. Manufactured for Exelon Generation, LLC - 200 Exelon Way, Kennett Square, PA 19348 (name and address of Purchaser)
3. Location of installation Three Mile Island Nuclear Station Unit 1 - Route 441 South, Middletown, PA 17057 (name and address)
4. Type Vertical (horiz. or vert.) | Heat Exch. (tank, jacketed, heat ex.) | GV/TM326 (Cert. Holder's serial no.) | N/A (CRN) | See Page 3 (drawings no.) | 6 (Nat'l. Bd. no.) | 2009 (year built)

SUPPLEMENTAL INFORMATION

Line Item Description

17. Nozzles, inspection and safety valve openings:

Purpose (inlet, outlet, drain, etc.)	Quantity	Nominal Dia. or Size	Type	How Attached	Mat'l	Thickness	Reinforcement Material	Location
Main Feedwater Nozzles	32	2.9" I.D.	N/A	Bolted with seal weld	SB-564 Alloy 690	0.3"	Integral	Shell
Emergency FW Nozzles	7	2.9" I.D.	N/A	Bolted with seal weld	SB-564 Alloy 690	0.3"	Integral	Shell
Handholes	8	8.0" I.D.	Bolted Cover	Integral	SA508 G3C2	3.88"	Integral	Shell
Primary Inspection Port	1	5.0" I.D.	Bolted Cover	Integral	SA508 G3C2	N/A	Integral	Top Head
Inspection Openings	9	3" I.D.	Bolted Cover	Welded	SA508 G3C2	3.25"	Integral	Thin Shell
Inspection Openings	8	3" I.D.	Bolted Cover	Integral	SA508 G3C2	N/A.	Integral	Thick Shell
Vent Conn.	1	1.5" I.D.	N/A	F.P Weld	SA-105	0.57"	Integral	Upper TS
Drain Conn.	2	1.5" I.D.	N/A	P.P. Weld	SA-105	0.2"	Integral	Shell
Temp. Sensing Conn.	2	1.4" O.D.	N/A	P.P. Weld	SB-166 Alloy 690	0.51"	None Req'd	Thin Shell
Temp. Sensing Conn.	1	1.4" O.D.	N/A	P.P. Weld	SB-166 Alloy 690	0.51"	Integral	Thick Shell
Tubesheet Drain Conn.	4	1.94" I.D.	N/A	F.P Weld	SA-105	0.435"	Integral	Lower TS
Shroud Drain Conn.	2	0.96" I.D.	N/A	P.P. Weld	SA-105	0.18"	Integral	Shell
Sensing Conn. Nozzle	6	2" O.D.	N/A	F.P Weld	SA-105	0.483"	Integral	Shell
UHL Sensing Conn.	2	0.96" I.D.	N/A	P.P. Weld	SA-105	0.18"	Integral	Shell
LHL Sensing Conn.	2	0.96" I.D.	N/A	P.P. Weld	SA-105	0.18"	Integral	Shell
ULL Sensing Conn.	2	0.96" I.D.	N/A	P.P. Weld	SA-105	0.18"	Integral	Shell
LLL Sensing Conn.	2	0.96" I.D.	N/A	P.P. Weld	SA-105	0.18"	Integral	Shell

AREVA NP Inc. Date Aug 1, 2009 Name AREVA NP Inc. (N Certificate Holder) Signed [signature]

ANI Date Aug 14, 2009 Name [signature] (Authorized Nuclear Inspector) Commissions 11452, A-N, OH193 (Nat'l. Bd. (incl. endorsements) and state or prov. and no.)

FORM N-1 CERTIFICATE HOLDERS' DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code, Section III, Division 1 **Pg. 5 of 5**

Certificate Holder's Serial No. GV/TM326

1. Manufactured and certified by AREVA NP, Inc. - 3315 Old Forest Road, Lynchburg, VA 24501 (name and address of N Certificate Holder)
2. Manufactured for Exelon Generation, LLC - 200 Exelon Way, Kennett Square, PA 19348 (name and address of Purchaser)
3. Location of installation Three Mile Island Nuclear Station Unit 1 - Route 441 South, Middletown, PA 17057 (name and address)
4. Type Vertical (horiz. or vert.) | Heat Exch. (tank, jacketed, heat ex.) | GV/TM326 (Cert. Holder's serial no.) | N/A (CRN) | See Page 3 (drawings no.) | 6 (Natl. Bd. no.) | 2009 (year built)

SUPPLEMENTAL INFORMATION

Line Item Description

19. Remarks:

Main Feedwater Header Parts:	Materials:
• 14" Sch. 80 MFW Header pipe and cap, Riser branch conn., Tee conn., Inspection Port	SA-182 F22 Class 3
• Riser pipe inspection port, plug, 4" x 3" Reducer and 3" Sch. 80 LR Elbows	SB-564 Alloy 690
• 3" Sch. 80 Riser pipe	SB-167 Alloy 690
• 14" Dia. x 3" long Safe End at Header Inlet	SA-105
• 3" Inspection Port Cover	SA-533 Gr. B Class 2

Emergency Feedwater Header Parts:	Materials:
• 6" Sch. 80 EFW Header pipe, 6" Sch. 80 LR Elbow, Spool Piece, Riser branch conn.	SA-182 F22 Class 3
• 6" – 900# Weld Neck Flange and Blind Flange	SA-182 F22 Class 3
• 3" Sch. 80 Riser pipe, 4" Sch. 40 Inlet pipe	SB-167 Alloy 690
• 3" Sch. 80 LR Elbows	SB-564 Alloy 690
• 6" Sch. 80 x 3" long Safe End at Header Inlet	SA-105

All ferritic steel surfaces exposed to primary reactor coolant are clad. Primary heads are internally clad with type 308L stainless steel; the primary face of tubesheets are clad with UNS number N06052.

Hydrostatic Testing
As permitted by NB-3226, up to 10 cycles of hydrostatic tests may be excluded from the SG component fatigue analysis. For compliance with that requirement, the actual test cycles used were as follows:

- 1 cycle – Primary Side Hydrostatic test
- 2 cycles – Secondary Side Hydrostatic test

AREVA NP Inc. Date Aug 1, 2009 Name AREVA NP Inc. (N Certificate Holder) Signed [signature]

ANI Date Aug 1st 2009 Name [signature] (Authorized Nuclear Inspector) Commissions 11452, A-N, OH 193 (Natl Bd. (incl. endorsements) and state or prov. and no.)

01 0008

FORM N-2 CERTIFICATE HOLDERS' DATA REPORT FOR IDENTICAL NUCLEAR PARTS AND APPURTENANCES
As Required by the Provisions of the ASME Code Section III
Not to Exceed One Day's Production

Certificate Holder's Data Report Ref : BUERTM/NGV0326 rev A

1. Manufactured and certified by AREVA NP Usine de Chalon/Saint Marcel
(Name and address of Certificate Holder)
BP 40001 – St Marcel – Zone Industrielle et Portuaire Sud - 71328 CHALON SUR SAONE Cedex - FRANCE

2. Manufactured for AREVA NP, Inc.
(Name and address of Purchaser)
3315 Old Forest Road, Lynchburg, VA 24501

3. Location of Installation Three Mile Island Nuclear Station Unit 1 – Route 441 South. Middletown. PA 17057USA

4. Type (See supplementary sheets) (drawing no.) (matl spec no.) (tensile strength) N/A (CRN) 2009 (year built)

5. ASME Code, Section III, Division 2001 (edition) Addenda through 2003 (addenda) 1&2 (see supp sheets) (class) N-725 (code case no.)

6. Fabricated in accordance with Const. Spec. (Div 2 only) N/A (no.) Revision _____ Date _____

7. Remarks:
- Class 1 : primary and secondary sides
- Class 2 : Main feedwater and Emergancy feedwater headers and risers

8. Nom. Thickness (in.) (See supplementary sheets) Min. des thickness (in.) (See supplementary sheets)

Dia. ID (ft & in.) (See supplementary sheets) Length overall (ft & in.) 52 Ft. – 1.38 in.

9. When applicable, Certificate Holders' Data Reports are attached for each item on this report:

Part or Appurtenance Serial Number	National Board No. in Numerical Order	Part or Appurtenance Serial Number	National Board No. In Numerical Order
1. GV/TM326	N/A		

10. Design Pressure (See supplementary sheets) psig Temp. (See supplementary sheets) Deg. F

Hydro.Test Pressure @ Temp (See supplementary sheets)

01 0009

FORM N-2 (Back – Pg 2 of 11)

Certificate Holders' Serial Nos GV/TM326

Certificate Holder's Data Report Ref : BUERTM/NGV0326 rev A

CERTIFICATION OF DESIGN

Design Specifications Certified by PHILIP A. OPSAL P.E. State VA Reg. No. 014498

Design Report Certified by T.M WIGER P.E. State CA Reg. No. M33816

CERTIFICATE OF COMPLIANCE

We Certify that the statements made in this report are correct and that this (these) STEAM GENERATOR conforms to the rules of construction of the ASME Code, Section III Division 1

NPT Certification of Authorization No. N-2772 Expires: Jan.29,2012

Date 04 Aug 2009 Name AREVA NP Signed LAIGNIER P

CERTIFICATE OF INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of OHIO and employed by HSB CT of CT have inspected these items described in this Data Report on June 7, 2009 and state that to the best of my knowledge and belief, the Certificate Holder has fabricated these parts or Appurtenances in accordance with the ASME Code, Section III, Division 1. Each Part has been authorized for stamping on the date shown above.

By signing this certificate, neither the Inspector nor his Employer makes any warranty expressed or implied concerning the equipment described in this Data Report. Furthermore, neither the Inspector nor his Employer shall be liable for any personal injury or property damage or loss of any kind arising from or connected with this inspection.

Date August 1st, 2009 Signed _____ Commissions 11452, A-N, OH 193

(Authorized Nuclear Inspector) (Nat'l Board Endsmts, State or Prov. and no.)

CERTIFICATE HOLDERS' DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code Section III

1. Manufactured and certified by AREVA NP – Usine de Chalon/St Marcel
(Name and address of NPT Certificate Holder)
BP 40001 St Marcel – 71328 CHALON SUR SAONE Cedex – France

2. Manufactured for AREVA NP, Inc.
(Name and address of Purchaser)
3315 Old Forest Road, Lynchburg, VA 24501

3. Location of installation Three Mile Island Nuclear Station Unit 1
(Name and address)
Route 441 South, Middletown, PA 17057 – USA

Item 4

List of drawings

Drawing Number	Title
02-5056245E-005	TMI EOTSG Specification Drawing
02-5056246E-005	TMI EOTSG General Outline Drawing
02-5056247E-005	TMI EOTSG General Outline – Cross section Drawing
02-5056248E-009	TMI EOTSG List of Material Drawing
02-5056249E-007	TMI EOTSG Shell Outline Drawing
02-5056250E-003	TMI EOTSG SG-B Main feedwater Assembly and Details
02-5056252E-008	TMI EOTSG Primary side Openings
02-5056253E-005	TMI EOTSG Secondary Openings sections
02-5056254E-006	TMI EOTSG Upper Tubesheet Details
02-5056256E-004	TMI EOTSG Lower Tubesheet Details
02-5056260E-002	TMI EOTSG Lower Head Outlet Nozzle Details
02-5056264E-003	TMI EOTSG Drain, Temperature and Sensing Nozzles
02-5056267E-001	TMI EOTSG Longitudinal Section and Opening Sections
02-5056281F-003	TMI EOTSG MFW Header additional Details
02-5056283E-003	TMI EOTSG Emergency feedwater Header Assembly and Details

AREVA NP SAS Date 01 AUG 2009 Name AREVA NP Signed LAIGNIER P
(Certificate Holder) (Authorized representative)

ANI Date 8/1/09 Name _____ Commissions 11452, A-N, OH 193
(Authorized Nuclear Inspector) [Nat'l Board (Incl. Endorsements), and State or Prov. and No.]

CERTIFICATE HOLDERS' DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code Section III

1. Manufactured and certified by AREVA NP – Usine de Chalon/St Marcel
(Name and address of NPT Certificate Holder)
BP 40001 St Marcel – 71328 CHALON SUR SAONE Cedex – France

2. Manufactured for AREVA NP, Inc.
(Name and address of Purchaser)
3315 Old Forest Road, Lynchburg, VA 24501

3. Location of installation Three Mile Island Nuclear Station Unit 1
(Name and address)
Route 441 South, Middletown, PA 17057 – USA

Item 5

ASME Code — ASME Code Section III, Division 1, 2001 Edition with Addenda through 2003 for the complete steam generator excluding Alloy 690 tube bundle material.

ASME Code section III, 1998 Edition with Addenda through 2000 for alloy 690 tube bundle material for procurement and design analysis.

Class — Within the jurisdictional boundaries specified on drawing 02-0506245 :

- The entire EOTSG primary side and secondary side pressure boundary are classified, designed, and fabricated in accordance with the ASME Code as a Class 1 Vessel.
- The primary outlet elbows and extension pieces are Class 1 Piping.
- The integrally welded support skirt is a Class 1 Support.
- The main Feedwater Header/Riser Assemblies are Class 2 Piping.
- The Emergency Feedwater Header/Riser Assembly is Class 2 Piping

AREVA NP SAS Date 01 Aug 2009 Name AREVA NP Signed [illegible]
(Certificate Holder) (Authorized representative)

ANI Date 8/1/09 Name [illegible] Commissions 11452, A-N, OH 193
(Authorized Nuclear Inspector) [Nat'l Board (Incl. Endorsements), and State or Prov. and No.]

CERTIFICATE HOLDERS' DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code Section III

1. Manufactured and certified by AREVA NP – Usine de Chalon/St Marcel
(Name and address of NPT Certificate Holder)
BP 40001 St Marcel – 71328 CHALON SUR SAONE Cedex – France

2. Manufactured for AREVA NP, Inc.
(Name and address of Purchaser)
3315 Old Forest Road, Lynchburg, VA 24501

3. Location of installation Three Mile Island Nuclear Station Unit 1
(Name and address)
Route 441 South, Middletown, PA 17057 – USA

Items 4 and 8

Part	Mat'l. Spec. no.	Tensile strength (ksi at 70°F) (note a)	Nom. thickness (in.)	Min.design thickness (in.)	Nom. Dia. ID (in.)
Upper shell	SA-508 Gr3 cl 2	90 ksi	5.31" (note b) 3.31" (note c)	5.13" 3.13"	140.00"
Nozzle shell	SA-508 Gr3 cl 2		3.31" (note d) 5.31" (note e) 3.31" (note f)	3.13" 5.13" 3.13"	140.00"
Intermediate shell	SA-508 Gr3 cl 2		3.31"	3.13"	140.00"
Lower shell	SA-508 Gr3 cl 2		3.31" (note g) 5.31" (note h)	3.13" 5.13"	140.00"
Lower head	SA-508 Gr3 cl 2		8.12"	8" 8.03" (flat bottom)	R=65.63" (note l)
Upper head	SA-508 Gr3 cl 2		8.07"	8"	R=60.88" (note l)
Lower and upper tubesheet	SA-508 Gr3 cl 2		24" (note i)	24" (note i)	119.06" (notes i and j) 140" (note k)
Lower and upper tubesheet extension (ring)	SA-508 Gr3 cl 2		N/A	8"	119.06" (note l)
Tube bundle	SB-163 Alloy 690	85 ksi	0.0368"	0.0340"	0.5514"

a : Tensile strength Su from ASME Code, Section III, Appendix 1, tables
b : Top end (tubesheet side)
c : Bottom end (Nozzle shell side)
d : Top end (Upper shell side)
e : Middle
f : Bottom end (Intermediate shell side)
g : Top end (Intermediate shell side)
h : Bottom end (Tubesheet side)
i : Under cladding
j : Head side
k : Shell side

AREVA NP SAS Date 01 JUL 2009 Name AREVA NP Signed LAIGNIER P.
(Certificate Holder) (Authorized representative)

ANI Date 8/1st/09 Name [illegible] Commissions 11452 A-N OH 193
(Authorized Nuclear Inspector) [Nat'l Board (Incl. Endorsements), and State or Prov. and No.]

01 0013

CERTIFICATE HOLDERS' DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code Section III

1. Manufactured and certified by AREVA NP – Usine de Chalon/St Marcel
(Name and address of NPT Certificate Holder)
BP 40001 St Marcel – 71328 CHALON SUR SAONE Cedex – France

2. Manufactured for AREVA NP, Inc.
(Name and address of Purchaser)
3315 Old Forest Road, Lynchburg, VA 24501

3. Location of installation Three Mile Island Nuclear Station Unit 1
(Name and address)
Route 441 South, Middletown, PA 17057 – USA

Items 4 and 8

Part	Mat'l. Spec. no.	Tensile strength (ksi at 70°F) (note a)	Nom. thickness (in.)	Min.design thickness (in.)	Nom. Dia. ID (in.)
Primary inlet nozzle extension	SA-508 Gr3 cl 2	90 ksi	3.25" (note b) 3.50" (note c) 5.25" (note d)	3.25"	36.13" (note e)
Primary inlet nozzle	SA-508 Gr3 cl 2		5.25"	5.25"	48.51" (note e)
Primary manway	SA-508 Gr3 cl 2		N/A	N/A	16.50" (note e)
Primary inspection port	SA-508 Gr3 cl 2		N/A	N/A	5.50" (note e)
Secondary manway	SA-508 Gr3 cl 2		4.97"	2.14"	16.00"
Secondary inspection port welded	SA-508 Gr3 cl 2		3.25"	2.78"	3.00"
Handhole	SA-508 Gr3 cl 2		3.875"	1.58"	8.00"
Steam outlet nozzle	SA-508 Gr3 cl 2		3.66"	3.66"	21.75"
Steam outlet nozzle safe end	SA-105	70 ksi	1.25"	1.25"	21.75"
Primary outlet nozzle	SA-508 Gr3 cl 2	90 ksi	4.31" (note f) 2.56" (note g)	1.51"	28.63"

a : Tensile strength Su from ASME Code, Section III, Appendix 1, tables
b : Top end (pipe side)
c : Middle
d : Bottom end (Primary inlet nozzle side)
e : Under cladding
f : Top end (Head side)
g : Bottom end (extension side)

AREVA NP SAS Date 01 Jul 2009 Name AREVA NP Signed LAIGNIER P.
(Certificate Holder) (Authorized representative)

ANI Date 8/1st/09 Name (Authorized Nuclear Inspector) Commissions 11452, A-N, OH 193
[Nat'l Board (Incl. Endorsements), and State or Prov. and No.]

01 0014

CERTIFICATE HOLDERS' DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code Section III

1. Manufactured and certified by AREVA NP – Usine de Chalon/St Marcel
(Name and address of NPT Certificate Holder)
BP 40001 St Marcel – 71328 CHALON SUR SAONE Cedex – France

2. Manufactured for AREVA NP, Inc.
(Name and address of Purchaser)
3315 Old Forest Road, Lynchburg, VA 24501

3. Location of Installation Three Mile Island Nuclear Station Unit 1
(Name and address)
Route 441 South, Middletown, PA 17057 – USA

Items 4 and 8

Part	Mat'l. Spec. no.	Tensile strength (ksi at 70°F) (note a)	Nom. thickness (in.)	Min.design thickness (in.)	Nom. Dia. ID (in.)
Primary outlet nozzle extension	SA-508 Gr3 cl 2	90 ksi	2.50" (note b) 3.375" (note c)	2.50"	28.75"
Primary outlet nozzle elbow	SA-508 Gr3 cl 2		3.375" (note d) 3.625" (note e)	3.63"	28.75" 28.25"
Nozzles for main and emergency feedwaters (quantity 32+7)	SB-564 Alloy 690	85 ksi	0.3"	0.30"	2.9"
Secondary inspection port (integral)	SA-508 Gr3 cl 2	90 ksi	N/A	N/A	3.00"
Drain connection nozzle	SA-105	70 ksi	0.67" (note f) 0.435" (note g)	0.44"	1.94"
Upper and lower low level sensing connection	SA-105		0.18"	0.18"	0.96"
Temperature sensing connection	SB-166 Alloy 690	85 ksi	0.51 "(note h) 0.4625" (note i) 0.31" (note j)	0.51"	0.38" (note h) 0.257" (note i)

a : Tensile strength Su from ASME Code, Section III, Appendix 1, tables
b : Top end (nozzle side)
c : Bottom end (elbow side)
d : Top end (Extension side)
e : Bottom end (pipe side)
f : Tubesheet side
g : Pipe side
h : Shell side
i : Shroud side end radial thickness
j : shroud side end thickness

AREVA NP SAS Date 11 AUG 2009 Name AREVA NP Signed LAINIER P
(Certificate Holder) (Authorized representative)

ANI Date 8/14/09 Name (Authorized Nuclear Inspector) Commissions 11452, A-N, OH 193.
[Nat'l Board (Incl. Endorsements), and State or Prov. and No.]

01 0015

CERTIFICATE HOLDERS' DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code Section III

Certificate Holders' Serial Nos. GV/TM 326 Pg. 8 of 11
Certificate Holder's Data Report Ref : BUERTM/NGV0326 rev A

1. Manufactured and certified by AREVA NP – Usine de Chalon/St Marcel
(Name and address of NPT Certificate Holder)
BP 40001 St Marcel – 71328 CHALON SUR SAONE Cedex – France

2. Manufactured for AREVA NP, Inc.
(Name and address of Purchaser)
3315 Old Forest Road, Lynchburg, VA 24501

3. Location of installation Three Mile Island Nuclear Station Unit 1
(Name and address)
Route 441 South, Middletown, PA 17057 – USA

Items 4 and 8

Part	Mat'l. Spec. no.	Tensile strength (ksi at 70°F) (note a)	Nom. thickness (in.)	Min.design thickness (in.)	Nom. Dia. ID (in.)
Sensing connection	SA-105	70 ksi	0.18" 0.36" (note b)	N/A	0.96"
Sensing connection nozzle	SA-105		0.483"	0.48"	1.673"
Upper shroud drain connection	SA-105		0.20" (note c) 0.40" (note d)	0.20"	1.50"
Vent and high level nitrogen purge connection	SA-105		0.565" (note e) 0.355" (notec)	0.36"	1.50"

a : Tensile strength Su from ASME Code, Section III, Appendix 1, tables
b : Bottom end with sensing connection nozzle welded (Shell side)
c : Pipe side
d : Shell side
e : Tubesheet side

AREVA NP SAS Date 01 AVR 2009 Name AREVA NP (Certificate Holder) Signed LAIGNIER P. (Authorized representative)

ANI Date 8/14/09 Name (Authorized Nuclear Inspector) Commissions 11452, A-N, OH 193.
[Nat'l Board (Incl. Endorsements), and State or Prov. and No.]

01 0016

CERTIFICATE HOLDERS' DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code Section III

1. Manufactured and certified by AREVA NP – Usine de Chalon/St Marcel
(Name and address of NPT Certificate Holder)
BP 40001 St Marcel – 71328 CHALON SUR SAONE Cedex – France

2. Manufactured for AREVA NP, Inc.
(Name and address of Purchaser)
3315 Old Forest Road, Lynchburg, VA 24501

3. Location of installation Three Mile Island Nuclear Station Unit 1
(Name and address)
Route 441 South, Middletown, PA 17057 – USA

Items 4 and 8 – Main Feedwaters accessories

Part	Mat'l. Spec. no.	Tensile strength (ksi at 70°F) (note a)	Nom. thickness (in.)	Min.design thickness (in.)	Nom. Dia. ID (in.)
14.00 sch 80 pipe	SA-182 F22 Cl 3	75 ksi	0.75"	0.66"	12.50"
Caps 14" sch 80	SA-182 F22 Cl 3		0.75"	0.70"	12.50"
Tee connection	SA-182 F22 Cl 3		1.00" min	1.00"	12.40"
Inspection ports	SA-182 F22 Cl 3		1.00" min	1.00"	12.40"
Header riser branch connection	SA-182 F22 Cl 3		0.3" (note b) 0.8" (note c)	0.28"	2.90"
Riser pipe 3.00" sch 80	SB-167 Alloy 690	85	0.3"	0.26"	2.90"
Riser pipe inspection port plug	SB-564 Alloy 690	85	1.50"	0.36"	0.86" OD
Riser pipe inspection port	SB-564 Alloy 690		0.30" min	0.36"	2.90"
Elbow 90° 3.00" sch 80	SB-564 Alloy 690		0.3"	N/A	2.90"
Inspection port cover	SA-533 GrB Cl2	90	2.25"	N/A	9.75" OD
Safe end	SA-105	70	0.75"	0.66"	12.50"

a : Tensile strength Su from ASME Code, Section III, Appendix 1, tables
b : MFW riser side
c : MFW header side

AREVA NP SAS Date 01 AUG 2009 Name AREVA NP (Certificate Holder) Signed LAIGNIER P (Authorized representative)

ANI Date 8/14/09 Name (Authorized Nuclear Inspector) Commissions 11452, A-N, OH 193. [Nat'l Board (Incl. Endorsements), and State or Prov. and No.]

01 0017

CERTIFICATE HOLDERS' DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code Section III

1. Manufactured and certified by AREVA NP - Usine de Chalon/St Marcel
(Name and address of NPT Certificate Holder)
BP 40001 St Marcel - 71328 CHALON SUR SAONE Cedex - France

2. Manufactured for AREVA NP, Inc.
(Name and address of Purchaser)
3315 Old Forest Road, Lynchburg, VA 24501

3. Location of installation Three Mile Island Nuclear Station Unit 1
(Name and address)
Route 441 South, Middletown, PA 17057 - USA

Items 4 and 8 – Emergency Feedwaters accessories

Part	Matl. Spec. no.	Tensile strength (ksi at 70°F) (note a)	Nom. thickness (in.)	Min.design thickness (in.)	Nom. Dia. ID (in.)
6" sch 80 pipe	SA-182 F22 Cl3	75	0.43"	0.38"	5.76"
Header to riser branch connection	SA-182 F22 Cl3		0.30" (note b) 0.80" (note c)	0.30"	2.90"
3" sch 80 riser pipe	SB-167 Alloy 690	85	0.3"	0.26"	2.90"
Elbow 3" sch 80	SB-564 Alloy 690		0.3"	N/A	2.90"
6" blind flange	SA-182 F22 Cl3	75	2.20"	N/A	15.00" OD
6" weld neck flange	SA-182 F22 Cl3		0.432"	N/A	5.76"
6.00" sch 80 pipe elbow	SA-182 F22 Cl3		0.43"	N/A	5.76"
6" sch 80 pipe safe end 3" lg	SA-105	70	0.43"	N/A	5.76"

a : Tensile strength Su from ASME Code, Section III, Appendix 1, tables
b : EFW riser side
c : EFW header side

AREVA NP SAS Date 01 AUG 2009 Name AREVA NP (Certificate Holder) Signed LAURENT P. (Authorized representative)

ANI Date 8/1/09 Name (Authorized Nuclear Inspector) Commissions 11452 A-N, OH193. [Nat'l Board (Incl. Endorsements), and State or Prov. and No.]

01 0018

CERTIFICATE HOLDERS' DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code Section III

1. Manufactured and certified by AREVA NP – Usine de Chalon/St Marcel
(Name and address of NPT Certificate Holder)
BP 40001 St Marcel – 71328 CHALON SUR SAONE Cedex – France

2. Manufactured for AREVA NP, Inc.
(Name and address of Purchaser)
3315 Old Forest Road, Lynchburg, VA 24501

3. Location of installation Three Mile Island Nuclear Station Unit 1
(Name and address)
Route 441 South, Middletown, PA 17057 – USA

Item 10

	Steam generator primary side	Steam generator secondary side
Design pressure (psig)	2500	1150
Temp (°F)	650	605
Hydro test pressure (psig)	3125	1438
Min: Temp. hydr test (°F)	70	70

AREVA NP SAS Date 04 AUG 2009 Name AREVA NP (Certificate Holder) Signed LANGNIER P. (Authorized representative)

ANI Date 8/14/09 Name (Authorized Nuclear Inspector) Commissions 11452, A-N, OH 193 (Nat'l Board (Incl. Endorsements), and State or Prov. and No.)

FORM NPP-1 CERTIFICATE HOLDER'S DATA REPORT FOR FABRICATED NUCLEAR PIPING SUBASSEMBLIES*

As Required by the Provisions of the ASME Code, Section III, Division 1

1. Fabricated and certified by TAYLOR FORGE ENGINEERED SYSTEMS, INC • 208 N. IRON STREET • PAOLA, KANSAS 66071
(name and address of NPT Certificate Holder)

2. Fabricated for AREVA NP, INC., • 155 MILL RIDGE ROAD • LYNCHBURG, VA 24502
(name and address of Purchaser)

3. Location of installation THREE MILE ISLAND, UNIT 1 • RT 441 SOUTH • MIDDLETOWN, PA 17057
(name and address)

4. Type:

0199-1B	—	0199-01-D12, Rev. 1	—	2009
(Certificate Holder's serial no.)	(CRN)	(drawing no.)	(National Bd. no.)	(year built)

5. ASME Code, Section III, Division 1:

2001	2003	Class 1	2142-2
(edition)	(addenda date)	(class)	(Code Case no.)

6. Shop hydrostatic test 3125 psig Minimum / 3400 psig Maximum at 70° F. Minimum / 100° F. Maximum (if performed)

7. Description of piping **36" ID Overlaid Upper Hot Leg Assembly:** 180° Elbow (4-45° Elbows)=SA-516-70 Modified to SA-234-WPC S7 & S9; All Pipe= SA-106-C; (2) Pressure Tap Nozzles=SA-105, (3) RTE Mounting Bosses With RTD Weldable Thermowells=SB-166 UNS N06690, (Continued in Remarks)

8. Certificate Holder's Data Reports properly identified and signed by commissioned inspectors have been furnished for the following items of this report: Vent and Pressure Tap Nozzle Forgings - Part Number EG8022796-001, S/N's 01, 03, 04, 05, 06, 07, 08, and Flow Meter Nozzle Forgings - Part Number EG8022801-001, S/N's 01, 02, 03 and 04

9. Remarks (1) Vent Nozzle=SA-105; (2) Flow Meter Nozzles=SA-105, (8) Impulse Nozzles & (2) Flow Meter Rings=SB-166 UNS N06690; (2) Flow Meter, (3) Vent and Pressure Tap Safe Ends=SA-182-F316; Lifting Lug and Insulation Support Lugs=SA-516-70

CERTIFICATE OF SHOP COMPLIANCE

We certify that the statements made in this report are correct and that the fabrication of the described piping subassembly conforms to the rules for construction of the ASME Code, Section III, Division 1.

NPT Certificate of Authorization No. N-1937 Expires November 25, 2010

Date 10/15/09 Name Taylor Forge Engineered Systems, Inc. Signed _____
(NPT Certificate Holder) (Authorized representative)

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Kansas and employed by HSB CT of Hartford, CT have inspected the piping subassembly described in this Data Report on 10/9/09, and state that to the best of my knowledge and belief, the Certificate Holder has fabricated this piping subassembly in accordance with the ASME Code, Section III, Division 1.

By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the piping subassembly described in this Data Report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 10/15/09 Signed _____ Commissions KS 4148 NB 11546 A B N I N S
(Authorized Nuclear Inspector) (National Bd. (incl. endorsements), and state or prov. and no.)

* Supplemental information in the form of lists, sketches, or drawings may be used provided: (1) size is 8 ½ x 11; (2) information in items 1 through 4 on this Data Report is included on each sheet; and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

(09/06)

FORM NPP-1 (Back — Pg. 2 of 2)

Certificate Holder's Serial No. 0199-1B

). Description of field fabrication _____

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_____

I. Pneu., hydro., or comb. test pressure _____ at temp. _____ (if performed)

CERTIFICATE OF FIELD FABRICATION COMPLIANCE

We certify that the statements made in this report are correct and that the field fabrication of the described piping subassembly conforms with the rules for construction of the ASME Code, Section III, Division 1.

NPT Certificate of Authorization No. _____ Expires _____

Date _____ Name _____ (Certificate Holder) Signed _____ (authorized representative)

CERTIFICATE OF FIELD FABRICATION INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of _____ and employed by _____ of _____ have compared the statements in this Data Report with the described piping subassembly and state that parts referred to as data items _____, not included in the Certificate of Shop Inspection, have been inspected by me on _____ and that to the best of my knowledge and belief the Certificate Holder has fabricated this piping subassembly in accordance with the ASME Code, Section III, Division 1.

By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the piping subassembly described in this Data Report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date _____ Signed _____ (Authorized Nuclear Inspector) Commissions _____ [National Bd. (incl. endorsements), and state or prov. and no.]

(09/06)

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner Exelon Nuclear — Date March 12, 2010
   Name
   200 Exelon Way, Kennett Square, PA — Sheet 1 of 1
   Address

2. Plant Three Mile Island Generating Station — Unit TMI-1
   Name
   See Remarks
   Address — Repair Organization P.O. No., Job No., etc.

3. Work Performed by Exelon Nuclear — Type Code Symbol Stamp N/A
   Name
   Authorization No. N/A
   200 Exelon Way, Kennett Square, PA — Expiration Date NA
   Address

4. Identification of System 223 – PRESSURIZER

5. (a) Applicable Construction Code ASME Section III, 1965, Class A Edition, Summer 1967, Addenda, N416-3 Code Case
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Pressurizer	Babcock & Wilcox Company	620-0005-59	N-110	NA	1970	Repaired	Yes

7. Description of Work: Removed six pressurizer level sensing nozzle safe ends and adjacent piping/valve assemblies. Replaced pressurizer level sensing nozzle safe ends with new stainless steel safe ends and piping/valve assemblies. Removed pressurizer sample nozzle safe end and replaced with new stainless steel safe end.

8. Tests Conducted Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒

   Other ☐ Pressure 2176 psig Test Temp. 532°F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

This Form (E00030) may be obtained from the Order Dept., 22 Law drive, Box 2300, Fairfield, NJ 07007-2300. , New York, NY 10017

FORM NIS-2 (Back)

9. Remarks: Removed six pressurizer level sensing nozzle safe ends and adjacent piping/valve assemblies. Replaced pressurizer level sensing nozzle safe ends with new stainless steel safe ends and piping/valve assemblies. Removed pressurizer sample nozzle safe end and replaced with new stainless steel safe end. Work performed under work orders C2020136, C2020137, C2020138, C2020140, C2020142, C2020143, C2020144.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil/ISI Program Specialist Date March 12, 2010

Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 1-29-09 to 3-18-10, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Joseph A. Libby Commissions PA 1887 NB 5478 A.N.I.

Inspector's Signature National Board, State, Province, and Endorsements

Date March 11 20 10

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner Exelon Nuclear (Name) — Date March 12, 2010

   200 Exelon Way, Kennett Square, PA (Address) — Sheet 1 of 1

2. Plant Three Mile Island Generating Station (Name) — Unit TMI-1

   (Address) — C2020486 and C2020487 (Repair Organization P.O. No., Job No., etc.)

3. Work Performed by Exelon Nuclear (Name) — Type Code Symbol Stamp N/A

   Authorization No. N/A

   200 Exelon Way, Kennett Square, PA (Address) — Expiration Date NA

4. Identification of System 223 – PRESSURIZER

5. (a) Applicable Construction Code ASME Section III, 1965, Class A Edition, Summer 1967, Addenda, N416-3 Code Case
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Pressurizer	Babcock & Wilcox Company	620-0005-59	N-110	NA	1970	Replaced	Yes

7. Description of Work: Removed existing thermowell from service by welding pad over existing location. Installed new thermowell 180 degrees from original location.

8. Tests Conducted Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒

   Other ☐ Pressure 2176 psig Test Temp. 532°F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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FORM NIS-2 (Back)

9. Remarks: Removed existing thermowell from service by welding pad over existing location. Installed new thermowell 180 degrees from original location.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil/ISI Program Specialist Date March 12, 2010
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 7-16-09 to 3-10-10, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Joseph L McCoy Commissions PA 1887 NB5478 A.N.I.
Inspector's Signature National Board, State, Province, and Endorsements

Date March 10 20 10

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner Exelon Nuclear — Date January 26, 2010
   Name
   200 Exelon Way, Kennett Square, PA — Sheet 1 of 1
   Address

2. Plant Three Mile Island Generating Station — Unit TMI-1
   Name
   PIMS AR# A2201054
   Address — Repair Organization P.O. No., Job No., etc.

3. Work Performed by Exelon Nuclear — Type Code Symbol Stamp N/A
   Name
   Authorization No. N/A
   200 Exelon Way, Kennett Square, PA — Expiration Date NA
   Address

4. Identification of System 211 – HPI/MAKEUP & PURIFICATION SYSTEM

5. (a) Applicable Construction Code ASME Section III 1998 Edition, 2000, Addenda, N-416-3 Code Case
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
NA	NA	NA	NA	NA	NA	NA	No

7. Description of Work: Replaced "A", "B", "C", and "D" High Pressure Injection (HPI) safe ends and thermal sleeves with new stainless steel material.

8. Tests Conducted Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒

   Other ☐ Pressure 2176 psig Test Temp. 532°F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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FORM NIS-2 (Back)

9. Remarks: Replaced "A", "B", "C", and "D" High Pressure Injection (HPI) safe ends and thermal sleeves with new stainless steel material. See work orders C2020573, C2020574, C2020575, and C2020576.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil/ISI Program Specialist Date January 26, 2010

Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 12-9-09 to 3-5-10, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Joseph L Yuhasz Commissions PA 1887 NB 5478 A. N. I.

Inspector's Signature National Board, State, Province, and Endorsements

Date MARCH 5 20 10

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner Exelon Nuclear (Name) — Date February 25, 2010

   200 Exelon Way, Kennett Square, PA (Address) — Sheet 1 of 1

2. Plant Three Mile Island Generating Station (Name) — Unit TMI-1

   (Address) — R2061681 (Repair Organization P.O. No., Job No., etc.)

3. Work Performed by Exelon Nuclear (Name) — Type Code Symbol Stamp N/A

   Authorization No. N/A

   200 Exelon Way, Kennett Square, PA (Address) — Expiration Date NA

4. Identification of System 411 – MAIN STEAM SYSTEM

5. (a) Applicable Construction Code ANSI B31.1 1967 Edition, NA Addenda, NA Code Case
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
NA	NA	NA	NA	NA	NA	NA	NA

7. Description of Work: Opened, inspected, and replaced stem, bonnet, and seal ring on valve MS-V-1C.
8. Tests Conducted Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒

   Other ☐ Pressure 860 psig Test Temp. 200°F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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FORM NIS-2 (Back)

9. Remarks: Opened, inspected, and replaced stem, bonnet, and seal ring on valve MS-V-1C.
Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil/ISI Program Specialist Date February 25, 2010
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 12-7-09 to 3-3-10, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Commissions PA 1987 N3 5478 A N I
Inspector's Signature
National Board, State, Province, and Endorsements

Date March 3 2010

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner Exelon Nuclear (Name) — Date February 23, 2010

   200 Exelon Way, Kennett Square, PA (Address) — Sheet 1 of 1

2. Plant Three Mile Island Generating Station (Name) — Unit TMI-1

   Rt. 441 South, Middletown, PA, 17057 (Address) — R2120893 (Repair Organization P.O. No., Job No., etc.)

3. Work Performed by Exelon Nuclear (Name) — Type Code Symbol Stamp N/A

   Authorization No. N/A

   200 Exelon Way, Kennett Square, PA (Address) — Expiration Date NA

4. Identification of System 153 – Reactor Building

5. (a) Applicable Construction Code B31.1 1967 Edition, NA, Addenda, NA Code Case
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1992 through 1992 Add

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
NA	NA	NA	NA	NA	NA	NA	NA

7. Description of Work: Replaced flange bolting on Reactor Building penetrations 414 and 415.
8. Tests Conducted Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure

   Other x Pressure 54 psig Test Temp NA°F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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FORM NIS-2 (Back)

9. Remarks: Replaced flange bolting on Reactor Building penetrations 414 and 415.
Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil/ISI Program Specialist Gene Navratil Date February 23, 2010
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 1-16-10 to 2-25-10, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Joseph L Clubby Commissions NB 5478 N I A PA 1687
Inspector's Signature National Board, State, Province, and Endorsements

Date FEB 25 2010

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner Exelon Nuclear — Date February 23, 2010
   Name
   200 Exelon Way, Kennett Square, PA — Sheet 1 of 1
   Address

2. Plant Three Mile Island Generating Station — Unit TMI-1
   Name
   C2022745
   Address — Repair Organization P.O. No., Job No., etc.

3. Work Performed by Exelon Nuclear — Type Code Symbol Stamp N/A
   Name
   Authorization No. N/A
   200 Exelon Way, Kennett Square, PA — Expiration Date NA
   Address

4. Identification of System 220 – REACTOR COOLANT SYSTEM

5. (a) Applicable Construction Code ASME Section III, 1977 Edition, Summer 1979, Addenda, NA Code Case
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
NA	NA	NA	NA	NA	NA	Replaced	NA

7. Description of Work: Replaced valve RC-V-42 operator/bonnet with new operator/bonnet.
8. Tests Conducted Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒

   Other ☐ Pressure 2176 psig Test Temp. 532°F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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FORM NIS-2 (Back)

9. Remarks: Replaced valve RC-V-42 operator/bonnet with new operator/bonnet.
Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil/ISI Program Specialist Date February 23, 2010
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 1-19-10 to 1-25-10, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Joseph A. Melby Commissions PA 1887 NB 5478 A.N.I.
Inspector's Signature National Board, State, Province, and Endorsements

Date FEB. 25 20 10

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner Exelon Nuclear — Name — Date February 17, 2010

   200 Exelon Way, Kennett Square, PA — Address — Sheet 1 of 1

2. Plant Three Mile Island Generating Station — Name — Unit TMI-1

   Address — C2022177 — Repair Organization P.O. No., Job No., etc.

3. Work Performed by Exelon Nuclear — Name — Type Code Symbol Stamp N/A

   Authorization No. N/A

   200 Exelon Way, Kennett Square, PA — Address — Expiration Date NA

4. Identification of System 411 – MAIN STEAM SYSTEM

5. (a) Applicable Construction Code ASME Section III 1968 Edition, NA Addenda, NA Code Case
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
MS-V-21B	Dresser	BL07020	NA	NA	1969	Refurbished	Yes

7. Description of Work: Removed valve, lapped and oxidized disk, lapped and passivated nozzle, tested valve, and re-installed refurbished valve.

8. Tests Conducted Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒

   Other ☐ Pressure 860 psig Test Temp. 200°F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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FORM NIS-2 (Back)

9. Remarks: Removed valve, lapped and oxidized disk, lapped and passivated nozzle, tested valve, and re-installed refurbished valve.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil/ISI Program Specialist Date February 17, 2010
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 11-7-09 to 2-25-10, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Joseph J. Hurley Commissions PA 1887 NB 5478 A.N.I.
Inspector's Signature National Board, State, Province, and Endorsements

Date FEB 25 20 10

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner Exelon Nuclear (Name) — Date February 17, 2010

   200 Exelon Way, Kennett Square, PA (Address) — Sheet 1 of 1

2. Plant Three Mile Island Generating Station (Name) — Unit TMI-1

   (Address) — C2022184 (Repair Organization P.O. No., Job No., etc.)

3. Work Performed by Exelon Nuclear (Name) — Type Code Symbol Stamp N/A

   Authorization No. N/A

   200 Exelon Way, Kennett Square, PA (Address) — Expiration Date NA

4. Identification of System 411 – MAIN STEAM SYSTEM

5. (a) Applicable Construction Code ASME Section III 1968 Edition, NA Addenda, NA Code Case
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
MS-V-19C	Dresser	BL07033	NA	NA	1969	Refurbished	Yes

7. Description of Work: Removed valve, replaced spindle and disk, lapped and passivated nozzle seat, tested valve, and re-installed refurbished valve.

8. Tests Conducted Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒

   Other ☐ Pressure 860 psig Test Temp. 200°F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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FORM NIS-2 (Back)

9. Remarks: Removed valve, replaced spindle and disk, lapped and passivated nozzle seat, tested valve, and re-installed refurbished valve.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil/ISI Program Specialist Date February 17, 2010
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 11-7-09 to 2-25-10, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Joseph A. Shelby Commissions PA 1887 NB 5478 A. H. I.
Inspector's Signature *National Board, State, Province, and Endorsements*

Date FEB. 25 20 10

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner Exelon Nuclear — Name — Date February 17, 2010

   200 Exelon Way, Kennett Square, PA — Address — Sheet 1 of 1

2. Plant Three Mile Island Generating Station — Name — Unit TMI-1

   Address — C2022197 — Repair Organization P.O. No., Job No., etc.

3. Work Performed by Exelon Nuclear — Name — Type Code Symbol Stamp N/A

   Authorization No. N/A

   200 Exelon Way, Kennett Square, PA — Address — Expiration Date NA

4. Identification of System 411 – MAIN STEAM SYSTEM

5. (a) Applicable Construction Code ASME Section III 1968 Edition, NA Addenda, NA Code Case
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
MS-V-19A	Dresser	BL07031	NA	NA	1969	Refurbished	Yes

7. Description of Work: Removed valve, replaced spindle and disk, lapped and passivated nozzle seat, tested valve, and re-installed refurbished valve.

8. Tests Conducted Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒

   Other ☐ Pressure 860 psig Test Temp. 200°F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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FORM NIS-2 (Back)

9. Remarks: Removed valve, replaced spindle and disk, lapped and passivated nozzle seat, tested valve, and re-installed refurbished valve.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil/ISI Program Specialist Gene Navratil Date February 17, 2010
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 11-7-09 to 2-24-10, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Joseph W. Kelly Commissions PA 1887 NB 5478 A, N I.
Inspector's Signature National Board, State, Province, and Endorsements

Date FEB 24 2010

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner Exelon Nuclear — Date February 17, 2010
   Name
   200 Exelon Way, Kennett Square, PA — Sheet 1 of 1
   Address

2. Plant Three Mile Island Generating Station — Unit TMI-1
   Name
   Address — C2022176
   Repair Organization P.O. No., Job No., etc.

3. Work Performed by Exelon Nuclear — Type Code Symbol Stamp N/A
   Name
   Authorization No. N/A
   200 Exelon Way, Kennett Square, PA — Expiration Date NA
   Address

4. Identification of System 411 – MAIN STEAM SYSTEM

5. (a) Applicable Construction Code ASME Section III 1968 Edition, NA Addenda, NA Code Case
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
MS-V-19D	Dresser	BL07034	NA	NA	1969	Refurbished	Yes

7. Description of Work: Replaced valve with new valve. New valve work included replaced spindle and disk, lapped and passivated nozzle seat, tested valve, and re-installed refurbished new valve.

8. Tests Conducted — Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒
   Other ☐ Pressure 860 psig Test Temp. 200°F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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FORM NIS-2 (Back)

9. Remarks: Replaced valve with new valve. New valve work included replaced spindle and disk, lapped and passivated nozzle seat, tested valve, and re-installed refurbished new valve.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms to the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil/ISI Program Specialist *Gene Navratil* Date February 17, 2010

Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 11-7-09 to 2-24-10, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

[signature] Commissions PA 1887 NB 5478 A, N, I

Inspector's Signature — National Board, State, Province, and Endorsements

Date FEB 24 20 10

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner Exelon Nuclear — Date February 19, 2010
   Name
   200 Exelon Way, Kennett Square, PA — Sheet 1 of 1
   Address

2. Plant Three Mile Island Generating Station — Unit TMI-1
   Name
   R2113945
   Address — Repair Organization P.O. No., Job No., etc.

3. Work Performed by Exelon Nuclear — Type Code Symbol Stamp N/A
   Name
   Authorization No. N/A
   200 Exelon Way, Kennett Square, PA — Expiration Date NA
   Address

4. Identification of System 221 – REACTOR VESSEL

5. (a) Applicable Construction Code B31.7 1968 Draft with June 1968 Errata Edition, NA, Addenda, NA Code Case
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
NA	NA	NA	NA	NA	NA	Replaced	NA

7. Description of Work: Replaced Reactor Coolant Inventory Tracking System tubing connected adjacent to the Reactor Vessel Closure Head.

8. Tests Conducted Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒

   Other ☐ Pressure 2176 psig Test Temp. 532°F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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FORM NIS-2 (Back)

9. Remarks: Replaced Reactor Coolant Inventory Tracking System tubing connected adjacent to the Reactor Vessel Closure Head.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil/ISI Program Specialist Date February 19, 2010
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 12-31-09 to 2-24-10, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Joseph A Hubby Commissions PA 1867 NB 5478 A N I
Inspector's Signature National Board, State, Province, and Endorsements

Date FEB. 24 2010

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner Exelon Nuclear (Name) — Date February 19, 2010

   200 Exelon Way, Kennett Square, PA (Address) — Sheet 1 of 1

2. Plant Three Mile Island Generating Station (Name) — Unit TMI-1

   (Address) — C2022204 (Repair Organization P.O. No., Job No., etc.)

3. Work Performed by Exelon Nuclear (Name) — Type Code Symbol Stamp N/A

   Authorization No. N/A

   200 Exelon Way, Kennett Square, PA (Address) — Expiration Date NA

4. Identification of System 411 – MAIN STEAM SYSTEM

5. (a) Applicable Construction Code ASME Section III 1968 Edition, NA Addenda, NA Code Case
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
MS-V-17C	Dresser	BL07025	NA	NA	1969	Refurbished	Yes

7. Description of Work: Removed valve, replaced disk, lapped and passivated nozzle seat, tested valve, and re-installed refurbished valve.

8. Tests Conducted Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒

   Other ☐ Pressure 860 psig Test Temp. 200°F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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FORM NIS-2 (Back)

9. Remarks: Removed valve, replaced disk, lapped and passivated nozzle seat, tested valve, and re-installed refurbished valve.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil/ISI Program Specialist Date February 19, 2010
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 11-7-09 to 2-23-10, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Joseph Ashbaugh Commissions PA 1887, NB 5478 A.N.I.
Inspector's Signature National Board, State, Province, and Endorsements

Date FEB 23 2010

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner Exelon Nuclear (Name) — Date February 19, 2010

   200 Exelon Way, Kennett Square, PA (Address) — Sheet 1 of 1

2. Plant Three Mile Island Generating Station (Name) — Unit TMI-1

   (Address) — C2022206 (Repair Organization P.O. No., Job No., etc.)

3. Work Performed by Exelon Nuclear (Name) — Type Code Symbol Stamp N/A

   Authorization No. N/A

   200 Exelon Way, Kennett Square, PA (Address) — Expiration Date NA

4. Identification of System 411 – MAIN STEAM SYSTEM

5. (a) Applicable Construction Code ASME Section III 1968 Edition, NA Addenda, NA Code Case
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
MS-V-21A	Dresser	BL07019	NA	NA	1969	Refurbished	Yes

7. Description of Work: Removed valve, lapped, passivated, and oxidized the disk, lapped and passivated nozzle seat. Spring and disk holder and guide were replaced. Tested and re-installed refurbished valve.

8. Tests Conducted Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒

   Other ☐ Pressure 860 psig Test Temp. 200°F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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FORM NIS-2 (Back)

9. Remarks: Removed valve, lapped, passivated, and oxidized the disk, lapped and passivated nozzle seat. Spring and disk holder and guide were replaced. Tested and re-installed refurbished valve.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil/ISI Program Specialist Date February 19, 2010

Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 11-7-09 to 2-23-10, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Joseph A Shelby Commissions PA 1887 NB5478 A, N.I.

Inspector's Signature National Board, State, Province, and Endorsements

Date FEB 23 2010

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner Exelon Nuclear — Date February 19, 2010
   Name
   200 Exelon Way, Kennett Square, PA — Sheet 1 of 1
   Address

2. Plant Three Mile Island Generating Station — Unit TMI-1
   Name
   Address — C2022202
   Repair Organization P.O. No., Job No., etc.

3. Work Performed by Exelon Nuclear — Type Code Symbol Stamp N/A
   Name
   Authorization No. N/A
   200 Exelon Way, Kennett Square, PA — Expiration Date NA
   Address

4. Identification of System 411 – MAIN STEAM SYSTEM

5. (a) Applicable Construction Code ASME Section III 1968 Edition, NA Addenda, NA Code Case
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
MS-V-18C	Dresser	BL07029	NA	NA	1969	Refurbished	Yes

7. Description of Work: Removed valve, replaced spindle and disk, lapped and passivated nozzle seat, tested valve, and re-installed refurbished valve.

8. Tests Conducted Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒

   Other ☐ Pressure 860 psig Test Temp. 200°F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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FORM NIS-2 (Back)

9. Remarks: Removed valve, replaced spindle and disk, lapped and passivated nozzle seat, tested valve, and re-installed refurbished valve.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil/ISI Program Specialist Date February 19, 2010
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 11-7-09 to 2-23-10, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Joseph J. Mulcahy Commissions PA 1887, NB 5478 A, N, I,
Inspector's Signature National Board, State, Province, and Endorsements

Date FEB 23 2010

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner Exelon Nuclear (Name) — Date February 17, 2010

   200 Exelon Way, Kennett Square, PA (Address) — Sheet 1 of 1

2. Plant Three Mile Island Generating Station (Name) — Unit TMI-1

   (Address) — C2022207 (Repair Organization P.O. No., Job No., etc.)

3. Work Performed by Exelon Nuclear (Name) — Type Code Symbol Stamp N/A

   Authorization No. N/A

   200 Exelon Way, Kennett Square, PA (Address) — Expiration Date NA

4. Identification of System 411 – MAIN STEAM SYSTEM

5. (a) Applicable Construction Code ASME Section III 1968 Edition, NA Addenda, NA Code Case
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
MS-V-19B	Dresser	BL07032	NA	NA	1969	Refurbished	Yes

7. Description of Work: Removed valve, replaced spindle and disk, passivated seat, tested valve, and re-installed refurbished valve.

8. Tests Conducted Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒

   Other ☐ Pressure 860 psig Test Temp. 200°F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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FORM NIS-2 (Back)

9. Remarks: Removed valve, replaced spindle and disk, passivated seat, tested valve, and re-installed refurbished valve.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil/ISI Program Specialist Date February 17, 2010
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 11-7-09 to 2-17-10, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Inspector's Signature Commissions PA 1887 NB 5478 E N, A
National Board, State, Province, and Endorsements

Date FEB 17 2010

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner Exelon Nuclear (Name) — Date January 26, 2010

   200 Exelon Way, Kennett Square, PA (Address) — Sheet 1 of 1

2. Plant Three Mile Island Generating Station (Name) — Unit TMI-1

   Rt. 441 South, Middletown, PA, 17057 (Address) — C2022710 (Repair Organization P.O. No., Job No., etc.)

3. Work Performed by Exelon Nuclear (Name) — Type Code Symbol Stamp N/A

   Authorization No. N/A

   200 Exelon Way, Kennett Square, PA (Address) — Expiration Date NA

4. Identification of System 824 – REACTOR BUILDING PURGE & KIDNEY SYSTEM

5. (a) Applicable Construction Code See Below Edition, See Below Addenda, NA Code Case
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
NA	NA	NA	NA	NA	NA	NA	NA

7. Description of Work: Replaced two studs and two nuts on valve AH-V-1D flange (IWE side).
8. Tests Conducted Hydrostatic ☐ Pneumatic ☒ Nominal Operating Pressure ☐

   Other ☐ Pressure 53 psig Test 64 F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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FORM NIS-2 (Back)

9. Remarks: two studs and two nuts on valve AH-V-1D flange (IWE side).
Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil/ISI Program Specialist Date January 26, 2010
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 1-14-10 to 2-8-10, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Joseph A Mabey Commissions PA 1887 NB 5478 I.N.A.
Inspector's Signature National Board, State, Province, and Endorsements

Date FEB 8 2010

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner Exelon Nuclear (Name) — Date February 4, 2010

   200 Exelon Way, Kennett Square, PA (Address) — Sheet 1 of 1

2. Plant Three Mile Island Generating Station (Name) — Unit TMI-1

   Rt. 441 South, Middletown, PA, 17057 (Address) — C2014853 (Repair Organization P.O. No., Job No., etc.)

3. Work Performed by Exelon Nuclear (Name) — Type Code Symbol Stamp N/A

   Authorization No. N/A

   200 Exelon Way, Kennett Square, PA (Address) — Expiration Date NA

4. Identification of System 231 – GASEOUS WASTE DISPOSAL SYSTEM

5. (a) Applicable Construction Code See Below Edition, See Below Addenda, N-416-3 Code Case
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
NA	NA	NA	NA	NA	NA	NA	NA

7. Description of Work: Replaced valve WDG-V-3 and added support WDG-3000. Design and materials per B31.1, 1967; B31.7Draft February 1968 with June 1968 Errata for fabrication, assembly, erection, inspection and testing (Class N-3).

8. Tests Conducted Hydrostatic ☐ Pneumatic ☒ Nominal Operating Pressure ☐

   Other ☐ Pressure 53.06 psig Test 62°F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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FORM NIS-2 (Back)

9. Remarks: Replaced valve WDG-V-3 and added support WDG-3000. Design and materials per B31.1, 1967; B31.7Draft February 1968 with June 1968 Errata for fabrication, assembly, erection, inspection and testing (Class N-3).

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil/ISI Program Specialist Date February 4, 2010
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 1-28-09 to 2-5-10, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Commissions PA 1887 NB 5478 I.N.A.
Inspector's Signature
National Board, State, Province, and Endorsements

Date FEB 5 2010

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner Exelon Nuclear (Name) — Date January 27, 2010

   200 Exelon Way, Kennett Square, PA (Address) — Sheet 1 of 1

2. Plant Three Mile Island Generating Station (Name) — Unit TMI-1

   (Address) — C2022596 (Repair Organization P.O. No., Job No., etc.)

3. Work Performed by Exelon Nuclear (Name) — Type Code Symbol Stamp N/A

   Authorization No. N/A

   200 Exelon Way, Kennett Square, PA (Address) — Expiration Date NA

4. Identification of System 213 – CORE FLOODING SYSTEM

5. (a) Applicable Construction Code B31.1 Edition, 1967, Addenda, NA Code Case
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
NA	NA	NA	NA	NA	NA	NA	No

7. Description of Work: Replaced snubber CF-14 eye bolt and snubber with new previously tested snubber.
8. Tests Conducted Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐

   Other ☒ Pressure Snubber per 1410-Y-34 psig Test Temp. NA°F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

This Form (E00030) may be obtained from the Order Dept., 22 Law drive, Box 2300, Fairfield, NJ 07007-2300. , New York, NY 10017

FORM NIS-2 (Back)

9. Remarks: Replaced snubber CF-14 eye bolt and snubber with new previously tested snubber.
Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil/ISI Program Specialist Date January 27, 2010
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 1-27-10 to 2-4-10, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Joseph A Shibley Commissions PA 1887 NB 5478 E.N. 17.
Inspector's Signature National Board, State, Province, and Endorsements

Date FEB. 4 2010

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner Exelon Nuclear — Name — Date February 4, 2010

   200 Exelon Way, Kennett Square, PA — Address — Sheet 1 of 1

2. Plant Three Mile Island Generating Station — Name — Unit TMI-1

   Address — R2125079 — Repair Organization P.O. No., Job No., etc.

3. Work Performed by Exelon Nuclear — Name — Type Code Symbol Stamp N/A

   Authorization No. N/A

   200 Exelon Way, Kennett Square, PA — Address — Expiration Date NA

4. Identification of System 223 – PRESSURIZER

5. (a) Applicable Construction Code ASME Section III 1971 Edition, Summer1973, Addenda, NA Code Case
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
RC-RV-1B	Dresser	BR06613	NA	NA	1977	NA	Yes

7. Description of Work: Removed, tested, refurbished, and re-installed valve.
8. Tests Conducted Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒

   Other ☐ Pressure 2176 psig Test Temp. 532°F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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FORM NIS-2 (Back)

9. Remarks: Removed, tested, refurbished, and re-installed valve.
Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil/ISI Program Specialist Date February 4, 2010
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 9-2-03 to 2-4-10, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Commissions PA 1887 NB 5478 I.N.A.
Inspector's Signature
National Board, State, Province, and Endorsements

Date FEB 4 20 10

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner Exelon Nuclear — Date February 4, 2010
   Name
   200 Exelon Way, Kennett Square, PA — Sheet 1 of 1
   Address

2. Plant Three Mile Island Generating Station — Unit TMI-1
   Name
   Address — R2125041
   Repair Organization P.O. No., Job No., etc.

3. Work Performed by Exelon Nuclear — Type Code Symbol Stamp N/A
   Name
   Authorization No. N/A
   200 Exelon Way, Kennett Square, PA — Expiration Date NA
   Address

4. Identification of System 223 – PRESSURIZER

5. (a) Applicable Construction Code ASME Section III 1971 Edition, Summer1973, Addenda, NA Code Case
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
RC-RV-1A	Dresser	BR06612	NA	NA	1977	Replaced	Yes

7. Description of Work: Removed valve and replaced with previously refurbished/tested valve that has been previously in service at TMI.

8. Tests Conducted Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒

   Other ☐ Pressure 2176 psig Test Temp. 532°F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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FORM NIS-2 (Back)

9. Remarks: Removed valve and replaced with previously refurbished/tested valve that has been previously in service at TMI.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil/ISI Program Specialist Date February 4, 2010
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 4-2-08 to 2-4-10, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Joseph A. Kelly Commissions PA 1857 NJ 5478 I, N, A
Inspector's Signature National Board, State, Province, and Endorsements

Date FEB 4 20 10

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner Exelon Nuclear — Date February 4, 2010
   Name
   200 Exelon Way, Kennett Square, PA — Sheet 1 of 1
   Address

2. Plant Three Mile Island Generating Station — Unit TMI-1
   Name
   Address — R2119709
   Repair Organization P.O. No., Job No., etc.

3. Work Performed by Exelon Nuclear — Type Code Symbol Stamp N/A
   Name
   Authorization No. N/A
   200 Exelon Way, Kennett Square, PA — Expiration Date NA
   Address

4. Identification of System 223 – PRESSURIZER

5. (a) Applicable Construction Code ASME Section III 1971 Edition, Summer1973, Addenda, NA Code Case
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
RC-RV-2	Dresser	BS03989	NA	NA	1978	NA	Yes

7. Description of Work: Removed, tested, and refurbished valve serial number BS03989 per Exelon Specification SP-1101-12-087.

8. Tests Conducted Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒

   Other ☐ Pressure 2176 psig Test Temp. 532°F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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FORM NIS-2 (Back)

9. Remarks: Removed, tested, and refurbished valve serial number BS03989 per Exelon Specification SP-1101-12-087.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil/ISI Program Specialist Date February 4, 2010
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 9-21-09 to 11-27-09, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Joseph J. Kubisky Commissions PA 1847 NB 5476 E, N, A.
Inspector's Signature National Board, State, Province, and Endorsements

Date FEB 4 20 10

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner Exelon Nuclear (Name) — Date January 26, 2010

   200 Exelon Way, Kennett Square, PA (Address) — Sheet 1 of 1

2. Plant Three Mile Island Generating Station (Name) — Unit TMI-1

   Rt. 441 South, Middletown, PA, 17057 (Address) — C2019390 (Repair Organization P.O. No., Job No., etc.)

3. Work Performed by Exelon Nuclear (Name) — Type Code Symbol Stamp N/A

   Authorization No. N/A

   200 Exelon Way, Kennett Square, PA (Address) — Expiration Date NA

4. Identification of System 212 – LPI/DECAY HEAT REMOVAL SYSTEM

5. (a) Applicable Construction Code See Below Edition, See Below Addenda, NA Code Case
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
NA	NA	NA	NA	NA	NA	NA	NA

7. Description of Work: Replaced one stud and two nuts on valve DH-V-38B bonnet without removing bonnet.

8. Tests Conducted Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐

   Other ☒ Pressure IST Pressure psig Test NA F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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FORM NIS-2 (Back)

9. Remarks: Replaced one stud and two nuts on valve DH-V-38B bonnet.
Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil/ISI Program Specialist Date January 26, 2010
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 11-30-09 to 2-3-10, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Joseph J. Shelby Commissions PA 1887 NB 35478 E N I
Inspector's Signature National Board, State, Province, and Endorsements

Date FEB 3 2010

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner AmerGen Energy Comp. LLC — Date October 3, 2008
   Name
   200 Exelon Way, Kennett Square, PA — Sheet 1 of 1
   Address

2. Plant Three Mile Island Generating Station — Unit TMI-1
   Name
   Rt. 441 South, Middletown, PA, 17057 — R2079136
   Address — Repair Organization P.O. No., Job No., etc.

3. Work Performed by AmerGen Energy Comp. — Type Code Symbol Stamp N/A
   Name
   Authorization No. N/A
   200 Exelon Way, Kennett Square, PA — Expiration Date NA
   Address

4. Identification of System 153 – REACTOR BUILDING

5. (a) Applicable Construction Code B31.1, 1967 (Materials & Design), B31.7, Feb. 1968 Draft with June 1968 Errata (Fabrication, Assembly, Erection, Test) Addenda, N/A Code Case
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1992 through 1992 Addenda

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Penetration 212	NA	NA	NA	NA	NA	NA	No

7. Description of Work: Replaced one blind flange bolt and nut.
8. Tests Conducted Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐
   Other ☐ Pressure NA psig Test Temp. NA °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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FORM NIS-2 (Back)

9. Remarks: Replaced one blind flange bolt and nut.
Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil/ISI Program Specialist Gene Navratil Date October 17, 2008
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 10/17/08 to 10/17/08, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Scott R. LaDuy Commissions PA 2372 (N&I)
Inspector's Signature National Board, State, Province, and Endorsements

Date 10/17 20 08

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner AmerGen Energy Comp. LLC (Name) — Date 04/18/2008

   200 Exelon Way, Kennett Square, PA (Address) — Sheet 1 of 1

2. Plant Three Mile Island Generating Station (Name) — Unit TMI-1

   Rt. 441 South, Middletown, PA, 17057 (Address) — C2016361 (Repair Organization P.O. No., Job No., etc.)

3. Work Performed by AmerGen Energy Comp. (Name) — Type Code Symbol Stamp N/A

   Authorization No. N/A

   200 Exelon Way, Kennett Square, PA (Address) — Expiration Date N/A

4. Identification of System 220- Pressurizer

5. (a) Applicable Construction Code ASME Section III Edition, 1967, Addenda, Summer 1967 Code Case N/A
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996 Addenda

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
RC-RV-1A (SN BL-08897)	NA	NA	NA	NA	NA	NA	Yes

7. Description of Work: Refurbish and test valve.

8. Tests Conducted — Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒

   Other ☐ Pressure 2160 psig Test Temp. 538 °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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FORM NIS-2 (Back)

9. Remarks: Refurbish and test valve.
Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil, ISI Program Engineer Date April 18, 2008
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 10/19/07 to 5/20/08, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Scott R. Farley Commissions PA2372 (N&I)
Inspector's Signature National Board, State, Province, and Endorsements

Date 5/20 2008

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner AmerGen Energy Comp. LLC (Name) Date 06/20/2008

   200 Exelon Way, Kennett Square, PA (Address) Sheet 1 of 1

2. Plant Three Mile Island Generating Station (Name) Unit TMI-1

   Rt. 441 South, Middletown, PA, 17057 (Address) C2014757 (Repair Organization P.O. No., Job No., etc.)

3. Work Performed by AmerGen Energy Comp. (Name) Type Code Symbol Stamp N/A

   Authorization No. N/A

   200 Exelon Way, Kennett Square, PA (Address) Expiration Date N/A

4. Identification of System 212- Decay Heat Removal

5. (a) Applicable Construction Code B31.7 Edition, 1968 draft, Addenda, June Errata Code Case N/A
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996 Addenda

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
DH-V-19B	NA	NA	NA	NA	NA	NA	No

7. Description of Work: Replaced valve internals and bonnet.

8. Tests Conducted Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒

   Other ☐ Pressure 165 psig Test Temp. 105 °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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FORM NIS-2 (Back)

9. Remarks Replaced valve internals and bonnet.
Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil, ISI Program Engineer Dave Navratil Date June 20, 2008
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 2/26/07 to 6/24/08, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Scott R. Lilley Commissions PA2372 (N&I)
Inspector's Signature National Board, State, Province, and Endorsements

Date 6/24 20 08

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner AmerGen Energy Comp. LLC — Date 06/20/2008
   Name

   200 Exelon Way, Kennett Square, PA — Sheet 1 of 1
   Address

2. Plant Three Mile Island Generating Station — Unit TMI-1
   Name

   Rt. 441 South, Middletown, PA, 17057 — C2014756
   Address — Repair Organization P.O. No., Job No., etc.

3. Work Performed by AmerGen Energy Comp. — Type Code Symbol Stamp N/A
   Name

   Authorization No. N/A

   200 Exelon Way, Kennett Square, PA — Expiration Date N/A
   Address

4. Identification of System 212- Decay Heat Removal

5. (a) Applicable Construction Code B31.7 Edition, 1968 draft, Addenda, June Errata Code Case N/A
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996 Addenda

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
DH-V-19A	NA	NA	NA	NA	NA	NA	No

7. Description of Work: Replaced valve internals and bonnet.

8. Tests Conducted — Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒
   Other ☐ Pressure 165 psig Test Temp. 105 °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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FORM NIS-2 (Back)

9. Remarks Replaced valve internals and bonnet.
Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil, ISI Program Engineer Gene Navratil Date June 20, 2008
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 2/27/07 to 6/24/08, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Scott R. Farley Commissions PA2372 (N&I)
Inspector's Signature National Board, State, Province, and Endorsements

Date 6/24 2008

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner AmerGen Energy Comp. LLC — Date 05/19/2008
   Name
   200 Exelon Way, Kennett Square, PA — Sheet 1 of 1
   Address

2. Plant Three Mile Island Generating Station — Unit TMI-1
   Name
   Rt. 441 South, Middletown, PA, 17057 — C2017025
   Address — Repair Organization P.O. No., Job No., etc.

3. Work Performed by AmerGen Energy Comp. — Type Code Symbol Stamp N/A
   Name
   Authorization No. N/A
   200 Exelon Way, Kennett Square, PA — Expiration Date N/A
   Address

4. Identification of System 211- HPI/MAKEUP & PURIFICATION

5. (a) Applicable Construction Code B31.7 Edition, 1968 draft, Addenda, June errata Code Case N/A
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996 Addenda

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
MU-P-1B Bolting	NA	NA	NA	NA	NA	NA	No

7. Description of Work: Replace inlet flange bolting one at a time.

8. Tests Conducted — Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒
   Other ☐ Pressure 35 psig Test Temp. 95 °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

This Form (E00030) may be obtained from the Order Dept., 22 law drive, Box 2300, Fairfield, NJ 07007-2300. , New York, NY 10017

FORM NIS-2 (Back)

9. Remarks None

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil, ISI Program Engineer Gene Navratil Date May 19, 2008

Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 2/27/08 to 5/20/08, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Scott R. Farley Commissions PA2372 (N&I)

Inspector's Signature National Board, State, Province, and Endorsements

Date 5/20 2008

FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS

As required by the Provisions of the ASME Code Section XI

1. Owner AmerGen Energy Comp. LLC (Name) Date 05/19/2008

   200 Exelon Way, Kennett Square, PA (Address) Sheet 1 of 1

2. Plant Three Mile Island Generating Station (Name) Unit TMI-1

   Rt. 441 South, Middletown, PA, 17057 (Address) C2016502 (Repair Organization P.O. No., Job No., etc.)

3. Work Performed by AmerGen Energy Comp. (Name) Type Code Symbol Stamp N/A

   Authorization No. N/A

   200 Exelon Way, Kennett Square, PA (Address) Expiration Date N/A

4. Identification of System 211- HPI/MAKEUP & PURIFICATION

5. (a) Applicable Construction Code B31.7 Edition, 1968 draft, Addenda, June errata Code Case N/A
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1995 through 1996 Addenda

6. Identification of Components Repaired or Replaced and Replacement Components.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Yr Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
MU-P-1A Bolting	NA	NA	NA	NA	NA	NA	No

7. Description of Work: Replace inlet flange bolting one at a time.

8. Tests Conducted Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒

   Other ☐ Pressure 35 psig Test Temp. 95 °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 ½ x 11 in. (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

This Form (E00030) may be obtained from the Order Dept., 22 law drive, Box 2300, Fairfield, NJ 07007-2300. , New York, NY 10017

FORM NIS-2 (Back)

9. Remarks None

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

I certify that the statements made in the report are correct and that this conforms the requirements of ASME Code, Section XI.

Type of Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Gene Navratil, ISI Program Engineer Date May 19, 2008

Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Pennsylvania and employed by. Hartford Steam boiler I & I Co of CT of Hartford, CT, 06102 have inspected the components described in this Owner's Report during the period 1/3/08 to 5/20/08, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Scott R. Foley Commissions PA2372 (N&I)

Inspector's Signature National Board, State, Province, and Endorsements

Date 5/20 2008

TMI-10-033
April 21, 2010

ENCLOSURE 3

35th Year Reactor Building Tendon Surveillance (Period 9)

(Rev *0*)

Author	**Date**
Co-Author	**Date**
Reviewer	**Date**
Design Verification Required?	☐ Yes ☒ No
Section Manager	**Date**

Table of Contents

Table of Contents

1. PURPOSE AND INTRODUCTION

This topical report documents the results of the 35th Year (Period 9) Reactor Building In-Service Inspection. This in-service inspection (ISI), also referred to herein as a surveillance, is performed at 5 year intervals to demonstrate the continuing structural integrity of the reactor building, or, containment.

This topical report also serves as the Engineering Evaluation Report required by 10CFR50.55a and the ASME Boiler and Pressure Vessel Code, Section XI, Sub-Section IWL, Par. IWL-3310. The ISI Summary Report and the NIS-1 and NIS-2 forms identified in Sub-Section IWA, Article IWA-6000 and required by 10CFR50.55a, are separate documents.

The ISI, performed per Technical Specification 4.4.2.1, meets the requirements of USNRC Regulation 10CFR50.55a and, as referenced in that regulation, the requirements of the 1992 Edition (with 1992 Addenda) of the ASME Boiler and Pressure Vessel Code, Section XI, Subsection IWL. The ISI, also referred to as a surveillance, meets the requirements described in the FSAR and is performed in accordance with TMI-1 Surveillance Procedure 1301-9.1.

The ISI is comprised of the measurements, examinations, tests and related activities identified in Section 2 below.

Surveillance activities also included replacement of leaking end cap gaskets in the tendon gallery.

Measurements, examinations and tests on randomly selected tendons have been done on a regular basis throughout the life of the plant. Complete examination of the containment exterior as specified in Sub-Section IWL, examination of tendon end anchorage caps and tendon force trend extrapolation, commenced with the Period 7 surveillance (performed in 2000) in accordance with requirements introduced in a 1996 amendment to 10CFR50.55a. The Period 9 surveillance is the third to be conducted per 10CFR50.55a and Sub-Section IWL. The first, the Period 7, and second, the Period 8 surveillance, are documented in topical Reports No. 136 and 183.

The remainder of this topical report is divided into the following sections:

Section 2, Summary of Work Performed and Inspection Results, is a synopsis of ISI activities and findings.

Section 3, Post-Tensioning System Examinations and Tests, describes measurements, tests, and examinations performed on post-tensioning system components (except bearing plate examinations performed as a part of the overall containment exterior examination), tabulates results, provides a detailed development of tendon force trend extrapolation and includes evaluations of conditions that do not meet acceptance criteria. Post-tensioning

system examinations and tests performed to satisfy the topical Report 183 commitments are also covered in this section.

Section 4, Containment Surface Examinations, describes the examination process, discusses examination findings and includes evaluations of conditions that do not meet acceptance criteria. Containment surface examinations performed to satisfy the Topical Report 183 commitments are also covered in this section

Section 5, Repairs and follow-Up Examinations, is a summary list of required repair work and damage / deteriorated area re-examinations to be done during the 40th year surveillance.

Section 6, Conclusions, summarizes overall conclusions regarding containment integrity as demonstrated by the ISI.

Section 7, References, identifies the documents that govern the performance of the ISI and that are otherwise cited in this report.

Section 8, Tables and Figures, includes tables and figures referenced in preceding sections of the report.

Section 9, Attachment 1, is the detailed report submitted by the ISI contractor. This report includes field data sheets.

2. SUMMARY OF WORK PERFORMED AND INSPECTION RESULTS

The work performed during the 35th year surveillance and the results of these examinations and tests are summarized in 2.1 and 2.2 below.

2.1 Work Performed

The 35th year surveillance consisted of testing and visual examination of a randomly selected sample of post-tensioning tendons and a visual examination of the accessible containment exterior.

2.1.1 Post-Tensioning System Testing and Examination

The following tendons, except as noted, were randomly selected for testing and examination. Tendons V-32, H62-26, and D-225, identified as the control tendons, are included in the successive surveillance samples. The initial size, nominally 2% of the tendons in each group (vertical, hoop, dome) or 5 tendons, whichever is less (but at least 3 tendons), meets the requirements of Sub-Section IWL, Par. IWL-2521. Dome tendon D-342 could not be fully examined for safety reasons during the 30th year surveillance, and was added to the scope of the 35th year surveillance.

- Vertical Tendons: V-11, V-32, V-90, V-132
- Hoop Tendons: H13-41, H24-33, H46-50, H51-49, H62-26
- Dome Tendons: D-122, D-225, D-322, D-342

Examinations and tests consisted of the following activities, with exceptions as noted. Examinations and tests were performed in accordance with Surveillance Procedure 1301-9.1, which incorporates the applicable requirements of the 1992 Edition (with 1992 Addenda) of the ASME Boiler and Pressure Vessel Code, Section XI, Sub-Section IWL and the additional requirements specified in 10CFR50.55a(b)(2)(viii). The surveillance procedure also incorporates applicable requirements of the UFSAR.

- Collection of corrosion protection medium (CPM) samples from each end of each tendon (no samples taken from the ends of tendons which only had grease cans repaired) and laboratory tests on these to determine water content, concentration or corrosive ions and reserve alkalinity.
- Visual examination of end anchorage hardware (button heads, anchor heads, shims and bearing plates) and concrete within 2 feet of the bearing plate.
- Measurements of end anchorage force using the feeler gage pull out procedure described in Surveillance Procedure 1301-9.1.

- De-tensioning of one tendon in each group and extraction of a specimen wire for visual examination and tensile tests.

- Re-tensioning of the de-tensioned tendons with measurement of elongations at several loads.

- Refilling tendon ducts and end caps with CPM (quantities of CPM removed and replaced measured and documented).

Also, all tendon end anchorage covers were examined for damage and CPM leakage in accordance with the requirements of 10CFR50.55a(b)(2)(viii)(A).

2.1.2 Containment Surface Examination

The entire accessible concrete surface of the containment was visually examined using the VT-3C procedure defined in ASME Section XI Sub-Section IWL, Par. IWL-2310. This examination was performed directly (without optical aids) and remotely using binoculars. Tendon anchorage end caps and bearing plates were examined at the same time.

The concrete was examined for evidence of cracking, spalling, efflorescence and other types of damage / deterioration as identified in ACI 201.1R. This examination was also focused, as specified in 10CFR50.55a(b)(2)(viii)(D)(3), on CPM seepage through the concrete.

Bearing plates were examined for detached or missing coatings and corrosion.

Topical Report No. 183, Section 5.2, specifies that detailed examinations of previously identified concrete surface conditions be performed during the 35th year ISI. These were performed using the VT-1C detailed visual examination procedure defined in IWL-2310.

2.2 Inspection Results

The results of the 35th Year (Period 9) Reactor Building In-Service Inspection are summarized below.

2.2.1 Post-Tensioning System

The results of the post-tensioning system examinations, measurements and tests met prescriptive acceptance criteria and the one exception was shown to be acceptable by evaluation. A listing of specific results follows.

- All tendon forces were above 95% of the predicted values.

- Vertical, hoop, and dome tendon normalized group mean forces were above the minimum required levels.

- The 95% lower confidence limits on vertical, hoop and dome tendon force trends projected to the latest date for the completion of the 40th year ISI were above the minimum required levels for those groups.

- Elongations measured during re-tensioning of de-tensioned tendons were within 10% of previously measured values as corrected for jack pull rod elongations.

- End anchorage hardware items, with the exception of several tendon gallery bearing plates, were free of active corrosion, cracking and distortion. A number of tendon gallery bearing plates are frequently wetted by ground water seepage between the gallery walls and the Reactor Building base mat. This has caused minor corrosion on several plates. There is no significant loss of metal and, at the present time, no need to take remedial action other than re-examination during the 40th year surveillance.

- All as found button head conditions were as documented during construction. One button head at the shop end of D-322 was found to be unseated following re-tensioning of this tendon, which was de-tensioned for test wire removal. This is attributable to binding of the wires and transfer of force by friction in the wire bundle rather than bearing at the button head. The condition was accepted by evaluation.

- The tensile strength and elongation (at failure) of all wire test samples were above the minimum required values.

- Water content, corrosive ion concentration and reserve alkalinity of all corrosion protection medium samples met acceptance criteria.

- No free water was found at tendon anchorages.

- Concrete adjacent to end anchorages of the surveillance tendons was free of cracks over 0.01 inches wide.

- The differences between the quantities of corrosion protection medium removed from sample tendons and the quantities replaced were all within 10% of net duct volume.

- All end anchorage covers (grease caps) were free of damage with the exception of minor active corrosion on the flange of the V84 cap in the tendon gallery. Nine vertical tendon end caps showed signs of significant grease leakage through the gaskets, which were replaced. Only a few other grease caps showed signs of CPM leakage and the leakage observed was deemed to be insignificant.

2.2.2 Containment Surface

Concrete and tendon anchorage bearing plates were generally free of damage / deterioration. Minor active corrosion was noted on several bearing plates in the tendon gallery, a result of ground water seepage between the gallery outer wall and the Reactor Building base mat. Loss of metal is not significant. Remedial action, other than re-examination during the 40 year surveillance, is not considered necessary at this time.

Minor seepage of corrosion protection medium (CPM) through vertical cracks in the lower wall was found to be continuing at a nominal rate unchanged from that observed during the 30 year surveillance. This is expected since most of the CPM in the TMI tendon ducts is an older formulation that liquefies at a relatively low temperature. Most of the seepage was noted in the area below the equipment opening. Ducts in this area are curved to pass around the opening and are sheet metal fabricated with rolled seams that are not leak tight. The seepage, which has no structural significance, is monitored and corrective action will be taken to top off vertical tendon CPM levels if seepage rates warrant.

3. POST-TENSIONING SYSTEM TESTS AND EXAMINATION

The following tests and examinations were performed to assess the continuing quality and integrity of the post-tensioning system.

- Measurement of tendon end anchorage force.
- Measurement of tendon elongation during re-tensioning.
- Measurement of wire test specimen strength and elongation at failure.
- Chemical analysis to determine corrosion protection medium test specimen water content, reserve alkalinity and concentration of corrosive ions.
- Visual examination of post-tensioning system components, as well as concrete adjacent to bearing plates, to detect accumulation of free water, corrosion, deformation, cracking, wire breakage and wire button head failure.
- Visual examination of tendon end anchorage covers (grease caps) to detect damage and corrosion protection medium leakage.

All but the last of the above tests and examinations involved a small sample of the total tendon population. All tendon end anchorage covers were examined.

Tendons, except control tendons, initially selected for tests and examinations were randomly picked from a population that included all tendons not examined during a prior surveillance. Control tendons are common to consecutive surveillances. Sample tendons, identified in Surveillance Procedure 1301-9.1, enclosure 2, are listed below.

Vertical tendons:	V-11, V-32 (control), V-90 and V-123
Hoop Tendons:	H13-41, H24-33, H46-50, H51-49 and H62-26 (control)
Dome Tendons:	D-122, D-225 (control), D-322 and D-342 (added scope from 30th year[1])

[1] Tendon D342 was randomly selected for examination during Surveillance 8. Since one end of this tendon is located over the main steam safety and dump valve discharge piping, safety considerations limited the scope of the examination that could be performed while the plant was operating. The full set of tests and examinations of D342 was performed during Surveillance 9.

One tendon in each group (vertical, hoop and dome) was selected for de-tensioning and removal of a specimen wire for testing.

3.1 Tendon End Anchorage Forces

Tendon end anchorage forces were measured using the liftoff technique described in Surveillance Procedure 1301-9.1. Forces were measured at both ends of hoop and dome tendons and at only the upper ends of vertical tendons.

Acceptance criteria cover individual tendon forces, current group mean forces and projected group mean forces. These forces and the associated criteria are discussed in the following paragraphs.

3.1.1 Individual Tendon Forces

Table 3-1 lists measured end anchorage forces, tendon mean end forces (for hoop and dome tendons, the average of individual end anchorage measurements) and lower acceptance limits[2]. The acceptance limits are equal to 95% of the forces predicted for the individual tendons. Predictions are documented in Calculation DC-5390-225.01-SE.

As shown in the table, all tendon forces (mean end forces) are above the lower acceptance limits. Furthermore, the forces in all tendons except H13-41, V32, and V90 are above the predicted levels. The forces in the three aforementioned tendons are 99.8%, 99.5%, and 99.6% of their predicted forces, respectively.

In addition, all measured end anchorage forces are below 1,394 kip (0.7 Guaranteed Ultimate Tensile Strength, GUTS)

3.1.2 Group Mean Forces

The mean forces in each group of tendons must be equal to or greater than the minimum required force for the group as stated in Par. 9.3.1 of Surveillance Procedure 1301-9.1. The minimum required force values are:

Vertical Tendons: 1,033 kip

Hoop Tendons: 1,108 kip

Dome Tendons: 1,064 kip

---

[2] There is no stated upper limit; however, no measured force exceeded the implicit upper limit of 0.7 GUTS (Guaranteed Ultimate Tensile Strength), which is the stated upper limit on re-tensioning force. For the tendons examined during the 35th year surveillance, all of which have 169 effective wires, 0.7 GUTS equates to 1,394 kip.

During construction of the containment, individual tendons were tensioned to anchorage forces between about 0.70 and 0.74 GUTS. These force differences remain throughout the life of the structure.

Also, as tendons were tensioned in sequence, force in any tendon falls (elastic shortening loss) during subsequent tensioning of tendons in the same group.

Surveillance samples are quite small, nominally 2% of the tendons in each group. For this reason, there is a relatively high probability that the samples will consist of tendons initially tensioned to the high end or the low end of the acceptance range and / or tendons tensioned close to the beginning of the sequence or end of the sequence. Therefore, a sample mean force calculated using measured end anchorage forces has a high probability of deviating significantly from the true group mean.

Therefore, measured tendon forces are adjusted (normalized) to account for initial tensioning force and stressing sequence. Calculation DC-5390-225.01-SE describes the normalization procedure and lists the adjustments for each tendon selected for (or added to) surveillance samples.

Table 3-2 lists tendon forces (from Table 3-1), adjustments, normalized forces and group mean normalized forces. All group mean normalized forces are above the minimum required levels as summarized below.

Tendon Group	Mean Normalized Force, kip	Minimum Required Mean, kip
Vertical	1,186	1,033
Hoop	1,132	1,108
Dome	1,138	1,064

3.1.3 Projected Group Mean Forces

10CFR50.55a(b)(2)(viii)(B) requires projecting the trends of tendon forces to determine whether or not group means are not expected to remain above minimum required levels until the time of the subsequent surveillance.

Topical Report No. 136, which documents the results of the 25th year surveillance, develops the procedure used to extrapolate tendon force trends. As explained in that report, the projection uses the tendon force data acquired during the 10th year and later surveillances. It does not use data from the 1st, 3rd, and 5th year surveillances for two reasons. First, the trends of the forces measured during those early surveillance appear to differ significantly form the trends established by the data recorded during the later surveillances. Second, the later (10th year forward) surveillances are more completely documented, which ensures that the correct force values are used in trend development.

As discussed in Topical Report No. 136, the force data for all three groups exhibit a considerable degree of scatter. As a result, fitted lines or curves do not necessarily provide meaningful representations of force trends. Therefore, forecast force levels are not determined as the ordinates of the regression curves. Rather, these are reported as the 95% lower confidence levels computed for the postulated log-linear relationships between force and time. The basis for using the confidence level approach is extensively discussed in the cited topical report.

Figures 3-1, 3-2, and 3-3 are log-linear plots of vertical, hoop, and dome group tendon forces measured during the 10th year and later surveillances. The data scatter, which is typical, is evident in the plots. The plots include log-linear trend lines for reference. However, the magnitude of the scatter is such that these fitted trends cannot necessarily be considered meaningful (note that the hoop tendon trend, Fig 3-2, shows force increasing with time).

The tendon forces listed in Tables 3-3, 3-4 and 3-5 (and plotted in Figures 3-1 through 3-3) were used to compute 95% lower confidence limits on group means projected to March 2015 (41 years after the SIT and the latest date for the completion of Surveillance 10). These limits, also plotted in Figures 3-1, 3-2 and 3-3, were computed using the following procedure as developed in most engineering statistics texts[3].

$$LCL(X) = a + b * X - t_{0.05,\,n-2} * s_e * (1 / n + n * [X-X_m]^2 / S_{xx})^{1/2}$$

Where (with all summations from 1 to n):

LCL(X) = Lower confidence limit on Y at an abscissa value of X
$a = Y_m - b * X_m$ is the intercept of the least squares fit trend line
$Y_m = (\Sigma Y_i) / n$
$X_m = (\Sigma X_i) / n$
X_i , Y_i are data sets with $X_i = \log_{10} (t_i)$ and Y_i = tendon force in kip
$b = S_{xy} / S_{xx}$ is the slope of the slope of the least squres fit trend line
$t_{0.05,\,n-2}$ is the t statistic for a 95% confidence level and (n-2) degrees of freedom
$s_e = [\{S_{xx} * S_{yy} - (S_{xy})^2\} / \{n * (n-2) * S_{xx}\}]^{1/2}$ is the standard error of the estimate
n is the number of data sets used in the LCL calculation
$S_{xx} = n * \Sigma X_i^2 - (\Sigma X_i)^2$
$S_{yy} = n * \Sigma Y_i^2 - (\Sigma Y_i)^2$
$S_{xy} = n * \Sigma(X_i * Y_i) - (\Sigma X_i) * (Y_i)$

---

[3] The procedure shown is that developed in Reference 10. The 95% LCL's on the projected means for the three groups are above the minimum required values, which provides a significant degree of confidence that actual mean forces will be above minimum required levels in March 2015 (T = 41 years), the latest date for completion of the 10th surveillance.

The lower confidence limits (LCL's) on group means at T = 41 years and the corresponding minimum required group means are listed below.

Group	95% LCL on Group Mean, kip	Minimum Group Mean, kip
Vertical	1,178	1,033
Hoop	1,129	1,108
Dome	1,079	1,064

3.1.4 Control Tendon Force Trends

One tendon in each group is designated as a control tendon and is, barring exceptional circumstances, included in each consecutive surveillance sample to provide information on the time dependent behavior of individual post-tensioning elements. Control tendons are not de-tensioned. The control tendons and consecutively measured (not normalized) forces are listed in the table below.

Control Tendon Forces, kip						
Tendon	Surveillance Year					
	10th	15th	20th	25th	30th	35th
V-32	1,196	N/A	1,210	1,193	1,190	1,180
H62-26	1,145	1,128	1,161	1,136	1,120	1,148
D-225	1,125	N/A	1,120	1,104	1,120	1,093

There is no clear trend to the above forces, which fluctuate in a random manner over a relatively narrow range. The fluctuations, which probably result from temperature changes, tendon force redistribution and small measurement errors, tend to mask the expected trend (a slow, linear decrease with the logarithm or time).

The measured forces, measured force trend line (log-linear fit to the force data) and predicted force trend line are shown for each of the control tendons in Figures 3-4 through 3-6. These plots exhibit the following consistent features.

- Trend lines fitted to the measured forces all have flatter slopes than the predicted force trend lines and, as expected, all fitted trend lines have negative slopes.
- 35th year surveillance measured forces are above predicted values.
- The log-linear trends of measured forces are above the predicted force trends, both at the time of the 35 year surveillance and at all future times.

These plots provide a positive indication that tendon forces are currently decreasing at a lower than expected rate and support the conclusion that mean tendon forces will remain above minimum required levels at least until the latest date for completion of the 40th year surveillance.

3.2 Tendon Elongations and Re-Tensioning

One tendon in each group was de-tensioned to allow removal of a wire for testing. Elongations were measured during the subsequent re-tensioning and compared to original construction values to verify that tendons were intact and that there were no obstructions to tendon motion within the ducts. Following the elongation measurements at Overstress force (OSF) (nominal 80% of ultimate strength), each tendon was seated, in accordance with Sub-Section IWL requirements, at force between that predicted for the time of the surveillance and 70% of ultimate strength.

Tendons V-90, H51-49 and D-322 were de-tensioned for wire removal.

3.2.1 Elongations

Elongations measured during initial tensioning and re-tensioning are normalized to account for differences between the Pre-tension Force (PTF) / OSF forces applied during original construction and those applied during the 9th surveillance as well as for differences in the number of wires (one was removed for testing prior to re-tensioning). Normalizing construction and surveillance values in this manner allows direct comparison of elongations regardless of differences in PTF values, OSF values and numbers of wires. Normalized elongations are expressed as inches per kip per wire.

Elongations are acceptable if:

$$-0.1 \leq dR = (\Delta_{n2} - \Delta_{n1}) / \Delta_{n1} \leq 0.1$$

where

Δ_{n1} is normalized elongation determined for original stressing

Δ_{n2} is normalized elongation determined for re-tensioning

dR is the percent difference of normalized elongation

Pertinent data documented for initial construction tensioning and the 35th year surveillance re-tensioning are tabulated for each of the sample tendons below. These tabulations also list the calculated normalized elongation rates. Original stressing data are as listed on the tendon stressing cards completed during construction and maintained in permanent plant records.

	Parameter	Tendon		
		V90	H51-49	D322
Construction	F_{osf}, kip	1,478	1,564	1,564
	d_{osf}, in	13.5	18.0	14.2
	F_{ptf}, kip	208	208	208
	d_{ptf}, in	1.2	7.45	3.50
	Wires, N_w	169	169	169
	Δ_{n1}, in / (kip / wire)	0.812	1.315	1.333
2009 Surveillance	F_{osf}, kip	1,579	1,555	1,528
	d_{osf}, in	17.8	17.5	17.00
	F_{ptf}, kip	207	207	207
	d_{ptf}, in	5.9	6.6	7.0
	Wires, N_w	168	168	168
	Δ_{n2}, in / (kip / wire)	1.457	1.358	1.272
	$dR = (\Delta_{n2} - \Delta_{n1}) / \Delta_{n1}$	-0.11	0.03	-0.05

In the above table - F_{osf} is overstress force ~ 80% GUTS
d_{osf} is overstress reference distance
F_{ptf} is pre-tension force ~ 200 kip
d_{ptf} is pre-tension reference distance
Δ_n is normalized elongation = $(d_{osf} - d_{ptf}) \times N_w / (F_{osf} - F_{ptf})$

Values of dR computed for H51-49 and D-322 are between -0.1 and 0.1 and are, therefore, acceptable as shown. The value computed for V90 is just outside the acceptance range. However, if the original measured elongation is reduced to account for the increase in the length of the jack pull rod (~0.1 inches), as discussed in the vendor manual, Reference 22, the resulting value of dR is acceptable.

3.2.2 Re-Tensioning

After elongations at OSF were measured, tendons were reseated at forces between those predicted for the time of the surveillance and 70% of ultimate strength as specified in Sub-Section IWL, Par. 2523.3. Final lock-off forces as documented in Surveillance Procedure 1301-9.1 are listed below with the applicable lower and upper limits.

Tendon	Predicted Force, kip	Lock-Off Force, kip	70% GUTS, kip
V-90	1204	1238	1384
H51-49	1132	1215	1384
D-322	1128	1171	1384

As shown above, all final lock-off forces are between the specified limits.

3.3 End Anchorage Condition

Sample tendon end anchorages, except as subsequently noted, were visually examined for evidence of corrosion, physical damage, missing button heads and unseated button heads. In addition, the concrete surrounding the anchorage was examined out to a distance of two feet beyond the bearing plate edge to detect cracks >0.01 inches in width, spalls, and other indications of damage / deterioration.

These examinations uncovered no indication of unacceptable conditions. Examination results and acceptance criteria are listed below.

3.3.1 Corrosion

- Acceptance Criterion

  No evidence of active corrosion

- Examination Results

  No active corrosion was found on wires[4], button heads, stressing washers or shims. Observed corrosion was limited to light, dry, tightly adhering rust on shims and bearing plates; no rust was observed on button heads or anchor heads.

[4] Short segments of some wires were visible when tendons were de-tensioned for wire removal

3.2.2 Physical Damage

- Acceptance Criterion

  No cracks or deformation in anchor heads, shims or bearing plates.

- Examination Results

  No cracks or deformations were found.

3.3.3 Missing Button Heads

- Acceptance Criterion

  No missing button heads not previously documented (no specific criterion set for button heads that detach during surveillance operations).

- Examination Results

  No missing button heads were found during examinations.

3.3.4 Unseated Button Heads

- Acceptance Criterion

  No unseated button heads not previously documented (no specific criterion set for button heads that are unseated following re-tensioning).

- Examination Results

  No unseated button heads were found during as found inspection.

  One button head at the shop end of D322 was unseated after re-tensioning. There were no indications of wire breakage. It is concluded that this wire is tightly bound in the bundle at a point relatively close to the anchorage and that full load transfer to the wire was by friction rather than button head bearing. This condition is acceptable.

3.3.5 Concrete Within Two Feet of Bearing Plate

- Acceptance Criterion

  No concrete cracks wider than 0.01 inches.

- Examination Results

No cracks wider than 0.01 inches were found.

3.4 Specimen Wire Test Results

A specimen for wire examination and testing was removed from one tendon in each group. Each wire was visually examined over its entire length for corrosion, pitting, and physical damage. Test samples (100 inches in length) were cut from near each end and near the middle of each specimen wire. These were tested to determine tensile strength and elongation at failure.

The visual examinations, as documented in Surveillance Procedure 1301-9.1, Enclosure 4, showed that all three specimen wires were free from active corrosion, pitting and physical damage. As a result, there was no need to cut an additional test specimen from the most corroded section of wire as specified in the surveillance procedure.

Tensile strengths of all 9 test specimens exceeded the specified lower limit of 240 ksi (Guaranteed Ultimate Tensile Strength, or GUTS). Also elongations at failure all exceeded the lower limit of 4%. The results of the tests are tabulated below.

Tendon	Test Sample	Tensile Strength, ksi	Elongation at Failure, %
V-90	1	282	5.4
	2	280	5.2
	3	278	5.1
H51-49	1	287	5.3
	2	287	5.3
	3	287	5.3
D-322	1	282	5.3
	2	280	5.3
	3	281	5.6

It was noted that the tensile strength of the sample wires was moderately stronger than previous data. A thorough investigation of the wire test procedures and equipment calibration procedures, and calibrations tracked to NIST was conducted. Additional wire samples were tested from the same wires with the same results. A fifth set of wire samples were then tested using different test equipment and different calibration equipment traceable to NIST. These last tests with a second set of equipment agreed with originally measured data. As such, the strength measurements are acceptable.

3.5 Corrosion Protection Medium Test Results

Samples of corrosion protection medium (CPM) were collected from each end of each sample tendon. Laboratory tests were performed on these samples to determine the characteristics listed (with acceptance limits) below. Enclosure 3 of Surveillance Procedure 1301-9.1 identifies the process and standardized tests used in the laboratory analysis.

Characteristic	Acceptance Limit
Water Content	Not to Exceed 10% by weight
Water Soluble Chlorides	Not to Exceed 10 ppm
Water Soluble Nitrates	Not to Exceed 10ppm
Water Soluble Sulfides	Not to Exceed 10 ppm
Reserve Alkalinity (Base Number)	≥0 or an acid number ≤1 for originally installed CPM ≥17.5 for Visconorust 2090-P4

Table 3-6 lists the laboratory test results. As shown in the table, all test results meet the acceptance criteria.

3.6 Corrosion Protection Medium Removal / Replacement

When CPM was removed from tendon sheath, quantity removed and the quantity later replaced were documented. The difference in these quantities provides the information to assess the acceptability of both the level of CPM fill prior to removal and the level following replacement. If the amount replaced is significantly less than the amount removed, the level is low and must be increased. If the amount replaced is significantly greater than the amount removed the reason for the difference (initial fill or leakage over time) must be determined and the situation corrected.

Quantities of CPM removed and replaced during the 35th year surveillance are shown in Table 3-7. All differences (absolute values) are less than 10% of the net duct volume limits specified in 10CFR50.55a(b)(2)(viii)(D)(2).

3.7 Free Water Accumulation

End anchorages were examined for evidence of free water accumulation. No free water was found at any of the anchorages examined.

3.8 Tendon End Anchorage Cover Examination

Tendon end anchorage covers (grease caps) were examined as specified in 10CFR50.55a(b)(2)(viii)(A) for damage / deformations and CPM leakage.

All covers examined were in sound condition and free of deformations. With one exception, there was no evidence of corrosion on the covers. The flange on the cover at the lower end of V84 has active corrosion resulting from seepage of ground water between the tendon gallery wall and the Reactor Building base mat. Loss of metal is not significant. At this time, corrective action, other than re-examination during the 40 year surveillance, is not considered necessary.

Significant CPM leakage was observed at the lower ends of 9 vertical tendons. End cap gaskets were replaced to eliminate the leakage and the tendons were refilled with grease.

3.9 Topical Report No. 183 Examination and Test Commitments

All areas identified in Topical Report No. 183 for VT-1C re-examination during the 2009 surveillance were found to be essentially unchanged. The repair to overlay exposed reinforcing on the vertical face of the ring girder sector in the SE quadrant was done after the completion of the 35 year surveillance. The repaired area currently shows no sign of damage or deterioration.

As all of these areas, with the exception of the repaired area on the ring girder, have been examined multiple times over many years, the special detailed visual examinations will, except as noted below, not be continued in future surveillances.

- The repaired area on the face of the ring girder will be re-examined (detailed visual) during the 40 year surveillance.

- The lower wall extending up from the base mat will be re-examined (detailed visual) to assess the seepage of corrosion protection medium through vertical cracks in the concrete. This detailed visual examination will be done during future surveillances.

- Concrete and bearing plates at the bottom of the base mat where this is exposed in the tendon gallery will require a detailed examination each future surveillance to assess the effects of ongoing ground water intrusion into the gallery area.

4. CONTAINMENT SURFACE EXAMINATIONS

4.1 Overall Concrete Surface Condition

The overall concrete surface shows no evidence of damage or degradation other than non-structural degradation of grout patches in several areas and minor spalling at sharp edges.

There are numerous small shrinkage cracks at the concrete surface. Most of these are less than 0.01 inches wide and are, therefore, below the threshold at which these are to be recorded and evaluated. A few cracks up to 0.15 inches wide were found. However, these were all below 12 inches in length and, therefore, of no structural significance.

Corrosion protection medium (CPM) is seeping through small vertical cracks in the lower wall. This condition is expected if the corrosion protection medium filling the tendon ducts is, as in the case of TMI-1, an older formulation that liquefies at a relatively low temperature. The seepage has no structural significance. It does slowly reduce the level of CPM in vertical tendons. Vertical tendon ducts that lose CPM, whether due to seepage from the ducts or through deteriorated lower end cap gaskets, are refilled under a maintenance work order.

4.2 Previously Documented Conditions

Damaged / degraded areas of the Reactor Building concrete surface that required detailed visual examination under commitments made in Topical Report No. 183 showed no change in condition. The grout overlay of exposed reinforcing on the vertical face of the ring girder sector in the SE quadrant was completed following the 30 year surveillance. The examination done during the 35 year surveillance, the first since the pre-service examination that followed the repair work, uncovered no evidence of damage or deterioration in the repaired area.

4.3 Tendon End Anchorage Bearing Plate Condition

With the following exceptions, end anchorage bearing plates showed no evidence of damage or degradation. Minor active corrosion was noted on the V84 bottom bearing plate and several others, to a lesser degree, in the tendon gallery. This results from frequent seepage of water between the top of the tendon gallery wall and the reactor building base mat. Loss of metal is not significant and the condition can be easily controlled by corrective maintenance if the degree of corrosion worsens. Corrective action (cleaning to bare metal and recoating) is not considered necessary at the present time.

4.4 Concrete Cracks at Selected Dome Tendon Anchorage Areas

Inspection of the nine dome tendon anchorage areas for concrete crack growth is no longer required. As specified in Technical Specification 4.4.2.1.5, "This inspection may be discontinued, if the concrete cracks show no sign of growth." A review performed this surveillance revealed that no change in crack conditions had been reported in the period 6, 7, and 8 surveillances. As allowed per the Technical Specification, this specific inspection has been evaluated as no longer necessary and will be discontinued.

5. REPAIRS AND FOLLOW-UP EXAMINATIONS

5.1 Repairs

The results of the surveillance show that no repair to either the concrete or post-tensioning system is necessary at the present time.

5.2 Follow-Up Examinations During 1 Year Containment Opening Examination

The surface of new concrete placed in the steam generator opening will be visually examined during the one year limited scope surveillance. The examination will include a detailed visual of the new concrete perimeter and corners for evidence of shrinkage cracks / separation.

Tendons, anchorage hardware, sample wires and CPM will be examined / tested as required by the 2001 Edition with 2002 Addenda of the ASME Boiler and Pressure Vessel Code, Section XI, Sub-Section IWL.

The tendon gallery will be examined for evidence of CPM leakage and the effects of ground water seepage.

5.3 Follow-up Examination During 40th Year ISI

Detailed visual examinations of the following areas will be done during the 40 year surveillance.

- The grout overlay of previously exposed reinforcing on the vertical face of the ring girder sector in the SE quadrant.

- The tendon gallery ceiling area including base mat concrete, tendon bearing plates and tendon end caps for evidence of CPM leakage, effects ground water seepage on concrete and steel items, deterioration of previously documented exposed reinforcing and, other damage / deterioration.

- The lower wall above the base mat to determine whether or not corrosion protection medium seepage through the vertical cracks is increasing as evidenced by CPM accumulation on the top of the base mat.

- The V84 lower end bearing plate including all surface area visible without de-tensioning of the tendon and removal of shims.

- V146, a randomly selected tendon for the 40th year surveillance, was detensioned and retensioned as part of the Steam Generator Replacement Project. As such, it is no longer representative of the original tendon population. The nearest tendon which has not been previously inspected and was not detensined for the Steam Generator Replacement Project is V159. During the 40th year surveillance, V159 will be examined in place of V146, and V146 will be subject to random sampling from the population of tendons affected by the Steam Generator Replacement Project.

6. CONCLUSIONS

The following conclusions are based on, and supported by, evaluation of the surveillance results.

- The force in each individual sample tendon exceeds the lower acceptance limit (95% of the predicted value); no sample tendon force exceeds the implied upper limit of 73% GUTS (the limit imposed during initial and Steam Generator Replacement Project tensioning).

- Vertical, hoop and dome sample tendon mean normalized forces are above minimum required levels.

- The 95% lower confidence limits on vertical, hoop and dome tendon force trends are forecast to remain above minimum required levels through March 2015, the deadline for completion of the 40 year surveillance.

- Control tendon lift-offs exhibit relatively little scatter; vertical, hoop and dome trends indicate that forces are decreasing more slowly than predicted.

- Elongations measured during re-tensioning of de-tensioned tendons are as expected and all are within 10% of previously measured values as adjusted for pull rod length change.

- With the exception of several bearing plates in the tendon gallery, all examined tendon end anchorage hardware is free of active corrosion, cracks and distortion. Active corrosion on gallery bearing plates is minor and there is no significant loss of metal; corrective action is not required at this time.

- With one exception, all examined wire buttonheads are seated and meet acceptance criteria on splits. A single wire at one end of re-tensioned tendon D-322 is unseated. This single exception has no structural significance.

- The difference between quantities of CPM removed form sample tendons and quantities replaced were all within 10% of net duct volume showing that tendon duct fill was adequate both as-found and as-left.

- Corrosion protection medium samples meet specified limits on absorbed water content and concentrations of corrosive ions. The samples also meet the specified lower limit on reserve alkalinity.

- No free water was detected at tendon end anchorages; therefore, it is concluded that water intrusion is not a problem.

- Tendon wire samples meet the specified lower limits on ultimate strength and elongation at failure.

- Concrete Surrounding sample tendon bearing plates is free of damage, deterioration and cracks that exceed 0.010 inches in width.

- Concrete surfaces are free of damage and degradation. Spalling of grot patches, as noted in various areas, has no structural significance. The few concrete cracks that exceed the threshold with acceptance criterion of 0.010 inches are less than 1 foot long and are of no structural significance.

- Tendon end caps are free of damage and, with one exception, free of active corrosion. The single exceptions is an end cap in the tendon gallery with minor active corrosion on the mounting flange. Loss of metal is not significant and corrective action is not required at this time.

- Conditions in areas identified for detailed visual examination in Topical Report 183 have not noticeably change since the 30 year surveillance in 2004 (or, in the case of the ring girder grout repair, since the repair was completed following that surveillance). With the exception of the lower wall CPM seepage area, the ring girder repair area and the tendon gallery ceiling, these areas may be deleted form the detailed visual examination commitment list.

7. REFERENCES

The following documents (applicable sections noted) were used in the development of this report and /or are specifically referenced herein.

1. United States Code of Federal Regulations, Title 10, Part 50, Sub-part 50.55a (10CFR50.55a).

2. ASME Boiler and Pressure Vessel Code (1992 Edition with Addenda through 1992), Section XI, Sub-Sections IWA and IWL.

3. USNRC Regulatory Guide 1.35.1, Determining Prestressing Forces for Inspection of Prestressed Concrete Containments, Jul 90.

4. TMI – Unit 1 FSAR Section 5.7.5, Rev. 20

5. TMI – Unit 1 Technical Specification Sections 3.19.1 & 4.4.2.1

6. TMI – Unit 1 Surveillance Procedure 1301-9.1, RB Structural Integrity Tendon Surveillance, Revision 20

7. TMI – Unit 1 EER JO # 162193, Rx Building Tendons, Minimum Required Prestressing Forces.

8. TMI – Unit 1 Calculation C-1101-153-E410-028, Rx Building Tendons, Minimum Required Prestressing Forces, Revision 0.

9. Gilbert / Commonwealth Calculation DC-5390-225.01-SE, dated 26 Apr 94.

10. Miller, Irwin and John E. Freund, *Probability and Statistics for Engineers*, Prentice-Hall, 1965

11. TMI – Unit 1, Reactor Containment Building / First Tendon Surveillance test / One Year After SIT, GAI Report No. 1880, 29 Sep 75

12. TMI – Unit 1, Second Tendon Surveillance Test of Reactor Containment Building / Three Years After SIT, VSL Corp. Report No. GQL 0204, Dec 77.

13. TMI – Unit 1, Containment Building Tendon Surveillance Test report for Third Period (5 Years After SIT), TDR No. 229, 27 Mar 81.

14. TMI – Unit 1, Reactor Building Tendon Surveillance Test / Inspection Period 4 (10 Years), TR No. 025, 27 Aug 85.

15. TMI – Unit 1, Reactor Building Fifteen year Tendon Surveillance Test (Inspection Period 5), Topical report 069, 2 May 90.

16. TMI – Unit 1, Reactor Building Twenty Year Tendon Surveillance Test (Inspection Period 6), Topical Report 093, 22 Mar 95.

17. TMI – Unit 1, 25th Year Reactor Building Tendon Surveillance (Period 7), Topical Report 136, Revision 1, 31 Jul 01.

18. Topical Report No. 183, 30th Year Reactor Building Tendon Surveillance (Period 8), Revision 00.

19. Gilbert / Commonwealth Letter (with attachments) G/C/TMI-1CS/16616 dated 27 Dec 88, Transmitting Tendon Stressing Record Data (ECD C-310055).

20. ACI 349.3R-96, Evaluation of Existing Nuclear Safety-Related Concrete Structures, Published by the American Concrete Institute.

21. TMI Vendor Manual VM-TM-2485.

8. TABLES AND FIGURES

Tables and Figures referenced in the preceding text are included in this section

8.1 Tables

Tables commence on the following page. Numerical values shown in the tables are extracted from Surveillance Procedure 1301-9.1, Calculation DC-5390-225.01-SE, the data sheets documenting the 35th year surveillance and Topical Reports Nos. 025, 069, 093, 136, and 183.

Table 3-1
Measured End Anchorage Forces and Predicted Forces

Tendon	End	Measured Force, kip	Mean End Force, kip	Predicted Force, kip	95% of Predicted Force, kip
V-11	Top	1206	1206	1148	1090
V-32	Top	1175	1175	1181	1122
V-90	Top	1200	1200	1204	1144
V-132	Top	1206	1206	1204	1144
H13-41	B-1	1173	1151	1153	1095
	B-3	1130			
H24-33	B-4	1157	1123	1068	1015
	B-2	1089			
H46-50	B-6	1204	1131	1116	1060
	B-4	1057			
H51-49	B-1	1186	1154	1132	1075
	B-5	1123			
H62-26	B-6	1131	1141	1105	1050
	B-2	1152			
D-122	S	1110	1119	1082	1028
	N	1128			
D-225	NE	1083	1088	1067	1014
	SW	1094			
D-322	N	1138	1135	1128	1071
	S	1133			
D-342	SW	1118	1150	1116	1060
	SE	1182			

Table 3-2
Normailzed Tendon Forces and Group Mean Forces

Tendon	Measured force, kip	Adjustment, kip	Normalized force, kip
V-11	1206	+26	1232
V-32	1175	-7	1168
V-90	1200	-30	1170
V-132	1206	-30	1176
Vertical Group – Mean Normalized Force			**1187**
H13-41	1151	-47	1104
H24-33	1123	+38	1161
H46-50	1131	-9	1122
H51-49	1154	-25	1129
H62-26	1141	+2	1143
Hoop Group – Mean Normailzed Force			**1132**
D-122	1119	+31	1150
D-225	1088	+45	1133
D-322	1135	-15	1120
D-342	1150	-3	1147
Dome Group – Mean Normalized Force			**1138**

Table 3-3
Summary of Vertical Tendon Forces

Surveillance Year	Time Since SIT, Years	Tendon	Force, kip
10	11.2	V-14	1243
		V-30	1193
		V-32	1196
		V-84	1189
		V-160	1192
15	15.6	V-19	1187
		V-21	1196
		V-22	1171
		V-23	1175
		V-50	1213
		V-83	1196
		V-85	1179
20	20.6	V-32	1210
		V-78	1306
		V-126	1209
25	25.5	V-32	1193
		V-40	1202
		V-114	1189
		V-164	1181
30	30.6	V-32	1190
		V-53	1222
		V-66	1178
		V-137	1218
		V-140	1144
		V-141	1207
35	35.6	V-11	1206
		V-32	1175
		V-90	1200
		V-132	1206

Table 3-4
Summary of Hoop Tendon Forces

Surveillance Year	Time Since SIT, Years	Tendon	Force, kip
10	11.2	H13-35	1191
		H13-36	1066
		H13-37	1182
		H24-26	1173
		H35-26	1156
		H62-26	1145
		H62-30	1152
15	15.6	H24-29	1072
		H24-30	1139
		H24-31	1114
		H24-51	1142
		H46-34	1177
		H62-13	1088
		H62-26	1128
20	20.6	H24-40	1132
		H35-23	1200
		H35-47	1192
		H62-26	1161
		H62-49	1163
25	25.5	H13-50	1159
		H35-33	1169
		H46-37	1129
		H51-43	1170
		H62-26	1136
30	30.6	H13-11	1218
		H35-49	1201
		H46-25	1121
		H62-18	1105
		H62-26	1120
35	35.6	H13-41	1151
		H24-33	1123
		H46-50	1131
		H51-49	1154
		H62-26	1141

Table 3-5 Summary of Dome Tendon forces			
Surveillance Year	**Time Since SIT, Years**	**Tendon**	**Force, kip**
10	11.2	D-133	1107
		D-225	1125
		D-314	1290
15	15.6	D-145	1220
		D-347	1183
20	20.6	D-141	1164
		D-225	1120
		D-248	1202
25	25.5	D-102	1280
		D-225	1104
		D-313	1120
30	30.6	D-213	1094
		D-225	1120
		D-230	1149
35	35.6	D-122	1119
		D-225	1088
		D-322	1135
		D-342	1150

Table 3-6
Corrosion Protection Medium Test Results

Tendon	End	Chlorides, ppm	Nitrates, ppm	Sulfides, ppm	Water Content, %	Base Number (Lower Limit)	Acid Number
V-11	Shop	<0.5	<0.5	<0.5	0.21	31.90	N/A
	Field	<0.5	<0.5	<0.5	<0.10	1.40	N/A
V-32	Shop	<0.5	<0.5	<0.5	<0.10	50.60	N/A
	Field	<0.5	<0.5	<0.5	0.48	39.70	N/A
V-90	Shop	<0.5	<0.5	<0.5	0.50	2.82	N/A
	Field	<0.5	<0.5	<0.5	<0.10	3.43	N/A
V-132	Shop	<0.5	<0.5	<0.5	0.30	46.80	N/A
	Field	<0.5	<0.5	<0.5	<0.10	5.11	N/A
H13-41	Shop	<0.5	<0.5	<0.5	<0.10	<0.50	<0.50
	Field	<0.5	<0.5	<0.5	<0.10	0.57	N/A
H24-33	Shop	<0.5	<0.5	<0.5	<0.10	<0.50	<0.50
	Field	<0.5	<0.5	<0.5	<0.10	2.23	N/A
H46-50	Shop	<0.5	<0.5	<0.5	0.58	2.21	N/A
	Field	<0.5	<0.5	<0.5	0.20	2.51	N/A
H51-49	Shop	<0.5	<0.5	<0.5	<0.10	<0.50	<0.50
	Field	<0.5	<0.5	<0.5	<0.10	1.12	N/A
H62-26	Shop	<0.5	<0.5	<0.5	<0.10	44.60	N/A
	Field	<0.5	<0.5	<0.5	0.15	34.70	N/A
D-122	Shop	<0.5	<0.5	<0.5	<0.10	2.79	N/A
	Field	<0.5	<0.5	<0.5	<0.10	55.00	N/A
D-225	Shop	<0.5	<0.5	<0.5	<0.10	37.30	N/A
	Field	<0.5	<0.5	<0.5	<0.10	52.00	N/A
D-322	Shop	<0.5	<0.5	<0.5	<0.10	<0.50	<0.50
	Field	<0.5	<0.5	<0.5	<0.10	0.81	N/A
D-342	Shop	<0.5	<0.5	<0.5	<0.10	1.67	N/A
	Field	<0.5	<0.5	<0.5	<0.10	4.94	N/A

Table 3-7
Corrosion Protection Medium – Quantities Removed / Replaces

Tendon	Quantity Removed, ga.	Quantity Replaced, gal	Absolute Difference, gal	Duct Volume (Gal)	% Diff.
V-11	61.50	68.55	7.05	123.80	5.69
V-32	12.50	23.01	10.51	125.20	8.39
V-90	74.50	76.85	2.35	124.90	1.88
V-132	58.5	*	*	*	*
H13-41	11.5	13.27	1.77	103.50	1.71
H24-33	9.00	12.38	3.38	103.20	3.27
H46-50	9.00	15.04	6.04	103.40	5.84
H51-49	8.00	14.16	6.16	103.40	5.96
H62-26	9.25	13.27	4.02	103.20	3.89
D-122	40.00	44.02	4.02	118.70	3.38
D-225	15.75	18.58	2.83	119.90	2.36
D-322	15.00	19.47	4.47	120.20	3.72
D-342	50.00	58.72	8.72	107.8	8.09

*Tendon V-132 was replaced with a new tendon as part of the scope of the Steam Generator Replacement Project and as such, the grease replacement was performed under that project.

8.2 Figures

Figures commence on the following page.

Figure 3-1 - Vertical Tendon Force Trend

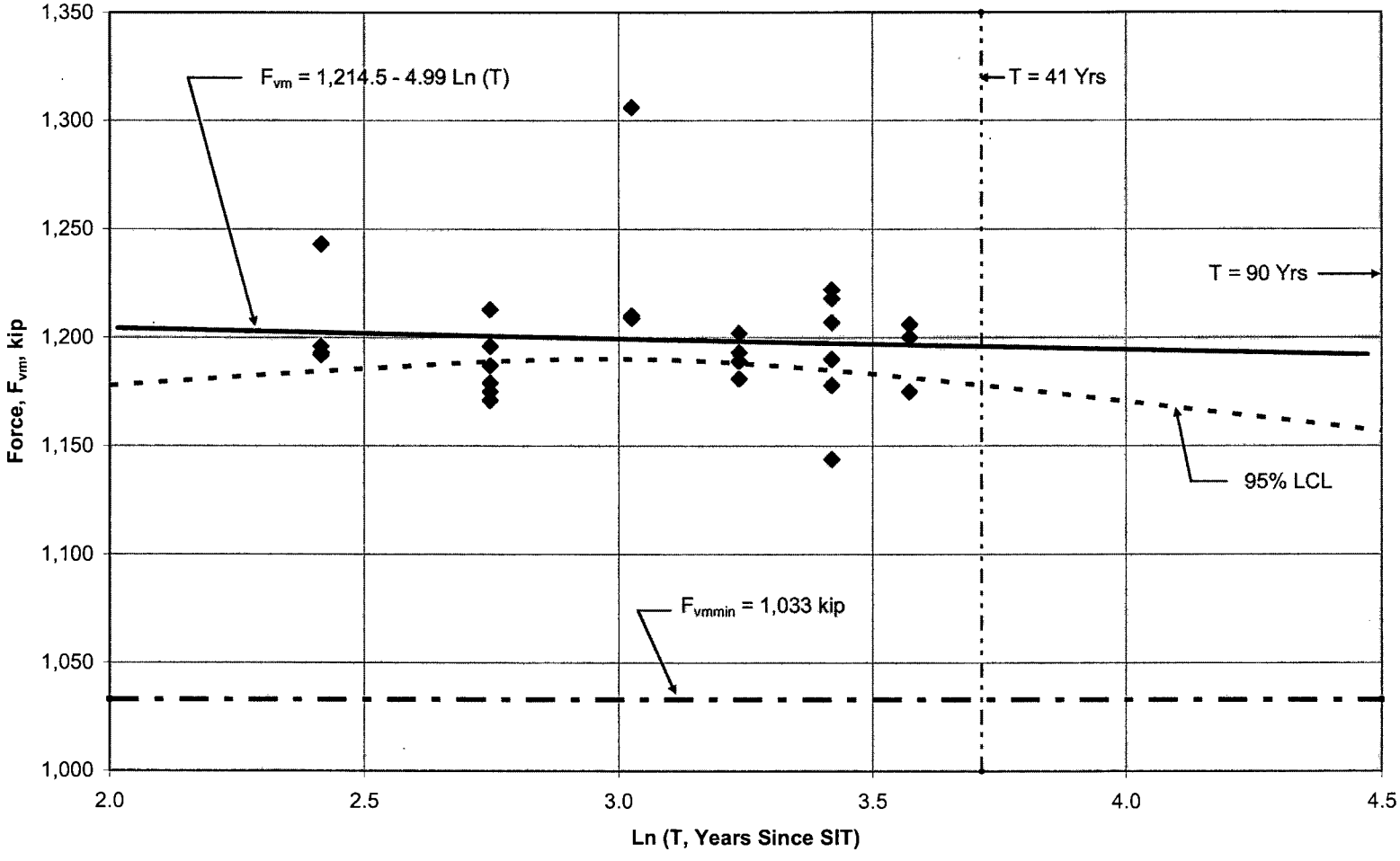


Figure 3-2 - Hoop Tendon Force Trend

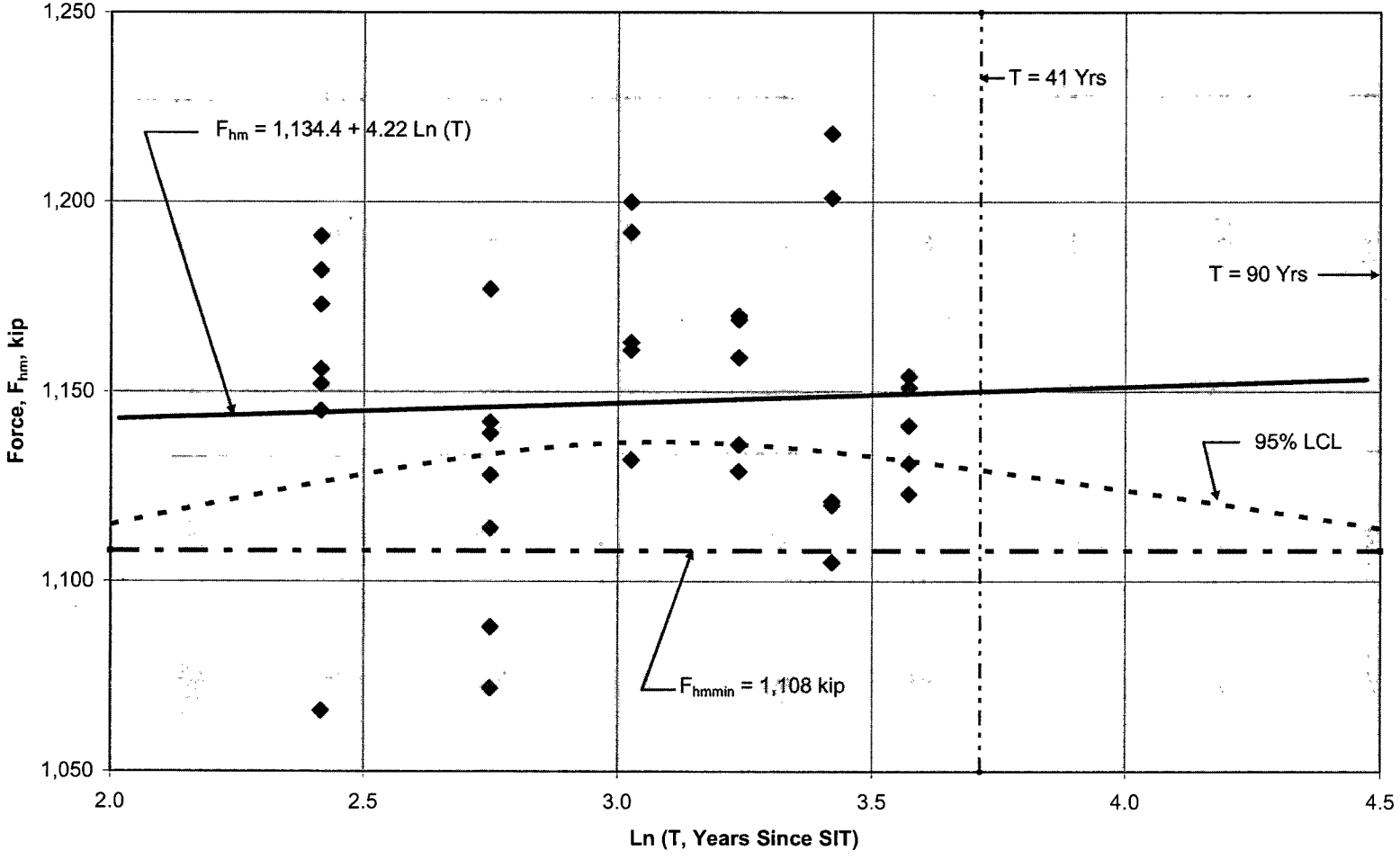


Figure 3-3 - Dome Tendon Force Trend

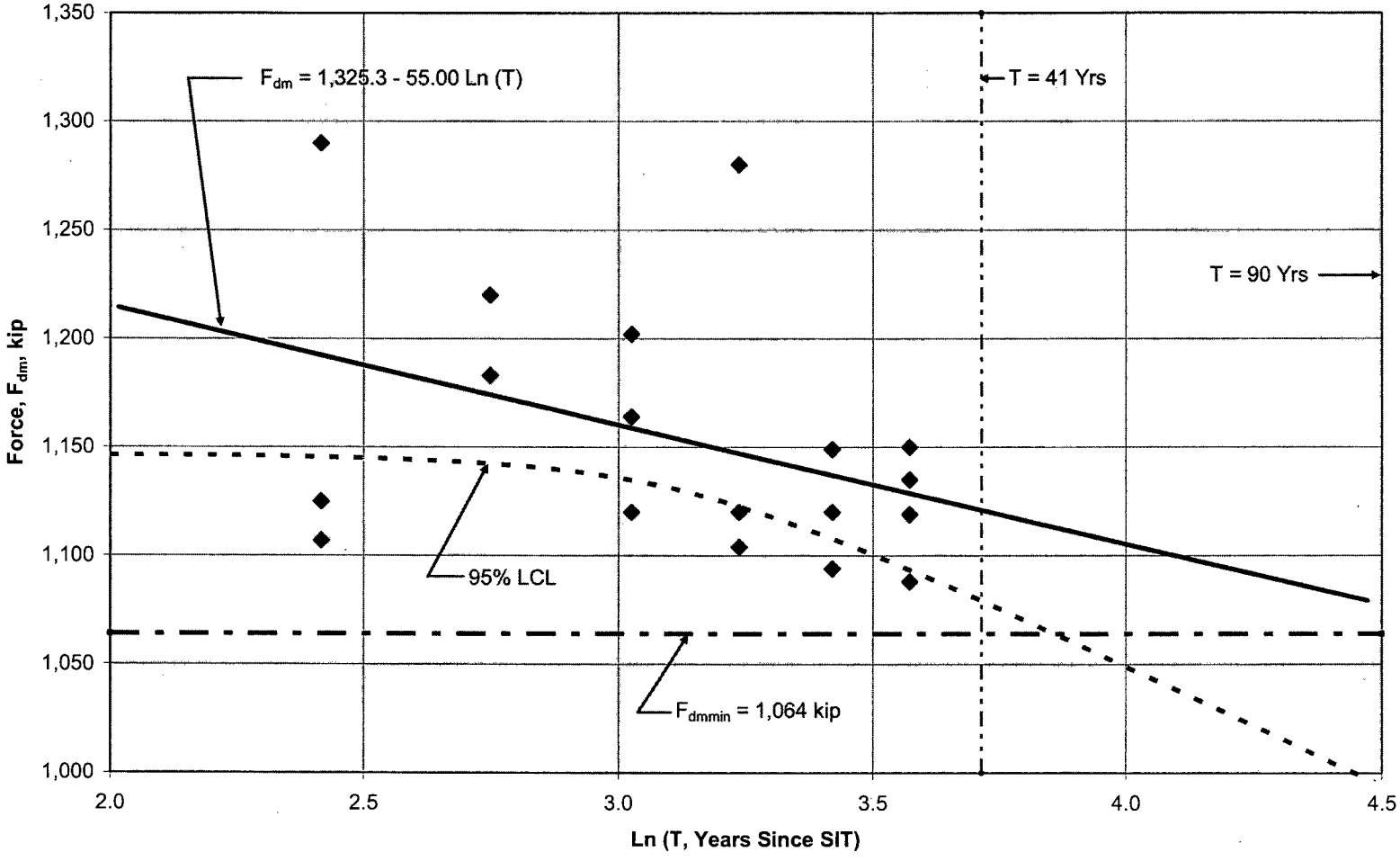


Figure 3-4 - Vertical Control Tendon V-32

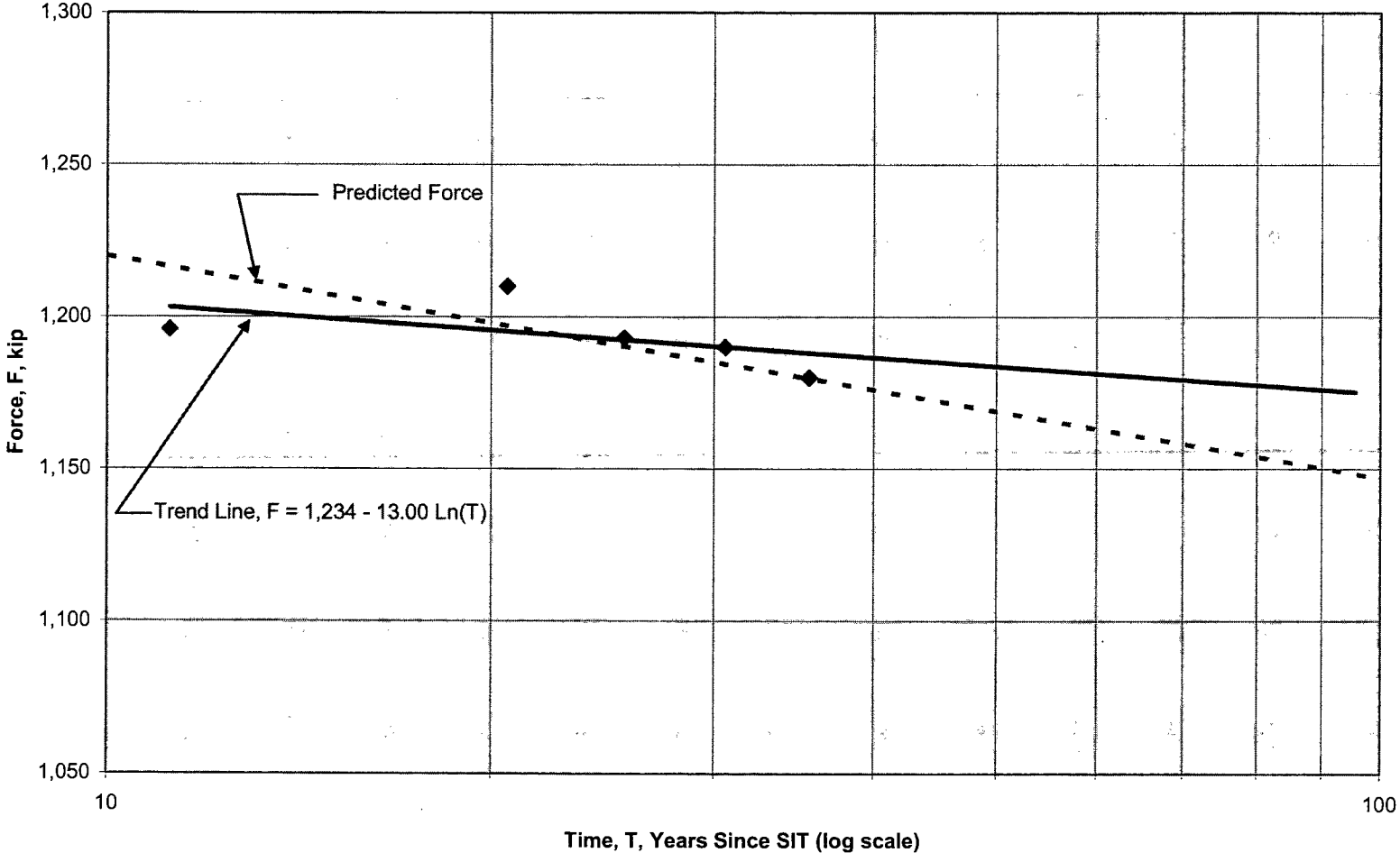


Figure 3-5 - Hoop Control Tendon H62-26

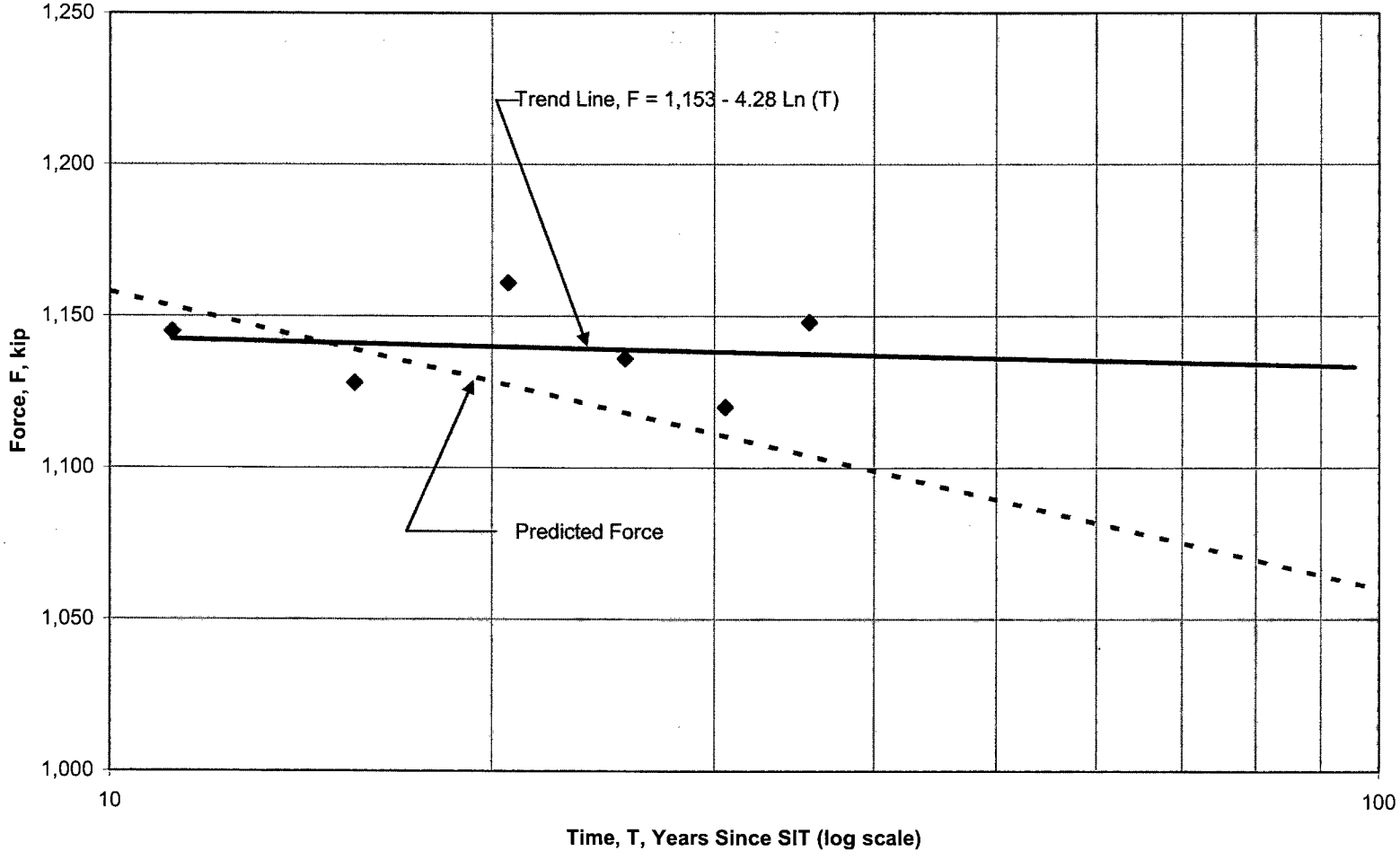
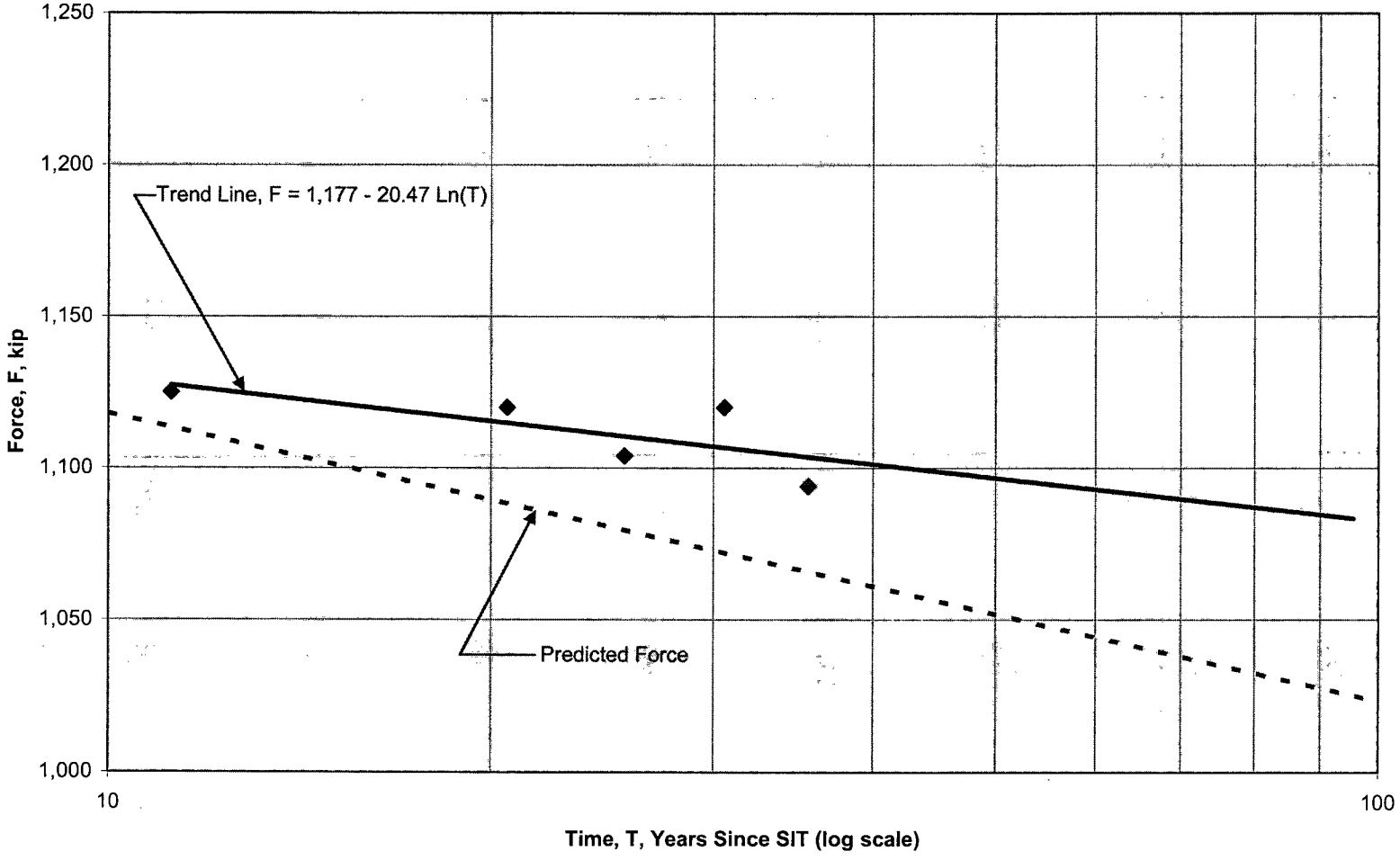


Figure 3-6 - Dome Control Tendon D-225



Attachment 1: Final Report for the Three Mile Island Unit 1 35th Year containment Building Tendon Surveillance

Attachment 1 begins on the following page.

Exelon. Nuclear

DOCUMENT COVER SHEET

Document No: **TM-N1043-500**

Title: **Final Report for the Three Mile Island Unit 1 35TH Year Containment Building Tendon Surveillance**

PREPARED BY: David Maldonado

REVIEWED BY: Brian Giometti

APPROVED BY: Paul C. Smith

0	INITIAL ISSUE	*DJM*	*4/14/10*	*BAG*	*4/14/10*	*PCS*	*4/14/10*
REV NO	**DESCRIPTION**	***Prepared***	***Date***	***Reviewed***	***Date***	***Approved***	***Date***
		SIGN OFF					

REVISIONS

ABSTRACT

The purpose of this report is to present the results of the 2009 Three Mile Island Unit 1 35TH Year In-Service Inspection on the containment structure post tensioning system. The results of this investigation are discussed in detail in the body of this report and are summarized as follows:

1. The sheathing filler (grease) samples were tested and found to have acceptable levels of water-soluble ions (Chlorides, Nitrates and Sulfides). The moisture contents were all below the acceptable limit of 10% water by weight. All neutralization numbers were acceptable.
2. No tendons showed presence of water during the removal of the grease cap, during anchorage inspection or during detensioning.
3. Acceptable corrosion levels were found on all tendon ends and no cracks were found on any anchorage components.
4. No missing or protruding buttonheads were identified during anchorage inspections. One protruding buttonhead was observed on the shop end of dome tendon D-322 after retensioning.
5. A detailed visual inspection was performed on the 24" of concrete surrounding the bearing plate of each tendon end inspected. No recordable indications were noted during these examinations.
6. A general visual inspection was performed on all accessible exterior surfaces of the containment building. The results of this inspection have been evaluated by the Utility. The general concrete inspection results are included in APPENDIX H of this report.
7. Threads measurements were taken to assure that the external threads of inspected tendon anchorages meet the minimum strength requirement of 120% of the minimum Guaranteed Ultimate Tensile Strength (GUTS) of the tendon, when coupled with a specific Stressing Adaptor. All measurements were within the acceptable ranges.
8. The hydraulic jacks used for liftoffs, detensioning and retensioning tendons were calibrated and found to be within an acceptable variation of +/- 1.5% as calculated using the maximum calibration force.
9. All of the tendons monitored for forces this inspection period were found to have forces greater than 95% of the corresponding predicted force. The normalized and as-found group averages were above the required minimum design force levels.
10. The detensioned tendons were retensioned with acceptable elongations and acceptable force levels. All test wires removed from detensioned tendons were found to have acceptable corrosion levels. All tendon test wire samples had acceptable diameter, yield stress, ultimate stress and elongation results.
11. All vertical tendons, except for V-132, were resealed and regreased to acceptable levels. Vertical tendon V-132 was part of the Steam Generator Replacement Project scope and as such was greased by SGT, no data was provided to PSC.
12. A comparison of as-found force levels to the original force levels was made in an effort to detect any evidence of system degradation. The force losses since original installation for each tendon group are reported as: 21.76% for the hoop tendons, 17.16% for the vertical tendons, and 21.32% for the dome tendons.

Based on the data gathered during the Three Mile Island Unit 1 35TH Year In-Service Inspection on the containment structure post tensioning system and reported herein, the conclusion is reached that no abnormal degradation of the post tensioning system has occurred.

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 This report details the 2009 Three Mile Island Unit 1 - 35TH Year containment structure post tensioning system tendon surveillance. The surveillance program is a systematic means of assessing the quality and structural performance of the post tensioning system.

1.2 The tendon surveillance program consists of a periodic inspection of the condition of a selected group of tendons. This program provides confidence in the condition and functional capability of the system, and an opportunity for timely corrective measures if adverse conditions are detected. The 2009 tendon surveillance at TMI began on August 11, 2009 and ended on January 22, 2010. This surveillance period consisted of a Physical Inspection of the post tensioning system. Physical tendon surveillance consists of: sheathing filler inspection and testing, inspection for water, thread measurement, anchorage inspection, concrete inspection around tendons, force monitoring, inspection and tensile testing of removed wire samples (for detensioned tendons), retensioning of detensioned tendons and replacement of sheathing filler after completion of all inspections.

1.3 Three Mile Island is currently committed to meet the requirements of the American Society of Mechanical Engineers, Boiler and Pressure Vessel Code, Section XI, 1992 Edition with 1992 Addenda and the applicable amendments as specified in 10CFR50.55a, Codes and Standard.

1.4 PSC Surveillance Procedures, TMI Surveillance Procedures 1301-9.1 Revision 20, the Code of Federal Regulations 10CFR50.55a, and ASME Section XI, Sub-Section IWL define the specific requirements for selection of the inspection tendons as well as acceptance criteria for the performance of the inspections. A copy of the PSC Surveillance Procedures is included in APPENDIX D of this Surveillance Report. A copy of the TMI Surveillance Procedure is attached in APPENDIX E of this report. The scope for the surveillance is included in Table 1-1.

1.5 Nine tendons were identified by TMI for Grease Leak / Gasket Repairs. These tendons only received a limited inspection of the grease coverage / condition and for the presence of water. If unacceptable conditions had been noted, a full visual inspection would have been performed. The tendons chosen and the inspections performed are listed in Table 1-2.

Table 1-1: Three Mile Island – Surveillance Tendons

TENDON	END SHOP & FIELD	VISUAL						PHISICAL					COMMENTS
		SQ6.0	SQ6.1	SQ7.0	SQ7.1	VT-1	VT-1C	1301-9.1	SQ10.2	SQ10.3	SQ12.0	SQ12.1	
H13-41	BT 1 & BT 3	•	•	•	•	•	•	•			•	•	
H24-33	BT 2 & BT 4	•	•	•	•	•	•	•			•	•	
H46-50	BT 4 & BT 6	•	•	•	•	•	•	•			•	•	
H51-49	BT 1 & BT 5	•	•	•	•	•	•	•	•	•	•	•	DETENSION
H62-26	BT 2 & BT 6	•	•	•	•	•	•	•			•	•	COMMON
V-11	TOP & BOT	•	•	•	•	•	•	•			•	•	
V-32	TOP & BOT	•	•	•	•	•	•	•			•	•	COMMON
V-90	TOP & BOT	•	•	•	•	•	•	•	•	•	•	•	DETENSION
V-132	TOP & BOT	•	•	•	•	•	•	•			•	•	
D-122	BT 5 & BT 2	•	•	•	•	•	•	•			•	•	
D-225	BT 5 & BT 2	•	•	•	•	•	•	•			•	•	COMMON
D-322	N & S	•	•	•	•	•	•	•	•	•	•	•	DETENSION
D-342	BT 6 / BT 4	•	•	•	•	•	•	•			•	•	COMMITMENT FROM 30TH YEAR

Table 1-2: Three Mile Island – Gasket Repair Tendons

TENDON	END FIELD	VISUAL						PHISICAL					COMMENTS
		SQ6.0	SQ6.1	SQ7.0	SQ7.1	VT-1	VT-1C	1301-9.1	SQ10.2	SQ10.3	SQ12.0	SQ12.1	
V-10	BOTTOM	•	•								•	•	GREASE LEAK REPAIR
V-55	BOTTOM	•	•								•	•	GREASE LEAK REPAIR
V-60	BOTTOM	•	•								•	•	GREASE LEAK REPAIR
V-62	BOTTOM	•	•								•	•	GREASE LEAK REPAIR
V-71	BOTTOM	•	•								•	•	GREASE LEAK REPAIR
V-84	BOTTOM	•	•								•	•	BEARING PLATE INSPECTION
V-88	BOTTOM	•	•								•	•	GREASE LEAK REPAIR
V-98	BOTTOM	•	•								•	•	GREASE LEAK REPAIR
V-99	BOTTOM	•	•								•	•	GREASE LEAK REPAIR

LEGEND

SQ 6.0 – GREASE CAP REMOVAL
SQ 6.1 – INSPECTION FOR WATER (IWL Item L2.50)
SQ 7.0 – GREASE SAMPLE ANALYSIS (IWL Item L2.40)
SQ 7.1 – THREAD MEASUREMENT
VT-1 / VT-1C – AS PER ER-AA-335-018 (IWL Items L2.40, L1.10, L1.11 and L11.12)
1301-9.1 – MONITOR TENDON FORCES (IWL Item L2.20) and RETENSION TENDONS
SQ 10.2 – TENDON WIRE INSPECTION (IWL Item L2.20)
SQ 10.3 – TESTING TENDON WIRES (IWL Item L2.20)
SQ 12.0 – GREASE CAP REPLACEMENT
SQ 12.1 – GREASE REPLACEMENT

2.0 SURVEILLANCE PROCEDURES

APPENDIX D and APPENDIX E of this Surveillance Report contain the detailed procedures for conducting the tendon surveillance. The surveillance consists of the following steps:

2.1 Grease cap removal and visual examination of sheathing filler (grease).

2.2 Analytical testing of sheathing filler (grease) samples.

2.3 Examination for the presence of water.

2.4 Inspection of the anchorage assembly of each surveillance tendon end for deleterious conditions such as corrosion, cracks, broken or missing wires or buttonheads.

2.5 Thread measurement for each tendon that is monitored for force.

2.6 Measurement of the liftoff force for each physical surveillance tendon.

2.7 Removal of one wire from surveillance tendons which are detensioned for examination and testing.

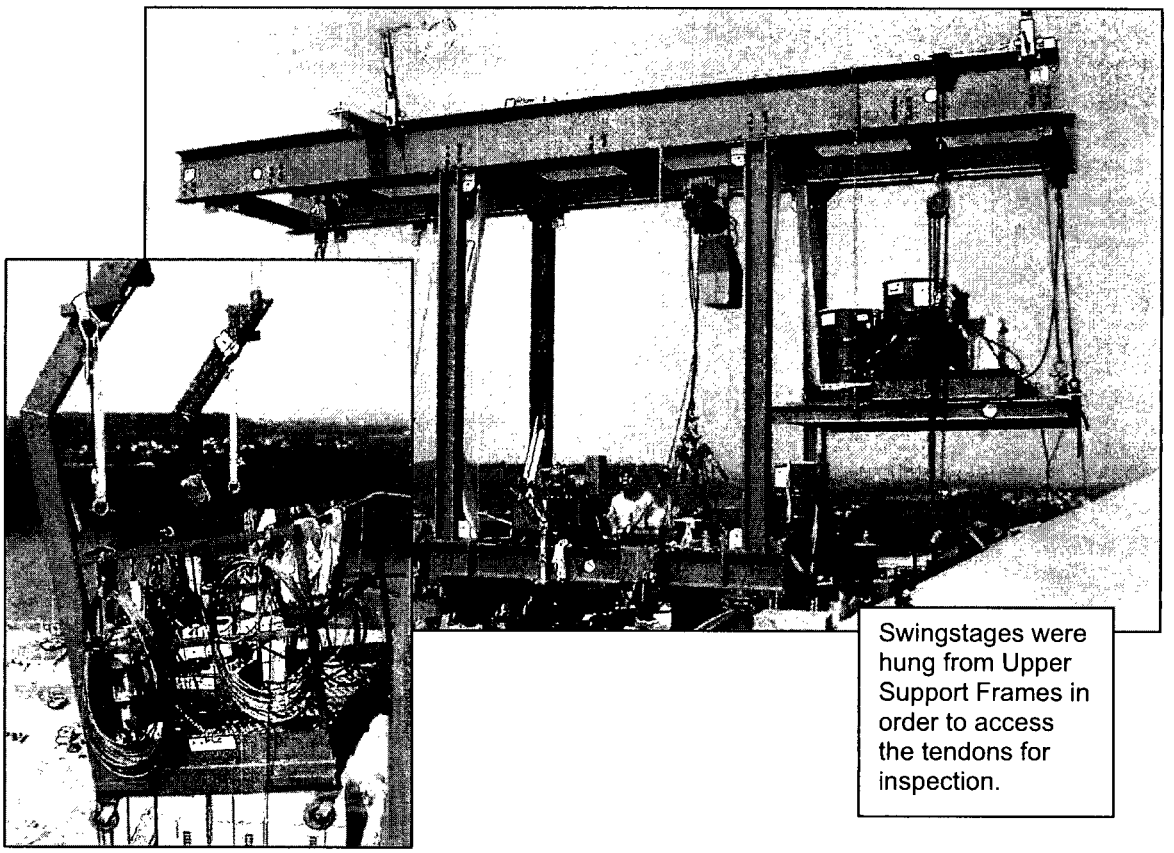
2.8 Retensioning of detensioned tendons and measuring of the corresponding tendon elongation.

2.9 Visual inspection for corrosion, pitting, or any significant physical change of the removed wires.

2.10 Testing of samples taken from wires removed from tendons for yield strength, ultimate strength, and percentage elongation at failure

2.11 Resealing tendon caps and replacement of lost sheathing filler (grease) into the tendon duct and cap.

2.12 Evaluation of test and inspection results to assess the general condition of the post tensioning system.



Swingstages were hung from Upper Support Frames in order to access the tendons for inspection.

3.0 SHEATHING FILLER ANALYSIS

3.1 Two samples of sheathing filler (grease) were removed from each end of the surveillance tendons. Chemical tests were performed on a sample from each end by Suburban Laboratories, Inc. The results of the tests are presented in APPENDIX B and are summarized in Table 3-1.

3.2 The maximum acceptable test limits are:

3.2.1 *Maximum 10 parts per million for water-soluble chlorides, nitrates and sulfides.* All of the samples tested met these acceptance criteria.

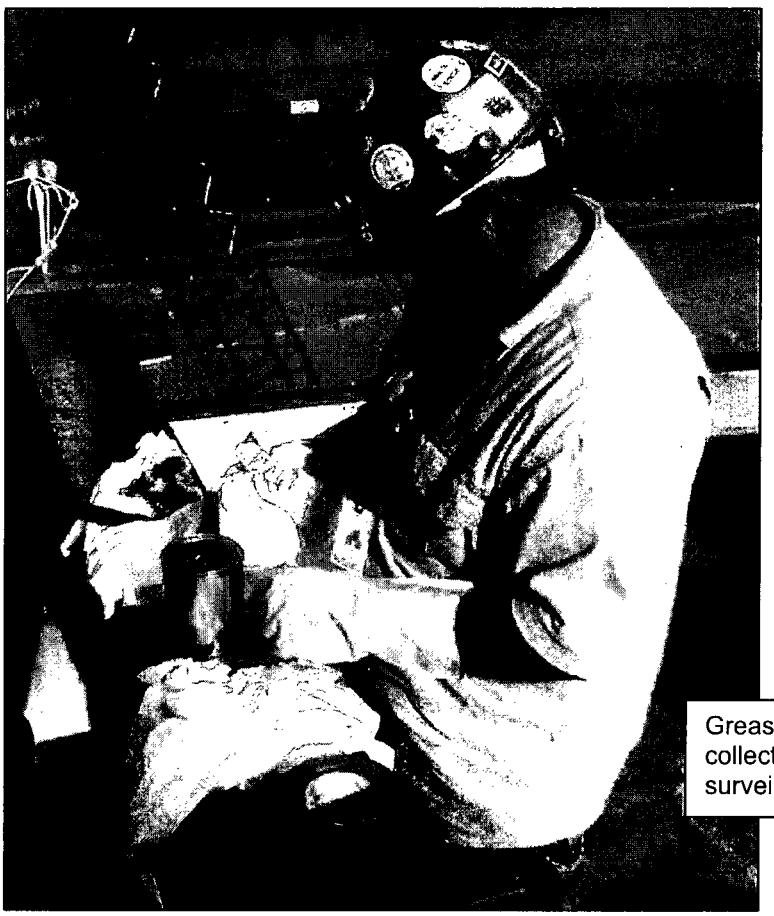
3.2.2 *Maximum 10 percent by weight for water content.* All of the samples tested met this requirement.

3.2.3 *Reserve Alkalinity (Base Number) greater than zero.* The acceptance criteria for reserve alkalinity is determined by Table IWL-2525-1 and further explained and clarified by notes 3 and 4 from Enclosure 3 of TMI Procedure 1301-9.1. The reserve alkalinity is reported on the grease sample testing results as the Neutralization Number.

3.2.3.1 Four of the grease samples tested had neutralization numbers below the detection limits of the test (<0.5 mgKOH/g). Additional acid tests were conducted to verify the low numbers. These acid tests produced results <0.5 indicating a near neutral condition, as found in the original 2090-P grease, and therefore indicated no discernable change or deterioration in the grease. These four samples are acceptable per Note 4 or Enclosure 3 of TMI Procedure 1301-9.1.

3.2.3.2 All of the other grease samples tested had Neutralization Numbers confirmed greater than zero upon initial testing and are acceptable.

3.3 Sheathing filler samples were not taken or analyzed for Grease Leak Repair Tendons.



Grease samples were collected from all surveillance tendons.

Table 3-1: Laboratory Analysis of Sheathing Filler

TENDON	END	ION CONCENTRATION (PPM)			WATER CONTENT (%wt)	NEUTRAL No. (mg KOH/g)
		CHLORIDE	NITRATE	SULFIDE		
H13-41	SHOP / BT 1	<0.50	<0.50	<0.50	<0.10	<0.50
	FIELD / BT 3	<0.50	<0.50	<0.50	<0.10	0.570
H24-33	SHOP / BT 4	<0.50	<0.50	<0.50	<0.10	<0.50
	FIELD / BT 2	<0.50	<0.50	<0.50	<0.10	2.23
H46-50	SHOP / BT 6	<0.50	<0.50	<0.50	0.58	2.21
	FIELD / BT 4	<0.50	<0.50	<0.50	0.20	2.51
H51-49	SHOP / BT 1	<0.50	<0.50	<0.50	<0.10	<0.50
	FIELD / BT 5	<0.50	<0.50	<0.50	<0.10	1.12
H62-26	SHOP / BT 6	<0.50	<0.50	<0.50	<0.10	44.60
	FIELD / BT 2	<0.50	<0.50	<0.50	0.15	34.70
V-11	SHOP / TOP	<0.50	<0.50	<0.50	0.21	31.90
	FIELD / BOT	<0.50	<0.50	<0.50	<0.10	1.40
V-32	SHOP / TOP	<0.50	<0.50	<0.50	<0.10	50.60
	FIELD / BOT	<0.50	<0.50	<0.50	0.48	39.70
V-90	SHOP / TOP	<0.50	<0.50	<0.50	0.50	2.82
	FIELD / BOT	<0.50	<0.50	<0.50	<0.10	3.43
V-132	SHOP / TOP	<0.50	<0.50	<0.50	0.30	46.80
	FIELD / BOT	<0.50	<0.50	<0.50	<0.10	5.11
D-122	SHOP / BT 5	<0.50	<0.50	<0.50	<0.10	2.79
	FIELD / NE	<0.50	<0.50	<0.50	<0.10	55.00
D-225	SHOP / BT 5	<0.50	<0.50	<0.50	<0.10	37.3
	FIELD / BT 2	<0.50	<0.50	<0.50	<0.10	52.00
D-322	SHOP / N	<0.50	<0.50	<0.50	<0.10	<0.50
	FIELD / S	<0.50	<5.00	<0.50	<0.10	0.81
D-342	SHOP / BT 6	<0.50	<0.50	<0.50	<0.10	1.67
	FIELD / BT 4	<0.50	<0.50	<0.50	<0.10	4.94

4.0 ANCHORAGE COMPONENTS

In the following discussion, all procedures referred to are included in APPENDIX D or APPENDIX E of this report and all data sheets are included in APPENDIX A.

4.1 SQ6.0 – GREASE CAP REMOVAL

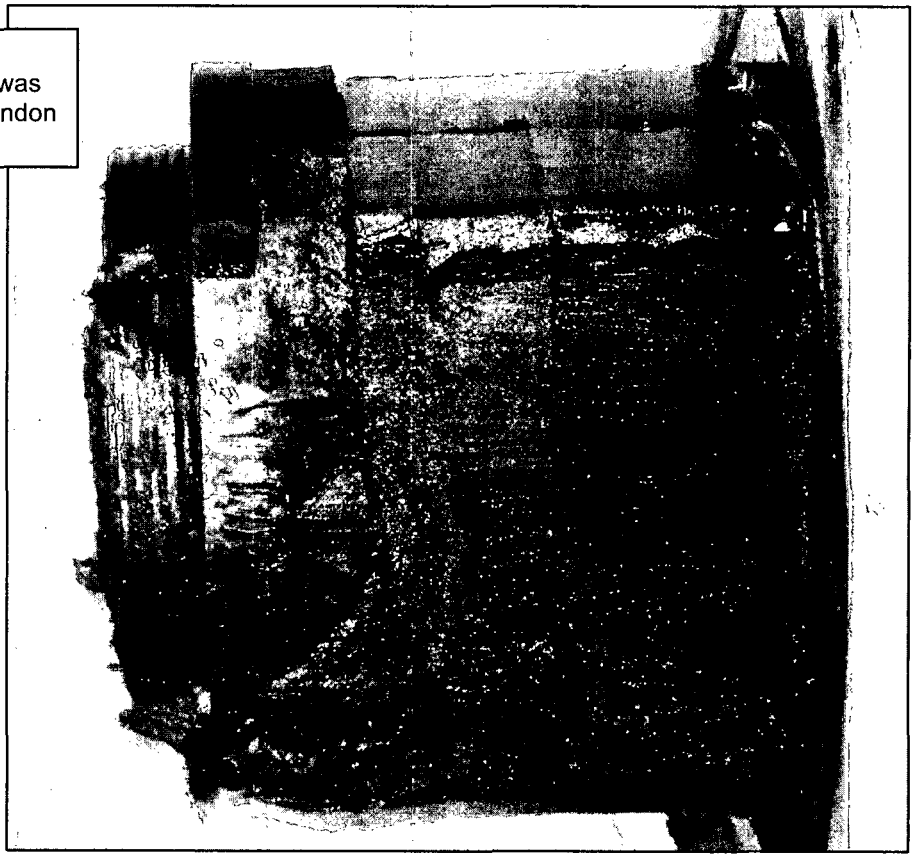
4.1.1 Inspection of the anchorage components began by removing the grease cap of each surveillance tendon end (PSC Procedure SQ 6.0). Complete grease coating (100%) was found on all tendon ends inspected. The percentage of grease coverage for each anchorage component was recorded on Data Sheet SQ 6.0 with the results tabulated in Table 4-1 and Table 4-2.

Table 4-1: SQ6.0– Grease Cap Removal – Surveillance Tendons

TENDON	END	GREASE COATING (%)				
		GREASE CAP	BUTTON HEADS	ANCHOR HEAD	SHIMS	BEARING PLATE
H13-41	SHOP / BT 1	100	100	100	100	100
	FIELD / BT 3	100	100	100	100	100
H24-33	SHOP / BT 4	100	100	100	100	100
	FIELD / BT 2	100	100	100	100	100
H46-50	SHOP / BT 6	100	100	100	100	100
	FIELD / BT 4	100	100	100	100	100
H51-49	SHOP / BT 1	100	100	100	100	100
	FIELD / BT 5	100	100	100	100	100
H62-26	SHOP / BT 6	100	100	100	100	100
	FIELD / BT 2	100	100	100	100	100
V-11	SHOP / TOP	100	100	100	100	100
	FIELD / BOT	100	100	100	100	100
V-32	SHOP / TOP	100	100	100	100	100
	FIELD / BOT	100	100	100	100	100
V-90	SHOP / TOP	100	100	100	100	100
	FIELD / BOT	100	100	100	100	100
V-132	SHOP / TOP	100	100	100	100	100
	FIELD / BOT	100	100	100	100	100
D-122	SHOP / BT 5	100	100	100	100	100
	FIELD / NE	100	100	100	100	100
D-225	SHOP / BT 5	100	100	100	100	100
	FIELD / BT 2	100	100	100	100	100
D-322	SHOP / N	100	100	100	100	100
	FIELD / S	100	100	100	100	100
D-342	SHOP / BT 6	100	100	100	100	100
	FIELD / BT 4	100	100	100	100	100

Table 4-2: SQ6.0 – Grease Cap Removal – Gasket Repair Tendons						
TENDON	END	GREASE COATING (%)				
		GREASE CAP	BUTTON HEADS	ANCHOR HEAD	SHIMS	BEARING PLATE
V-10	FIELD / BOT	100	100	100	100	100
V-55	FIELD / BOT	100	100	100	100	100
V-60	FIELD / BOT	100	100	100	100	100
V-62	FIELD / BOT	100	100	100	100	100
V-71	FIELD / BOT	100	100	100	100	100
V-84	FIELD / BOT	100	100	100	100	100
V-88	FIELD / BOT	100	100	100	100	100
V-98	FIELD / BOT	100	100	100	100	100
V-99	FIELD / BOT	100	100	100	100	100

Complete (100%) grease coverage was observed on all tendon ends inspected.



4.2 SQ6.1 – INSPECT FOR WATER

4.2.1 Throughout the inspection process, the presence of water on any anchorage components is monitored. Water Inspections were recorded on Data Sheet SQ 6.1 and are summarized in Table 4-3 and Table 4-4.

4.2.2 No water was observed during the cap removal or at any time during the inspections for all the grease caps removed.

Table 4-3: SQ6.1 – Inspection for Water – Surveillance Tendons

SURVEILLANCE TENDONS			SURVEILLANCE TENDONS		
TENDON	**END**	**WATER QUANTITY (oz.)**	**TENDON**	**END**	**WATER QUANTITY (oz.)**
H13-41	SHOP / BT 1	0	**V-90**	SHOP / TOP	0
	FIELD / BT 3	0		FIELD / BOT	0
H24-33	SHOP / BT 4	0	**V-132**	SHOP / TOP	0
	FIELD / BT 2	0		FIELD / BOT	0
H46-50	SHOP / BT 6	0	**D-122**	SHOP / BT 5	0
	FIELD / BT 4	0		FIELD / NE	0
H51-49	SHOP / BT 1	0	**D-225**	SHOP / BT 5	0
	FIELD / BT 5	0		FIELD / BT 2	0
H62-26	SHOP / BT 6	0	**D-322**	SHOP / N	0
	FIELD / BT 2	0		FIELD / S	0
V-11	SHOP / TOP	0	**D-342**	SHOP / BT 6	0
	FIELD / BOT	0		FIELD / BT 4	0
V-32	SHOP / TOP	0			
	FIELD / BOT	0			

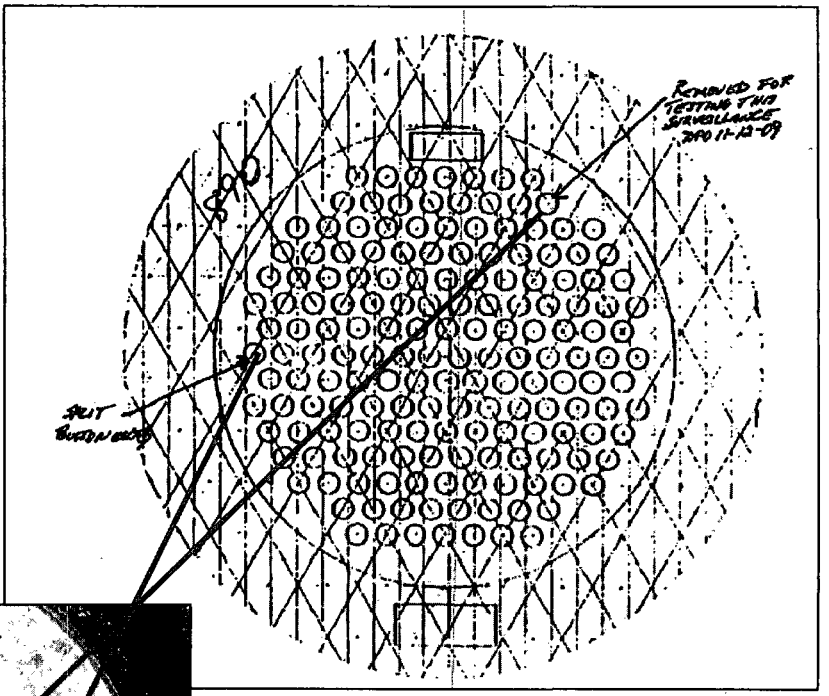
Table 4-4: SQ6.1 – Inspection for Water – Gasket Repair Tendons

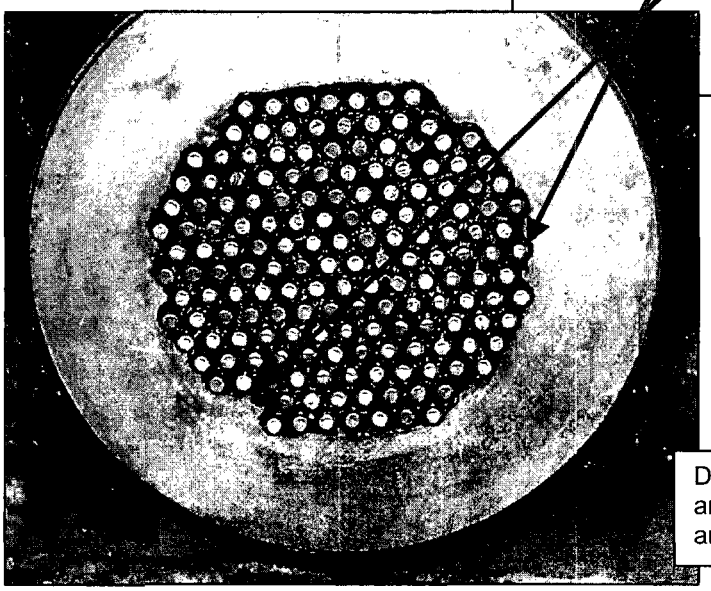
SURVEILLANCE TENDONS			SURVEILLANCE TENDONS		
TENDON	**END**	**WATER QUANTITY (oz.)**	**TENDON**	**END**	**WATER QUANTITY (oz.)**
V-10	FIELD / BOT	0	**V-84**	FIELD / BOT	0
V-55	FIELD / BOT	0	**V-88**	FIELD / BOT	0
V-60	FIELD / BOT	0	**V-98**	FIELD / BOT	0
V-62	FIELD / BOT	0	**V-99**	FIELD / BOT	0
V-71	FIELD / BOT	0			

4.3 ANCHORAGE VISUAL EXAMINATION

4.3.1 A detailed visual examination was performed on all of the anchorage components (anchorhead, buttonheads, bushing, shims and bearing plate) of each surveillance tendon end for recordable indications as outlined in Exelon Procedure ER-AA-335-018, which is included in APPENDIX E. The results were recorded on Data Sheet ER-AA-335-018, Attachment 5 and are summarized in Table 4-5.

4.3.2 No recordable indications were found during the initial inspection of any tendon ends. The only recordable indication noted was a protruding buttonhead found on the field end of tendon D322 after retensioning. The rest of the observations made were information only and consist of light inactive rust on the shims and/or bearing plate, split buttonheads, or test wires which were removed. Also, the shop end of dome tendon D-122 was noted as having a shim gap of 1.25" during the as-found inspection. The shim gap was remedied as much as conditions permitted.





During the anchorage inspections, any abnormalities in buttonheads are mapped for each tendon end.

Table 4-5: Detailed Anchorage Inspection – Surveillance tendons

TENDON	END	ANCHOR/ BUSHING I.D.	RESULTS			EXPLANATION
			NI	RI TYPE	IO	
H13-41	SHOP / BT 1	569 / 766	X			
	FIELD / BT 3	132	X			
H24-33	SHOP / BT 4	1031 / 1249			F	Light inactive surface rust on shims
	FIELD / BT 2	662	X			
H46-50	SHOP / BT 6	678 / 754	X			
	FIELD / BT 4	900			F	Light inactive surface rust on shims
H51-49	SHOP / BT 1	1007 / 1156			A	1 wire removed for testing this surv.
	FIELD / BT 5	890			O A	1 split buttonhead (0.030") 1 wire removed for testing this surv.
H62-26	SHOP / BT 6	837 / 924	X			
	FIELD / BT 2	571	X			
V-11	SHOP / TOP	519 / 1213	X			
	FIELD / BOT	555	X			
V-32	SHOP / TOP	1036 / 1050	X			
	FIELD / BOT	657	X			
V-90	SHOP / TOP	890 / 590			A	1 wire removed for testing this surv.
	FIELD / BOT	728			A	1 wire removed for testing this surv.
V-132	SHOP / TOP	916 / 1098	X			
	FIELD / BOT	682	X			
D-122	SHOP / BT 5	547 / 1074			L F	1.25" shim gap at top of anchorage Light inactive surface rust on shims
	FIELD / NE	754	X			
D-225	SHOP / BT 5	765 / 1137			F	Light inactive surface rust on shims and bearing plate
	FIELD / BT 2	684	X			
D-322	SHOP / N	668 / 1002		C	A	1 protruding wire after retensioning 1 wire removed for testing this surv.
	FIELD / S	1064			A	1 wire removed for testing this surv.
D-342	SHOP / BT 6	1146 / 1183			F	Light inactive surface rust on shims
	FIELD / BT 4	841	X			

NI – NO INDICATIONS RI – RECORDABLE INDICATION IO – INFORMATION ONLY

A – Missing Wires
B – Missing Buttonheads
C – Protruding/ Unseated Wires
D – Broken Wires
E – Active Corrosion
F – Other Corrosion
G – Evidence of Free Water (Quantify)
H – Cracks
I – Pitting
J – Nicks, Gouges, Mechanical Damage
K – Uneven Shim Stack
NI – No Indication
K – Uneven Shim Stack
L – Excessive Shim Gaps
M – Gasket Seating Surface Damage
N – Surface Discontinuities, Deflections
O – Other (Explain)

4.4 BUTTONHEAD COUNT

4.4.1 An inspection for protruding and missing buttonheads was performed on each surveillance tendon end and documented per TMI Procedure 1301-9.1 Revision 20 - Tendon Buttonhead Inspection. This inspection is performed to acquire information on the function of the tendon since the original installation or previous surveillance. A missing and/or protruding buttonhead decreases the amount of effective wires in the tendon. The results of these inspections are recorded on Enclosure 6, Data Sheet 4 from TMI Procedure 1301-9.1 and are summarized in Table 4-6.

4.4.2 Upon completion of retensioning process, the shop end of tendon D-322 was identified with a protruding buttonhead (0.35"). No other protruding/missing buttonheads were detected on any of the inspected tendon ends, aside from those removed for testing.

Table 4-6: Buttonhead Count – Surveillance Tendons

TENDON	END	PREVIOUSLY		AS FOUND		AS LEFT			EFFECTIVE WIRES AS FOUND	EFFECTIVE WIRES AS LEFT
		PROTRUDE	BROKEN / MISSING	PROTRUDE	BROKEN / MISSING	PROTRUDE	BROKEN / MISSING	REMOVED FOR TESTING		
H13-41	SHOP / BT 1	0	0	0	0	0	0	0	169	169
	FIELD / BT 3	0	0	0	0	0	0	0	169	169
H24-33	SHOP / BT 4	0	0	0	0	0	0	0	169	169
	FIELD / BT 2	0	0	0	0	0	0	0	169	169
H46-50	SHOP / BT 6	0	0	0	0	0	0	0	169	169
	FIELD / BT 4	0	0	0	0	0	0	0	169	169
H51-49	SHOP / BT 1	0	0	0	0	0	0	1	169	168
	FIELD / BT 5	0	0	0	0	0	0	1	169	168
H62-26	SHOP / BT 6	0	0	0	0	0	0	0	169	169
	FIELD / BT 2	0	0	0	0	0	0	0	169	169
V-11	SHOP / TOP	0	0	0	0	0	0	0	169	169
	FIELD / BOT	0	0	0	0	0	0	0	169	169
V-32	SHOP / TOP	0	0	0	0	0	0	0	169	169
	FIELD / BOT	0	0	0	0	0	0	0	169	169
V-90	SHOP / TOP	0	0	0	0	0	0	1	169	168
	FIELD / BOT	0	0	0	0	0	0	1	169	168
V-132	SHOP / TOP	0	0	0	0	0	0	0	169	169
	FIELD / BOT	0	0	0	0	0	0	0	169	169
D-122	SHOP / BT 5	0	0	0	0	0	0	0	169	169
	FIELD / NE	0	0	0	0	0	0	0	169	169
D-225	SHOP / BT 5	0	0	0	0	0	0	0	169	169
	FIELD / BT 2	0	0	0	0	0	0	0	169	169
D-322	SHOP / N	0	0	0	0	1	0	1	169	167
	FIELD / S	0	0	0	0	0	0	1	169	168
D-342	SHOP / BT 6	0	0	0	0	0	0	0	169	169
	FIELD / BT 4	0	0	0	0	0	0	0	169	169

4.5 DETAILED CONCRETE EXAMINATION

4.5.1 A detailed visual examination (VT-1C) was performed on the 24" around the bearing plate of each surveillance tendon end in accordance with Exelon Procedure ER-AA-335-018. The results were recorded on Exelon Procedure ER-AA-335-018, Attachment 6 and are summarized in Table 4-7. None of the inspected tendon ends exhibited concrete cracks exceeding 0.010" around any bearing plate inspected.

Table 4-7: Detailed Concrete Inspection – Surveillance Tendons

TENDON	END	RESULTS			RESULTS
		NI	RI TYPE	IO	
H13-41	SHOP / BT 1	X			
	FIELD / BT 3	X			
H24-33	SHOP / BT 4			A	1 crack extending from the upper right corner of the bearing plate to the lower right corner of the bearing plate above 12" Long x < 0.010" wide.
	FIELD / BT 2	X			
H46-50	SHOP / BT 6	X			
	FIELD / BT 4	X			
H51-49	SHOP / BT 1	X			
	FIELD / BT 5	X			Exam Limited Due to Accesibility
H62-26	SHOP / BT 6	X			
	FIELD / BT 2	X			
V-11	SHOP / TOP	X			
	FIELD / BOT	Q			Efflorescence on Exterior Wall. 4" strip around entire gallery.
V-32	SHOP / TOP	X			
	FIELD / BOT	X			
V-90	SHOP / TOP	X			
				A	1 crack adjacent to the bearing plate 3' L x <0.010" wide
	FIELD / BOT			A	1 crack from corner of bearing plate to exterior wall 10" L x <0.010" wide.
V-132	SHOP / TOP			P	Small bugholes present in the entire area.
	FIELD / BOT			Q	Efflorescence on inner wall.
D-122	SHOP / BT 5			M	Large area of light scaling above tendon
				A	Crack from top corner of bearing plate 4' Long x <0.010" wide.
				A	Crack from bottom center of bearing plate 6' Long x <0.010" wide.
	FIELD / NE	X			
D-225	SHOP / BT 5			A	Crack extending from right upper corner of bearing plate 49" long x <0.010" wide
				A	Crack from lower right corner 44" L x <0.010" wide.
	FIELD / BT 2			H	Grout patch from lower left to upper right of bearing plate separating from concrete.
D-322	SHOP / N	X			
	FIELD / S	X			
D-342	SHOP / BT 6			A	3 cracks. 2 at top and 1 at bottom of bearing plate. 12" max length x <0.010" wide.
	FIELD / BT 4			A	1 crack above bearing plate 17" long x <0.010" wide.

4.5.2 The concrete examinations of the accessible exterior surfaces and areas previously identified for re-examination were completed. The results of these examinations are summarized in APPENDIX H and were evaluated by the Utility.

4.6 SQ 7.1 ANCHORHEAD THREAD MEASUREMENT

4.6.1 Threads measurements were taken to assure that the external threads of inspected tendon anchorages meet the minimum strength requirement of 120% of the minimum Guaranteed Ultimate Tensile Strength (GUTS) of the tendon, when coupled with a specific Stressing Adaptor. The results were recorded on Datasheet SQ7.1 and are summarized in Table 4-8. All measurements taken were in within acceptable limits.

Table 4-8: SQ7.1 – Thread Measurements – Surveillance Tendons

TENDON	END	ANCHOR/ BUSHING I.D.	EXTERNAL MAJOR (inches)	EXTERNAL PITCH (inches)	EXTERNAL MINOR (inches)	ADAPTOR MARK	MINIMUMMIN OR DIAMETER (IN)
H13-41	SHOP / BT 1	569 / 766	9.372	9.255	9.183	A5	8.598
	FIELD / BT 3	132	9.369	9.270	9.177	A5	8.579
H24-33	SHOP / BT 4	1031 / 1249	9.374	9.249	9.179	A5	8.598
	FIELD / BT 2	662	9.390	9.261	9.204	A5	8.598
H46-50	SHOP / BT 6	678 / 754	9.375	9.284	9.194	A5	8.513
	FIELD / BT 4	900	9.371	9.250	9.172	A5	8.717
H51-49	SHOP / BT 1	1007 / 1156	9.397	9.264	9.200	A5	8.443
	FIELD / BT 5	890	9.378	9.270	9.166	X2	8.755
H62-26	SHOP / BT 6	837 / 924	9.375	9.275	9.175	A5	8.543
	FIELD / BT 2	571	9.380	9.268	9.168	A5	8.682
V-11*	SHOP / TOP	519 / 1213	9.371	9.250	9.184	X2	8.677
	FIELD / BOT	555	N/A	N/A	N/A	N/A	N/A
V-32*	SHOP / TOP	1036 / 1050	9.363	9.252	9.164	X2	8.720
	FIELD / BOT	657	N/A	N/A	N/A	N/A	N/A
V-90*	SHOP / TOP	890 / 590	9.362	9.254	9.190	X2	8.720
	FIELD / BOT	728	N/A	N/A	N/A	N/A	N/A
V-132*	SHOP / TOP	916 / 1098	9.378	9.263	9.190	A5	8.534
	FIELD / BOT	682	N/A	N/A	N/A	N/A	N/A
D-122	SHOP / BT 5	547 / 1074	9.379	9.258	9.187	A5	8.598
	FIELD / NE	754	9.396	9.243	9.179	A5	8.576
D-225	SHOP / BT 5	765 / 1137	9.369	9.199	9.193	X2	8.750
	FIELD / BT 2	684	9.366	9.244	9.175	X2	8.695
D-322	SHOP / N	668 / 1002	9.375	9.261	9.187	A5	8.660
	FIELD / S	1064	9.379	9.256	9.183	X2	8.733
D-342	SHOP / BT 6	1146 / 1183	9.356	9.245	9.917	X2	8.736
	FIELD / BT 4	841	9.372	9.254	9.170	A5	8.598

*Measurements not taken for Field/Bottom end of vertical tendons because no stressing equipment was attached to these ends.

5.0 HYDRAULIC JACK CALIBRATIONS

5.1 Precision Surveillance Corporation has developed a program for calibrating hydraulic jacks utilizing regression analysis (PSC Procedure QA 12.8.G-W). This is a process where a straight line is mathematically best fit to a set of data points (in this case, force versus gauge pressure). This results in a linear equation which relates the ram area (slope) and constant (y-intercept) for each jack calibration, allowing the conversion of pressure to force and vice versa. Completed calibrations for all of the hydraulic jacks used are contained in APPENDIX C and are summarized in Table 5-1.

5.2 A before and after comparison of the stressing jacks' ram areas revealed that none of the hydraulic jacks' calibrations varied by more than 0.614%, indicating that they were in a properly calibrated status throughout the surveillance. Acceptable variation is 1.5%. The percent variation is obtained by comparing the maximum force calculated from the calibration data at the maximum pressure noted.

5.3 Due to the timing of the surveillance compared to the SGR Project, the stressing jacks used for the surveillance had to be calibrated in two phases. Phase one was the portion of the surveillance performed before the SGRP started and Phase two represents the tendons inspected once the unit was shutdown. A pre and post calibration was performed for each phase. It should be noted that the post calibration for phase one is used as the pre calibration for phase two.

5.4 The wire-testing ram, I.D.#7702 was calibrated before and after testing the wire samples and was also found within acceptable variation at -0.276% as compared using the maximum calibration forces.

5.5 Note that the force exerted by a jack can be calculated as follows:

Force = Area x Pressure + Constant

(K) (in^2) (KSI) (K)

Table 5-1: Hydraulic Jack Calibrations

JACK I.D.	FIRST				SECOND				MAX PRESSURE	% VARIATION
	DATE	AREA (in^2)	CONSTANT (KIPS)	FORCE F_i (KIPS)	DATE	AREA (in^2)	CONSTANT (KIPS)	FORCE F_f (KIPS)		
PHASE 1 CALIBRATIONS										
9370	7/14/09	218.894	-2.248	1858.35	9/23/09	220.472	-4.255	1869.76	8500	+0.614
9371	7/9/09	220.008	-3.524	1866.54	9/23/09	220.599	-5.486	1869.61	8500	+0.164
PHASE 2 CALIBRATIONS										
9370	9/23/09	220.472	-4.255	1869.76	12/22/09	219.313	-1.189	1862.97	8500	-0.363
9371	9/23/09	220.599	-5.486	1869.61	12/22/09	219.509	-0.624	1865.20	8500	-0.236
PSC SHOP CALIBRATIONS										
7702	12/23/09	1.696	0.091	14.507	12/29/09	1.697	0.123	14.548	8500	+0.276

6.0 TENDON LIFTOFFS

6.1 MONITOR TENDON FORCES

6.1.1 A liftoff is defined as the force required to transfer the load on a tendon from the shim stack to the stressing ram and is representative of the force held by that tendon. A liftoff is performed on each surveillance tendon to monitor the force exerted by the tendon onto the containment structure. TMI procedure 1301-9.1 details the steps taken to perform a liftoff. The results were documented on Data Sheets 1, 2 and 5 from TMI Procedure 1301-9.1 and are summarized in Table 6-1.

6.1.1.1 It should be noted that performing a liftoff has only a localized effect on a tendon; therefore, it is acceptable to use the same jack for both ends of a tendon by executing the liftoff on separate occasions.

6.1.2 According to ASME, Section XI, subsection IWL-3221.1:*Tendon forces are acceptable if:*

(a) *the average of all measured tendon forces, including those measured in IWL-3221.1(b)(2), for each type of tendon is equal to or greater than the minimum required prestress specified at the anchorage for that type of tendon;*

(b) *the measured force in each individual tendon is not less than 95% of the predicted force unless the following conditions are satisfied:*

(1) *the measured force in not more than one tendon is between 90% and 95% of the predicted force;*

(2) *The measured forces in two tendons located adjacent to the tendon in IWL-3221.1(b)(1) are not less than 95% of the predicted forces; and*

(3) *the measured forces in all the remaining sample tendons are not less than 95% of the predicted force.*

6.1.3 Per TMI Procedure 1301-9.1- RB Structural Integrity Tendon Surveillance, Revision 20, Section 9.3, the acceptance criteria for liftoff forces is:

(9.3.1) *The average of all normalized tendon lift-off forces, including those measured in 9.3.2.2, for each type of tendon (vertical, dome, or hoop) is equal or greater than the required minimum average tendon force at the anchorage for that type of tendon.*

(9.3.2) *The measured force in each individual tendon is not less than 95% of the Predicted Base Value (Predicted Force) obtained from VM-TM-2485…*

6.1.4 All of the as-found tendon liftoff forces were above the 95% Predicted Base Value (Predicted Force) as required by IWL-3221.1.(a) and 9.3.1 of 1301-9.1, and were therefore deemed acceptable. The actual values for each tendon are summarized in Table 6-1.

6.1.5 The average of the normalized liftoff values, as well as the average of as-found liftoff values, were above the required minimum average force for each tendon group (vertical, dome, or hoop) and deemed acceptable. The normalized forces were obtained by applying the normalization factors provided by Exelon for each individual tendon to the as-found liftoff forces. These computations are summarized in Table 6-2.

6.1.6 Upon completion of the liftoff, a visual verification is performed to identify any changes in the condition of the tendon end. In addition, tendons that are detentioned undergo a visual examination after both detensioning and retensioning of the tendon. The shop end of tendon D-322 was identified with one protruding buttonhead (0.35") after retensioning. No additional protruding or broken wires were noted during or after liftoffs, detensioning or retensioning.

Table 6-1: Monitoring Tendon Force

TENDON	END	SHIM STACK HEIGHT (in)	EFFECTIVE WIRES	JACK I.D.	END LIFT-OFF FORCE (KIPS)	AVERAGE LIFT-OFF FORCE (KIPS)	PREDICTED FORCE (KIPS)	95% P.F. (KIPS)	90% P.F. (KIPS)	AS-FOUND ACCEPTANCE
H13-41	SHOP / BT 1	6.50	169	9371	1172.50	1151.01	1153	1095	1038	YES
	FIELD / BT 3	6.70	169	9371	1129.51					
H24-33	SHOP / BT 4	6.50	169	9371	1157.38	1123.43	1068	1015	961	YES
	FIELD / BT 2	7.60	169	9371	1089.47					
H46-50	SHOP / BT 6	6.40	169	9371	1204.31	1130.62	1116	1060	1004	YES
	FIELD / BT 4	7.00	169	9371	1056.91					
H51-49	SHOP / BT 1	7.10	169	9371	1185.70	1154.28	1132	1075	1019	YES
	FIELD / BT 5	6.60	169	9370	1122.86					
H62-26	SHOP / BT 6	6.80	169	9371	1130.98	1141.25	1105	1050	995	YES
	FIELD / BT 2	7.30	169	9371	1151.51					
V-11	SHOP / TOP	14.30	169	9370	1205.97	1205.97	1148	1091	1033	YES
	FIELD / BOT	N/A	N/A	N/A	N/A					
V-32	SHOP / TOP	14.15	169	9370	1175.10	1175.10	1181	1122	1063	YES
	FIELD / BOT	N/A	N/A	N/A	N/A					
V-90	SHOP / TOP	15.00	169	9371	1199.92	1199.92	1204	1144	1084	YES
	FIELD / BOT	N/A	N/A	N/A	N/A					
V-132	SHOP / TOP	15.50	169	9371	1205.78	1205.78	1204	1144	1084	YES
	FIELD / BOT	N/A	N/A	N/A	N/A					
D-122	SHOP / BT 5	5.65	169	9371	1110.44	1119.42	1082	1028	974	YES
	FIELD / NE	7.00	169	9371	1128.39					
D-225	SHOP / BT 5	7.70	169	9370	1093.90	1088.25	1067	1014	960	YES
	FIELD / BT 2	4.70	169	9370	1082.59					
D-322	SHOP / N	6.65	169	9370	1137.78	1135.29	1128	1072	1015	YES
	FIELD / S	6.40	169	9371	1132.80					
D-342	SHOP / BT 6	5.40	169	9370	1118.12	1149.85	1116	1060	1004	YES
	FIELD / BT 4	5.10	169	9371	1181.58					

Table 6-2: Monitoring Tendon Force – Normalized Force

TENDON	END	END LIFT-OFF FORCE (KIPS)	AS-FOUND LIFT-OFF FORCE (KIPS)	NORMALIZATION FACTOR	NORMALIZED FORCE (KIPS)	AS-FOUND AVERAGE (KIPS)	NORMALIZED FORCE-GROUP AVERAGE (KIPS)	MINIMUM DESIGN AVERAGE (KIPS)	ACCEPTABLE
H13-41	SHOP / BT 1 FIELD / BT 3	1172.50 1129.51	1151.01	-47	1104.01	1140.12	1131.92	1108	YES
H24-33	SHOP / BT 4 FIELD / BT 2	1157.38 1089.47	1123.43	+38	1161.43				
H46-50	SHOP / BT 6 FIELD / BT 4	1204.31 1056.91	1130.62	-9	1121.62				
H51-49	SHOP / BT 1 FIELD / BT 5	1185.70 1122.86	1154.28	-25	1129.28				
H62-26	SHOP / BT 6 FIELD / BT 2	1130.98 1151.51	1141.25	+2	1143.25				
V-11	SHOP / TOP FIELD / BOT	1205.97 N/A	1205.97	+26	1231.97	1196.69	1186.44	1033	YES
V-32	SHOP / TOP FIELD / BOT	1175.10 N/A	1175.10	-7	1168.1				
V-90	SHOP / TOP FIELD / BOT	1199.92 N/A	1199.92	-30	1169.92				
V-132	SHOP / TOP FIELD / BOT	1205.78 N/A	1205.78	-30	1175.78				
D-122	SHOP / BT 5 FIELD / NE	1110.44 1128.39	1119.42	+31	1150.42	1123.20	1137.70	1064	YES
D-225	SHOP / BT 5 FIELD / BT 2	1093.90 1082.59	1088.25	+45	1133.25				
D-322	SHOP / N FIELD / S	1137.78 1132.80	1135.29	-15	1120.29				
D-342	SHOP / BT 6 FIELD / BT 4	1118.12 1181.58	1149.85	-3	1146.85				

7.0 WIRE INSPECTION AND WIRE TESTING

7.1 One tendon from each group (Vertical, Hoop and Dome) was completely detensioned. A single wire was removed from each detensioned tendon for inspection and testing. Each removed wire was examined over its entire length for corrosion and mechanical damage. Three samples from each wire were tested for diameter, yield strength, ultimate tensile strength and elongation at failure. PSC SQ 10.2 outlines the details and acceptance criteria pertaining to the wire inspection and testing. All data was recorded on Data Sheets SQ10.2 and SQ10.3 and the results are summarized in Table 7-1.

7.1.1 Wire diameter measurements were all within acceptable limits of 0.250" ± 0.002". No mechanical damage was noted on any of the wires.

7.1.2 The corrosion levels for the tested wires were:

1 – No visible corrosion. *Or* *2 – Metal reddish brown color, no pitting.*

Which are both acceptable corrosion levels.

7.1.3 The ultimate stress of the wires exceeded the minimum strength criteria of 240 ksi on all test samples. The lowest recorded ultimate stress was 278.244ksi. The percent elongation at sample failure was above the required minimum of 4.0% on all samples tested. The recorded elongation values on the samples varied from 5.10% to 5.60%.

7.1.4 It was noted during the review process, by the Utility, that the sample ultimate break strengths were higher than had been reported in all the historical data. An additional sample was tested from each wire for confirmation and the results were consistent with the initial tests. For further confirmation, a different hydraulic ram was calibrated using a different load cell and one more sample from each wire was tested. The results using this independent equipment were again consistent with the initial and supplemental results.

7.1.5 The utility performed a review of the calibration data for both hydraulic rams as well as the NIST calibration data for the load cells used. The calibration procedures from the 30th Year and 35th Year Surveillances as well as the wire testing procedure and datasheets from the 30th Year and 35th Year Surveillances were reviewed by the Utility with no significant changes or discrepancies.

7.1.6 The measured elongations at break and measured wire stress at 1% elongation were consistent between the current surveillance and historical data. All of the wire test results for the 35th Year Surveillance meet or exceed the specified minimum requirements and the Utility has deemed the results acceptable.

Table 7-1: Visual Inspection And Tensile Testing Of Wires

TENDON	SAMPLE NUMBER	CORROSION LEVEL	SAMPLE LOCATION (ft)	DIAMETER (in.)	YIELD STRENGTH (ksi)	ULTIMATE STRENGTH (ksi)	ELONGATION (%)	ACCEPT?
H51-49	1	2	20-29	0.250	222.275	282.389	5.40	YES
	2	2	70-79	0.250	220.893	279.625	5.20	YES
	3	2	140-149	0.250	227.111	278.244	5.10	YES
V-90	1	1	0-10	0.250	236.785	287.226	5.30	YES
	2	1	70-80	0.250	229.184	287.226	5.30	YES
	3	1	170-180	0.250	231.257	286.535	5.30	YES
D-322	1	2	20-29	0.250	235.403	282.389	5.30	YES
	2	2	70-79	0.250	231.257	280.316	5.30	YES
	3	2	130-139	0.250	232.639	281.007	5.60	YES

8.0 TENDON RETENSIONING AND RESEALING

8.1 TENDON RETENSIONING

8.1.1 The tendons that were detensioned for test wire removal were retensioned per TMI Surveillance Procedures 1301-9.1 in order to restore them to an acceptable working force. The results of the retensioning process were recorded on Data Sheet 4 of TMI Procedure 1301-9.1 and the results are summarized in Table 8-1. In Table 8-1, "N/A" indicates restressing occurred from the opposite end only.

8.1.2 According to ASME, Section XI, subsection IWL-3221.1.*(d)*: *Tendon forces and elongation are acceptable if the following conditions are met*:

(d) *The measured tendon elongation varies from the last measurement, adjusted for effective wires or strands, by less than 10%.*

8.1.2.1 All retensioned tendons elongations were compared to original elongation and found to be acceptable.

8.1.3 A force versus elongation graph of each retensioning is plotted to show the comparison of retensioning compared with original stressing force and elongation values.

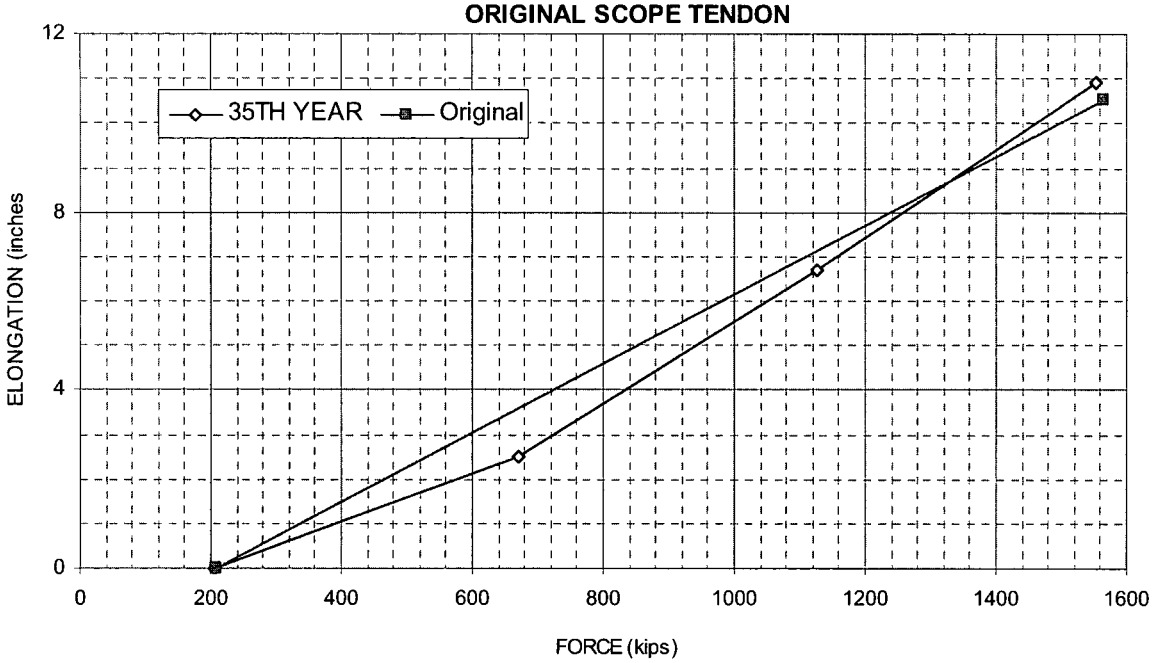
8.1.4 All tendons were retensioned to acceptable force values greater than as found.

8.1.5 Retensioning forces (PTF, Step 1, Step 2 and OSF) are adjusted from original, for the surveillance, taking into account the amount of wires removed in order to compare the observed elongation to the original elongation accurately.

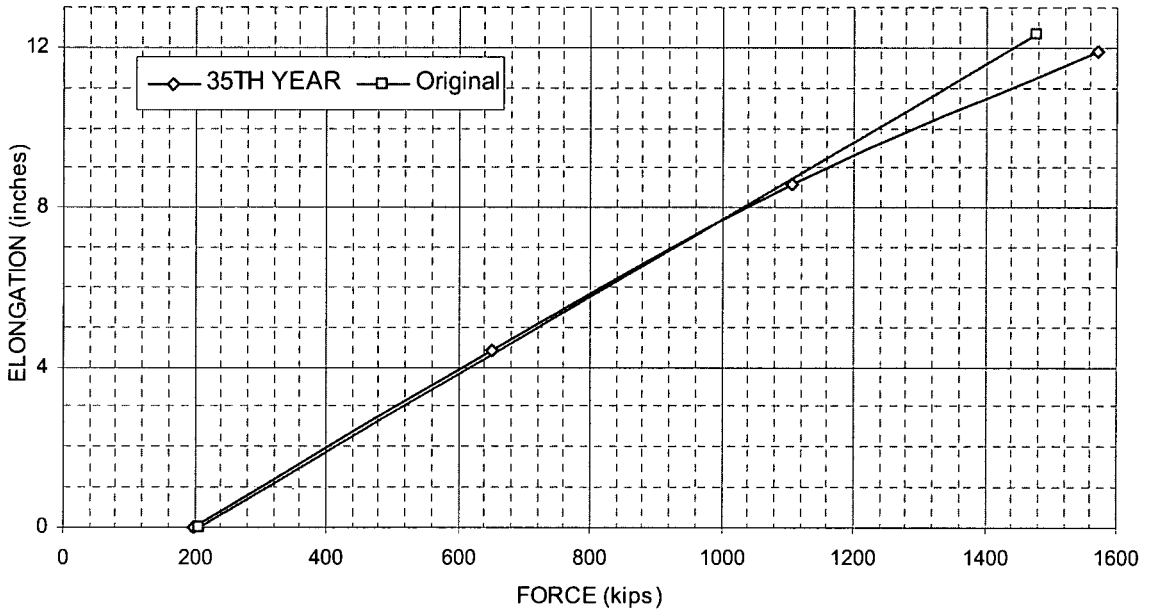
Table 8-1: Retensioning

TENDON	END	ORIGINAL ELONGATION TOTAL (in)	OBSERVED ELONGATION TOTAL (in)	% VARIATION	AS-FOUND LIFTOFF			RETENSIONING			% VARIATION	ACCPET ?
					JACK	END FORCE (kips)	TENDON FORCE (kips)	JACK	END FORCE (kips)	TENDON FORCE (kips)		
H51-49	SHOP/BT 1	10.55	10.90	+3.32	9371	1185.70	1154.28	9371	1225.40	1214.65	+5.230	YES
	FIELD/BT 5				9370	1122.86		9370	1203.90			
V-90	SHOP/TOP	12.35	11.90	-3.64	9371	1199.92	1199.92	9370	1238.14	1238.14	+3.185	YES
	FIELD/BOT				N/A	N/A		N/A	N/A			
D-322	SHOP/N	10.70	10.00	-6.54	9370	1137.78	1135.29	9370	1168.60	1170.56	+3.107	YES
	FIELD/S				9371	1132.80		9371	1172.51			

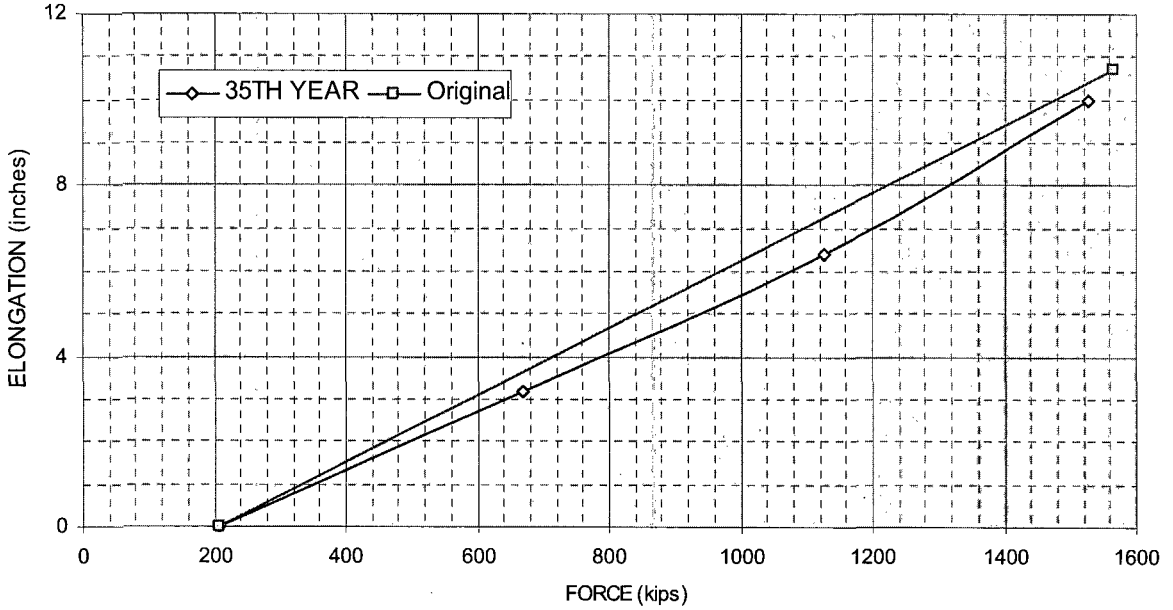
ELONGATION FOR H51-49
ORIGINAL SCOPE TENDON

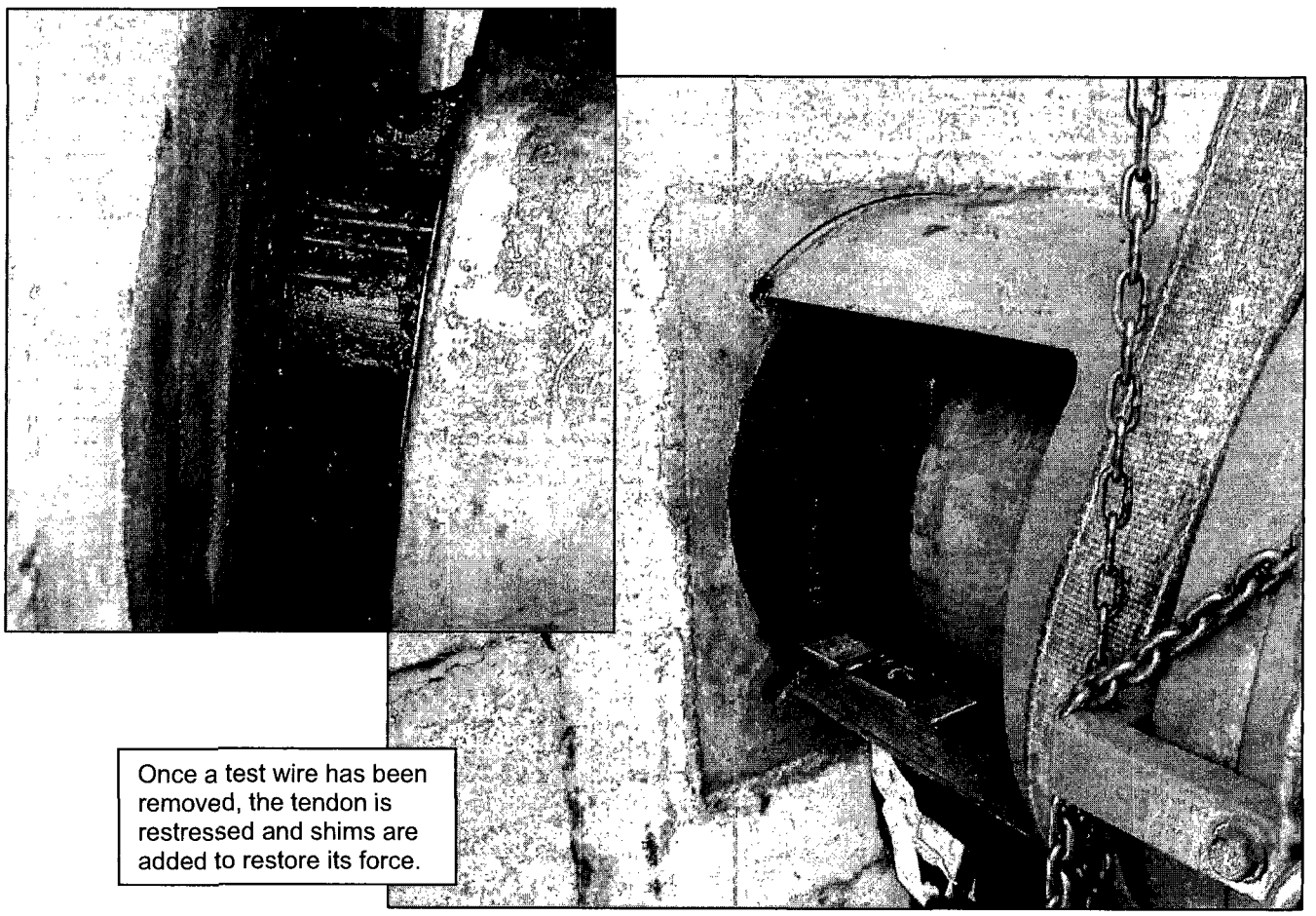


ELONGATION FOR V-90
ORIGINAL SCOPE TENDON



ELONGATION FOR D-322
ORIGINAL SCOPE TENDON





Once a test wire has been removed, the tendon is restressed and shims are added to restore its force.

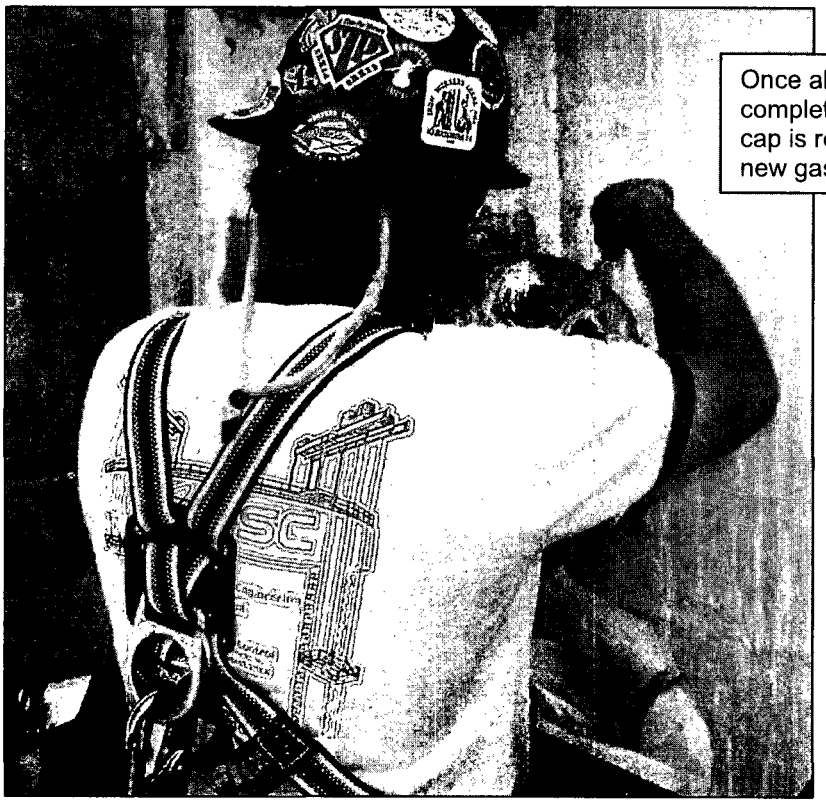
8.2 SQ12.0 TENDON CAP RESEALING

8.2.1 After completion of all inspections, the anchorage components were hand coated with cold grease to ensure complete coverage. The caps were reinstalled with new gaskets. The results of the grease cap replacement were recorded on Data Sheet SQ 12.0 and are summarized in Table 8-2 and Table 8-3.

Table 8-2: SQ12.0 – Grease Cap Replacement – Surveillance Tendons

TENDON	END	BEARING PLATE SURFACE PROPERLY PREPARED	GREASE CAP SURFACE PROPERLY PREPARED	GASKET MATING SURFACE PROPERLY PREPARED	STUD/ BOLT HOLES PROPERLY PREPARED	FOREIGN MATERIAL EXCLUSION CONTROLLED	ACCEPTABLE
H13-41	SHOP / BT 1	YES	YES	YES	YES	YES	YES
	FIELD / BT 3	YES	YES	YES	YES	YES	YES
H24-33	SHOP / BT 4	YES	YES	YES	YES	YES	YES
	FIELD / BT 2	YES	YES	YES	YES	YES	YES
H46-50	SHOP / BT 6	YES	YES	YES	YES	YES	YES
	FIELD / BT 4	YES	YES	YES	YES	YES	YES
H51-49	SHOP / BT 1	YES	YES	YES	YES	YES	YES
	FIELD / BT 5	YES	YES	YES	YES	YES	YES
H62-26	SHOP / BT 6	YES	YES	YES	YES	YES	YES
	FIELD / BT 2	YES	YES	YES	YES	YES	YES
V-11	SHOP / TOP	YES	YES	YES	YES	YES	YES
	FIELD / BOT	YES	YES	YES	YES	YES	YES
V-32	SHOP / TOP	YES	YES	YES	YES	YES	YES
	FIELD / BOT	YES	YES	YES	YES	YES	YES
V-90	SHOP / TOP	YES	YES	YES	YES	YES	YES
	FIELD / BOT	YES	YES	YES	YES	YES	YES
V-132	SHOP / TOP	YES	YES	YES	YES	YES	YES
	FIELD / BOT	YES	YES	YES	YES	YES	YES
D-122	SHOP / BT 5	YES	YES	YES	YES	YES	YES
	FIELD / NE	YES	YES	YES	YES	YES	YES
D-225	SHOP / BT 5	YES	YES	YES	YES	YES	YES
	FIELD / BT 2	YES	YES	YES	YES	YES	YES
D-322	SHOP / N	YES	YES	YES	YES	YES	YES
	FIELD / S	YES	YES	YES	YES	YES	YES
D-342	SHOP / BT 6	YES	YES	YES	YES	YES	YES
	FIELD / BT 4	YES	YES	YES	YES	YES	YES

Table 8-3: SQ12.0 – Grease Cap Replacement – Gasket Repair Tendons							
TENDON	END	BEARING PLATE SURFACE PROPERLY PREPARED	GREASE CAP SURFACE PROPERLY PREPARED	GASKET MATING SURFACE PROPERLY PREPARED	STUD/ BOLT HOLES PROPERLY PREPARED	FOREIGN MATERIAL EXCLUSION CONTROLLED	ACCEPTABLE
V-10	FIELD / BOT	YES	YES	YES	YES	YES	YES
V-55	FIELD / BOT	YES	YES	YES	YES	YES	YES
V-60	FIELD / BOT	YES	YES	YES	YES	YES	YES
V-62	FIELD / BOT	YES	YES	YES	YES	YES	YES
V-71	FIELD / BOT	YES	YES	YES	YES	YES	YES
V-84	FIELD / BOT	YES	YES	YES	YES	YES	YES
V-88	FIELD / BOT	YES	YES	YES	YES	YES	YES
V-98	FIELD / BOT	YES	YES	YES	YES	YES	YES
V-99	FIELD / BOT	YES	YES	YES	YES	YES	YES



Once all inspections are complete, the grease cap is reinstalled with a new gasket.

8.3 SQ12.1 TENDON DUCT AND CAP RE-GREASING

8.3.1 Upon acceptable grease cap replacement, the necessary amount of sheathing filler (grease) was replaced. All of the inspected tendons were refilled within the acceptable limits as stated in PSC Procedure SQ12.1. The results of the grease replacement were recorded on Data Sheet SQ 12.1 and are summarized in Table 8-4 and Table 8-5. In Table 8-4 and Table 8-5, "N/A" indicates grease was not required to be added to the end identified according to PSC Procedure SQ12.1.

8.3.2 The absolute difference between the amount of grease removed/lost and the amount of grease replaced in the subject tendon shall not exceed 10% of the net duct volume per PSC Procedure SQ 12.1. This requirement was met at all tendon ends and all refills were deemed acceptable.

8.3.3 Tendon V-132 was part of the scope of the Steam Generator Replacement Project and as such the grease replacement was performed under that Project. No data was given to PSC regarding the refilling of V-132.

Tendons are refilled with sheathing filler (grease) in order to replace what was removed during inspections.

Table 8-4: SQ12.1 – Grease Loss vs. Grease Replacement – Surveillance Tendons

TENDON	END	GREASE REMOVED (GALLONS)		GREASE REPLACED (GALLONS)		DIFF. (GAL.)	DUCT VOLUME (GAL.)	% DIFF.	ACCEPT
		END	TOTAL	END	TOTAL				
H13-41	SHOP / BT 1	6.50	11.50	7.96	13.27	1.77	103.50	1.71	YES
	FIELD / BT 3	5.00		5.31					
H24-33	SHOP / BT 4	5.00	9.00	7.96	12.38	3.38	103.20	3.27	YES
	FIELD / BT 2	4.00		4.42					
H46-50	SHOP / BT 6	4.50	9.00	7.08	15.04	6.04	103.4	5.84	YES
	FIELD / BT 4	4.50		7.96					
H51-49	SHOP / BT 1	4.00	8.00	7.08	14.16	6.16	103.40	5.96	YES
	FIELD / BT 5	4.00		7.08					
H62-26	SHOP / BT 6	4.00	9.25	7.08	13.27	4.02	103.2	3.89	YES
	FIELD / BT 2	5.25		6.19					
V-11	SHOP / TOP	4.00	61.50	N/A	68.55	7.05	123.8	5.69	YES
	FIELD / BOT	57.50		68.55					
V-32	SHOP / TOP	4.50	12.50	23.01	23.01	10.51	125.2	8.39	YES
	FIELD / BOT	8.00		N/A					
V-90	SHOP / TOP	4.00	74.50	N/A	76.85	2.35	124.90	1.88	YES
	FIELD / BOT	70.50		76.85					
V-132	SHOP / TOP	2.00	58.50	N/A*	N/A*	N/A*	N/A*	N/A*	N/A*
	FIELD / BOT	56.50		N/A*					
D-122	SHOP / BT 5	34.50	40.00	44.02	44.02	4.02	118.70	3.38	YES
	FIELD/BT NE	5.50		N/A					
D-225	SHOP / BT 5	7.00	15.75	7.96	18.58	2.83	119.90	2.36	YES
	FIELD / BT 2	8.75		10.62					
D-322	SHOP / N	8.50	15.00	10.62	19.47	4.47	120.20	3.72	YES
	FIELD / S	6.50		8.85					
D-342	SHOP / BT 6	10.00	50.00	58.72	58.72	8.72	107.8	8.09	YES
	FIELD / BT 4	40.00		N/A					

* Tendon V-132 was part of the scope of the Steam Generator Replacement Project and as such the grease replacement was performed under that Project. No data was given to PSC regarding the refilling of V-132.

Table 8-5: SQ12.1 – Grease Loss vs. Grease Replacement – Gasket Repair Tendons

TENDON	END	GREASE REMOVED (GALLONS)		GREASE REPLACED (GALLONS)		DIFF. (GAL.)	DUCT VOLUME (GAL.)	% DIFF.	ACCEPT
		END	TOTAL	END	TOTAL				
V-10	SHOP / TOP	N/A	53.00	N/A	54.94	1.94	124.80	1.55	YES
	FIELD / BOT	53.00		54.94					
V-55	SHOP / TOP	N/A	0.25	1.77	1.77	1.52	120.00	1.26	YES
	FIELD / BOT	0.25		N/A					
V-60	SHOP / TOP	N/A	34.25	14.61	34.52	0.27	120.00	0.22	YES
	FIELD / BOT	34.25		19.91					
V-62	SHOP / TOP	N/A	46.50	30.09	47.13	0.63	120.00	0.52	YES
	FIELD / BOT	46.50		17.04					
V-71	SHOP / TOP	N/A	46.00	N/A	46.20	0.20	120.00	0.16	YES
	FIELD / BOT	46.00		46.20					
V-84	SHOP / TOP	N/A	0.25	1.77	1.77	1.52	120.00	1.26	YES
	FIELD / BOT	0.25		N/A					
V-88	SHOP / TOP	N/A	53.56	N/A	53.50	0.06	120.00	0.05	YES
	FIELD / BOT	53.56		53.50					
V-98	SHOP / TOP	N/A	40.28	35.40	50.01	9.73	120.00	8.10	YES
	FIELD / BOT	40.28		14.61					
V-99	SHOP / TOP	N/A	44.25	N/A	45.20	0.95	120.00	0.75	YES
	FIELD / BOT	44.25		45.20					

9.0 COMPARISON WITH ORIGINAL INSTALLATION DATA

9.1 A comparison of the liftoff forces from this surveillance to the original installation lock-off forces for the tendons physically inspected is made in an effort to detect any evidence of system degradation. The forces are compared in order to detect any abnormal force loss that would possibly indicate an underestimation of the creep, shrinkage and/or elastic shortening effects in the Containment Building. This comparison is summarized in Table 9-1.

9.2 The losses since original installation for each tendon group are reported as: 21.76% for the hoop tendons, 17.16% for the vertical tendons, and 21.32% for the dome tendons.

Table 9-1: Comparison with Original Installation Data

TENDON	LIFTOFF FORCE		LOSS (KIPS)	% LOSS	GROUP AVERAGE LOSS %
	ORIGINAL	@35 YEARS			
H13-41	1447.42	1151.01	296.41	20.48	
H24-33	1446.38	1123.43	322.95	28.17	
H46-50	1443.26	1130.62	312.64	21.66	21.76
H51-49	1426.60	1154.28	272.32	19.09	
H62-26	1416.19	1141.25	274.94	19.41	
V-11	1437.01	1205.97	231.04	16.08	
V-32	1457.84	1175.10	282.74	19.39	17.16
V-90	1437.01	1199.92	237.09	16.50	
V-132	1447.42	1205.78	241.64	16.69	
D-122	1407.86	1119.42	288.44	20.49	
D-225	1426.60	1088.25	338.35	23.71	21.32
D-322	1460.44	1135.29	325.15	22.26	
D-342	1416.19	1149.85	266.34	18.81	

10.0 CONCLUSION

A review of this surveillance was conducted per IWL-3221 Unbonded Post-Tensioning Systems and is outlined below:

IWL-3221 Acceptance by Examination

IWL-3221.1 Tendon Force *Tendon forces are acceptable if:*

(a) *the average of all measured tendon forces, including those measured in IWL-3221.1(b)(2), for each type of tendon is equal to or greater than the minimum required prestress specified at the anchorage for that type of tendon;*

Results: The normalized, as well as as-found, group averages for each group of tendons (hoop, vertical, dome) were all above the corresponding required minimum design force values.

(b) *the measured force in each individual tendon is not less than 95% of the predicted force unless the following conditions are satisfied:*

(1) *the measured force in not more than one tendon is between 90% and 95% of the predicted force;*

(2) *the measured forces in two tendons located adjacent to the tendon in IWL-3221.1(b)(1) are not less than 95% of the predicted forces; and*

(3) *the measured forces in all the remaining sample tendons are not less than 95% of the predicted force.*

Results: All of the hoop, vertical and dome tendon liftoffs were found to be above their corresponding 95% Predicted Base Value (Predicted Force) and were deemed acceptable.

IWL-3221.2 Tendon Wire or Strand Samples. *The condition of wire or strand samples is acceptable if:*

(a) *samples are free of physical damage;*

Results: All of the tendon wire test samples were free of physical damage.

(b) *sample ultimate tensile strength and elongation are not less than minimum specified values.*

Results: All of the tendon test wire samples had acceptable results for ultimate tensile stress (≥ 240 ksi) and elongation (≥ 4%).

IWL-3221.3 Tendon Anchorage Areas. *The condition of tendon anchorage areas is acceptable if:*

(a) *there is no evidence of cracking in anchor heads, shims, or bearing plates;*

Results: Detailed inspections did not reveal any cracks in the anchorage components for any inspected tendon end.

(b) *there is no evidence of active corrosion;*

Results: Detailed inspections did not reveal any active corrosion on the anchorage components for any inspected tendon end.

(c) *broken or unseated wires, broken strands, and detached buttonheads were documented and accepted during a pre-service examination or during a previous in-service examination;*

Results: No missing or protruding wires/buttonheads were discovered during initial examinations of surveillance tendon ends. One protruding buttonhead was identified on the shop end of dome tendon D-322 after retensioning.

(d) *cracks in the concrete adjacent to the bearing plates do not exceed 0.01 in. in width;*

Results: No cracks exceeding 0.010" were detected in the 24" of concrete adjacent to the bearing plates.

IWL-3221.4 Corrosion Protection Medium. *Corrosion protection medium is acceptable when the reserve alkalinity, water content and soluble ion concentrations of all samples are within the limits specified in Table IWL-2525-1.*

Results: All sheathing filler (grease) samples were tested and found to have acceptable levels of water-soluble ions (Chlorides, Nitrates and Sulfides). All neutralization numbers were above the IWL requirement of 0.0 mg KOH/g and acceptable. Water content values were below 10% by weight and acceptable for all samples tested.

Additionally

All tendons which were detensioned exhibited elongations within ±10% of their original elongation values when they were restressed and were deemed acceptable. All of the detensioned tendons were restored to acceptable force levels.

No water was detected on any of the inspected tendons at any point during inspections.

The absolute difference between the amount of grease removed and replaced was less than 10% of the net duct volume and deemed acceptable for all tendon ends.

Based upon the evaluation of the In-Service Inspection results for the Three Mile Island Unit 1 35th Year Containment Building Tendon Surveillance reported herein, PSC concludes that the containment structure has experienced no abnormal degradation of the post-tensioning system. The containment post-tensioning system is performing in accordance with the design requirements and is expected to continue to do so for the life of the unit.

11.0 REFERENCE DOCUMENTS

11.1 American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, "Rules for In-Service Inspection of Nuclear Power Plant Components", 1992 Edition, with 1992 addenda.

11.2 Code of Federal Regulation 10 CFR 50.55a

11.3 PSC Post Tensioning System In-Service Inspection Manual (N1043) for Exelon – Three Mile Island - Nuclear Plant Unit 1 Unit 1 Physical 35th Year Containment Building Tendon Surveillance.

11.4 Three Mile Island Surveillance Procedures 1301-9.1 - RB Structural Integrity Tendon Surveillance, Revision 20

11.5 Exelon Nuclear ER-AA-335-018, Revision 5 - Detail, General, VT-1, VT-1C, VT-3 and VT-3C Visual Examination of ASME Class MC and CC Containment Surface and Components

PSC PROCEDURE SQ 6.0
GREASE CAP REMOVAL
Data Sheet 6.0
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ct: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

2) Tendon No.: H13-41 Tendon End: SHOP / BUTT ☒ Shop ☐ Field

Grease Cap Removal

		Q.C. Signoff
(7.5)Date Removal Started:	11-12-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage	☐ Yes ☒ No	
(7.7) Temp. of Concrete:	48 °F Thermometer No: ST-52 Re-Cal Date: 7-27-10	
Ambient Temp.:	46 °F Thermometer No.: PK104 Re-Cal Date: 7-27-10	11-12-09
(8.4) Anchorhead I.D. :	569 / 766 Anchorhead Verification: ☒ Match ☐ No-Match	11-12-09

(8.5) Grease Coating

Grease Cap -	Complete	✓	Partial		Uncoated	%
Buttonheads -	Complete	✓	Partial		Uncoated	%
Anchorhead -	Complete	✓	Partial		Uncoated	%
Shims -	Complete	✓	Partial		Uncoated	%
Bearing Plate – (1)	Complete	✓	Partial		Uncoated	%

(1) - *Limited within the inside diameter of the grease cap.* — 11-12-09

6) Unusual Conditions: NONE — 11-12-09

(8.7) Grease Color Match: ☐ Yes ☒ No Grease Color: DARK BROWN
Comments: NONE — 11-12-09

(8.8) Quantity of Samples 2 Quart Samples identified per Step 8.8.1? ☒ Yes ☐ No
Location of Removal ☐ A.H. ☐ B.P. ☐ Shims ☒ Cap ☐ Duct — 11-12-09

(8.9) Qty. of Grease lost during removal of cap: 0 gal. — 11-12-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: ~0 gal. — 11-12-09
(9.6) Qty. of Grease removed from anchorage: ~1 gal: — 11-12-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: NONE — 11-12-09

(10.3) Method of Tendon Protection: COATED W/GREASE & CAP INSTALLED — 11-12-09
(10.4) Amount of Grease Loss from Tendon duct: 0 gal. — 11-12-09

(10.5) Total quantity of lost grease (below):
(8.8) ½ + (9.8) 0 + (8.9.1) ~0 + (9.6) ~1 + (10.4) 0 = 6½ TOTAL — 11-12-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No — 11-12-09

C Reviewed: A Bussone Level: III Date: 2/2/10

PSC PROCEDURE SQ 6.0
GREASE CAP REMOVAL
Data Sheet 6.0
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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: H-13-41 Tendon End: Buttress 3 ☐ Shop ☒ Field

Grease Cap Removal

	Q.C. Signoff
(7.5) Date Removal Started: 8-26-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage ☐ Yes ☒ No	
(7.7) Temp. of Concrete: 104 °F Thermometer No.: ST-82 Re-Cal Date: 7-27-10	
Ambient Temp.: 99 °F Thermometer No.: PK-102 Re-Cal Date: 7-27-10	WRR 8-26-09
(8.4) Anchorhead I.D. WRR 8-26-09 766 132 Anchorhead Verification: ☐ Match ☒ No-Match	WRR 8-26-09

(8.5) Grease Coating

Grease Cap -	Complete	✓	Partial		Uncoated	%
Buttonheads -	Complete	✓	Partial		Uncoated	%
Anchorhead -	Complete	✓	Partial		Uncoated	%
Shims -	Complete	✓	Partial		Uncoated	%
Bearing Plate – (1)	Complete	✓	Partial		Uncoated	%

WRR 8-26-09

(1) - *Limited within the inside diameter of the grease cap.*

(8.6) Unusual Conditions: NONE — WRR 8-26-09

(8.7) Grease Color Match: ☐ Yes ☒ No Grease Color: DARK BROWN
Comments: NONE — WRR 8-26-09

(8.8) Quantity of Samples 2 Quart Samples identified per Step 8.8.1? ☒ Yes ☐ No
Location of Removal ☐ A.H. ☐ B.P. ☐ Shims ☒ Cap ☐ Duct — WRR 8-26-09

(8.9) Qty. of Grease lost during removal of cap: .5 gal. — WRR 8-26-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 3.5 gal. — WRR 8-26-09
(9.6) Qty. of Grease removed from anchorage: .5 gal. — WRR 8-26-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: NONE — WRR 8-26-09

(10.3) Method of Tendon Protection: Reinstalled the grease can w/a new gasket — WRR 8-26-09
(10.4) Amount of Grease Loss from Tendon duct: 0 gal. — WRR 8-26-09

(10.5) Total quantity of lost grease (below):
(8.8) .5 + (8.9) .5 + (8.9.1) 3.5 + (9.6) .5 + (10.4) 0 = 5 TOTAL — WRR 8-26-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No — WRR 8-26-09

Reviewed: [signature] Level: II Date: 8-26-09

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GREASE CAP REMOVAL
Data Sheet 6.0
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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: H24-33 Tendon End: Butt. 4 ☒ Shop ☐ Field

Grease Cap Removal

	Q.C. Signoff
(7.5)Date Removal Started: 8-11-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage ☐ Yes ☒ No	
(7.7) Temp. of Concrete: 95 °F Thermometer No.: ST82 Re-Cal Date: 7-27-10	
Ambient Temp.: 93 °F Thermometer No.: PK102 Re-Cal Date: 7-27-10	WRR 8-11-09
(8.4) Anchorhead I.D.: 1249 Anchorhead Verification: ☐ Match ☒ No-Match	WRR 8-11-09

(8.5) Grease Coating

	Complete		Partial		Uncoated	
Grease Cap -	Complete	✓	Partial		Uncoated	%
Buttonheads -	Complete	✓	Partial		Uncoated	%
Anchorhead -	Complete	✓	Partial		Uncoated	%
Shims -	Complete	✓	Partial		Uncoated	%
Bearing Plate – (1)	Complete	✓	Partial		Uncoated	%

(1) - *Limited within the inside diameter of the grease cap.* — WRR 8-11-09

.6) Unusual Conditions: None — WRR 8-11-09

(8.7) Grease Color Match: ☐ Yes ☒ No Grease Color: Dark Brown
Comments: None — WRR 8-11-09

(8.8) Quantity of Samples 2 Quart Samples identified per Step 8.8.1? ☒ Yes ☐ No
Location of Removal ☐ A.H. ☐ B.P. ☐ Shims ☒ Cap ☐ Duct — WRR 8-11-09

(8.9) Qty. of Grease lost during removal of cap: 2 gal. — WRR 8-11-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 2 gal. — WRR 8-11-09
(9.6) Qty. of Grease removed from anchorage: .5 gal. — WRR 8-11-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: None — WRR 8-11-09

(10.3) Method of Tendon Protection: Reinstalled the grease can w/a new gasket — WRR 8-11-09
(10.4) Amount of Grease Loss from Tendon duct: 0 gal. — WRR 8-11-09

(10.5) Total quantity of lost grease (below):
(8.8) .5 + (8.9) 2 + (8.9.1) 2 + (9.6) .5 + (10.4) 0 = 5 TOTAL — WRR 8-11-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No — WRR 8-11-09

: Reviewed: [signature] Level: I Date: 8-11-09

PSC PROCEDURE SQ 6.0
GREASE CAP REMOVAL
Data Sheet 6.0
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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: H24-33 Tendon End: Buttress 2 ☐ Shop ☒ Field

Grease Cap Removal

	Q.C. Signoff
(7.5) Date Removal Started: 8-24-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage ☐ Yes ☒ No	
(7.7) Temp. of Concrete: 99 °F Thermometer No.: ST-83 Re-Cal Date: 3-26-09	
Ambient Temp.: 92 °F Thermometer No.: PK-104 Re-Cal Date: 7-27-09	AGS 8-24-09
(8.4) Anchorhead I.D. : 662 Anchorhead Verification: ☒ Match ☐ No-Match	ZGS 8-24-09

(8.5) Grease Coating

Grease Cap -	Complete	✓	Partial		Uncoated	%
Buttonheads -	Complete	✓	Partial		Uncoated	%
Anchorhead -	Complete	✓	Partial		Uncoated	%
Shims -	Complete	✓	Partial		Uncoated	%
Bearing Plate – (1)	Complete	✓	Partial		Uncoated	%

(1) - *Limited within the inside diameter of the grease cap.*

ZGS 8-24-09

ZGS 8-24-09

.6) Unusual Conditions: None — ZGS 8-24-09

(8.7) Grease Color Match: ☐ Yes ☒ No Grease Color: Dark brown
Comments: None — ZGS 8-24-09

(8.8) Quantity of Samples 2 Quart Samples identified per Step 8.8.1? ☒ Yes ☐ No
Location of Removal ☒ A.H. ☐ B.P. ☒ Shims ☒ Cap ☐ Duct — ZGS 8-24-09

(8.9) Qty. of Grease lost during removal of cap: 0 gal. — ZGS 8-24-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 3 gal. — ZGS 8-24-09
(9.6) Qty. of Grease removed from anchorage: .50 gal. — ZGS 8-24-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: N/A — ZGS 8-24-09

(10.3) Method of Tendon Protection: Reinstall grease can with new gasket — ZGS 8-24-09
(10.4) Amount of Grease Loss from Tendon duct: 0 gal. — ZGS 8-24-09

(10.5) Total quantity of lost grease (below):
(8.8) .5 + (8.9) 0 + (8.9.1) 3 + (9.6) .50 + (10.4) 0 = 4 TOTAL — ZGS 8-24-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No — ZGS 8-24-09

Reviewed: W. Bruce Robb Level: II Date: 8-24-09

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GREASE CAP REMOVAL
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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: H46-50 Tendon End: Butt. 6 ☒ Shop ☐ Field

Grease Cap Removal

		Q.C. Signoff
(7.5) Date Removal Started:	8-12-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage	☐ Yes ☒ No	
(7.7) Temp. of Concrete:	83 °F Thermometer No.: ST-82 Re-Cal Date: 7-27-10	
Ambient Temp.:	76 °F Thermometer No.: PK-102 Re-Cal Date: 7-27-10	WRR 8-12-09
(8.4) Anchorhead I.D. :	754 Anchorhead Verification: ☒ Match ☐ No-Match	WRR 8-12-09

(8.5) Grease Coating

Grease Cap -	Complete	✓	Partial		Uncoated	%
Buttonheads -	Complete	✓	Partial		Uncoated	%
Anchorhead -	Complete	✓	Partial		Uncoated	%
Shims -	Complete	✓	Partial		Uncoated	%
Bearing Plate – (1)	Complete	✓	Partial		Uncoated	%

(1) - *Limited within the inside diameter of the grease cap.* — WRR 8-12-09

(8.6) Unusual Conditions: NONE — WRR 8-12-09

(8.7) Grease Color Match: ☐ Yes ☒ No Grease Color: Dark Brown
Comments: NONE — WRR 8-12-09

(8.8) Quantity of Samples 2 Quart Samples identified per Step 8.8.1? ☒ Yes ☐ No
Location of Removal ☐ A.H. ☐ B.P. ☐ Shims ☒ Cap ☐ Duct — WRR 8-12-09

(8.9) Qty. of Grease lost during removal of cap: 1 gal. — WRR 8-12-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No — Qty. of Grease removed from cap: 2 gal. — WRR 8-12-09
(9.6) Qty. of Grease removed from anchorage: .5 gal. — WRR 8-12-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: NONE — WRR 8-12-09

(10.3) Method of Tendon Protection: Reinstalled the grease can w/a new gasket — WRR 8-12-09
(10.4) Amount of Grease Loss from Tendon duct: .5 gal. — WRR 8-12-09

(10.5) Total quantity of lost grease (below):
(8.8) .5 + (8.9) 1 + (8.9.1) 2 + (9.6) .5 + (10.4) .5 = 4.5 TOTAL — WRR 8-12-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No — WRR 8-12-09

Reviewed: [signature] Level: I Date: 8-13-09

PSC PROCEDURE SQ 6.0
GREASE CAP REMOVAL
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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: H46-50 Tendon End: Butt. 4 ☐ Shop ☒ Field

Grease Cap Removal

		Q.C. Signoff
(7.5) Date Removal Started: 8-11-09		
(7.6) Dry Ice Used on Grease Cap and/or Anchorage ☐ Yes ☒ No		
(7.7) Temp. of Concrete: 84 °F Thermometer No.: ST82 Re-Cal Date: 7-27-10		
Ambient Temp.: 79 °F Thermometer No.: PK102 Re-Cal Date: 7-27-10		WRR 8-11-09
(8.4) Anchorhead I.D.: 900 Anchorhead Verification: ☒ Match ☐ No-Match		WRR 8-11-09
(8.5) Grease Coating		
Grease Cap - Complete ✓ Partial ____ Uncoated ____ %		
Buttonheads - Complete ✓ Partial ____ Uncoated ____ %		
Anchorhead - Complete ✓ Partial ____ Uncoated ____ %		
Shims - Complete ✓ Partial ____ Uncoated ____ %		
Bearing Plate – (1) Complete ✓ Partial ____ Uncoated ____ %		WRR 8-11-09
(1) - *Limited within the inside diameter of the grease cap.*		
.6) Unusual Conditions: None		WRR 8-11-09
(8.7) Grease Color Match: ☐ Yes ☒ No Grease Color: Dark Brown Comments: None		WRR 8-11-09
(8.8) Quantity of Samples 2 Quart Samples identified per Step 8.8.1? ☒ Yes ☐ No		
Location of Removal ☐ A.H. ☐ B.P. ☐ Shims ☒ Cap ☐ Duct		WRR 8-11-09
(8.9) Qty. of Grease lost during removal of cap: 1 gal.		WRR 8-11-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 2.5 gal.		WRR 8-11-09
(9.6) Qty. of Grease removed from anchorage: .5 gal.		WRR 8-11-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: None		WRR 8-11-09
(10.3) Method of Tendon Protection: Reinstalled the grease can w/a new gasket		WRR 8-11-09
(10.4) Amount of Grease Loss from Tendon duct: 0 gal.		WRR 8-11-09
(10.5) Total quantity of lost grease (below):		
(8.8) .5 + (8.9) 1 + (8.9.1) 2.5 + (9.6) .5 + (10.4) 0 = 4.5 TOTAL		WRR 8-11-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No		WRR 8-11-09

Reviewed: Timothy C. Gates Level: I Date: 8-11-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: H51-49 Tendon End: SHOP / BUTT 1 ☒ Shop ☐ Field

Grease Cap Removal

		Q.C. Signoff
(7.5) Date Removal Started:	11-11-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage	☐ Yes ☒ No	
(7.7) Temp. of Concrete:	54 °F Thermometer No.: ST-82 Re-Cal Date: 7-27-10	
Ambient Temp.:	52 °F Thermometer No.: PK104 Re-Cal Date: 7-27-10	11-11-09
(8.4) Anchorhead I.D. :	1007 / 1156 Anchorhead Verification: ☒ Match ☐ No-Match	11-11-09

(8.5) Grease Coating

Grease Cap -	Complete	✓	Partial		Uncoated	%
Buttonheads -	Complete	✓	Partial		Uncoated	%
Anchorhead -	Complete	✓	Partial		Uncoated	%
Shims -	Complete	✓	Partial		Uncoated	%
Bearing Plate – (1)	Complete	✓	Partial		Uncoated	%

(1) - *Limited within the inside diameter of the grease cap.* — 11-11-09

(8.6) Unusual Conditions: NONE — 11-11-09

(8.7) Grease Color Match: ☐ Yes ☒ No Grease Color: DARK BROWN
Comments: NONE — 11-11-09

(8.8) Quantity of Samples 2 Quart Samples identified per Step 8.8.1? ☒ Yes ☐ No
Location of Removal ☐ A.H. ☐ B.P. ☐ Shims ☒ Cap ☐ Duct — 11-11-09

(8.9) Qty. of Grease lost during removal of cap: 0 gal. — 11-11-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 5 gal. — 11-11-09
(9.6) Qty. of Grease removed from anchorage: 1½ gal. — 11-11-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: NONE — 11-11-09

(10.3) Method of Tendon Protection: COATED W/GREASE & CAP INSTALLED — 11-12-09
(10.4) Amount of Grease Loss from Tendon duct: 0 gal. — 11-13-09

(10.5) Total quantity of lost grease (below):
(8.8) ½ + (8.9) 0 + (8.9.1) 5 + (9.6) 1½ + (10.4) 0 = 7 TOTAL — 11-13-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No — 11-13-09

Reviewed: J Bussone Level: III Date: 2/2/10

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: H51-49 Tendon End: Buttress 5 ☐ Shop ☒ Field

Grease Cap Removal

		Q.C. Signoff
(7.5) Date Removal Started: 8-26-09		
(7.6) Dry Ice Used on Grease Cap and/or Anchorage ☐ Yes ☒ No		
(7.7) Temp. of Concrete: 86 °F Thermometer No.: ST-82 Re-Cal Date: 7-27-10		
Ambient Temp.: 69 °F Thermometer No.: PK-102 Re-Cal Date: 7-27-10		WRR 8-26-09
(8.4) Anchorhead I.D. : WRR 8.26.09 115D 89D Anchorhead Verification: ☒ Match ☐ No-Match		WRR 8-26-09

(8.5) Grease Coating

Grease Cap -	Complete	✓	Partial		Uncoated	%
Buttonheads -	Complete	✓	Partial		Uncoated	%
Anchorhead -	Complete	✓	Partial		Uncoated	%
Shims -	Complete	✓	Partial		Uncoated	%
Bearing Plate – (1)	Complete	✓	Partial		Uncoated	%

(1) - *Limited within the inside diameter of the grease cap.* WRR 8-26-09

(8.6) Unusual Conditions: None WRR 8-26-09

(8.7) Grease Color Match: ☐ Yes ☒ No Grease Color: Dark Brown
Comments: None WRR 8-26-09

(8.8) Quantity of Samples 2 Quart Samples identified per Step 8.8.1? ☒ Yes ☐ No
Location of Removal ☐ A.H. ☐ B.P. ☐ Shims ☒ Cap ☐ Duct WRR 8-26-09

(8.9) Qty. of Grease lost during removal of cap: 1 gal. WRR 8-26-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 2 gal. WRR 8-26-09
(9.6) Qty. of Grease removed from anchorage: .5 gal. WRR 8-26-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: None WRR 8-26-09
Re-installed the grease can w/old gasket WRR 8-26-09

(10.3) Method of Tendon Protection:

(10.4) Amount of Grease Loss from Tendon duct: 0 gal. WRR 8-26-09

(10.5) Total quantity of lost grease (below):
(8.8) .5 + (8.9) 1 + (8.9.1) 2 + (9.6) .5 + (10.4) 0 = 4 TOTAL WRR 8-26-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No WRR 8-26-09

Reviewed: Timothy C. Sitts Level: I Date: 8-26-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: H62-26 Tendon End: Butt. 6 ☒ Shop ☐ Field

Grease Cap Removal

	Q.C. Signoff
(7.5)Date Removal Started: 8-12-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage ☐ Yes ☒ No	
(7.7) Temp. of Concrete: 90 °F Thermometer No.: ST-82 Re-Cal Date: 7-27-10	
Ambient Temp.: 85 °F Thermometer No.: PK-102 Re-Cal Date: 7-27-10	WRR 8-12-09
(8.4) Anchorhead I.D. : 924 Anchorhead Verification: ☒ Match ☐ No-Match	WRR 8-12-09

(8.5) Grease Coating

Grease Cap -	Complete	✓	Partial		Uncoated	%
Buttonheads -	Complete	✓	Partial		Uncoated	%
Anchorhead -	Complete	✓	Partial		Uncoated	%
Shims -	Complete	✓	Partial		Uncoated	%
Bearing Plate – (1)	Complete	✓	Partial		Uncoated	%

(1) - *Limited within the inside diameter of the grease cap.* — WRR 8-12-09

.6) Unusual Conditions: None — WRR 8-12-09

(8.7) Grease Color Match: ☒ Yes ☐ No Grease Color: Med. Brown
Comments: None — WRR 8-12-09

(8.8) Quantity of Samples 2 Quart Samples identified per Step 8.8.1? ☒ Yes ☐ No
Location of Removal ☐ A.H. ☐ B.P. ☐ Shims ☒ Cap ☐ Duct — WRR 8-12-09

(8.9) Qty. of Grease lost during removal of cap: 1 gal. — WRR 8-12-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 2 gal. — WRR 8-12-09
(9.6) Qty. of Grease removed from anchorage: .5 gal. — WRR 8-12-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: None — WRR 8-12-09

(10.3) Method of Tendon Protection: Reinstalled the grease can w/a new gasket — WRR 8-12-09
(10.4) Amount of Grease Loss from Tendon duct: 0 gal. — WRR 8-12-09

(10.5) Total quantity of lost grease (below):
(8.8) .5 + (8.9) 1 + (8.9.1) 2 + (9.6) .5 + (10.4) 0 = 4 TOTAL — WRR 8-12-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No — WRR 8-12-09

C Reviewed: [signature] Level: I Date: 8-13-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: H62-26 Tendon End: Buttress 2 ☐ Shop ☒ Field

Grease Cap Removal

		Q.C. Signoff
(7.5) Date Removal Started:	8-28-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage	☐ Yes ☒ No	
(7.7) Temp. of Concrete:	97 °F Thermometer No.: ST-82 Re-Cal Date: 7-27-10	
Ambient Temp.:	89 °F Thermometer No.: PK-102 Re-Cal Date: 7-27-10	WRR 8-28-09
(8.4) Anchorhead I.D.:	924 571 Anchorhead Verification: ☒ Match ☐ No-Match	WRR 8-28-09

(8.5) Grease Coating

Grease Cap -	Complete	✓	Partial		Uncoated	%	
Buttonheads -	Complete	✓	Partial		Uncoated	%	
Anchorhead -	Complete	✓	Partial		Uncoated	%	
Shims -	Complete	✓	Partial		Uncoated	%	
Bearing Plate – (1)	Complete	✓	Partial		Uncoated	%	WRR 8-28-09

(1) - *Limited within the inside diameter of the grease cap.*

(8.6) Unusual Conditions: None — WRR 8-28-09

(8.7) Grease Color Match: ☒ Yes ☐ No Grease Color: Med. Brown
Comments: None — WRR 8-28-09

(8.8) Quantity of Samples 2 Quart Samples identified per Step 8.8.1? ☒ Yes ☐ No
Location of Removal ☐ A.H. ☐ B.P. ☐ Shims ☒ Cap ☐ Duct — WRR 8-28-09

(8.9) Qty. of Grease lost during removal of cap: .5 gal. — WRR 8-28-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 4 gal. — WRR 8-28-09
(9.6) Qty. of Grease removed from anchorage: .25 gal. — WRR 8-28-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: None — WRR 8-28-09

(10.3) Method of Tendon Protection: Reinstalled the greasecan w/a new gasket — WRR 8-28-09
(10.4) Amount of Grease Loss from Tendon duct: 0 gal. — WRR 8-28-09

(10.5) Total quantity of lost grease (below):
(8.8) .5 + (8.9) .5 + (8.9.1) 4 + (9.6) .25 + (10.4) 0 = 5.25 TOTAL — WRR 8-28-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No — WRR 8-28-09

Reviewed: [signature] Level: I Date: 8-28-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: V-11 Tendon End: Butt. 1 Top ☒ Shop ☐ Field

Grease Cap Removal

		Q.C. Signoff
(7.5) Date Removal Started:	8-14-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage	☐ Yes ☒ No	
(7.7) Temp. of Concrete:	98 °F Thermometer No.: ST-83 Re-Cal Date: 3-26-10	
Ambient Temp.:	91 °F Thermometer No.: PR-104 Re-Cal Date: 7-27-10	J.C.J. 8-14-09
(8.4) Anchorhead I.D. :	1213 Anchorhead Verification: ☒ Match ☐ No-Match	J.C.J. 8-14-09

(8.5) Grease Coating

Grease Cap -	Complete	√	Partial		Uncoated	%
Buttonheads -	Complete	√	Partial		Uncoated	%
Anchorhead -	Complete	√	Partial		Uncoated	%
Shims -	Complete	√	Partial		Uncoated	%
Bearing Plate – (1)	Complete	√	Partial		Uncoated	%

(1) - *Limited within the inside diameter of the grease cap.*

J.C.J. 8-14-09

(8.6) Unusual Conditions: None — J.C.J. 8-14-09

(8.7) Grease Color Match: ☐ Yes ☒ No Grease Color: Dark brown
Comments: None — J.C.J. 8-14-09

(8.8) Quantity of Samples 2 Quart Samples identified per Step 8.8.1? ☐ Yes ☐ No
Location of Removal ☒ A.H. ☐ B.P. ☒ Shims ☒ Cap ☐ Duct — J.C.J. 8-14-09

(8.9) Qty. of Grease lost during removal of cap: 0 gal. — J.C.J. 8-14-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 3 gal. — J.C.J. 8-14-09
(9.6) Qty. of Grease removed from anchorage: .5 gal. — J.C.J. 8-14-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: N/A — J.C.J. 8-14-09

(10.3) Method of Tendon Protection: coat with grease and cover with plastic 8-14-09
Install grease can with new gasket — J.C.J. 8-18-09
(10.4) Amount of Grease Loss from Tendon duct: 0 gal. — J.C.J. 8-14-09

(10.5) Total quantity of lost grease (below):
(8.8) .5 + (8.9) 0 + (8.9.1) 3 + (9.6) .5 + (10.4) 0 = 4 TOTAL — J.C.J. 8-14-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No — J.C.J. 8-14-09

Reviewed: W. Rance Cable Level: II Date: 8-18-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: V-11 Tendon End: Bottom ☐ Shop ☒ Field

Grease Cap Removal

	Q.C. Signoff
(7.5) Date Removal Started: 8-13-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage ☐ Yes ☒ No	
(7.7) Temp. of Concrete: 83 °F Thermometer No.: ST82 Re-Cal Date: 7-27-10	
Ambient Temp.: 80 °F Thermometer No.: PK102 Re-Cal Date: 7-27-10	WRR 8-13-09
(8.4) Anchorhead I.D. : 555 Anchorhead Verification: ☒ Match ☐ No-Match	WRR 8-13-09

(8.5) Grease Coating

Grease Cap -	Complete	✓	Partial		Uncoated	%
Buttonheads -	Complete	✓	Partial		Uncoated	%
Anchorhead -	Complete	✓	Partial		Uncoated	%
Shims -	Complete	✓	Partial		Uncoated	%
Bearing Plate – (1)	Complete	✓	Partial		Uncoated	%

(1) - *Limited within the inside diameter of the grease cap.* — WRR 8-13-09

(8.6) Unusual Conditions: None — WRR 8-13-09

(8.7) Grease Color Match: ☐ Yes ☒ No Grease Color: Dark Brown
Comments: None — WRR 8-13-09

(8.8) Quantity of Samples 2 Quart Samples identified per Step 8.8.1? ☒ Yes ☐ No
Location of Removal ☐ A.H. ☐ B.P. ☐ Shims ☒ Cap ☐ Duct — WRR 8-13-09

(8.9) Qty. of Grease lost during removal of cap: 0 gal. — WRR 8-13-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 3 gal. — WRR 8-13-09
(9.6) Qty. of Grease removed from anchorage: 1 gal. — WRR 8-13-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: None — WRR 8-13-09

(10.3) Method of Tendon Protection: Reinstalled the greasecan w/a new gasket — WRR 8-13-09
(10.4) Amount of Grease Loss from Tendon duct: 53 gal. — WRR 8-13-09

(10.5) Total quantity of lost grease (below):
(8.8) 5 + (8.9) 0 + (8.9.1) 3 + (9.6) 1 + (10.4) 53 = 57.5 TOTAL — WRR 8-13-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No — WRR 8-13-09

Reviewed: [signature] Level: I Date: 8-13-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: V-32 Tendon End: Butt. 2/Top ☒ Shop ☐ Field

Grease Cap Removal

		Q.C. Signoff
(7.5) Date Removal Started: 8-14-09		
(7.6) Dry Ice Used on Grease Cap and/or Anchorage ☐ Yes ☒ No		
(7.7) Temp. of Concrete: 98 °F Thermometer No.: ST-83 Re-Cal Date: 3-26-10		
Ambient Temp.: 91 °F Thermometer No.: PH-104 Re-Cal Date: 7-29-10		TCD 8-14-09
(8.4) Anchorhead I.D. : 1050 Anchorhead Verification: ☒ Match ☐ No-Match		TCD 8-14-09
(8.5) Grease Coating		
Grease Cap - Complete ✓ Partial ____ Uncoated ____ %		
Buttonheads - Complete ✓ Partial ____ Uncoated ____ %		
Anchorhead - Complete ✓ Partial ____ Uncoated ____ %		
Shims - Complete ✓ Partial ____ Uncoated ____ %		
Bearing Plate – (1) Complete ✓ Partial ____ Uncoated ____ %		TCD 8-14-09
(1) - *Limited within the inside diameter of the grease cap.*		
(8.6) Unusual Conditions: None		TCD 8-14-09
(8.7) Grease Color Match: ☒ Yes ☐ No Grease Color: Med. Brown		
Comments: None		TCD 8-14-09
(8.8) Quantity of Samples 2 Quart Samples identified per Step 8.8.1? ☒ Yes ☐ No		
Location of Removal ☒ A.H. ☐ B.P. ☒ Shims ☒ Cap ☐ Duct		TCD 8-14-09
(8.9) Qty. of Grease lost during removal of cap: 0 gal.		TCD 8-14-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 3.5 gal.		TCD 8-14-09
(9.6) Qty. of Grease removed from anchorage: .5 gal.		TCD 8-14-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: N/A		TCD 8-14-09
(10.3) Method of Tendon Protection: coated with grease covered with plastic TCD 8-14-09 Installed grease can with new gasket		TCD 8-18-09
(10.4) Amount of Grease Loss from Tendon duct: 0 gal.		TCD 8-14-09
(10.5) Total quantity of lost grease (below): (8.8) .5 + (8.9) 0 + (8.9.1) 3.5 + (9.6) .5 + (10.4) 0 = 4.5 TOTAL		TCD 8-14-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No		TCD 8-14-09

Reviewed: W. Rance Robertson Level: II Date: 8-20-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: V-32 Tendon End: Bottom ☐ Shop ☒ Field

Grease Cap Removal

	Q.C. Signoff
(7.5) Date Removal Started: 8-13-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage ☐ Yes ☒ No	
(7.7) Temp. of Concrete: 84 °F Thermometer No.: ST 82 Re-Cal Date: 7-27-10	
Ambient Temp.: 79 °F Thermometer No.: PK 102 Re-Cal Date: 7-27-10	WRR 8-13-09
(8.4) Anchorhead I.D. : 657 957 WRR 8-13-09 Anchorhead Verification: ~~☒~~ Match ☒ No-Match WRR 8-13-09	WRR 8-13-09

(8.5) Grease Coating

Grease Cap -	Complete	✓	Partial		Uncoated	%
Buttonheads -	Complete	✓	Partial		Uncoated	%
Anchorhead -	Complete	✓	Partial		Uncoated	%
Shims -	Complete	✓	Partial		Uncoated	%
Bearing Plate – (1)	Complete	✓	Partial		Uncoated	%

(1) - *Limited within the inside diameter of the grease cap.* — WRR 8-13-09

(8.6) Unusual Conditions: NONE — WRR 8-13-09

(8.7) Grease Color Match: ☒ Yes ☐ No Grease Color: Med. Brown
Comments: NONE — WRR 8-13-09

(8.8) Quantity of Samples 2 Quart Samples identified per Step 8.8.1? ☒ Yes ☐ No
Location of Removal ☐ A.H. ☐ B.P. ☐ Shims ☒ Cap ☐ Duct — WRR 8-13-09

(8.9) Qty. of Grease lost during removal of cap: 2 gal. — WRR 8-13-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 4 gal. — WRR 8-13-09
(9.6) Qty. of Grease removed from anchorage: .5 gal. — WRR 8-13-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: NONE — WRR 8-13-09

(10.3) Method of Tendon Protection: Reinstalled the greaseCAN W/A NEW GASKET — WRR 8-13-09
(10.4) Amount of Grease Loss from Tendon duct: 1 gal. — WRR 8-13-09

(10.5) Total quantity of lost grease (below):
(8.8) .5 + (8.9) 2 + (8.9.1) 4 + (9.6) .5 + (10.4) 1 = 8 TOTAL — WRR 8-13-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No — WRR 8-13-09

Reviewed: Level: I Date: 8-13-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: V-90 Tendon End: Butt. 4/Top ☒ Shop ☐ Field

Grease Cap Removal

		Q.C. Signoff
(7.5) Date Removal Started:	8-14-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage	☐ Yes ☒ No	
(7.7) Temp. of Concrete:	99 °F Thermometer No.: ST-83 Re-Cal Date: 3-26-10	
Ambient Temp.:	91 °F Thermometer No.: PK-104 Re-Cal Date: 7-27-10	T.C.S. 8-14-09
(8.4) Anchorhead I.D.:	590 Anchorhead Verification: ☐ Match ☒ No-Match	T.C.S. 8-14-09

(8.5) Grease Coating

Grease Cap -	Complete	✓	Partial		Uncoated	%
Buttonheads -	Complete	✓	Partial		Uncoated	%
Anchorhead -	Complete	✓	Partial		Uncoated	%
Shims -	Complete	✓	Partial		Uncoated	%
Bearing Plate – (1)	Complete	✓	Partial		Uncoated	%

(1) - *Limited within the inside diameter of the grease cap.* — T.C.S. 8-14-09

(8.6) Unusual Conditions:	None — T.C.S. 8-14-09
(8.7) Grease Color Match: ☒ Yes ☐ No Grease Color: Med. Brown Comments: None	T.C.S. 8-14-09
(8.8) Quantity of Samples 2 Quart Samples identified per Step 8.8.1? ☒ Yes ☐ No Location of Removal ☒ A.H. ☐ B.P. ☒ Shims ☒ Cap ☐ Duct	T.C.S. 8-14-09
(8.9) Qty. of Grease lost during removal of cap: 0 gal.	T.C.S. 8-14-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 3 gal.	T.C.S. 8-14-09
(9.6) Qty. of Grease removed from anchorage: .5 gal.	T.C.S. 8-14-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: N/A	T.C.S. 8-14-09
(10.3) Method of Tendon Protection: Replace grease can with new gasket	T.C.S. 8-14-09
(10.4) Amount of Grease Loss from Tendon duct: 0 gal.	T.C.S. 8-14-09
(10.5) Total quantity of lost grease (below): (8.8) .5 + (8.9) 0 + (8.9.1) 3 + (9.6) .5 + (10.4) 0 = 4 TOTAL	T.C.S. 8-14-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No	T.C.S. 8-14-09

Reviewed: W. Rance Robertson Level: II Date: 8-20-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: V-90 Tendon End: Gallery ☐ Shop ☒ Field

Grease Cap Removal

	Q.C. Signoff
(7.5)Date Removal Started: 8-13-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage ☐ Yes ☒ No	
(7.7) Temp. of Concrete: 84 °F Thermometer No.: ST 82 Re-Cal Date: 7-27-10	
Ambient Temp.: 80 °F Thermometer No.: PK 102 Re-Cal Date: 7-27-10	WRR 8-13-09
(8.4) Anchorhead I.D. : 728 Anchorhead Verification: ☒ Match ☐ No-Match	WRR 8-13-09

(8.5) Grease Coating

Grease Cap -	Complete	✓	Partial		Uncoated	%
Buttonheads -	Complete	✓	Partial		Uncoated	%
Anchorhead -	Complete	✓	Partial		Uncoated	%
Shims -	Complete	✓	Partial		Uncoated	%
Bearing Plate – (1)	Complete	✓	Partial		Uncoated	%

(1) - *Limited within the inside diameter of the grease cap.* — WRR 8-13-09

.6) Unusual Conditions: None — WRR 8-13-09

(8.7) Grease Color Match: ☐ Yes ☒ No Grease Color: Dark Brown
Comments: None — WRR 8-13-09

(8.8) Quantity of Samples 2 Quart Samples identified per Step 8.8.1? ☒ Yes ☐ No
Location of Removal ☐ A.H. ☐ B.P. ☐ Shims ☒ Cap ☐ Duct — WRR 8-13-09

(8.9) Qty. of Grease lost during removal of cap: 1 gal. — WRR 8-13-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 4 gal. — WRR 8-13-09
(9.6) Qty. of Grease removed from anchorage: 1 gal. — WRR 8-13-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: None — WRR 8-13-09

(10.3) Method of Tendon Protection: Reinstalled the greasecan w/a new gasket — WRR 8-20-09
(10.4) Amount of Grease Loss from Tendon duct: 64 gal. — WRR 8-19-09

(10.5) Total quantity of lost grease (below):
(8.8) 0.5 + (8.9) 1.0 + (8.9.1) 4.0 + (9.6) 1.0 + (10.4) 64.0 = 70.5 TOTAL — WRR 8-19-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No — WRR 8-19-09

C Reviewed: [signature] Level: I Date: 8-21-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: V-132 Tendon End: Top ☒ Shop ☐ Field

Grease Cap Removal

	Q.C. Signoff
(7.5) Date Removal Started: 8-13-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage ☐ Yes ☒ No	
(7.7) Temp. of Concrete: 79 °F Thermometer No.: ST82 Re-Cal Date: 7-27-10	
Ambient Temp.: 71 °F Thermometer No.: PK10Z Re-Cal Date: 7-27-10	WRR 8-13-09
(8.4) Anchorhead I.D. : 1098 Anchorhead Verification: ☒ Match ☐ No-Match	WRR 8-13-09

(8.5) Grease Coating

Grease Cap -	Complete	✓	Partial		Uncoated	%
Buttonheads -	Complete	✓	Partial		Uncoated	%
Anchorhead -	Complete	✓	Partial		Uncoated	%
Shims -	Complete	✓	Partial		Uncoated	%
Bearing Plate – (1)	Complete	✓	Partial		Uncoated	%

(1) - *Limited within the inside diameter of the grease cap.* WRR 8-13-09

(8.6) Unusual Conditions: None WRR 8-13-09

(8.7) Grease Color Match: ☒ Yes ☐ No Grease Color: Med Brown
Comments: None WRR 8-13-09

(8.8) Quantity of Samples 2 Quart Samples identified per Step 8.8.1? ☒ Yes ☐ No
Location of Removal ☒ A.H. ☐ B.P. ☒ Shims ☐ Cap ☐ Duct WRR 8-13-09

(8.9) Qty. of Grease lost during removal of cap: 2 gal. WRR 8-13-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: .5 gal. WRR 8-13-09
(9.6) Qty. of Grease removed from anchorage: 1.5 gal. WRR 8-13-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: None WRR 8-13-09
~~Light coat of grease and covered with grease cap WRR 8-13-09~~

(10.3) Method of Tendon Protection:

(10.4) Amount of Grease Loss from Tendon duct: 0 gal. WRR 8-13-09

(10.5) Total quantity of lost grease (below):
(8.8) .5 + (8.9) 2 + (8.9.1) .5 + (9.6) 1.5 + (10.4) 0 = 4.5 TOTAL WRR 8-13-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No WRR 8-13-09

Reviewed: [signature] Level: I Date: 8-19-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: V-132 Tendon End: Bottom ☐ Shop ☒ Field

Grease Cap Removal

	Q.C. Signoff
(7.5)Date Removal Started: 8-13-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage ☐ Yes ☒ No	
(7.7) Temp. of Concrete: 83 °F Thermometer No.: ST 82 Re-Cal Date: 7-27-10 Ambient Temp.: 79 °F Thermometer No.: PK-107 Re-Cal Date: 7-27-10	WRR 8-13-09
(8.4) Anchorhead I.D.: 682 Anchorhead Verification: ☒ Match ☐ No-Match	WRR 8-13-09

(8.5) Grease Coating

Grease Cap -	Complete	✓	Partial		Uncoated	%
Buttonheads -	Complete	✓	Partial		Uncoated	%
Anchorhead -	Complete	✓	Partial		Uncoated	%
Shims -	Complete	✓	Partial		Uncoated	%
Bearing Plate – (1)	Complete	✓	Partial		Uncoated	%

(1) - *Limited within the inside diameter of the grease cap.* — WRR 8-13-09

.6) Unusual Conditions: None — WRR 8-13-09

(8.7) Grease Color Match: ☐ Yes ☒ No Grease Color: Dark Brown
Comments: None — WRR 8-13-09

(8.8) Quantity of Samples 2 Quart Samples identified per Step 8.8.1? ☒ Yes ☐ No
Location of Removal ☐ A.H. ☐ B.P. ☐ Shims ☒ Cap ☐ Duct — WRR 8-13-09

(8.9) Qty. of Grease lost during removal of cap: 0 gal. — WRR 8-13-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 3 gal. — WRR 8-13-09
(9.6) Qty. of Grease removed from anchorage: 1 gal. — WRR 8-13-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: None — WRR 8-13-09

light coat of grease, left open to drain WRR 8-13-09
(10.3) Method of Tendon Protection: Reinstalled the grease can w/a new gasket — WRR 8-13-09
(10.4) Amount of Grease Loss from Tendon duct: 52 gal. — WRR 8-13-09

(10.5) Total quantity of lost grease (below):
(8.8) .5 + (8.9) 0 + (8.9.1) 3 + (9.6) 1 + (10.4) 52 = 56.5 TOTAL — WRR 8-13-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No — WRR 8-13-09

: Reviewed: [signature] Level: I Date: 8-13-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: D-122 Tendon End: Buttress 5 ☒ Shop ☐ Field

Grease Cap Removal

		Q.C. Signoff
(7.5) Date Removal Started:	8-17-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage	☐ Yes ☒ No	
(7.7) Temp. of Concrete:	82 °F Thermometer No.: ST 82 Re-Cal Date: 7-27-10	
Ambient Temp.:	71 °F Thermometer No.: PK 102 Re-Cal Date: 7-27-10	WRR 8-17-09
(8.4) Anchorhead I.D. :	1074 Anchorhead Verification: ☒ Match ☐ No-Match	WRR 8-17-09

(8.5) Grease Coating

Grease Cap -	Complete	✓	Partial		Uncoated	%
Buttonheads -	Complete	✓	Partial		Uncoated	%
Anchorhead -	Complete	✓	Partial		Uncoated	%
Shims -	Complete	✓	Partial		Uncoated	%
Bearing Plate – (1)	Complete	✓	Partial		Uncoated	%

(1) - *Limited within the inside diameter of the grease cap.* — WRR 8-17-09

(8.6) Unusual Conditions: None — WRR 8-17-09

(8.7) Grease Color Match: ☐ Yes ☒ No Grease Color: Dark Brown
Comments: Grease consistancy is about like 30wt. oil — WRR 8-17-09

(8.8) Quantity of Samples 2 Quart Samples identified per Step 8.8.1? ☒ Yes ☐ No
Location of Removal ☐ A.H. ☐ B.P. ☐ Shims ☒ Cap ☐ Duct — WRR 8-17-09

(8.9) Qty. of Grease lost during removal of cap: 3 gal. — WRR 8-17-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 2 gal. — WRR 8-17-09
(9.6) Qty. of Grease removed from anchorage: 1 gal. — WRR 8-17-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: None — WRR 8-17-09

(10.3) Method of Tendon Protection: Reinstalled the grease can w/a new gasket — WRR 8-17-09
(10.4) Amount of Grease Loss from Tendon duct: 28 gal. — WRR 8-17-09

(10.5) Total quantity of lost grease (below):
(8.8) .5 + (8.9) 3 + (8.9.1) 2 + (9.6) 1 + (10.4) 28 = 34.5 TOTAL — WRR 8-17-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No — WRR 8-17-09

Reviewed: [signature] Level: I Date: WRR 8-17-09 ~~8-17-09~~ 8-17-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☐ UNIT 1

(7.2) Tendon No.: D-122 Tendon End: FIGH / NE ☐ Shop ☒ Field

Grease Cap Removal

	Q.C. Signoff
(7.5) Date Removal Started: 11-13-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage ☐ Yes ☒ No	
(7.7) Temp. of Concrete: 46 °F Thermometer No.: ST-82 Re-Cal Date: 7-27-10	
Ambient Temp.: 46 °F Thermometer No.: PK104 Re-Cal Date: 7-27-10	11-13-09
(8.4) Anchorhead I.D. : 754 Anchorhead Verification: ☒ Match ☐ No-Match	11-13-09

(8.5) Grease Coating

Grease Cap -	Complete	✓	Partial		Uncoated	%
Buttonheads -	Complete	✓	Partial		Uncoated	%
Anchorhead -	Complete	✓	Partial		Uncoated	%
Shims -	Complete	✓	Partial		Uncoated	%
Bearing Plate – (1)	Complete	✓	Partial		Uncoated	%

(1) - *Limited within the inside diameter of the grease cap.* — 11-13-09

(6) Unusual Conditions: NONE — 11-13-09

(8.7) Grease Color Match: ☐ Yes ☒ No Grease Color: BROWN
Comments: NONE — 11-13-09

(8.8) Quantity of Samples 2 Quart Samples identified per Step 8.8.1? ☒ Yes ☐ No
Location of Removal ☐ A.H. ☐ B.P. ☐ Shims ☒ Cap ☐ Duct — 11-13-09

(8.9) Qty. of Grease lost during removal of cap: 0 gal. — 11-13-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 4 gal. — 11-13-09
(9.6) Qty. of Grease removed from anchorage: 1 gal. — 11-13-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: NONE — 11-13-09

(10.3) Method of Tendon Protection: COATED W/GREASE & CAP INSTALLED — 11-13-09
(10.4) Amount of Grease Loss from Tendon duct: 0 gal. — 11-13-09

(10.5) Total quantity of lost grease (below):
(8.8) 1/2 + (8.9) 0 + (8.9.1) 4 + (9.6) 1 + (10.4) 0 = 5 1/2 TOTAL — 11-13-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No — 11-13-09

Reviewed: G Bussone Level: III Date: 2/2/10

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: D225 Tendon End: Butt. 5 ☒ Shop ☐ Field

Grease Cap Removal

	Q.C. Signoff
(7.5) Date Removal Started: 8-11-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage ☐ Yes ☒ No	
(7.7) Temp. of Concrete: 80 °F Thermometer No.: ST-83 Re-Cal Date: 3-26-10	T.C. 8-11-09
Ambient Temp.: 79 °F Thermometer No.: Pk-104 Re-Cal Date: 7-27-10	
(8.4) Anchorhead I.D. : 1137 Anchorhead Verification: ☒ Match ☐ No-Match	T.C. 8-11-09

(8.5) Grease Coating

Grease Cap -	Complete	100	Partial		Uncoated	%
Buttonheads -	Complete	100	Partial		Uncoated	%
Anchorhead -	Complete	100	Partial		Uncoated	%
Shims -	Complete	100	Partial		Uncoated	%
Bearing Plate – (1)	Complete	100	Partial		Uncoated	%

(1) - *Limited within the inside diameter of the grease cap.*

T.C. 8-11-09

.6) Unusual Conditions: None	T.C. 8-11-09
(8.7) Grease Color Match: ☒ Yes ☐ No Grease Color: Med. Brown Comments: None	T.C. 8-11-09
(8.8) Quantity of Samples 2 Quart Samples identified per Step 8.8.1? ☒ Yes ☐ No Location of Removal ☒ A.H. ☐ B.P. ☐ Shims ☒ Cap ☒ Duct	T.C. 8-11-09
(8.9) Qty. of Grease lost during removal of cap: .5 gal.	T.C. 8-11-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 5 gal.	T.C. 8-11-09
(9.6) Qty. of Grease removed from anchorage: .5 gal.	T.C. 8-11-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: None	T.C. 8-11-09
(10.3) Method of Tendon Protection: Replaced can with new gasket	T.C. 8-11-09
(10.4) Amount of Grease Loss from Tendon duct: .5 gal.	T.C. 8-11-09
(10.5) Total quantity of lost grease (below): (8.8) .5 + (8.9) .5 + (8.9.1) ~~.5~~ + (9.6) ~~.5~~ .5 + (10.4) .5 = 7 TOTAL	T.C. 8-11-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No	T.C. 8-11-09

QC Reviewed: W. Ranca Robb Level: II Date: 8-11-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: D-225 Tendon End: Batt. 2 ☐ Shop ☒ Field

Grease Cap Removal

		Q.C. Signoff
(7.5) Date Removal Started:	8-12-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage	☐ Yes ☒ No	
(7.7) Temp. of Concrete:	91 °F Thermometer No.: ST-83 Re-Cal Date: 3-26-10	
Ambient Temp.:	90 °F Thermometer No.: PK-104 Re-Cal Date: 7-27-10	T.C.D. 8-12-09
(8.4) Anchorhead I.D. :	684 Anchorhead Verification: ☒ Match ☐ No-Match	T.C.D. 8-12-09

(8.5) Grease Coating

Grease Cap -	Complete	✓	Partial		Uncoated	%
Buttonheads -	Complete	✓	Partial		Uncoated	%
Anchorhead -	Complete	✓	Partial		Uncoated	%
Shims -	Complete	✓	Partial		Uncoated	%
Bearing Plate – (1)	Complete	✓	Partial		Uncoated	%

(1) - *Limited within the inside diameter of the grease cap.*

T.C.D. 8-12-09

(8.6) Unusual Conditions: None

T.C.D. 8-12-09

(8.7) Grease Color Match: ☒ Yes ☐ No Grease Color: Med. Brown

Comments: None

T.C.D. 8-12-09

(8.8) Quantity of Samples 2 Quart Samples identified per Step 8.8.1? ☒ Yes ☐ No

Location of Removal ☒ A.H. ☐ B.P. ☐ Shims ☒ Cap ☐ Duct

T.C.D. 8-12-09

(8.9) Qty. of Grease lost during removal of cap: 0 gal. T.C.D. 8-12-09

(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 8 gal. T.C.D. 8-12-09

(9.6) Qty. of Grease removed from anchorage: .25 gal. T.C.D. 8-12-09

(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: NONE T.C.D. 8-12-09

(10.3) Method of Tendon Protection: Replaced grease cap with new gasket T.C.D. 8-12-09

(10.4) Amount of Grease Loss from Tendon duct: 0 gal. T.C.D. 8-12-09

(10.5) Total quantity of lost grease (below):

(8.8) .5 + (8.9) 0 + (8.9.1) 8 + (9.6) .25 + (10.4) 0 = 8.75 TOTAL T.C.D. 8-12-09

(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No T.C.D. 8-12-09

Reviewed: W. Lance Roberts Level: IV Date: 8-18-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☑ UNIT 1

(7.2) Tendon No.: D-322 Tendon End: SHOP / NORTH ☒ Shop ☐ Field

Grease Cap Removal

	Q.C. Signoff
(7.5) Date Removal Started: 11-16-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage ☐ Yes ☒ No	
(7.7) Temp. of Concrete: 48 °F Thermometer No.: ST-82 Re-Cal Date: 7-27-10	
Ambient Temp.: 46 °F Thermometer No.: PK104 Re-Cal Date: 7-27-10	11-16-09
(8.4) Anchorhead I.D. : 668/1002 Anchorhead Verification: ☒ Match ☐ No-Match	11-16-09

(8.5) Grease Coating

Grease Cap -	Complete	✓	Partial		Uncoated	%
Buttonheads -	Complete	✓	Partial		Uncoated	%
Anchorhead -	Complete	✓	Partial		Uncoated	%
Shims -	Complete	✓	Partial		Uncoated	%
Bearing Plate – (1)	Complete	✓	Partial		Uncoated	%

(1) - *Limited within the inside diameter of the grease cap.* — 11-16-09

6) Unusual Conditions: NONE — 11-16-09

(8.7) Grease Color Match: ☐ Yes ☒ No Grease Color: DARK BROWN
Comments: NONE — 11-16-09

(8.8) Quantity of Samples 2 Quart Samples identified per Step 8.8.1? ☒ Yes ☐ No
Location of Removal ☐ A.H. ☐ B.P. ☐ Shims ☒ Cap ☐ Duct — 11-16-09

(8.9) Qty. of Grease lost during removal of cap: 0 gal. — 11-16-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 4 gal. — 11-16-09
(9.6) Qty. of Grease removed from anchorage: 1 gal. — 11-16-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: NONE — 11-16-09

(10.3) Method of Tendon Protection: COATED w/GREASE & CAP INSTALLED — 11-17-09
(10.4) Amount of Grease Loss from Tendon duct: 3 gal. — 11-17-09

(10.5) Total quantity of lost grease (below):
(8.8) ½ + (8.9) 0 + (8.9.1) 4 + (9.6) 1 + (10.4) 3 = 8½ TOTAL — 11-17-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No — 11-17-09

Reviewed: G Bussone Level: III Date: 2/2/10

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GREASE CAP REMOVAL
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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: D-322 Tendon End: FIELD / SOUTH ☐ Shop ☒ Field

Grease Cap Removal

	Q.C. Signoff
(7.5) Date Removal Started: 11-16-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage ☐ Yes ☒ No	
(7.7) Temp. of Concrete: 54 °F Thermometer No.: ST-82 Re-Cal Date: 7-27-10	
Ambient Temp.: 56 °F Thermometer No.: PK104 Re-Cal Date: 7-27-10	DK 11-16-09
(8.4) Anchorhead I.D.: 1064 Anchorhead Verification: ☒ Match ☐ No-Match	DK 11-16-09
(8.5) Grease Coating	
Grease Cap - Complete ✓ Partial ____ Uncoated ____ %	
Buttonheads - Complete ✓ Partial ____ Uncoated ____ %	
Anchorhead - Complete ✓ Partial ____ Uncoated ____ %	
Shims - Complete ✓ Partial ____ Uncoated ____ %	
Bearing Plate – (1) Complete ✓ Partial ____ Uncoated ____ %	DK 11-16-09
(1) - *Limited within the inside diameter of the grease cap.*	
(6) Unusual Conditions: NONE	DK 11-16-09
(8.7) Grease Color Match: ☐ Yes ☒ No Grease Color: DARK BROWN	
Comments: NONE	DK 11-16-09
(8.8) Quantity of Samples 2 Quart Samples identified per Step 8.8.1? ☒ Yes ☐ No	
Location of Removal ☐ A.H. ☐ B.P. ☐ Shims ☒ Cap ☐ Duct	DK 11-16-09
(8.9) Qty. of Grease lost during removal of cap: 0 gal.	DK 11-16-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 5 gal.	DK 11-16-09
(9.6) Qty. of Grease removed from anchorage: 1 gal.	DK 11-16-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: NONE	DK 11-16-09
(10.3) Method of Tendon Protection: COATED W/GREASE & CAP INSTALLED	DK 11-16-09 DK 11-17-09
(10.4) Amount of Grease Loss from Tendon duct: 0 gal.	DK 11-17-09
(10.5) Total quantity of lost grease (below): (8.8) ½ + (8.9) 0 + (8.9.1) 5 + (9.6) 1 + (10.4) 0 = 6½ TOTAL	DK 11-17-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No	DK 11-17-09

Reviewed: G Bussone Level: III Date: 2/2/10

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: D342 Tendon End: Butt. 6 ☒ Shop ☐ Field

Grease Cap Removal

		Q.C. Signoff
(7.5) Date Removal Started:	8-17-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage	☐ Yes ☒ No	
(7.7) Temp. of Concrete:	81 °F Thermometer No.: ST-83 Re-Cal Date: 3-26-10	
Ambient Temp.:	79 °F Thermometer No.: PK-104 Re-Cal Date: 9-27-10	TCJ 8-17-09
(8.4) Anchorhead I.D.:	1183 Anchorhead Verification: ☒ Match ☐ No-Match	TCJ 8-17-09

(8.5) Grease Coating

Grease Cap -	Complete	✓	Partial		Uncoated	%
Buttonheads -	Complete	✓	Partial		Uncoated	%
Anchorhead -	Complete	✓	Partial		Uncoated	%
Shims -	Complete	✓	Partial		Uncoated	%
Bearing Plate – (1)	Complete	✓	Partial		Uncoated	%

(1) - *Limited within the inside diameter of the grease cap.* — TCJ 8-17-09

(8.6) Unusual Conditions: None — TCJ 8-17-09

(8.7) Grease Color Match: ☐ Yes ☒ No Grease Color: Dark brown
Comments: None — TCJ 8-17-09

(8.8) Quantity of Samples 2 Quart Samples identified per Step 8.8.1? ☒ Yes ☐ No
Location of Removal ☐ A.H. ☐ B.P. ☒ Shims ☒ Cap ☒ Duct — TCJ 8-17-09

(8.9) Qty. of Grease lost during removal of cap: 2 gal. — TCJ 8-17-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 6 gal. — TCJ 8-17-09
(9.6) Qty. of Grease removed from anchorage: .5 gal. — TCJ 8-17-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: N/A — TCJ 8-17-09

(10.3) Method of Tendon Protection: Install grease can with new gasket — TCJ 8-17-09
(10.4) Amount of Grease Loss from Tendon duct: 31 gal. — TCJ 8-17-09

(10.5) Total quantity of lost grease (below):
(8.8) .5 + (8.9) 2 + (8.9.1) 6 + (9.6) .5 + (10.4) 31 = 40 TOTAL — TCJ 8-17-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No — TCJ 8-17-09

Reviewed: W. Bruce Ballentine Level: II Date: 8-17-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: D342 Tendon End: Buttress 4 ☐ Shop ☒ Field

Grease Cap Removal

		Q.C. Signoff
(7.5) Date Removal Started:	8-17-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage	☐ Yes ☒ No	
(7.7) Temp. of Concrete:	110 °F Thermometer No.: ST-82 Re-Cal Date: 7-27-10	
Ambient Temp.:	92 °F Thermometer No.: PK-102 Re-Cal Date: 7-27-10	WRR 8-17-09
(8.4) Anchorhead I.D. :	841 Anchorhead Verification: ☒ Match ☐ No-Match	WRR 8-17-09

(8.5) Grease Coating

Grease Cap -	Complete	✓	Partial		Uncoated	%
Buttonheads -	Complete	✓	Partial		Uncoated	%
Anchorhead -	Complete	✓	Partial		Uncoated	%
Shims -	Complete	✓	Partial		Uncoated	%
Bearing Plate – (1)	Complete	✓	Partial		Uncoated	%

(1) - *Limited within the inside diameter of the grease cap.* — WRR 8-17-09

(8.6) Unusual Conditions: None — WRR 8-17-09

(8.7) Grease Color Match: ☐ Yes ☒ No Grease Color: Dark Brown
Comments: None — WRR 8-17-09

(8.8) Quantity of Samples 2 Quart Samples identified per Step 8.8.1? ☒ Yes ☐ No
Location of Removal ☒ A.H. ☐ B.P. ☐ Shims ☒ Cap ☐ Duct — WRR 8-17-09

(8.9) Qty. of Grease lost during removal of cap: .5 gal. — WRR 8-17-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 5 gal. — WRR 8-17-09
(9.6) Qty. of Grease removed from anchorage: 1 gal. — WRR 8-17-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: None — WRR 8-17-09

(10.3) Method of Tendon Protection: Reinstalled the greaseCAN w/A new gasket — WRR 8-17-09
(10.4) Amount of Grease Loss from Tendon duct: 3 gal. — WRR 8-17-09

(10.5) Total quantity of lost grease (below):
(8.8) .5 + (8.9) .5 + (8.9.1) 5 + (9.6) 1 + (10.4) 3 = 10 TOTAL — WRR 8-17-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No — WRR 8-17-09

Reviewed: [signature] Level: II Date: 8-17-09

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Gasket Repair

Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: V-10 Tendon End: Gallery ☐ Shop ☒ Field

Grease Cap Removal

	Q.C. Signoff
(7.5) Date Removal Started: 8-21-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage ☐ Yes ☒ No	GRT 1/26/10
(7.7) Temp. of Concrete: 84 °F Thermometer No.: ST-83 Re-Cal Date: 3-26-09 10	GRT 1/26/10
Ambient Temp.: 82 °F Thermometer No.: PK-104 Re-Cal Date: 7-27-09 10	GRT 1/26/10
(8.4) Anchorhead I.D.: N/A Anchorhead Verification: ☐ Match N/A ☐ No-Match	8-21-09

(8.5) Grease Coating

Grease Cap -	Complete	✓	Partial		Uncoated	%
Buttonheads -	Complete	✓	Partial		Uncoated	%
Anchorhead -	Complete	✓	Partial		Uncoated	%
Shims -	Complete	✓	Partial		Uncoated	%
Bearing Plate – (1)	Complete	✓	Partial		Uncoated	%

(1) - *Limited within the inside diameter of the grease cap.* — 8-21-09

(8.6) Unusual Conditions: None — 8-21-09

(8.7) Grease Color Match: ☐ Yes ☒ No Grease Color: Dark brown
Comments: None — 8-21-09

(8.8) Quantity of Samples N/A Quart Samples identified per Step 8.8.1? ☐ Yes N/A ☐ No
Location of Removal N/A ☐ A.H. ☐ B.P. ☐ Shims ☐ Cap ☐ Duct — 8-21-09

(8.9) Qty. of Grease lost during removal of cap: 0 gal. — 8-21-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 4 gal. — 8-21-09
(9.6) Qty. of Grease removed from anchorage: .25 gal. — 8-21-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: N/A — 8-21-09

(10.3) Method of Tendon Protection: Reinstalled the grease can w/a new gasket — 8-21-09
(10.4) Amount of Grease Loss from Tendon duct: 48.75 gal. — 8-21-09

(10.5) Total quantity of lost grease (below):
(8.8) 0 + (8.9) 0 + (8.9.1) 4 + (9.6) .25 + (10.4) 48.75 8-21-09 = 53 TOTAL — 8-21-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No — 8-21-09

Reviewed: W. Pence Robertson Level: II Date: 8-21-09

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GREASE LEAK REPAIR

Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: V55 Tendon End: FIELD / BOTTOM ☐ Shop ☒ Field

Grease Cap Removal

	Q.C. Signoff
(7.5) Date Removal Started: 11-19-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage ☐ Yes ☒ No	
(7.7) Temp. of Concrete: 68 °F Thermometer No.: ST-82 Re-Cal Date: 7-27-10	
Ambient Temp.: 74 °F Thermometer No.: PK104 Re-Cal Date: 7-27-10	11-19-09
(8.4) Anchorhead I.D.: N/A Anchorhead Verification N/A ☐ Match ☐ No-Match	11-19-09

(8.5) Grease Coating

Grease Cap -	Complete	✓	Partial		Uncoated	%
Buttonheads -	Complete	✓	Partial		Uncoated	%
Anchorhead -	Complete	✓	Partial		Uncoated	%
Shims -	Complete	✓	Partial		Uncoated	%
Bearing Plate – (1)	Complete	✓	Partial		Uncoated	%

(1) - *Limited within the inside diameter of the grease cap.* — 11-19-09

(6) Unusual Conditions: GREASE LEAKING FROM GASKET — 11-19-09

(8.7) Grease Color Match: ☐ Yes ☒ No Grease Color: DARK BROWN
Comments: NONE — 11-19-09

(8.8) Quantity of Samples N/A Quart Samples identified per Step 8.8.1? N/A ☐ Yes ☐ No
Location of Removal N/A ☐ A.H. ☐ B.P. ☐ Shims ☐ Cap ☐ Duct — 11-19-09

(8.9) Qty. of Grease lost during removal of cap: 0 gal. — 11-19-09
(8.9.1) Grease from cap to be reused? ☒ Yes ☐ No Qty. of Grease removed from cap: ¼ gal. — 11-19-09
(9.6) Qty. of Grease removed from anchorage: 0 gal. — 11-19-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: NONE — 11-19-09

(10.3) Method of Tendon Protection: REPLACED GASKET & CAP INSTALLED — 11-19-09
(10.4) Amount of Grease Loss from Tendon duct: 0 gal. — 11-19-09

(10.5) Total quantity of lost grease (below):
(8.8) 0 + (8.9) 0 + (8.9.1) ¼ + (9.6) 0 + (10.4) 0 = ¼ TOTAL — 11-19-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1. GREASE REPLACEMENT. ☒ Yes ☐ No — 11-19-09

Reviewed: A. Bussone Level: III Date: 1/26/10

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Gasket Repair

Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: V-60 Tendon End: Gallery ☐ Shop ☒ Field

Grease Cap Removal

		Q.C. Signoff
(7.5)Date Removal Started:	8-21-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage	☐ Yes ☒ No	
(7.7) Temp. of Concrete:	84 °F Thermometer No.: ST-83 Re-Cal Date: 3-26-09 10 GFB 1/26/10	
Ambient Temp.:	82 °F Thermometer No.: PK-104 Re-Cal Date: 7-23-09 10 GFB 1/26/10	JCG 8-21-09
(8.4) Anchorhead I.D. :	N/A Anchorhead Verification: ☐ Match N/A ☐ No-Match	JCG 8-21-09

(8.5) Grease Coating

Grease Cap -	Complete	✓	Partial		Uncoated	%
Buttonheads -	Complete	✓	Partial		Uncoated	%
Anchorhead -	Complete	✓	Partial		Uncoated	%
Shims -	Complete	✓	Partial		Uncoated	%
Bearing Plate – (1)	Complete	✓	Partial		Uncoated	%

(1) - *Limited within the inside diameter of the grease cap.*

JCG 8-21-09

JCG 8-21-09

.6) Unusual Conditions: None

JCG 8-21-09

(8.7) Grease Color Match: ☐ Yes ☒ No JCG 8-21-09 Grease Color: Dark brown

Comments: ~~Dark brown~~ None

JCG-8-21-09

(8.8) Quantity of Samples N/A Quart Samples identified per Step 8.8.1? ☐ Yes N/A ☐ No

Location of Removal N/A ☐ A.H. ☐ B.P. ☐ Shims ☐ Cap ☐ Duct

JCG 8-21-09

(8.9) Qty. of Grease lost during removal of cap: 0 gal. JCG 8-21-09

(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 4 gal. JCG 8-21-09

(9.6) Qty. of Grease removed from anchorage: .25 gal. JCG 8-21-09

(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: N/A JCG-8-21-09

(10.3) Method of Tendon Protection: Reinstalled the grease can w/A new gasket JCG 8-21-09

(10.4) Amount of Grease Loss from Tendon duct: 30.00 gal. JCG 8-21-09

(10.5) Total quantity of lost grease (below):

(8.8) 0 + (8.9) 0 + (8.9.1) 4 + (9.6) .25 + (10.4) 30.00 = 34.25 TOTAL JCG-8-21-09

(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No JCG 8-21-09

Reviewed: W. Lance Roble Level: II Date: 8-21-09

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Gasket Repair

Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: V-62 Tendon End: Gallery ☐ Shop ☒ Field

Grease Cap Removal

	Q.C. Signoff
(7.5) Date Removal Started: 8-21-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage ☐ Yes ☒ No	
(7.7) Temp. of Concrete: 84 °F Thermometer No.: ST-83 Re-Cal Date: 3-26-09 10 GFB 1/26/10	
Ambient Temp.: 82 °F Thermometer No.: PK-104 Re-Cal Date: 7-27-09 10 GFB 1/26/10	TCD 8-21-09
(8.4) Anchorhead I.D.: N/A Anchorhead Verification: ☐ Match N/A ☐ No-Match	TCD 8-21-09
(8.5) Grease Coating	
Grease Cap - Complete ✓ Partial ____ Uncoated ____ %	
Buttonheads - Complete ✓ Partial ____ Uncoated ____ %	
Anchorhead - Complete ✓ Partial ____ Uncoated ____ %	
Shims - Complete ✓ Partial ____ Uncoated ____ %	
Bearing Plate – (1) Complete ✓ Partial ____ Uncoated ____ %	TCD-8-21-09
(1) - *Limited within the inside diameter of the grease cap.*	TCD 8-21-09
.6) Unusual Conditions: None	TCD 8-21-09
(8.7) Grease Color Match: ☐ Yes ☒ No Grease Color: Dark Brown	
Comments: None	TCD 8-21-09
(8.8) Quantity of Samples N/A Quart Samples identified per Step 8.8.1? ☐ Yes N/A ☐ No	
Location of Removal N/A ☐ A.H. ☐ B.P. ☐ Shims ☐ Cap ☐ Duct	TCD 8-21-09
(8.9) Qty. of Grease lost during removal of cap: 0 gal.	TCD 8-21-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 4 gal.	TCD 8-21-09
(9.6) Qty. of Grease removed from anchorage: .25 gal.	TCD 8-21-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: N/A	TCD 8-21-09
(10.3) Method of Tendon Protection: Reinstalled the grease can w/a new gasket	TCD 8-21-09
(10.4) Amount of Grease Loss from Tendon duct: 42.25 gal.	TCD 8-21-09
(10.5) Total quantity of lost grease (below): (8.8) 0 + (8.9) 0 + (8.9.1) 4 + (9.6) .25 + (10.4) 42.25 = 46.50 TOTAL	TCD 8-21-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No	TCD 8-21-09

Reviewed: W. Rance Robertson Level: II Date: 8-21-09

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Gasket Repair

Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: V-71 Tendon End: Gallery ☐ Shop ☒ Field

Grease Cap Removal

		Q.C. Signoff
(7.5) Date Removal Started:	8-20-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage	☐ Yes ☒ No	
(7.7) Temp. of Concrete:	84 °F Thermometer No.: ST-83 Re-Cal Date: 3-26-09 10 (AB 11/26/10)	
Ambient Temp.:	82 °F Thermometer No.: PK-104 Re-Cal Date: 7-27-09 10 (AB 11/26/10)	J.C.L 8-20-09
(8.4) Anchorhead I.D.:	N/A Anchorhead Verification: ☐ Match N/A ☐ No-Match	J.C.L 8-20-09

(8.5) Grease Coating

Grease Cap -	Complete	✓	Partial		Uncoated	%
Buttonheads -	Complete	✓	Partial		Uncoated	%
Anchorhead -	Complete	✓	Partial		Uncoated	%
Shims -	Complete	✓	Partial		Uncoated	%
Bearing Plate – (1)	Complete	✓	Partial		Uncoated	%

(1) - *Limited within the inside diameter of the grease cap.* — J.C.L 8-21-09

(8.6) Unusual Conditions: None — J.C.L 8-21-09

(8.7) Grease Color Match: ☐ Yes ☒ No Grease Color: Dark brown
Comments: None — J.C.L 8-21-09

(8.8) Quantity of Samples N/A Quart Samples identified per Step 8.8.1? ☐ Yes N/A ☐ No
Location of Removal N/A ☐ A.H. ☐ B.P. ☐ Shims ☐ Cap ☐ Duct — J.C.L 8-21-09

(8.9) Qty. of Grease lost during removal of cap: 0 gal. — J.C.L 8-21-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 4 gal. — J.C.L 8-21-09
(9.6) Qty. of Grease removed from anchorage: .25 gal. — J.C.L 8-21-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: N/A — J.C.L 8-21-09

(10.3) Method of Tendon Protection: Reinstalled the grease can w/A new gasket — J.C.L 8-21-09
(10.4) Amount of Grease Loss from Tendon duct: 41.75 gal. — J.C.L 8-21-09

(10.5) Total quantity of lost grease (below):
(8.8) 0 + (8.9) 0 + (8.9.1) 4 + (9.6) .25 + (10.4) 41.75 = 46 TOTAL — J.C.L 8-21-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No — J.C.L 8-21-09

Reviewed: W. Bruce Robb Level: II Date: 8-21-09

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GREASE CAP REMOVAL
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GREASE LEAK REPAIR

Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: V84 Tendon End: FIELD/BOTTOM ☐ Shop ☒ Field

Grease Cap Removal

	Q.C. Signoff
(7.5) Date Removal Started: 11-19-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage ☐ Yes ☒ No	
(7.7) Temp. of Concrete: 68 °F Thermometer No.: ST-82 Re-Cal Date: 7-27-10	
Ambient Temp.: 74 °F Thermometer No.: PK104 Re-Cal Date: 7-27-10	~~KO~~ 11-19-09
(8.4) Anchorhead I.D.: N/A Anchorhead Verification N/A ☐ Match ☐ No-Match	~~KO~~ 11-19-09

(8.5) Grease Coating

Grease Cap -	Complete	✓	Partial		Uncoated	%
Buttonheads -	Complete	✓	Partial		Uncoated	%
Anchorhead -	Complete	✓	Partial		Uncoated	%
Shims -	Complete	✓	Partial		Uncoated	%
Bearing Plate – (1)	Complete	✓	Partial		Uncoated	%

(1) - *Limited within the inside diameter of the grease cap.*

~~KO~~ 11-19-09

(6) Unusual Conditions: HEAVY RUST ON GREASE CAP FLANGE AND EDGE OF BEARING PLATE OUTSIDE GASKET AREA — ~~KO~~ 11-19-09

(8.7) Grease Color Match: ☐ Yes ☒ No Grease Color: DARK BROWN
Comments: NONE — ~~KO~~ 11-19-09

(8.8) Quantity of Samples N/A Quart Samples identified per Step 8.8.1? N/A ☐ Yes ☐ No
Location of Removal N/A ☐ A.H. ☐ B.P. ☐ Shims ☐ Cap ☐ Duct — ~~KO~~ 11-19-09

(8.9) Qty. of Grease lost during removal of cap: 0 gal. — ~~KO~~ 11-19-09
(8.9.1) Grease from cap to be reused? ☒ Yes ☐ No Qty. of Grease removed from cap: ¼ gal. — ~~KO~~ 11-19-09
(9.6) Qty. of Grease removed from anchorage: 0 gal. — ~~KO~~ 11-19-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: NONE — ~~KO~~ 11-19-09

(10.3) Method of Tendon Protection: REPLACED GASKET & CAP INSTALLED — ~~KO~~ 11-19-09
(10.4) Amount of Grease Loss from Tendon duct: 0 gal. — ~~KO~~ 11-19-09

(10.5) Total quantity of lost grease (below):
(8.8) 0 + (8.9) 0 + (8.9.1) ¼ + (9.6) 0 + (10.4) 0 = ¼ TOTAL — ~~KO~~ 11-19-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No — ~~KO~~ 11-19-09

Reviewed: J Brusone Level: III Date: 1/26/10

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Gasket Repair

Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: V-88 Tendon End: Gallery ☐ Shop ☒ Field

Grease Cap Removal

		Q.C. Signoff
(7.5) Date Removal Started:	8-20-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage	☐ Yes ☒ No	
(7.7) Temp. of Concrete:	84 °F Thermometer No.: ST-83 Re-Cal Date: 3-26-09 10	GHB 1/26/10
Ambient Temp.:	82 °F Thermometer No.: PK-104 Re-Cal Date: 7-23-09 10	GHB 1/26/10
		TCJ 8-20-09
(8.4) Anchorhead I.D.:	N/A Anchorhead Verification: ☐ Match N/A ☐ No-Match	TCJ 8-20-09

(8.5) Grease Coating

Grease Cap -	Complete	✓	Partial		Uncoated	%
Buttonheads -	Complete	✓	Partial		Uncoated	%
Anchorhead -	Complete	✓	Partial		Uncoated	%
Shims -	Complete	✓	Partial		Uncoated	%
Bearing Plate – (1)	Complete	✓	Partial		Uncoated	%

(1) - *Limited within the inside diameter of the grease cap.*

TCJ 8-20-09

(8.6) Unusual Conditions: None — TCJ 8-20-09

(8.7) Grease Color Match: ☐ Yes ☒ No Grease Color: Dark brown
Comments: None — TCJ 8-20-09

(8.8) Quantity of Samples N/A Quart Samples identified per Step 8.8.1? ☐ Yes N/A ☐ No
Location of Removal N/A ☐ A.H. ☐ B.P. ☐ Shims ☐ Cap ☐ Duct — TCJ 8-20-09

(8.9) Qty. of Grease lost during removal of cap: 0 gal. — TCJ 8-20-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 4 gal. — TCJ 8-20-09
(9.6) Qty. of Grease removed from anchorage: .25 gal. — TCJ 8-20-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: N/A — TCJ 8-20-09

(10.3) Method of Tendon Protection: Reinstalled the grease can w/a new gasket — TCJ 8-20-09
(10.4) Amount of Grease Loss from Tendon duct: 49.31 gal. — TCJ 8-20-09

(10.5) Total quantity of lost grease (below):
(8.8) 0 + (8.9) 0 + (8.9.1) 4.0 + (9.6) .25 + (10.4) 49.31 = 53.56 TOTAL — TCJ 8-20-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No — TCJ 8-20-09

C Reviewed: W. Lance Robbins Level: II Date: 8-21-09

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Gasket Repair

Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: V-98 Tendon End: Gallery ☐ Shop ☒ Field

Grease Cap Removal

		Q.C. Signoff
(7.5) Date Removal Started:	8-20-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage	☐ Yes ☒ No	GH 11/24/10
(7.7) Temp. of Concrete:	84 °F Thermometer No.: ST-83 Re-Cal Date: 3-26-09 10	GH 11/24/10
Ambient Temp.:	82 °F Thermometer No.: PK-104 Re-Cal Date: 7-22-09 10	JCJ 8-20-09
(8.4) Anchorhead I.D.:	N/A Anchorhead Verification: ☐ Match N/A ☐ No-Match	JCJ 8-20-09

(8.5) Grease Coating

Grease Cap -	Complete	✓	Partial		Uncoated	%
Buttonheads -	Complete	✓	Partial		Uncoated	%
Anchorhead -	Complete	✓	Partial		Uncoated	%
Shims -	Complete	✓	Partial		Uncoated	%
Bearing Plate – (1)	Complete	✓	Partial		Uncoated	%

(1) - *Limited within the inside diameter of the grease cap.*

JCJ 8-20-09

JCJ 8-20-09

(8.6) Unusual Conditions: None

JCJ 8-20-09

(8.7) Grease Color Match: ☐ Yes ☒ No Grease Color: Dark brown

Comments: None

JCJ 8-20-09

(8.8) Quantity of Samples N/A Quart Samples identified per Step 8.8.1? ☐ Yes N/A ☐ No

Location of Removal N/A ☐ A.H. ☐ B.P. ☐ Shims ☐ Cap ☐ Duct

JCJ 8-20-09

(8.9) Qty. of Grease lost during removal of cap: 0 gal.

JCJ 8-20-09

(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 4 gal.

JCJ 8-20-09

(9.6) Qty. of Grease removed from anchorage: .25 gal.

JCJ 8-20-09

(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: N/A

JCJ 8-20-09

(10.3) Method of Tendon Protection: Reinstalled the grease can w/a new gasket

JCJ 8-20-09

(10.4) Amount of Grease Loss from Tendon duct: 36.03 gal.

JCJ 8-20-09

(10.5) Total quantity of lost grease (below):

(8.8) 0 + (8.9) 0 + (8.9.1) 4 + (9.6) .25 + (10.4) 36.03 = 40.28 TOTAL

JCJ 8-20-09

(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT: ☒ Yes ☐ No

JCJ 8-20-09

Reviewed: W. Bruce Robb Level: II Date: 8-21-09

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Gasket Repair

Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(7.2) Tendon No.: V-99 Tendon End: Gallery ☐ Shop ☒ Field

Grease Cap Removal

	Q.C. Signoff
(7.5) Date Removal Started: 8-20-09	
(7.6) Dry Ice Used on Grease Cap and/or Anchorage ☐ Yes ☒ No	
(7.7) Temp. of Concrete: 84 °F Thermometer No.: ST-83 Re-Cal Date: 3-26-09 10 GAB 1/26/10	
Ambient Temp.: 82 °F Thermometer No.: PK-104 Re-Cal Date: 7-27-09 10 GAB 1/26/10	TCS 8-20-09
(8.4) Anchorhead I.D.: N/A Anchorhead Verification: ☐ Match N/A ☐ No-Match	TCS 8-20-09

(8.5) Grease Coating

Grease Cap -	Complete	✓	Partial		Uncoated	%
Buttonheads -	Complete	✓	Partial		Uncoated	%
Anchorhead -	Complete	✓	Partial		Uncoated	%
Shims -	Complete	✓	Partial		Uncoated	%
Bearing Plate – (1)	Complete	✓	Partial		Uncoated	%

(1) - *Limited within the inside diameter of the grease cap.* — TCS 8-20-09

(8.6) Unusual Conditions: None — TCS 8-20-09

(8.7) Grease Color Match: ☐ Yes ☒ No Grease Color: Dark brown
Comments: None — TCS 8-20-09

(8.8) Quantity of Samples N/A Quart Samples identified per Step 8.8.1? ☐ Yes N/A ☐ No
Location of Removal N/A ☐ A.H. ☐ B.P. ☐ Shims ☐ Cap ☐ Duct — TCS 8-20-09

(8.9) Qty. of Grease lost during removal of cap: 0 gal. — TCS 8-20-09
(8.9.1) Grease from cap to be reused? ☐ Yes ☒ No Qty. of Grease removed from cap: 4 gal. — TCS 8-20-09
(9.6) Qty. of Grease removed from anchorage: .25 gal. — TCS 8-20-09
(9.7) Damage during cap removal or anchorage cleaning? ☐ Yes ☒ No Describe: N/A — TCS 8-20-09

(10.3) Method of Tendon Protection: Reinstalled the grease can w/a new gasket — TCS 8-20-09
(10.4) Amount of Grease Loss from Tendon duct: 40 gal. — TCS 8-20-09

(10.5) Total quantity of lost grease (below):
(8.8) 0 + (8.9) 0 + (8.9.1) 4 + (9.6) .25 + (10.4) 40 = 44.25 TOTAL — TCS 8-20-09
(11.1.2) Document TOTAL grease lost on Data Sheet 12.1, GREASE REPLACEMENT. ☒ Yes ☐ No — TCS 8-20-09

Reviewed: W. Rance Collins Level: II Date: 8-21-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: H13-41 Tendon End: Shop/Buttr ☒ Shop ☐ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: N/A Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: N/A

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: N/A Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: N/A

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: N/A Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: N/A

(9.9.1) DURING DETENSIONING N/A

Water Detected N/A ☐ Yes ☐ No Quantity: N/A Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: N/A

(11.1) NOTIFICATION

Exelon Notified: N/A ☐ Yes ☐ No Individual Name: N/A Date: N/A

SAMPLE IDENTIFICATION AND STORAGE

(12.2) Samples adequately identified: N/A ☐ Yes ☐ No

(12.3) Samples stored at: N/A

QC Signoff: David P. O'Brien Level: II Date: 1-12-09

QC Reviewed: G Bussone Level: III Date: 2/2/10

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: H13-41 Tendon End: Butt. 3 ☐ Shop ☒ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A
Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable
Comments: None

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A
Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable
Comments: None

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A
Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable
Comments: None

(9.9.1) DURING DETENSIONING N/A

Water Detected: ☐ Yes ☐ No Quantity: Sample Taken: ☐ Yes ☐ No ☐ N/A
Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☐ Not Applicable
Comments:

(11.1) NOTIFICATION N/A

Exelon Notified: ☐ Yes ☐ No Individual Name: Date:

SAMPLE IDENTIFICATION AND STORAGE N/A

(12.2) Samples adequately identified: ☐ Yes ☐ No
(12.3) Samples stored at:

QC Signoff: W. Rance Ralston Level: II Date: 8-26-09
QC Reviewed: Timothy Cw[illegible] Level: I Date: 8-26-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: H24-33 Tendon End: Both, 4 ☒ Shop ☐ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.9.1) DURING DETENSIONING N/A

Water Detected: ☐ Yes ☒ No Quantity: Sample Taken: ☐ Yes ☐ No ☐ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☐ Not Applicable

Comments:

(11.1) NOTIFICATION N/A

Exelon Notified: ☐ Yes ☐ No Individual Name: Date:

SAMPLE IDENTIFICATION AND STORAGE N/A

(12.2) Samples adequately identified: ☐ Yes ☐ No

(12.3) Samples stored at:

QC Signoff: W. Ramon Robinson Level: II Date: 8-11-09

QC Reviewed: Timothy C Date Level: I Date: 8-11-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: H 24-33 Tendon End: But. 2 ☐ Shop ☒ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.9.1) DURING DETENSIONING N/A

Water Detected: ☐ Yes ☐ No Quantity: Sample Taken: ☐ Yes ☐ No ☐ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☐ Not Applicable

Comments:

(11.1) NOTIFICATION N/A

Exelon Notified: ☐ Yes ☐ No Individual Name: Date:

SAMPLE IDENTIFICATION AND STORAGE N/A

(12.2) Samples adequately identified: ☐ Yes ☐ No

(12.3) Samples stored at:

QC Signoff: [signature] Level: I Date: 8-24-09

QC Reviewed: W. Bruce Robertson Level: II Date: 8-24-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: H 46-50 Tendon End: Butt. 6 ☒ Shop ☐ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.9.1) DURING DETENSIONING N/A

Water Detected: ☐ Yes ☐ No Quantity: Sample Taken: ☐ Yes ☐ No ☐ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☐ Not Applicable

Comments:

(11.1) NOTIFICATION N/A

Exelon Notified: ☐ Yes ☐ No Individual Name: Date:

SAMPLE IDENTIFICATION AND STORAGE N/A

(12.2) Samples adequately identified: ☐ Yes ☐ No

(12.3) Samples stored at:

QC Signoff: W. Pance Robertson Level: II Date: 8-12-09

QC Reviewed: Timothy C. Dietz Level: I Date: 8-13-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: H46-50 Tendon End: Butt. 4 ☐ Shop ☒ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.9.1) DURING DETENSIONING N/A

Water Detected: ☐ Yes ☐ No Quantity: _____ Sample Taken: ☐ Yes ☐ No ☐ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☐ Not Applicable

Comments: _____

(11.1) NOTIFICATION N/A

Exelon Notified: ☐ Yes ☐ No Individual Name: _____ Date: _____

SAMPLE IDENTIFICATION AND STORAGE N/A

(12.2) Samples adequately identified: ☐ Yes ☐ No

(12.3) Samples stored at: _____

QC Signoff: W. Rance Robb Level: II Date: 8-11-09

QC Reviewed: Jimmy C. Sto Level: I Date: 8-11-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: H51-49 Tendon End: Buttr 1 ☒ Shop ☐ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: N/A

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: N/A

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: N/A

(9.9.1) DURING DETENSIONING

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: N/A

(11.1) NOTIFICATION

Exelon Notified N/A ☐ Yes ☐ No Individual Name: N/A Date: N/A

SAMPLE IDENTIFICATION AND STORAGE

(12.2) Samples adequately identified N/A ☐ Yes ☐ No

(12.3) Samples stored at: N/A

QC Signoff: Dan P. O'Shea Level: II Date: 11-11-09

Reviewed: [signature] Level: III Date: 2/2/10

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: H51-49 Tendon End: Both. S ☐ Shop ☒ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None WRR 8-26-09

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None WRR 8-26-09

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None WRR 8-26-09

(9.9.1) DURING DETENSIONING

Water Detected: ☐ Yes ☒ No Quantity: N/A Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments:

(11.1) NOTIFICATION

Exelon Notified: N/A ☐ Yes ☐ No Individual Name: N/A Date: N/A

SAMPLE IDENTIFICATION AND STORAGE

(12.2) Samples adequately identified: N/A ☐ Yes ☐ No

(12.3) Samples stored at: N/A

QC Signoff: [signature] Level: II Date: 11-11-09

QC Reviewed: [signature] Level: II Date: 2-25-10

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☑ UNIT 1

(8.1) Tendon No.: H62-2C Tendon End: Bttm. ☒ Shop ☐ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.9.1) DURING DETENSIONING N/A

Water Detected: ☐ Yes ☐ No Quantity: Sample Taken: ☐ Yes ☐ No ☐ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☐ Not Applicable

Comments:

(11.1) NOTIFICATION N/A

Exelon Notified: ☐ Yes ☐ No Individual Name: Date:

SAMPLE IDENTIFICATION AND STORAGE N/A

(12.2) Samples adequately identified: ☐ Yes ☐ No

(12.3) Samples stored at:

QC Signoff: W. Pearce Robertson Level: II Date: 8-12-09

QC Reviewed: Timothy C. Pate Level: I Date: 8-13-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: H62-26 Tendon End: Buttress 2 ☐ Shop ☒ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: NONE

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: NONE

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: NONE

(9.9.1) DURING DETENSIONING N/A

Water Detected: ☐ Yes ☐ No Quantity: _____ Sample Taken: ☐ Yes ☐ No ☐ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☐ Not Applicable

Comments: _____

(11.1) NOTIFICATION N/A

Exelon Notified: ☐ Yes ☐ No Individual Name: _____ Date: _____

SAMPLE IDENTIFICATION AND STORAGE N/A

(12.2) Samples adequately identified: ☐ Yes ☐ No

(12.3) Samples stored at: _____

QC Signoff: W. Rance Pahlen Level: II Date: 8-28-09

QC Reviewed: [signature] Level: I Date: 8-28-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: V-11 Tendon End: Butt. 1 ☒ Shop ☐ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.9.1) DURING DETENSIONING

Water Detected: ☐ Yes ☐ No Quantity: N/A Sample Taken: ☐ Yes ☐ No ☐ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☐ Not Applicable

Comments:

(11.1) NOTIFICATION

Exelon Notified: ☐ Yes ☐ No Individual Name: Date:

SAMPLE IDENTIFICATION AND STORAGE

(12.2) Samples adequately identified: ☐ Yes ☐ No

(12.3) Samples stored at:

QC Signoff: [signature] Level: I Date: 8-14-09

QC Reviewed: W. Lance Poller Level: II Date: 8-18-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: V-11 Tendon End: Gallery ☐ Shop ☒ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.9.1) DURING DETENSIONING N/A

Water Detected: ☐ Yes ☐ No Quantity: Sample Taken: ☐ Yes ☐ No ☐ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☐ Not Applicable

Comments:

(11.1) NOTIFICATION N/A

Exelon Notified: ☐ Yes ☐ No Individual Name: Date:

SAMPLE IDENTIFICATION AND STORAGE N/A

(12.2) Samples adequately identified: ☐ Yes ☐ No

(12.3) Samples stored at:

QC Signoff: W. Ramsey Robinson Level: II Date: 8-13-09

QC Reviewed: Timothy C. Bates Level: I Date: 8-13-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: V-32 Tendon End: Butt. 2 ☒ Shop ☐ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.9.1) DURING DETENSIONING

Water Detected: ☐ Yes ☐ No Quantity: N/A Sample Taken: ☐ Yes ☐ No ☐ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☐ Not Applicable

Comments:

(11.1) NOTIFICATION

Exelon Notified: ☐ Yes ☐ No Individual Name: N/A Date:

SAMPLE IDENTIFICATION AND STORAGE

(12.2) Samples adequately identified: ☐ Yes ☐ No N/A

(12.3) Samples stored at:

QC Signoff: Level: I Date: 8-14-09

QC Reviewed: W. Lance Robbins Level: II Date: 8-20-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: V-32 Tendon End: Gallery ☐ Shop ☒ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.9.1) DURING DETENSIONING N/A

Water Detected: ☐ Yes ☐ No Quantity: _____ Sample Taken: ☐ Yes ☐ No ☐ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☐ Not Applicable

Comments: _____

(11.1) NOTIFICATION N/A

Exelon Notified: ☐ Yes ☐ No Individual Name: _____ Date: _____

SAMPLE IDENTIFICATION AND STORAGE N/A

(12.2) Samples adequately identified: ☐ Yes ☐ No

(12.3) Samples stored at: _____

QC Signoff: W. Robert Robertson Level: II Date: 8-13-09

QC Reviewed: Thomas C Dietz Level: I Date: 8-13-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: V-90 Tendon End: ~~Buttr. 4~~ Top ~~2-25-10~~ ☒ Shop ☐ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.9.1) DURING DETENSIONING

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(11.1) NOTIFICATION N/A

Exelon Notified: ☐ Yes ☐ No Individual Name: _____ Date: _____

SAMPLE IDENTIFICATION AND STORAGE N/A

(12.2) Samples adequately identified: ☐ Yes ☐ No

(12.3) Samples stored at: _____

QC Signoff: W. Rance Fuller Level: II Date: 8-19-09

QC Reviewed: Tommy C. Dutton Level: I Date: 8-20-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: V-90 Tendon End: Bottom ☐ Shop ☒ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None WRR 8-13-09

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None WRR 8-13-09

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None WRR 8-13-09

(9.9.1) DURING DETENSIONING

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None WRR 8-19-09

(11.1) NOTIFICATION N/A

Exelon Notified: ☐ Yes ☐ No Individual Name: _____ Date: _____

SAMPLE IDENTIFICATION AND STORAGE N/A

(12.2) Samples adequately identified: ☐ Yes ☐ No

(12.3) Samples stored at: _____

QC Signoff: W. Rance Robertson Level: II Date: 8-19-09

QC Reviewed: Timothy C. Bates Level: I Date: 8-20-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: V-132 Tendon End: ~~☒~~ Top WRR 8-13-09 ☒ Shop ☐ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None WRR 8-13-09

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None WRR 8-13-09

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None WRR 8-13-09

(9.9.1) DURING DETENSIONING N/A

Water Detected: ☐ Yes ☐ No Quantity: Sample Taken: ☐ Yes ☐ No ☐ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☐ Not Applicable

Comments:

(11.1) NOTIFICATION N/A

Exelon Notified: ☐ Yes ☐ No Individual Name: Date:

SAMPLE IDENTIFICATION AND STORAGE N/A

(12.2) Samples adequately identified: ☐ Yes ☐ No

(12.3) Samples stored at:

QC Signoff: W. Rance Robertson Level: II Date: 8-17-09

QC Reviewed: Timothy C Dunn Level: I Date: 8-19-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: V-132 Tendon End: Gallery ☐ Shop ☒ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: NONE

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: NONE

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: NONE

(9.9.1) DURING DETENSIONING N/A

Water Detected: ☐ Yes ☐ No Quantity: Sample Taken: ☐ Yes ☐ No ☐ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☐ Not Applicable

Comments:

(11.1) NOTIFICATION N/A

Exelon Notified: ☐ Yes ☐ No Individual Name: Date:

SAMPLE IDENTIFICATION AND STORAGE N/A

(12.2) Samples adequately identified: ☐ Yes ☐ No

(12.3) Samples stored at:

QC Signoff: W. Rance Rabb Level: II Date: 8-13-09

QC Reviewed: Timothy C. Dietz Level: I Date: 8-13-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: D122 Tendon End: Butt. 5 ☒ Shop ☐ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.9.1) DURING DETENSIONING N/A

Water Detected: ☐ Yes ☐ No Quantity: Sample Taken: ☐ Yes ☐ No ☐ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☐ Not Applicable

Comments:

(11.1) NOTIFICATION N/A

Exelon Notified: ☐ Yes ☐ No Individual Name: Date:

SAMPLE IDENTIFICATION AND STORAGE N/A

(12.2) Samples adequately identified: ☐ Yes ☐ No

(12.3) Samples stored at:

QC Signoff: W. Ronee Robertson Level: II Date: 8-17-09

QC Reviewed: Tommy C. Dutton Level: I Date: 8-17-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: D122 Tendon End: FIELD/NE ☐ Shop ☒ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: N/A Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: N/A

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: N/A Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: N/A

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: N/A Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: N/A

(9.9.1) DURING DETENSIONING N/A

Water Detected: ☐ Yes ☒ No Quantity: N/A Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: N/A

(11.1) NOTIFICATION

Exelon Notified: N/A ☐ Yes ☐ No Individual Name: N/A Date: N/A

SAMPLE IDENTIFICATION AND STORAGE

(12.2) Samples adequately identified: N/A ☐ Yes ☐ No

(12.3) Samples stored at: N/A

QC Signoff: Daniel P. O'Brien Level: II Date: 11-13-09

QC Reviewed: J Bussone Level: III Date: 2/2/10

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: D-225 Tendon End: Butt. 5 ☒ Shop ☐ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.9.1) DURING DETENSIONING

Water Detected: ☐ Yes ☐ No Quantity: N/A Sample Taken: ☐ Yes ☐ No ☐ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: N/A

(11.1) NOTIFICATION

Exelon Notified: ☐ Yes ☐ No Individual Name: N/A Date:

SAMPLE IDENTIFICATION AND STORAGE

(12.2) Samples adequately identified: ☐ Yes ☐ No

(12.3) Samples stored at: N/A

QC Signoff: [signature] Level: I Date: 8-11-09

QC Reviewed: W. Rance Cable Level: II Date: 8-11-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: D225 Tendon End: Butt 2 ☐ Shop ☒ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.9.1) DURING DETENSIONING

Water Detected: ☐ Yes ☐ No Quantity: N/A Sample Taken: ☐ Yes ☐ No ☐ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☐ Not Applicable

Comments:

(11.1) NOTIFICATION

Exelon Notified: ☐ Yes ☐ No Individual Name: N/A Date:

SAMPLE IDENTIFICATION AND STORAGE

(12.2) Samples adequately identified: ☐ Yes ☐ No N/A

(12.3) Samples stored at:

QC Signoff: Timothy C. Dietz Level: I Date: 8-12-09

QC Reviewed: W. Ponce Robles Level: II Date: 8-18-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: D-322 Tendon End: SHOP/NORTH ☒ Shop ☐ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: N/A Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: N/A

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: N/A Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: N/A

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: N/A Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: N/A

(9.9.1) DURING DETENSIONING

Water Detected: ☐ Yes ☒ No Quantity: N/A Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: N/A

(11.1) NOTIFICATION

Exelon Notified: N/A ☐ Yes ☐ No Individual Name: N/A Date: N/A

SAMPLE IDENTIFICATION AND STORAGE

(12.2) Samples adequately identified: N/A ☐ Yes ☐ No

(12.3) Samples stored at: N/A

QC Signoff: David P. O'Shea Level: II Date: 11-17-09

QC Reviewed: J. G Bussone Level: III Date: 2/2/10

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: D-322 Tendon End: Hoop/South ☐ Shop ☒ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: N/A

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: N/A Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: N/A

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: N/A Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: N/A

(9.9.1) DURING DETENSIONING

Water Detected: ☐ Yes ☒ No Quantity: N/A Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: N/A

(11.1) NOTIFICATION

Exelon Notified: N/A ☐ Yes ☐ No Individual Name: N/A Date: N/A

SAMPLE IDENTIFICATION AND STORAGE

(12.2) Samples adequately identified: N/A ☐ Yes ☐ No

(12.3) Samples stored at: N/A

QC Signoff: [signature] Level: II Date: 11-16-09

QC Reviewed: J Bussone Level: III Date: 2/2/10

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: D-342 Tendon End: Butt. 6 ☒ Shop ☐ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.9.1) DURING DETENSIONING

Water Detected: ☐ Yes ☐ No Quantity: N/A Sample Taken: ☐ Yes ☐ No ☐ N/A

Moisture Description: ☐ Observable Moisture ☒ Significant Moisture ☐ Not Applicable

Comments:

(11.1) NOTIFICATION

Exelon Notified: ☐ Yes ☒ No Individual Name: N/A Date:

SAMPLE IDENTIFICATION AND STORAGE

(12.2) Samples adequately identified: ☐ Yes ☒ No

(12.3) Samples stored at: N/A

QC Signoff: [signature] Level: I Date: 8-17-09

QC Reviewed: W. Rance Robb Level: II Date: 8-17-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: D-342 Tendon End: Butt. 4 ☐ Shop ☒ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.9.1) DURING DETENSIONING N/A

Water Detected: ☐ Yes ☐ No Quantity: _____ Sample Taken: ☐ Yes ☐ No ☐ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☐ Not Applicable

Comments: _____

(11.1) NOTIFICATION N/A

Exelon Notified: ☐ Yes ☐ No Individual Name: _____ Date: _____

SAMPLE IDENTIFICATION AND STORAGE N/A

(12.2) Samples adequately identified: ☐ Yes ☐ No

(12.3) Samples stored at: _____

QC Signoff: W. Rance Robertson Level: II Date: 8-17-09

QC Reviewed: Timothy C. Estes Level: I Date: 8-17-09

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Gasket Repair

Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: V- 10 Tendon End: Gallery ☐ Shop ☒ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.9.1) DURING DETENSIONING N/A

Water Detected: ☐ Yes ☐ No Quantity: _____ Sample Taken: ☐ Yes ☐ No ☐ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☐ Not Applicable

Comments: _____

(11.1) NOTIFICATION N/A

Exelon Notified: ☐ Yes ☐ No Individual Name: _____ Date: _____

SAMPLE IDENTIFICATION AND STORAGE N/A

(12.2) Samples adequately identified: ☐ Yes ☐ No

(12.3) Samples stored at: _____

QC Signoff: Timothy C. Dietz Level: I Date: 8-21-09

QC Reviewed: W. Rance Robertson Level: II Date: 8-21-09

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GREASE LEAK REPAIR

Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: V55 Tendon End: FIELD/BOTTOM ☐ Shop ☒ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: N/A Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: N/A

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: N/A Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: N/A

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: N/A Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: N/A

(9.9.1) DURING DETENSIONING N/A

Water Detected: N/A ☐ Yes ☐ No Quantity: N/A Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: N/A

(11.1) NOTIFICATION

Exelon Notified N/A ☐ Yes ☐ No Individual Name: N/A Date: N/A

SAMPLE IDENTIFICATION AND STORAGE

(12.2) Samples adequately identified N/A ☐ Yes ☐ No

(12.3) Samples stored at: N/A

QC Signoff: Daniel P. O'Shea Level: II Date: 11-19-09

QC Reviewed: J Bussone Level: III Date: 1/26/10

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Gasket Repair

Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: V- 60 Tendon End: Gallery ☐ Shop ☒ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.9.1) DURING DETENSIONING N/A

Water Detected: ☐ Yes ☐ No Quantity: Sample Taken: ☐ Yes ☐ No ☐ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☐ Not Applicable

Comments:

(11.1) NOTIFICATION N/A

Exelon Notified: ☐ Yes ☐ No Individual Name: Date:

SAMPLE IDENTIFICATION AND STORAGE N/A

(12.2) Samples adequately identified: ☐ Yes ☐ No

(12.3) Samples stored at:

QC Signoff: Timothy Cuff Level: I Date: 8-21-09

QC Reviewed: W. Ponce Robles Level: II Date: 8-21-09

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Gasket Repair

Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: V- 62 Tendon End: Gallery ☐ Shop ☒ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.9.1) DURING DETENSIONING N/A

Water Detected: ☐ Yes ☐ No Quantity: _____ Sample Taken: ☐ Yes ☐ No ☐ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☐ Not Applicable

Comments: _____

(11.1) NOTIFICATION N/A

Exelon Notified: ☐ Yes ☐ No Individual Name: _____ Date: _____

SAMPLE IDENTIFICATION AND STORAGE N/A

(12.2) Samples adequately identified: ☐ Yes ☐ No

(12.3) Samples stored at: _____

QC Signoff: Terrence C. Gates Level: I Date: 8-21-09

QC Reviewed: W. Ponce Robertson Level: II Date: 8-21-09

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Gasket Repair

Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: V- 71 Tendon End: Gallery ☐ Shop ☒ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.9.1) DURING DETENSIONING N/A

Water Detected: ☐ Yes ☐ No Quantity: _____ Sample Taken: ☐ Yes ☐ No ☐ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☐ Not Applicable

Comments: _____

(11.1) NOTIFICATION N/A

Exelon Notified: ☐ Yes ☐ No Individual Name: _____ Date: _____

SAMPLE IDENTIFICATION AND STORAGE N/A

(12.2) Samples adequately identified: ☐ Yes ☐ No

(12.3) Samples stored at: _____

QC Signoff: [signature] Level: I Date: 8-21-09

QC Reviewed: W. Lance Robbins Level: II Date: 8-21-09

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GREASE LEAK REPAIR

Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: V84 Tendon End: FIELD/BOTTOM ☐ Shop ☒ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: N/A Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: N/A ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: N/A

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: N/A Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: N/A

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: N/A Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: N/A

(9.9.1) DURING DETENSIONING N/A

Water Detected N/A ☐ Yes ☐ No Quantity: N/A Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: N/A

(11.1) NOTIFICATION

Exelon Notified: N/A ☐ Yes ☐ No Individual Name: N/A Date: N/A

SAMPLE IDENTIFICATION AND STORAGE

(12.2) Samples adequately identified: N/A ☐ Yes ☒ No

(12.3) Samples stored at: N/A

QC Signoff: David P. O'Shea Level: II Date: 11-19-09

QC Reviewed: L. Bussone Level: III Date: 1/26/10

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Gasket Repair

Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: V-88 Tendon End: Gallery ☐ Shop ☒ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.9.1) DURING DETENSIONING N/A

Water Detected: ☐ Yes ☐ No Quantity: _____ Sample Taken: ☐ Yes ☐ No ☐ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☐ Not Applicable

Comments: _____

(11.1) NOTIFICATION N/A

Exelon Notified: ☐ Yes ☐ No Individual Name: _____ Date: _____

SAMPLE IDENTIFICATION AND STORAGE N/A

(12.2) Samples adequately identified: ☐ Yes ☐ No

(12.3) Samples stored at: _____

QC Signoff: [signature] Level: I Date: 8-20-09

QC Reviewed: W. Pence Pebble Level: II Date: 8-21-09

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Gasket Repair

Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: V- 98 Tendon End: Gallery ☐ Shop ☒ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments: None

(9.9.1) DURING DETENSIONING N/A

Water Detected: ☐ Yes ☐ No Quantity: _____ Sample Taken: ☐ Yes ☐ No ☐ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☐ Not Applicable

Comments: _____

(11.1) NOTIFICATION N/A

Exelon Notified: ☐ Yes ☐ No Individual Name: _____ Date: _____

SAMPLE IDENTIFICATION AND STORAGE N/A

(12.2) Samples adequately identified: ☐ Yes ☐ No

(12.3) Samples stored at: _____

QC Signoff: Timothy C Yost Level: I Date: 8-20-09

QC Reviewed: W. Bruce Rodden Level: II Date: 8-21-09

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Gasket Repair

Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

(8.1) Tendon No.: V- 99 Tendon End: Gallery ☐ Shop ☒ Field

(9.5.1) DURING REMOVAL OF GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments:

(9.6.1) INSIDE GREASE CAP

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments:

(9.7.1) AROUND TENDON ANCHORAGE COMPONENTS

Water Detected: ☐ Yes ☒ No Quantity: 0 Sample Taken: ☐ Yes ☐ No ☒ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☒ Not Applicable

Comments:

(9.9.1) DURING DETENSIONING N/A

Water Detected: ☐ Yes ☐ No Quantity: Sample Taken: ☐ Yes ☐ No ☐ N/A

Moisture Description: ☐ Observable Moisture ☐ Significant Moisture ☐ Not Applicable

Comments:

(11.1) NOTIFICATION N/A

Exelon Notified: ☐ Yes ☐ No Individual Name: Date:

SAMPLE IDENTIFICATION AND STORAGE N/A

(12.2) Samples adequately identified: ☐ Yes ☐ No

(12.3) Samples stored at:

QC Signoff: [signature] Level: I Date: 8-20-09

QC Reviewed: W. Lance Robertson Level: II Date: 8-21-09

DATA SHEET 9
Tendon Anchorage Area Moisture/Free Water Inspection

Inspection Period 35th yr.

	Tendon No.	Location	Moisture/Water (Yes or No)	Description of Free Moisture/Water-Quantity, Location	Date Insp.	Inspect. By (Initials)
1.	V-11	Bottom Field	NO	None	8-13-09	TCS.
2.	V-11	Top Shop	NO	None	8-14-09	TCS.
3.	V-32	Top Shop	NO	None	8-14-09	TCS.
4.	V-32	Bottom Field	NO	None	8-13-09	TCS
5.	V-90	Top shop	NO	None	8-14-09	TCS
6.	V-90	Bottom Field	No	None	8-13-09	TCS
7.	V-132	Top Shop	NO	None	8-13-09	TCS.
8.	V-132	Bottom field	NO	None	8-13-09	TCS.
9.						
10.						
11.						
12.						

NOTE: Location:
Hoop Tendons: 1 to 6 - Buttress number at end of tendon
Vertical Tendons: T or B - Top or Bottom
Dome Tendons: 1 to 6 - Number of buttress nearest to end of tendon

Cognizant QV Inspector Verification By: Timothy C. Sota Date: 8-28-09

Cognizant ~~Mech~~/Struct Engineer Review By: [signature] Date: 19 MAR 10

DATA SHEET 9
Tendon Anchorage Area Moisture/Free Water Inspection

Inspection Period 35th Yr.

	Tendon No.	Location	Moisture/Water (Yes or No)	Description of Free Moisture/Water-Quantity, Location	Date Insp.	Inspect. By (Initials)
1.	H13-41	Butt.3/Field	NO	None	8-26-09	LCS.
2.	H13-41	Shoe/Butt 1	no	none	11-12-09	[illegible]
3.	H24-33	Butt.4/Shop	No	None	8-11-09	LCS.
4.	H24-33	Butt 2/Field	No	None	8-24-09	LCS.
5.	H46-50	Butt.6/Shop	No	None	8-12-09	LCS.
6.	H46-50	Butt.4/Field	No	None	8-11-09	LCS.
7.	H51-49	Butt 5/Field	No	None	11-11-09	[illegible]
8.	H51-49	Shoe/Butt 1	no	none	11-11-09	[illegible]
9.	H62-26	Butt. 6/Shop	No	None	8-12-09	LCS.
10.	H62-26	Butt 2/Field	No	None	8-28-09	LCS.
11.						
12.						

NOTE: Location:
Hoop Tendons: 1 to 6 - Buttress number at end of tendon
Vertical Tendons: T or B - Top or Bottom
Dome Tendons: 1 to 6 - Number of buttress nearest to end of tendon

Cognizant QV Inspector Verification By: [signature] Date: 8-28-08

Cognizant Mech/Struct Engineer Review By: [signature] Date: 19 MAR 10

DATA SHEET 9
Tendon Anchorage Area Moisture/Free Water Inspection

Inspection Period 35th yr.

	Tendon No.	Location	Moisture/Water (Yes or No)	Description of Free Moisture/Water-Quantity, Location	Date Insp.	Inspect. By (Initials)
1.	D-122	Butt.5/Shop	No	None	8-17-09	[illegible]
2.	D-122	Field/NE	No	None	11-13-07	[illegible]
3.	D-225	Butt.2/Field	No	None	8-12-09	[illegible]
4.	D-225	Butt.5/Shop	No	None	8-11-09	[illegible]
5.	D-322	Shop/N	No	None	11-16-07	[illegible]
6.	D-322	Field/S	No	None	11-16-07	[illegible]
7.	D-342	Butt.4/Field	No	None	8-17-09	[illegible]
8.	D-342	Butt6/shop	No	None	8-17-09	[illegible]
9.						
10.						
11.						
12.						

NOTE: Location:

Hoop Tendons: 1 to 6 - Buttress number at end of tendon

Vertical Tendons: T or B - Top or Bottom

Dome Tendons: 1 to 6 - Number of buttress nearest to end of tendon

Cognizant QV Inspector Verification By: [signature] Date: 8-29-08

Cognizant Mech/Struct Engineer Review By: [signature] Date: 19 MAR 10

ENCLOSURE 6

Data Sheet 3
Anchorage Assembly Surveillance Inspection
Hoop Tendons

INSPECTION PERIOD 35th yr.

TENDON	END		BUTTONHEADS			STRESSING WASHER & NUT			SHIMS			BEARING PLATE			DATE INSP.	COMMENTS	INSP. BY CONTR. FOREMAN	VERIF. BY COGNIZANT QV INSP.
I.D. 1	Location 2	Corr. 3	NO. OF MISSING, BROKEN, AND/OR DAMAGED WIRES 4	CORR. 5	SKETCHED 6	CORR. 7	CRACKS 8	SKETCHED 9	CORR. 10	CRACKS 11	SKETCHED 12	CORR. 13	CRACKS 14	SKETCHED 15	16	17	18	19
1 H13-41	Butt. 3	N	0	N	N	N	N	N	N	N	N	N	N	N	8-26-09	NONE	N/A	
	Field	N	0	N	N	N	N	N	N	N	N	N	N	N	11-13-09	NONE	N/A	
2 H13-41	Butt. 1	N	N	N	N	N	N	N	N	N	N	N	N	N	11-13-09	NONE	N/A	
	Shop																	
3 H 21-33	Butt. 2	N	0	N	N	N	N	N	N	N	N	N	N	N	8-24-09	None	N/A	
	Field																	
4 H24-33	Butt. 4	Y	0	N	N	N	N	N	Y	N	N	N	N	N	8-4-09	WS 8-27-09 ~~NONE~~	N/A	
	Shop															Light inactive rust on shims		
5 H46-50	Butt. 4	N	0	N	N	N	N	N	N	N	N	N	N	N	8-4-09	NONE	N/A	
	Field																	
6 H 46-50	Butt. 6	N	0	N	N	N	N	N	N	N	N	N	N	N	8-12-09	NONE	N/A	
	Shop																	

LEGEND

GENERAL

Y = YES
N = NO

TENDON END-LOCATION

IDENTIFY TENDON END (SHOP OR FIELD) AND NUMBER OF BUTTRESS (1 TO 6) AT TENDON END

ENCLOSURE 6

Data Sheet 3
Anchorage Assembly Surveillance Inspection
Hoop Tendons

INSPECTION PERIOD 35th. yr.

TENDON	END		BUTTONHEADS			STRESSING WASHER & NUT			SHIMS			BEARING PLATE			DATE INSP.	COMMENTS	INSP. BY CONTR. FOREMAN	VERIF. BY COGNIZANT QV INSP.
I.D. 1	Location 2	Corr. 3	NO. OF MISSING, BROKEN, AND/OR DAMAGED WIRES 4	CORR. 5	SKETCHED 6	CORR. 7	CRACKS 8	SKETCHED 9	CORR. 10	CRACKS 11	SKETCHED 12	CORR. 13	CRACKS 14	SKETCHED 15	16	17	18	19
1 H51-49	Butt 5	N	0	N	N	N	N	N	N	N	N	N	N	N	8-26-09	1- split button head .030"	N/A	
	Field																	
2 H51-49	Butt 1	N	0	N	N	N	N	N	N	N	N	N	N	N	11-4-09	NONE	n/a	
	Shop																	
3 H62-26	Butt 6	N	0	N	N	N	N	N	N	N	N	N	N	N	8-12-09	NONE	N/A	
	Shop																	
4 H62-26	Butt 2	N	0	N	N	N	N	N	N	N	N	N	N	N	8-28-09	NONE	N/A	
	Field																	
5.																		
6.																		

LEGEND

GENERAL

Y = YES
N = NO

TENDON END-LOCATION

IDENTIFY TENDON END (SHOP OR FIELD) AND NUMBER OF BUTTRESS (1 TO 6) AT TENDON END

ENCLOSURE 6

Data Sheet 2
Anchorage Assembly Surveillance Inspection
Vertical Tendons

INSPECTION PERIOD 35 TA. Yr.

TENDON	END	BUTTONHEADS			STRESSING WASHER & NUT			SHIMS			BEARING PLATE			DATE INSP.	COMMENTS	INSP. BY CONTR. FOREMAN	VERIF. BY COGNIZANT QV INSP.
I.D. 1	Location 2	Corr. 3	NO. OF MISSING, BROKEN, AND/OR DAMAGED WIRES 4	CORR. 5	SKETCHED 7	CORR. 8	CRACKS 9	SKETCHED 10	CORR. 11	CRACKS 12	SKETCHED 13	CORR. 14	CRACKS 15	SKETCHED 16	17	18	19	20
1. V-11	Bott.	N	0	N	N	N	N	N	N	N	N	N	N	N	8-13-09	NONE	N/A	
	Field																	
2. V-11	Top	N	0	N	N	N	N	N	N	N	N	N	N	N	8-18-09	None	N/A	
	Shop																	
3. V-32	Bott.	N	0	N	N	N	N	N	N	N	N	N	N	N	8-13-09	NONE	N/A	
	Field																	
4. V-32	Top	N	0	N	N	N	N	N	N	N	N	N	N	N	8-18-09	None	N/A	
	Shop																	
5. V-90	Top	N	0	N	N	N	N	N	N	N	N	N	N	N	8-18-09	None	N/A	
	Shop																	
6. V-90	Bott.	N	0	N	N	N	N	N	N	N	N	N	N	N	8-13-09	None	N/A	
	Field																	

LEGEND

GENERAL

Y = YES
N = NO

TENDON END-LOCATION

IDENTIFY TENDON END (SHOP OR FIELD) AND TOP (T) OR BOTTOM (B) OF TENDON

ENCLOSURE 6

Data Sheet 2
Anchorage Assembly Surveillance Inspection
Vertical Tendons

INSPECTION PERIOD 35 th. yr.

TENDON	END	BUTTONHEADS				STRESSING WASHER & NUT			SHIMS			BEARING PLATE			DATE INSP.	COMMENTS	INSP. BY CONTR. FOREMAN	VERIF. BY COGNIZANT QV INSP.
I.D. 1	Location 2	Corr. 3	NO. OF MISSING, BROKEN, AND/OR DAMAGED WIRES 4	CORR. 5	SKETCHED 7	CORR. 8	CRACKS 9	SKETCHED 10	CORR. 11	CRACKS 12	SKETCHED 13	CORR. 14	CRACKS 15	SKETCHED 16	17	18	19	20
1. V-132	Top	N	0	N	N	N	N	N	N	N	N	N	N	N	8-13-09	None	N/A	
	Shop																	
2. V-132	Bott.	N	0	N	N	N	N	N	N	N	N	N	N	N	8-13-09	None	N/A	
	Field																	
3.																		
4.																		
5.																		
6.																		

LEGEND

GENERAL

Y = YES
N = NO

TENDON END-LOCATION

IDENTIFY TENDON END (SHOP OR FIELD) AND TOP (T) OR BOTTOM (B) OF TENDON

ENCLOSURE 6

Data Sheet 1
Anchorage Assembly Surveillance Inspection
Dome Tendons

INSPECTION PERIOD 35th. Yr.

TENDON	END	BUTTONHEADS			STRESSING WASHER & NUT			SHIMS			BEARING PLATE			DATE INSP.	COMMENTS	INSP. BY CONTR. FOREMAN	VERIF. BY COGNIZANT QV INSP.
I.D. 1	Location 2	Corr. 3	NO. OF MISSING, BROKEN, AND/OR DAMAGED WIRES 4	CORR. 5	SKETCHED 6	CORR. 7	CRACKS 8	SKETCHED 9	CORR. 10	CRACKS 11	SKETCHED 12	CORR. 13	CRACKS 14	SKETCHED 15	16	17	18	19
1. D-122	Butt. 5	N	0	N	N	N	N	N	N	N	N	N	N	N	8-7-09	None	N/A	
	Shop																	
2. D-122	Butt. 3	N	0	N	N	N	N	N	N	N	N	N	N	N	11-13-09	NONE	N/A	
NE	Field	N	0															
3. D-225	Butt. 5	N	0	N	N	N	N	N	N	N	N	N	N	N	8-11-09	None	N/A	
	Shop																	
4. D-625	Butt. 2	N	0	N	N	N	N	N	N	N	N	N	N	N	8-12-09	None	N/A	
	Field																	
5. D-322	Shop	N	0	N	N	N	N	N	N	N	N	N	N	N	11-16-09	NONE	N/A	
	N																	
6. D-322	Field	N	0	N	N	N	N	N	N	N	N	N	N	N	11-16-09	NONE	N/A	
	S																	

LEGEND

GENERAL

Y = YES
N = NO

TENDON END-LOCATION

IDENTIFY TENDON END (SHOP OR FIELD) AND NW, NE, SW, SE

ENCLOSURE 6

Data Sheet 1
Anchorage Assembly Surveillance Inspection
Dome Tendons

INSPECTION PERIOD 35th. yr.

TENDON	END		BUTTONHEADS			STRESSING WASHER & NUT			SHIMS			BEARING PLATE			DATE INSP.	COMMENTS	INSP. BY CONTR. FOREMAN	VERIF. BY COGNIZANT QV INSP.
I.D. 1	Location 2	Corr. 3	NO. OF MISSING, BROKEN, AND/OR DAMAGED WIRES 4	CORR. 5	SKETCHED 6	CORR. 7	CRACKS 8	SKETCHED 9	CORR. 10	CRACKS 11	SKETCHED 12	CORR. 13	CRACKS 14	SKETCHED 15	16	17	18	19
1. D-342	Butt. 4	N	0	N	N	N	N	N	N	N	N	N	N	N	8-17-09	NONE	N/A	
	Field																	
2. D-342	Butt 6	N	0	N	N	N	N	N	N	N	N	N	N	N	8-17-09	NONE	N/A	
	Shop																	
3.																		
4.																		
5.																		
6.																		

LEGEND

GENERAL

Y = YES
N = NO

TENDON END-LOCATION

IDENTIFY TENDON END (SHOP OR FIELD) AND NW, NE, SW, SE

ENCLOSURE 6
Data Sheet 7
Tendon Anchorage Area Concrete Crack Inspection
Hoop Tendons

Inspection Period 35th yr.

Tendon No.	Location	Remarks about Cracking Pattern	Cracks with width >0.01" Location(A)	Cracks with width >0.01" Width (IN.)(B)	Date Insp.	Insp. By Contr. Foreman	Verify. By Cognizant QV Insp.
1. H13-41	Butt-3/Field	No indications	N/A	N/A	8-26-09	N/A	
2. H13-41	S/F	No Indications	N/A	N/A	11-12-09	N/A	
3. H24-33	Butt-1/Field	No indications	N/A	N/A	8-24-09	N/A	
4. H24-33	Butt-4/Shop	1 12" L. crack < than .010" wide	N/A	N/A	8-11-09	N/A	
5. H46-50	Butt-4/Field	no indications	N/A	N/A	8-11-09	N/A	
6. H46-50	Butt-6/Shop	no indications	N/A	N/A	8-11-09	N/A	
7. H51-49	Butt-5/Field	no indications, limited due to ventilation duct.	N/A	N/A	8-26-09	N/A	
8. H51-49	Butt/Gusset	No Indications	N/A	N/A	8-12-09 8-27-09 11-11-09	N/A 8-27-09 N/A	
9. H62-26	Butt-6/Shop	no indications	N/A	N/A	8-12-09	N/A	
10. H62-26	Butt-2/Field	no indications	N/A	N/A	8-28-09	N/A	

NOTE: (A) Location:
Identify Tendon End (Shop or Field) and
1 to 6 - Number of Buttress At End of Tendon
(B) If concrete crack width > 0.01", provide sketch

Cognizant Mech/Struct Engineer Reviewed By: _____ Date: 19 MAR 10

ENCLOSURE 6

Data Sheet 5
Tendon Anchorage Area Concrete Crack Inspection
~~Dome~~ VERTICAL Tendons

Inspection Period 35th. yr.

Tendon No.	Location	Remarks about Cracking Pattern	Cracks with width >0.01" Location(A)	Width (IN.)(B)	Date Insp.	Insp. By Contr. Foreman	Verify. By Cognizant QV Insp.
1. V-11	Top/Shop	no indications	N/A	N/A	8-18-09	N/A	
2. V-11	Bottom/Field	~~no indications 3002-25-10~~ EXCESSIVE 3002-2550	n/a	n/a	8-13-09	n/a	
3. V-32	Top/Shop	no indications	n/a	n/a	8-18-09	n/a	
4. V-32	Bottom/Field	no indications	n/a	n/a	8-13-09	n/a	
5. V-90	Bottom/Field	1- 3" crack < than .010" wide * 1- 10" crack < than .015" wide	N/A	N/A	8-13-09	n/a	
6. V-90	Top/Shop	no indications	N/A	N/A	8-18-09	N/A	

NOTE: (A) Location:

Identify Tendon End (Shop or Field) and NW, NE, SW, SE

(B) If concrete crack width > 0.01", provide sketch

Cognizant Mech/Struct Engineer Reviewed By: _____ Date: 19 MAR 10

* 10" x 0.015" CRACK ACCEPTABLE IN VIEW OF LIMITED LENGTH
(HOWARD T. H.) _____, P.E.
19 MAR 10

ENCLOSURE 6

Data Sheet 5
Tendon Anchorage Area Concrete Crack Inspection
~~Dome~~ Tendons
VERTICAL

Inspection Period 35th. yr.

Tendon No.	Location	Remarks about Cracking Pattern	Cracks with width >0.01" Location(A)	Width (IN.)(B)	Date Insp.	Insp. By Contr. Foreman	Verify. By Cognizant QV Insp.
1. V-132	Bottom/Field	no indications	n/a	n/a	8-13-09	N/A	
2. V-132	Top/Shop	Bug holes present in the entire area. No cracks.	n/a	n/a	8-13-09	N/A	
3.							
4.							
5.							
6.							

NOTE: (A) Location:

Identify Tendon End (Shop or Field) and NW, NE, SW, SE

(B) If concrete crack width > 0.01", provide sketch

Cognizant Mech/Struct Engineer Reviewed By: _____ Date: 17MAR10

ENCLOSURE 6
Data Sheet 6
Tendon Anchorage Area Concrete Crack Inspection
~~Vertical~~ Tendons
Done

Inspection Period 35th yr.

Tendon No.	Location	Remarks about Cracking Pattern	Cracks with width >0.01" Location(A)	Cracks with width >0.01" Width (IN.)(B)	Date Insp.	Insp. By Contr. Foreman	Verify. By Cognizant QV Insp.
1. D-122	Butt.5/shop	4"L. crack < than .010 wide 6"L. crack < than .010 wide Large area of light scaling	N/A	N/A	8-17-09	N/A	
2. D-122	E/NE	No Indications	n/a	n/a	11-13-09	n/a	
3. D-225	Butt.2/Field	Grout patch seperating near bearing plate	n/a	n/a	8-12-09	n/a	
4. D-225	Butt.5/shop	1-44" crack from upper right corner Less < than .010 wide 1-44" crack from lower right corner < than .010 wide.	n/a	n/a	8-11-09	N/A	
5. D-322	S/W	No Indications	n/a	n/a	11-16-09	n/a	
6. D-322	E/S	No Indications	n/a	n/a	11-16-09	n/a	
7.							

NOTE: (A) Location:
Identify Tendon End (Shop or Field) and
T or B - Top or Bottom of Vertical Tendon
(B) If concrete crack width > 0.01", provide sketch

Cognizant Mech/Struct Engineer Reviewed By: Date: 17 Mar 10

ENCLOSURE 6
Data Sheet 6
Tendon Anchorage Area Concrete Crack Inspection
~~Vertical~~ Tendons
Dome

Inspection Period 35+ L. yr.

Tendon No.	Location	Remarks about Cracking Pattern	Cracks with width >0.01" Location(A)	Cracks with width >0.01" Width (IN.)(B)	Date Insp.	Insp. By Contr. Foreman	Verify. By Cognizant QV Insp.
1. D-342	Butt.4/Field	1 crack 12"L. x <.010 wide	n/A	n/A	8-17-09	n/A	
2. D-342	Butt.6/Shop	3-3" cracks around bearing plate 12" x <.010 wide	n/A	n/A	8-17-09	n/A	
3.							
4.							
5.							
6.							
7.							

NOTE: (A) Location:
Identify Tendon End (Shop or Field) and
T or B - Top or Bottom of Vertical Tendon
(B) If concrete crack width > 0.01", provide sketch

Cognizant Mech/Struct Engineer Reviewed By: _____ Date: 9/17/09

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI Unit: 1 Date: 11-12-09 Report No:

WO No(s): R2067551 Tendon Anchorage No.: H13-41 Tendon End: [X] Shop [Y] Field

Location: Tunnel, Gallery, (Buttress) 1 Elevation: Bearing Plate I D. Could not locate

Bearing Plate I.D Could not locate Anchor Head I.D. 569 Bushing I.D. 766

Exam Type. [ ] DV [X] VT-1 Type Of Exam: [X] Direct [ ] Remote

[X] As Found Exam [ ] As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned

Design Drawing(s) Visual Aids: None

M&TE Used: Light meter [illegible] [X] Test Card UTC or Serial No. N/A Cal. Due Date: N/A

Illumination Used Flashlight Illumination Verified: Date: 11-12-09 Time: 1100 PM

Special / Specific Instructions: None

Component / Item Number and Description	RESULTS NI	RESULTS RI TYPE	RESULTS IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unsealed Wires)
H13-41 Shop/Butt 1	X			

Results Legend.
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A	Missing Wires	H.	Cracks	O	Other (Explain)
B	Missing Button Heads	I.	Pitting		
C.	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D	Broken Wires	K.	Uneven Shim Stack		
E	Active Corrosion	L.	Excessive Shim Gaps		
F	Other Corrosion	M.	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information: [ ] Yes [X] No [ ] Sketch [ ] Photo [ ] Video [ ] Other (Describe):

Results: Acceptable [X] Yes [ ] No

EXAMINER/EVALUATOR (Print & Sign) Daniel P. O'Shea [signature] LEVEL II DATE 11-12-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson [signature] DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable [X] Yes [ ] No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) [signature] Howard T. Hill, P.E. DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-26-09	Report No:
WO No(s).: R2067551	Tendon Anchorage No.: H13-41	Tendon End: ☐ Shop ☒ Field	
Location: Tunnel, Gallery (Buttress): 3	Elevation:	Bearing Plate I.D.: Unable to locate	
Bearing Plate I.D. N/A	Anchor Head I.D. 132	Bushing I.D. N/A	
Exam Type: ☐ DV ☒ VT-1	Type Of Exam: ☒ Direct ☐ Remote		
☒ As Found Exam	☐ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned		
Design Drawing(s) PS-33	Visual Aids: None		
M&TE Used: Scale R-21 Calibr 4-6-10 ☒ Test Card	UTC or Serial No. N/A	Cal. Due Date: N/A	
Illumination Used Flashlight	Illumination Verified: Date: 8-26-09	Time: 1:PM	
Special / Specific Instructions: None			

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
Anchorage Components for H13-41 Buttress 3 Field End.	✓			

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Missing Wires	H.	Cracks	O.	Other (Explain)
B.	Missing Button Heads	I.	Pitting		
C.	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D.	Broken Wires	K.	Uneven Shim Stack		
E.	Active Corrosion	L.	Excessive Shim Gaps		
F.	Other Corrosion	M.	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information: ☒ Yes ☐ No ☐ Sketch ☒ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Rance Robbins W. Rance Robbins LEVEL II DATE 8-26-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. Initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) (Howard T. Hice P.E.) DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-11-09		Report No:	
WO No(s).: R2067551		Tendon Anchorage No.: H24-33		Tendon End: ☒ Shop ☐ Field	
Location: Tunnel, Gallery, Buttress: 4		Elevation:		Bearing Plate I.D.: Unable to locate	
Bearing Plate I.D. N/A	Anchor Head I.D. 1031			Bushing I.D. 12419	
Exam Type: ☐ DV ☒ VT-1				Type Of Exam: ☒ Direct ☐ Remote	
☒ As Found Exam	☐ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned				
Design Drawing(s) P5-34		Visual Aids: None			
M&TE Used: None	☒ Test Card	UTC or Serial No. N/A		Cal. Due Date: N/A	
Illumination Used Flashlight		Illumination Verified:	Date: 8-11-09	Time: 7:AM	
Special / Specific Instructions:					

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
Anchorage components for H24-33 Tendon Buttress 4 / Shop end			F	Light inactive surface rust on shims.

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Missing Wires	H.	Cracks	O.	Other (Explain)
B.	Missing Button Heads	I.	Pitting		
C.	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D.	Broken Wires	K.	Uneven Shim Stack		
E.	Active Corrosion	L.	Excessive Shim Gaps		
F.	Other Corrosion	M.	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information : ☒ Yes ☐ No ☐ Sketch ☒ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Rance Robbins W. Rance Robbins LEVEL II DATE 8-18-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable (results Acceptable) ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. Initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) Howard T. Nicl (CE.) DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: FMT	Unit: 1	Date: 8-24-09	Report No:		
WO No(s).: R2067551		Tendon Anchorage No.: H24.33	Tendon End: ☐ Shop ☒ Field		
Location: Tunnel, Gallery, Buttress: 2		Elevation:	Bearing Plate I.D.: Unable to locate		
Bearing Plate I.D. N/A	Anchor Head I.D. 662		Bushing I.D. N/A		
Exam Type: ☐ DV ☒ VT-1			Type Of Exam: ☒ Direct ☐ Remote		
☒ As Found Exam	☐ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned				
Design Drawing(s) P5-31		Visual Aids: None			
M&TE Used: Scale, R-22 aldyl gun ☒ Test Card		UTC or Serial No: N/A	Cal. Due Date: N/A		
Illumination Used Flash Light		Illumination Verified: Date: 8-24-09	Time: 8:AM		
Special / Specific Instructions: None					

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
Anchorage components for H24.33 buttress 2 field End.	✓			

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Missing Wires	H.	Cracks	O.	Other (Explain)
B.	Missing Button Heads	I.	Pitting		
C.	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D.	Broken Wires	K.	Uneven Shim Stack		
E.	Active Corrosion	L.	Excessive Shim Gaps		
F.	Other Corrosion	M.	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information : ☒ Yes ☐ No ☐ Sketch ☒ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Ranee Robbins W. Ranee Robbins LEVEL II DATE 8-24-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johns DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable (results Acceptable) ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. Initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) (Howard T. Hill, P.E.) DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-12-09		Report No:	
WO No(s).: R2067551		Tendon Anchorage No.: H46-50		Tendon End: ☒ Shop ☐ Field	
Location: Tunnel, Gallery (Buttress) 6			Elevation:	Bearing Plate I.D.: Could not locate.	
Bearing Plate I.D.		Anchor Head I.D. 678		Bushing I.D. 754	
Exam Type: ☐ DV ☒ VT-1				Type Of Exam: ☒ Direct ☐ Remote	
☒ As Found Exam	☐ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned				
Design Drawing(s) P5-46			Visual Aids: None		
M&TE Used:	☒ Test Card	UTC or Serial No. N/A		Cal. Due Date: N/A	
Illumination Used Flashlight		Illumination Verified:	Date: 8/12/09	Time: 7:30 AM	
Special / Specific Instructions: None					

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
H46-50 Tendon Anchorage components Buttress 6 / Shop end	X			

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Missing Wires	H.	Cracks	O.	Other (Explain)
B.	Missing Button Heads	I.	Pitting		
C.	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D.	Broken Wires	K.	Uneven Shim Stack		
E.	Active Corrosion	L.	Excessive Shim Gaps		
F.	Other Corrosion	M.	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information : ☒ Yes ☐ No ☐ Sketch ☒ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) N. Rance Robbins W. Rance Robbins LEVEL II DATE 8-12-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) Lawrence T. Hill, III DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-11-09		Report No:	
WO No(s).: R2067551		Tendon Anchorage No.: H46-50		Tendon End: ☐ Shop ☒ Field	
Location: Tunnel, Gallery, (Buttress) 4			Elevation:	Bearing Plate I.D.: TL	
Bearing Plate I.D. TL		Anchor Head I.D. 900		Bushing I.D. N/A	
Exam Type: ☐ DV ☒ VT-1				Type Of Exam: ☒ Direct ☐ Remote	
☒ As Found Exam	☐ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned				
Design Drawing(s) P5-43			Visual Aids: NONE		
M&TE Used: NONE	☒ Test Card	UTC or Serial No. N/A		Cal. Due Date: N/A	
Illumination Used Flashlight		Illumination Verified: Date: 8-11-09		Time: 8:AM	
Special / Specific Instructions: NONE					

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
Tendon anchorage components for H46-50 Buttress 4 field end.	X DAO 2-9-10		F	LIGHT SURFACE RUST ON SHIMS, NO PITTING - PER DATA SHEET 4 ENCLOSURE 6 DAO 2-9-10

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Missing Wires	H.	Cracks	O.	Other (Explain)
B.	Missing Button Heads	I.	Pitting		
C.	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D.	Broken Wires	K.	Uneven Shim Stack		
E.	Active Corrosion	L.	Excessive Shim Gaps		
F.	Other Corrosion	M.	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information: ☒ Yes ☐ No ☐ Sketch ☒ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Rance Robbins W. Rance Robbins LEVEL II DATE 8-11-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. Initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) Howard T. Nace, P.E. DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage
Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI Unit: 1 Date: 11-11-09 Report No:

WO No(s): R2067551 Tendon Anchorage No.: H51-49 Tendon End: ☒ Shop ☐ Field

Location: Tunnel, Gallery, (Buttress) 1 Elevation: Bearing Plate I D. Could not Locate

Bearing Plate I.D. Could not Locate Anchor Head I.D. 1067 Bushing I.D. 1156

Exam Type: ☐ DV ☒ VT-1 Type Of Exam: ☒ Direct ☐ Remote

☒ As Found Exam ☐ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned

Design Drawing(s) Visual Aids: None

M&TE Used: Light meter [illegible] DUE 12-11-10 ☒ Test Card UTC or Serial No. N/A Cal. Due Date: N/A

Illumination Used Flashlight Illumination Verified: Date: 11-11-09 Time: 9:00 AM

Special / Specific Instructions: None

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unsealed Wires)
H51-49 SHOP/BUTT 1	~~X~~ [illegible] 3-15-10 X			

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A	Missing Wires	H.	Cracks	O	Other (Explain)
B.	Missing Button Heads	I	Pitting		
C.	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D	Broken Wires	K.	Uneven Shim Stack		
E.	Active Corrosion	L.	Excessive Shim Gaps		
F	Other Corrosion	M.	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information: ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) Daniel P. O'Shea [signature] LEVEL II DATE 11-11-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson [signature] DATE 3/15/10

This section to be completed only If Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order Issue Report, etc. Initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) [signature] (Howard T. Hill, P.E.) DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI | Unit: 1 | Date: 11-12-09 | Report No:

WO No(s).: R2067551 | Tendon Anchorage No.: H51-49 | Tendon End: ☒ Shop ☐ Field

Location: Tunnel, Gallery, (Buttress) Butt. 1 | Elevation: | Bearing Plate I.D. Could not locate

Bearing Plate I.D. Could not locate | Anchor Head I.D. 1007 | Bushing I.D. 1156

Exam Type: ☐ DV ☒ VT-1 | Type Of Exam: ☒ Direct ☐ Remote

☐ As Found Exam ☒ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned

Design Drawing(s) | Visual Aids: None

M&TE Used: Light Meter R0002542478 due 5-11-10 | ☒ Test Card | UTC or Serial No. n/a | Cal. Due Date: n/a

Illumination Used Flashlight | Illumination Verified: Date: 11-12-09 | Time: 1100 PM

Special / Specific Instructions: n/a

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
H51-49 Shop / Butt. 1			A	1 wire removed for testing this surveillance

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Missing Wires	H.	Cracks	O.	Other (Explain)
B.	Missing Button Heads	I.	Pitting		
C.	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D.	Broken Wires	K.	Uneven Shim Stack		
E.	Active Corrosion	L.	Excessive Shim Gaps		
F.	Other Corrosion	M.	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information: ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) Daniel P. O'Shea [signature] LEVEL II DATE 11-12-09

STATION/ADMIN REVIEW (Print & Sign) 2010-03-09 Evan Johnson [signature] DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable (results Acceptable) ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) [signature] Howard T. Hill, P.E. DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-26-09	Report No:		
WO No(s).: R2067551		Tendon Anchorage No.: H51-49	Tendon End: ☐ Shop ☒ Field		
Location: Tunnel, Gallery, (Buttress) 5		Elevation:	Bearing Plate I.D.: Unable to locate		
Bearing Plate I.D. N/A	Anchor Head I.D. 890		Bushing I.D. N/A		
Exam Type: ☐ DV ☒ VT-1		Type Of Exam: ☒ Direct ☐ Remote			
☒ As Found Exam	☐ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned				
Design Drawing(s) P5-44	Visual Aids: None				
M&TE Used: Scale R-21 Caliber 46-10 ☒ Test Card	UTC or Serial No. N/A	Cal. Due Date: N/A			
Illumination Used Flash light	Illumination Verified: Date: 8-26-09	Time: 7:30 AM			
Special / Specific Instructions: None					

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
Anchorage components for H51-49 Buttress 5 Field End			O	1 split button head .030"

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Missing Wires	H.	Cracks	O.	Other (Explain)
B.	Missing Button Heads	I.	Pitting		
C.	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D.	Broken Wires	K.	Uneven Shim Stack		
E.	Active Corrosion	L.	Excessive Shim Gaps		
F.	Other Corrosion	M.	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information : ☒ Yes ☐ No ☐ Sketch ☒ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Bruce Robbins W. Bruce Robbins LEVEL II DATE 8-26-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. Initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) (Howard T. Hill, PE) DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI Unit: 1 Date: 11-12-09 Report No:

WO No(s).: R2067551 | Tendon Anchorage No.: H51-49 | Tendon End: ☐ Shop ☒ Field

Location: Tunnel, Gallery, (Buttress:) 5 Elevation: Bearing Plate I.D. Could not locate

Bearing Plate I.D Could not locate Anchor Head I.D. 890 Bushing I.D. N/A

Exam Type: ☐ DV ☒ VT-1 Type Of Exam: ☒ Direct ☐ Remote

☐ As Found Exam ☒ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned

Design Drawing(s) Visual Aids: None

M&TE Used: Light meter [illegible] 2015-11-10 ☒ Test Card UTC or Serial No. N/A Cal. Due Date: N/A

Illumination Used Flashlight Illumination Verified: Date: 11-12-09 Time: 1100 PM

Special / Specific Instructions: None

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
H51-49 Field/Butt 5			A	1 wire removed for testing this surveillance
			O	1 split buttonhead

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Missing Wires	H.	Cracks	O.	Other (Explain)
B.	Missing Button Heads	I.	Pitting		
C.	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D.	Broken Wires	K.	Uneven Shim Stack		
E.	Active Corrosion	L.	Excessive Shim Gaps		
F.	Other Corrosion	M.	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information: ☐ Yes ☐ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☐ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) Daniel P. O'Shea [signature] LEVEL II DATE 11-12-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson [signature] DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable (results Acceptable) ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) [signature] (Howard T. Hill, P.E.) DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-12-09		Report No:	
WO No(s).: R2067551		Tendon Anchorage No.: H62-26		Tendon End: ☒ Shop ☐ Field	
Location: Tunnel, Gallery, (Buttress) 6			Elevation:	Bearing Plate I.D.: Unable to locate	
Bearing Plate I.D.	Anchor Head I.D. 837 924 8-12-09			Bushing I.D. 924	
Exam Type: ☐ DV ☒ VT-1				Type Of Exam: ☒ Direct ☐ Remote	
☒ As Found Exam	☐ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned				
Design Drawing(s) P5-25			Visual Aids: NONE		
M&TE Used: N/A	☒ Test Card	UTC or Serial No. N/A		Cal. Due Date: N/A	
Illumination Used Flashlight		Illumination Verified:	Date: 8-12-09	Time: 1: PM	
Special / Specific Instructions:	None				

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
Tendon Anchorage compone-nts for H62-26 Buttress 6 / Shop end	X			

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Missing Wires	H.	Cracks	O.	Other (Explain)
B.	Missing Button Heads	I.	Pitting		
C.	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D.	Broken Wires	K.	Uneven Shim Stack		
E.	Active Corrosion	L.	Excessive Shim Gaps		
F.	Other Corrosion	M.	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information : ☒ Yes ☐ No ☐ Sketch ☒ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. RANCE ROBBINS W. Rance Robbins LEVEL II DATE 8-12-09

STATION/ADMIN REVIEW (Print & Sign) Eva Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable (results Acceptable) ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) Howard T. Hill, CE DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-28-09		Report No:	
WO No(s).: R-2067551		Tendon Anchorage No.: H62-26		Tendon End: ☐ Shop ☒ Field	
Location: Tunnel, Gallery, (Buttress) 2			Elevation:	Bearing Plate I.D.: TK	
Bearing Plate I.D. N/A		Anchor Head I.D. 571		Bushing I.D. N/A	
Exam Type: ☐ DV ☒ VT-1				Type Of Exam: ☒ Direct ☐ Remote	
☒ As Found Exam	☐ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned				
Design Drawing(s) PS-22			Visual Aids: None		
M&TE Used: Scale R-21 Caldx. 4-6-10	☒ Test Card	UTC or Serial No. N/A		Cal. Due Date: N/A	
Illumination Used Flash light		Illumination Verified: Date: 8-28-09		Time: 7:30 AM	
Special / Specific Instructions: None					

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
H62-26 Buttress 2 field end anchorage components.	✓			

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Missing Wires	H.	Cracks	O.	Other (Explain)
B.	Missing Button Heads	I.	Pitting		
C.	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D.	Broken Wires	K.	Uneven Shim Stack		
E.	Active Corrosion	L.	Excessive Shim Gaps		
F.	Other Corrosion	M.	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information : ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Bruce Robbins W. Bruce Robbins LEVEL II DATE 8-28-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) (Howard T. Hill, P.E.) DATE: 12 MAR 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-18-09		Report No:	
WO No(s).: R2067551		Tendon Anchorage No.: V-11		Tendon End: ☒ Shop ☐ Field	
Location: (Tunnel) Gallery, Buttress:			Elevation:	Bearing Plate I.D.: Unable to locate	
Bearing Plate I.D.		Anchor Head I.D. 519		Bushing I.D. 1213	
Exam Type: ☐ DV ☒ VT-1				Type Of Exam: ☒ Direct ☐ Remote	
☒ As Found Exam	☐ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned				
Design Drawing(s)			Visual Aids: None		
M&TE Used: R-21 guide cal. due 4-6-10	☒ Test Card	UTC or Serial No. N/A		Cal. Due Date: N/A	
Illumination Used Flashlight		Illumination Verified:	Date: 8-18-09	Time: 7:AM	
Special / Specific Instructions: None					

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
Tendon Anchorage components for V-11 Shop / Top End	X			

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Missing Wires	H.	Cracks	O.	Other (Explain)
B.	Missing Button Heads	I.	Pitting		
C.	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D.	Broken Wires	K.	Uneven Shim Stack		
E.	Active Corrosion	L.	Excessive Shim Gaps		
F.	Other Corrosion	M.	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information : ☒ Yes ☐ No ☐ Sketch ☒ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Rance Robbins W. Rance Robbins LEVEL II DATE 8-18-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. Initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) (Howard T. Hill, PE) DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage
Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-13-09		Report No:	
WO No(s).: R2067551		Tendon Anchorage No.: V-11		Tendon End: ☐ Shop ☒ Field	
Location: Tunnel (Gallery) Buttress:		Elevation:		Bearing Plate I.D.: Unable to locate	
Bearing Plate I.D.		Anchor Head I.D. 555		Bushing I.D. N/A	
Exam Type: ☐ DV ☒ VT-1				Type Of Exam: ☒ Direct ☐ Remote	
☒ As Found Exam	☐ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned				
Design Drawing(s)		Visual Aids: None			
M&TE Used: None	☒ Test Card	UTC or Serial No. N/A		Cal. Due Date: N/A	
Illumination Used Flashlight		Illumination Verified:	Date: 8-13-09	Time: 1 PM	
Special / Specific Instructions: None					

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
Anchorage components on V-11 gallery / Field end.	X			

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Missing Wires	H.	Cracks	O.	Other (Explain)
B.	Missing Button Heads	I.	Pitting		
C.	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D.	Broken Wires	K.	Uneven Shim Stack		
E.	Active Corrosion	L.	Excessive Shim Gaps		
F.	Other Corrosion	M.	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information : ☒ Yes ☐ No ☐ Sketch ☒ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) N. Bruce Robbins W. Bruce Robbins LEVEL II DATE 8-13-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. Initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) Howard T. Nix (PE) DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-18-09		Report No:	
WO No(s).: R2067551		Tendon Anchorage No.: V-32		Tendon End: ☒ Shop ☐ Field	
Location: (Tunnel) Gallery, Buttress:			Elevation:	Bearing Plate I.D.: Unable to locate	
Bearing Plate I.D.		Anchor Head I.D. 1036		Bushing I.D. 1050	
Exam Type: ☐ DV ☒ VT-1				Type Of Exam: ☒ Direct ☐ Remote	
☒ As Found Exam	☐ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned				
Design Drawing(s)			Visual Aids: NONE		
M&TE Used: R21 Scale Ultrasonic 4-6-10		☒ Test Card	UTC or Serial No. N/A		Cal. Due Date: N/A
Illumination Used Flashlight			Illumination Verified: Date: 8-18-09		Time: 7:AM
Special / Specific Instructions:	None				

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
Anchorage components for V-32 tendon Shop/Top end.	X			

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Missing Wires	H.	Cracks	O.	Other (Explain)
B.	Missing Button Heads	I.	Pitting		
C.	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D.	Broken Wires	K.	Uneven Shim Stack		
E.	Active Corrosion	L.	Excessive Shim Gaps		
F.	Other Corrosion	M.	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information : ☒ Yes ☐ No ☐ Sketch ☒ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☐ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Rance Robbins W. Rance Robbins LEVEL II DATE 8-18-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. Initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) Howard T. Hill, C.E. DATE: 12 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI Unit: 1 Date: 8-13-09 Report No:

WO No(s).: R2067551 | Tendon Anchorage No.: V-32 | Tendon End: ☐ Shop ☒ Field

Location: Tunnel, (Gallery), Buttress: Elevation: Bearing Plate I.D.: Unable to locate

Bearing Plate I.D. Anchor Head I.D. 687 Bushing I.D. N/A

Exam Type: ☐ DV ☒ VT-1 Type Of Exam: ☒ Direct ☐ Remote

☒ As Found Exam ☐ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned

Design Drawing(s) Visual Aids: None

M&TE Used: R21 scale cal. due 4-6-10 ☒ Test Card UTC or Serial No.: N/A Cal. Due Date: N/A

Illumination Used Flashlight Illumination Verified: Date: 8-13-09 Time: 11PM

Special / Specific Instructions: None

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
Anchorage components for V-32 Gallery/Field end.	X			

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Missing Wires	H.	Cracks	O.	Other (Explain)
B.	Missing Button Heads	I.	Pitting		
C.	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D.	Broken Wires	K.	Uneven Shim Stack		
E.	Active Corrosion	L.	Excessive Shim Gaps		
F.	Other Corrosion	M.	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information : ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Rance Robbins W. Rance Robbins LEVEL II DATE 8-13-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson [signature] DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. Initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) [signature] (Howard T. Hill, RE) DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-18-09		Report No:	
WO No(s).: R2067551		Tendon Anchorage No.: V-90		Tendon End: ☒ Shop ☐ Field	
Location: (Tunnel) Gallery, Buttress:			Elevation:	Bearing Plate I.D.: Unable to locate	
Bearing Plate I.D.		Anchor Head I.D. 590		Bushing I.D. 590	
Exam Type: ☐ DV ☒ VT-1				Type Of Exam: ☒ Direct ☐ Remote	
☒ As Found Exam	☐ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned				
Design Drawing(s)			Visual Aids: NONE		
M&TE Used: R-21 scale cal. due 4/10 ☒ Test Card		UTC or Serial No. N/A		Cal. Due Date: N/A	
Illumination Used Flashlight		Illumination Verified: Date: 8-18-09 VER 8-19-09		Time: 7:30 AM	
Special / Specific Instructions: None					

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
Anchorage components for V-90 Shop/Top end.	X			

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Missing Wires	H.	Cracks	O.	Other (Explain)
B.	Missing Button Heads	I.	Pitting		
C.	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D.	Broken Wires	K.	Uneven Shim Stack		
E.	Active Corrosion	L.	Excessive Shim Gaps		
F.	Other Corrosion	M.	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information : ☒ Yes ☐ No ☐ Sketch ☒ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Rance Robbins W. Rance Robbins LEVEL II DATE 8-18-09

STATION/ADMIN REVIEW (Print & Sign) Even Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable: ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) (Howard T. Nix P.E.) DATE: 18 MAR 10

AIII REVIEW (as applicable) DATE:

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage
Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-20-09		Report No:	
WO No(s).: R2067551		Tendon Anchorage No.: V-90		Tendon End: ☒ Shop ☐ Field	
Location: (Tunnel) Gallery, Buttress:		Elevation:		Bearing Plate I.D.: Unable to locate	
Bearing Plate I.D.	Anchor Head I.D. 890			Bushing I.D. 590	
Exam Type: ☐ DV ☒ VT-1				Type Of Exam: ☒ Direct ☐ Remote	
☐ As Found Exam	☒ As Left Exam Following Retensioning Of Tendons Which Have Been Detensioned				
Design Drawing(s)		Visual Aids: NONE			
M&TE Used: NONE	☒ Test Card	UTC or Serial No. N/A		Cal. Due Date: N/A	
Illumination Used Flashlight		Illumination Verified: Date: 8-20-09		Time: 2:00PM	
Special / Specific Instructions:	None				

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
Anchorage components for V-90 shop/top end.	X JPO 8-25-10		A	1 WIRE REMOVED THIS SURVEILLANCE JPO 8-25-10

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Missing Wires	H.	Cracks	O.	Other (Explain)
B.	Missing Button Heads	I.	Pitting		
C.	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D.	Broken Wires	K.	Uneven Shim Stack		
E.	Active Corrosion	L.	Excessive Shim Gaps		
F.	Other Corrosion	M.	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information : ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Lance Robbins W. Lance Robbins LEVEL II DATE 8-20-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable (results Acceptable) ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. Initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) (Howard T. Hill, P.E.) DATE: 18 MAR 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-13-09		Report No:	
WO No(s).: R2067551		Tendon Anchorage No.: V-90		Tendon End: ☐ Shop ☒ Field	
Location: Tunnel, (Gallery) Buttress:			Elevation:	Bearing Plate I.D: Unable to locate	
Bearing Plate I.D.		Anchor Head I.D. 728		Bushing I.D. N/A	
Exam Type: ☐ DV ☒ VT-1				Type Of Exam: ☒ Direct ☐ Remote	
☒ As Found Exam	☐ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned				
Design Drawing(s)			Visual Aids: NONE		
M&TE Used: None	☒ Test Card	UTC or Serial No. N/A		Cal. Due Date: N/A	
Illumination Used Flashlight		Illumination Verified: Date: 8-13-09		Time: 1:PM	
Special / Specific Instructions: None					

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
Anchorage components for V-90 tendon gallery field end.	X			

Results Legend:
NI - No Indications RI - Recordable Indication IO - Information Only

Recordable Indication Type Codes:

A.	Missing Wires	H.	Cracks	O.	Other (Explain)
B.	Missing Button Heads	I.	Pitting		
C.	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D.	Broken Wires	K.	Uneven Shim Stack		
E.	Active Corrosion	L.	Excessive Shim Gaps		
F.	Other Corrosion	M.	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information : ☒ Yes ☐ No ☐ Sketch ☒ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) N. Ranee Robbins N. Ranee Robbins LEVEL II DATE 8-13-09

STATION/ADMIN REVIEW (Print & Sign) Eve Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. Initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) Howard T. Hill, CC DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-20-09	Report No:		
WO No(s).: R2067551		Tendon Anchorage No.: V-90	Tendon End: ☐ Shop ☒ Field		
Location: Tunnel (Gallery) Buttress:		Elevation:	Bearing Plate I.D.: Unable to Locate		
Bearing Plate I.D.	Anchor Head I.D. 728		Bushing I.D. N/A		
Exam Type: ☐ DV ☒ VT-1			Type Of Exam: ☒ Direct ☐ Remote		
☐ As Found Exam	☒ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned				
Design Drawing(s)		Visual Aids: NONE			
M&TE Used: NONE	☒ Test Card	UTC or Serial No. N/A	Cal. Due Date: N/A		
Illumination Used: Flashlight		Illumination Verified:	Date: 8-20-09	Time: 2:PM	
Special / Specific Instructions:	NONE				

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
Anchorage components for V-90 tendon Gallery/Field End Post Retension	X DRD 8-25-09		A	1 WIRES REQUIRED FOR TESTING THIS SURVEILLANCE DRD 8-25-09

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Missing Wires	H.	Cracks	O.	Other (Explain)
B.	Missing Button Heads	I.	Pitting		
C.	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D.	Broken Wires	K.	Uneven Shim Stack		
E.	Active Corrosion	L.	Excessive Shim Gaps		
F.	Other Corrosion	M.	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information : ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Rance Robbins W. Rance Robbins LEVEL II DATE 8-20-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) (Donald T. Nici, P.E.) DATE: 18 MAR. 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-13-09		Report No:	
WO No(s).: R206 7551		Tendon Anchorage No.: V-132		Tendon End: ☒ Shop ☐ Field	
Location: (Tunnel) Gallery, Buttress:		Elevation:		Bearing Plate I.D.: Unable to locate	
Bearing Plate I.D.	Anchor Head I.D. 916		Bushing I.D. 1098		
Exam Type: ☐ DV ☒ VT-1			Type Of Exam: ☒ Direct ☐ Remote		
☒ As Found Exam	☐ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned				
Design Drawing(s)		Visual Aids: None			
M&TE Used: R-21 Scale Oblique 46-10	☒ Test Card	UTC or Serial No. N/A		Cal. Due Date: N/A	
Illumination Used Flashlight		Illumination Verified: Date: 8-13-09		Time: 8:11M	
Special / Specific Instructions: None					

Component / Item Number and Description	RESULTS NI	RESULTS RI TYPE	RESULTS IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
Tendon Anchorage components for Top/Shop end of V-132	X			

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Missing Wires	H.	Cracks	O.	Other (Explain)
B.	Missing Button Heads	I.	Pitting		
C.	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D.	Broken Wires	K.	Uneven Shim Stack		
E.	Active Corrosion	L.	Excessive Shim Gaps		
F.	Other Corrosion	M.	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information : ☒ Yes ☐ No ☐ Sketch ☒ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Bruce Robbins W. Bruce Robbins LEVEL II DATE 8-13-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) (Howard T. Hill, P.E.) DATE: 18 MAR 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-13-09	Report No:		
WO No(s).: R2067551		Tendon Anchorage No.: V-132	Tendon End: ☐ Shop ☒ Field		
Location: Tunnel (Gallery) Buttress:		Elevation:	Bearing Plate I.D.:		
Bearing Plate I.D.	Anchor Head I.D. 682		Bushing I.D. N/A		
Exam Type: ☐ DV ☒ VT-1			Type Of Exam: ☒ Direct ☐ Remote		
☒ As Found Exam	☐ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned				
Design Drawing(s)		Visual Aids: None			
M&TE Used: R-21 Scale Cal. due 4-6-10	☒ Test Card	UTC or Serial No. N/A	Cal. Due Date: N/A		
Illumination Used Flash light		Illumination Verified: Date: 8-13-09	Time: 1:PM		
Special / Specific Instructions: None					

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
Anchorage components for V-132 Gallery Field End.	X			

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Missing Wires	H.	Cracks	O.	Other (Explain)
B.	Missing Button Heads	I.	Pitting		
C.	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D.	Broken Wires	K.	Uneven Shim Stack		
E.	Active Corrosion	L.	Excessive Shim Gaps		
F.	Other Corrosion	M.	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information : ☒ Yes ☐ No ☐ Sketch ☒ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Rance Robbins W. Rance Robbins LEVEL II DATE 8-13-09

STATION/ADMIN REVIEW (Print & Sign) [signature] DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) [signature] (Leonard T. Hill, P.E.) DATE: 18 Mar 10

ANII REVIEW (as applicable) _____ DATE: _____

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-17-09	Report No:		
WO No(s).: R2067551	Tendon Anchorage No.: D-122	Tendon End: ☒ Shop ☐ Field			
Location: Tunnel, Gallery, (Buttress) 5	Elevation:	Bearing Plate I.D.: TO			
Bearing Plate I.D. TO	Anchor Head I.D. 547	Bushing I.D. 1074			
Exam Type: ☐ DV ☒ VT-1	Type Of Exam: ☒ Direct ☐ Remote				
☒ As Found Exam	☐ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned				
Design Drawing(s)	Visual Aids: None				
M&TE Used: Scale R-21 Caldve 4-6-10 ☒ Test Card	UTC or Serial No. N/A	Cal. Due Date: N/A			
Illumination Used Flashlight	Illumination Verified: Date: 8-17-09	Time: 7:30 AM			
Special / Specific Instructions: None					

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
Tendon anchorage components for D-122 Buttress 5 Shop End			L	Shim gap is closed at bottom and open 1.25" at the top
			F	Light surface rust on shims, no pitting – per data sheet 4 Enclosure 6 RAD 2-8-10

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Missing Wires	H.	Cracks	O.	Other (Explain)
B.	Missing Button Heads	I.	Pitting		
C.	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D.	Broken Wires	K.	Uneven Shim Stack		
E.	Active Corrosion	L.	Excessive Shim Gaps		
F.	Other Corrosion	M.	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information : ☒ Yes ☐ No ☐ Sketch ☒ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. RANCE ROBBINS W. Rance Robbins LEVEL II DATE 8-17-09

STATION/ADMIN REVIEW (Print & Sign) Eileen Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) (Howard T. Nutt, P.E.) DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 11-13-09	Report No:
WO No(s).: R2067551	Tendon Anchorage No.: D-122	Tendon End: ☐ Shop ☒ Field	
Location: Tunnel, Gallery, Buttress: NE	Elevation:	Bearing Plate I.D: Could not locate	
Bearing Plate I.D: Could not locate	Anchor Head I.D. 754	Bushing I.D. N/A	
Exam Type: ☐ DV ☒ VT-1	Type Of Exam: ☒ Direct ☐ Remote		
☒ As Found Exam	☐ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned		
Design Drawing(s)	Visual Aids: None		
M&TE Used: Light meter #[illegible] due 11-10 ☒ Test Card	UTC or Serial No. N/A	Cal. Due Date: N/A	
Illumination Used: Flashlight	Illumination Verified: Date: 11-13-09	Time: 1100 PM	
Special / Specific Instructions: None			

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
D-122 FIELD / NE	X			

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Missing Wires	H.	Cracks	O.	Other (Explain)
B.	Missing Button Heads	I.	Pitting		
C.	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D.	Broken Wires	K.	Uneven Shim Stack		
E.	Active Corrosion	L.	Excessive Shim Gaps		
F.	Other Corrosion	M.	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) Daniel P. O'Shea [signature] LEVEL II DATE 11-13-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson [signature] DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) [signature] (Howard T. Hill, P.E.) DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage
Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-11-09	Report No:		
WO No(s).: R2067551		Tendon Anchorage No.: D-225	Tendon End: ☒ Shop ☐ Field		
Location: Tunnel, Gallery, Buttress: Butt. 5		Elevation:	Bearing Plate I.D.: Unable to locate		
Bearing Plate I.D.	Anchor Head I.D. 765		Bushing I.D. 1137		
Exam Type: ☐ DV ☒ VT-1			Type Of Exam: ☒ Direct ☐ Remote		
☒ As Found Exam	☐ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned				
Design Drawing(s)		Visual Aids: None			
M&TE Used: Scale R-21 cal. due 4-6-10	☒ Test Card	UTC or Serial No. N/A		Cal. Due Date: N/A	
Illumination Used Flashlight		Illumination Verified: Date: 8-11-09		Time: 7:AM	
Special / Specific Instructions:					

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
Tendon Anchorage components for D-225 Buttress 5 /Shop End	X 8-11-09		F	LIGHT SURFACE RUST ON SHIMS & BEARING PLATE, NO PITTING - PER DATA SHEET 4 ENCLOSURE 6 8-11-10

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Missing Wires	H.	Cracks	O.	Other (Explain)
B.	Missing Button Heads	I.	Pitting		
C.	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D.	Broken Wires	K.	Uneven Shim Stack		
E.	Active Corrosion	L.	Excessive Shim Gaps		
F.	Other Corrosion	M.	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information : ☒ Yes ☐ No ☐ Sketch ☒ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) William Rance Robbins W. Rance Robbins LEVEL II DATE 8-11-09

STATION/ADMIN REVIEW (Print & Sign) Erica Tobin DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) Howard T. Hill, P.E. DATE: 18 MAR 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-12-09	Report No:		
WO No(s).: R2067551		Tendon Anchorage No.: D-225	Tendon End: ☐ Shop ☒ Field		
Location: Tunnel, Gallery, Buttress: 2		Elevation:	Bearing Plate I.D.: unable to locate		
Bearing Plate I.D.		Anchor Head I.D.: 684	Bushing I.D. N/A		
Exam Type: ☐ DV ☒ VT-1			Type Of Exam: ☒ Direct ☐ Remote		
☒ As Found Exam	☐ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned				
Design Drawing(s)		Visual Aids: None			
M&TE Used: R-21 scale calib 4-6-10 ☒ Test Card		UTC or Serial No. N/A	Cal. Due Date: N/A		
Illumination Used Flashlight		Illumination Verified: Date: 8-12-09	Time: 7:AM		
Special / Specific Instructions: None					

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
Tendon anchorage components for D-225 buttress 2 field end.	X			

Results Legend:
NI - No Indications, RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Missing Wires	H.	Cracks	O.	Other (Explain)
B.	Missing Button Heads	I.	Pitting		
C.	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D.	Broken Wires	K.	Uneven Shim Stack		
E.	Active Corrosion	L.	Excessive Shim Gaps		
F.	Other Corrosion	M.	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information : ☒ Yes ☐ No ☐ Sketch ☒ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Rance Robbins W. Rance Robbins LEVEL II DATE 8-12-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) (Howard T. Hall, P.E.) DATE: 18 MAR 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station TMI Unit: 1 Date: 11-16-09 Report No.

WO No(s): R2067551 Tendon Anchorage No: D-322 Tendon End ☒ Shop ☐ Field

Location: Tunnel, Gallery, Buttress: North Elevation Bearing Plate I D Could not locate

Bearing Plate I D Could not locate Anchor Head I D. 668 Bushing I D 1002

Exam Type ☐ DV ☒ VT-1 Type Of Exam: ☒ Direct ☐ Remote

☒ As Found Exam ☐ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned

Design Drawing(s) Visual Aids: None

M&TE Used: [illegible] ☒ Test Card UTC or Serial No. N/A Cal. Due Date. N/A

Illumination Used Flashlight Illumination Verified: Date: 11-16-09 Time: 8:00 AM

Special / Specific Instructions: None

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
D-322 Shop/North	X			

Results Legend.

NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes.

A	Missing Wires	H	Cracks	O	Other (Explain)
B	Missing Button Heads	I	Pitting		
C	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D.	Broken Wires	K.	Uneven Shim Stack		
E	Active Corrosion	L.	Excessive Shim Gaps		
F	Other Corrosion	M	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results. Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) Daniel P. O'Shea [signature] LEVEL II DATE 11-16-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson [signature] DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions

(Action Request Work Order Issue Report etc initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) [signature] Howard T. Hill, PE DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date:		Report No:	
WO No(s): R2067551		Tendon Anchorage No: D-322		Tendon End: ☒ Shop ☐ Field	
Location: Tunnel, Gallery, Buttress:			Elevation:	Bearing Plate I.D: Could not locate	
Bearing Plate I.D: Could not locate		Anchor Head I.D: 468		Bushing I.D: 1902	
Exam Type: ☐ OV ☒ VT-1				Type Of Exam: ☒ Direct ☐ Remote	
☐ As Found Exam		☒ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned			
Design Drawing(s):			Visual Aids: None		
M&TE Used: [illegible] Sheet 5-11-10		☒ Test Card	UTC or Serial No: N/A	Cal. Due Date: N/A	
Illumination Used: Flashlight			Illumination Verified: Date: 11-17-09	Time: 1100 PM	
Special / Specific Instructions: None					

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
D-322 Shop/North		C		1 PROTRUDING WIRE (0.35")
			A	1 WIRE REMOVED FOR TESTING THIS SURVEILLANCE PER A-35-10

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A	Missing Wires	H	Cracks	O	Other (Explain)
B	Missing Button Heads	I.	Pitting		
C.	Protruding / Unseated Wires	J.	Nicks, Gouges Mechanical Damage		
D	Broken Wires	K.	Uneven Shim Stack		
E	Active Corrosion	L.	Excessive Shim Gaps		
F	Other Corrosion	M.	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information: ☒ Yes ☐ No ☒ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☒ No

EXAMINER/EVALUATOR (Print & Sign): Daniel P. O'Steen LEVEL II DATE 11-17-09

STATION/ADMIN REVIEW (Print & Sign): Evan Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable): Howard T. Nix (PE) DATE: 3/30/10

ANII REVIEW (as applicable): Joseph A. Hultz DATE: 3/30/10

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI Unit: 1 Date: 11-16-09 Report No:

WO No(s): R2067551 Tendon Anchorage No.: D-322 Tendon End: ☐ Shop ☒ Field

Location: Tunnel, Gallery, Buttress: SOUTH Elevation: Bearing Plate I.D COULD NOT LOCATE

Bearing Plate I.D COULD NOT LOCATE Anchor Head I.D. 1064 Bushing I.D. N/A

Exam Type: ☐ DV ☒ VT-1 Type Of Exam: ☒ Direct ☐ Remote

☒ As Found Exam ☐ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned

Design Drawing(s) Visual Aids: NONE

M&TE Used: [illegible] DUE 15-11-10 ☒ Test Card UTC or Serial No. N/A Cal. Due Date: N/A

Illumination Used FLASHLIGHT Illumination Verified: Date: 11-16-09 Time: 8:00 AM

Special / Specific Instructions: NONE

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
D-322 FIELD/SOUTH	X			

Results Legend.
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A	Missing Wires	H.	Cracks	O	Other (Explain)
B	Missing Button Heads	I.	Pitting		
C.	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D	Broken Wires	K.	Uneven Shim Stack		
E.	Active Corrosion	L.	Excessive Shim Gaps		
F	Other Corrosion	M.	Gasket Sealing Surface Damage		
G	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information: ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) DANIEL P. O'SHEA [signature] LEVEL II DATE 11-16-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson [signature] DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) [signature] (Howard T. Hill, P.E.) DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI Unit. 1 Date: 11-17-09 Report No:

WO No(s): R2067551 | Tendon Anchorage No.: D-322 | Tendon End: ☐ Shop ☒ Field

Location: Tunnel, Gallery, Buttress: SOUTH Elevation: Bearing Plate I.D: COULD NOT LOCATE

Bearing Plate I.D COULD NOT LOCATE Anchor Head I.D. 1064 Bushing I.D N/A

Exam Type: ☐ DV ☒ VT-1 Type Of Exam: ☒ Direct ☐ Remote

☐ As Found Exam ☒ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned

Design Drawing(s) Visual Aids: NONE

M&TE Used: LIGHT METER #[illegible] DUE 5-11-10 ☒ Test Card UTC or Serial No. N/A Cal. Due Date: N/A

Illumination Used FLASHLIGHT Illumination Verified: Date: 11-17-09 Time: 1:00 PM

Special / Specific Instructions: NONE

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
D-322 FIELD/SOUTH			A	1 WIRE REMOVED FOR TESTING THIS SURVEILLANCE

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A	Missing Wires	H.	Cracks	O	Other (Explain)
B	Missing Button Heads	I.	Pitting		
C	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D	Broken Wires	K.	Uneven Shim Stack		
E.	Active Corrosion	L.	Excessive Shim Gaps		
F	Other Corrosion	M.	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information ☐ Yes ☐ No ☒ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) DANIEL P. O'SHEA [signature] LEVEL II DATE 11-17-09

STATION/ADMIN REVIEW (Print & Sign) [signature] DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions.
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) [signature] HOWARD T. HILL, P.E. DATE: 18 MAR 10

ANII REVIEW (as applicable) ________ DATE: ________

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: I	Date: 8-17-09	Report No:
WO No(s).: R2067551	Tendon Anchorage No.: D-342	Tendon End: ☒ Shop ☐ Field	
Location: Tunnel, Gallery, Buttress: Butt. 6	Elevation:	Bearing Plate I.D.: unable to locate	
Bearing Plate I.D.	Anchor Head I.D. 1146	Bushing I.D. 1183	
Exam Type: ☐ DV ☒ VT-1	Type Of Exam: ☒ Direct ☐ Remote		
☒ As Found Exam	☐ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned		
Design Drawing(s)	Visual Aids: None		
M&TE Used: Rul Scale Cal. due 4-6-10 ☒ Test Card	UTC or Serial No. N/A	Cal. Due Date: N/A	
Illumination Used Flashlight	Illumination Verified: Date: 8-17-09	Time: 7:30 AM	
Special / Specific Instructions: None			

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
Anchorage components for D-342 Butt.6 Shop end.	X (TDPD 3-4-10)		F	Light surface rust on shims, no pitting - for data sheet 4 Enclosure 6 TDPD 3-4-10

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A. Missing Wires	H. Cracks	O. Other (Explain)
B. Missing Button Heads	I. Pitting	
C. Protruding / Unseated Wires	J. Nicks, Gouges, Mechanical Damage	
D. Broken Wires	K. Uneven Shim Stack	
E. Active Corrosion	L. Excessive Shim Gaps	
F. Other Corrosion	M. Gasket Sealing Surface Damage	
G. Evidence Of Free Water (Quantify)	N. Surface Discontinuities, Deflections	

Supplemental Information: ☒ Yes ☐ No ☐ Sketch ☒ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Rance Robbins [signature] LEVEL II DATE 8-17-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson [signature] DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. Initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) [signature] Howard T. Hill, P.E. DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 5
ASME IWL (Class CC) Containment Tendon Anchorage Detailed Visual or VT-1 Visual Examination NDE Report
Page 1 of 1

Station: TMI Unit: 1 Date: 8-17-09 Report No:

WO No(s).: R2067551 Tendon Anchorage No.: D-342 Tendon End: ☐ Shop ☒ Field

Location: Tunnel, Gallery, (Buttress) 4 Elevation: Bearing Plate I.D.: Unable to locate

Bearing Plate I.D. Anchor Head I.D. 841 Bushing I.D. N/A

Exam Type: ☐ DV ☒ VT-1 Type Of Exam: ☒ Direct ☐ Remote

☒ As Found Exam ☐ As Left Exam Following Retensioning Of Tendons Which Have Been Detentioned

Design Drawing(s) Visual Aids: None

M&TE Used: R21 scale cal. due 4-6-10 ☒ Test Card UTC or Serial No. N/A Cal. Due Date: N/A

Illumination Used Flashlight Illumination Verified: Date: 8/17/09 Time: 1:PM

Special / Specific Instructions: None

Component / Item Number and Description	RESULTS NI	RI TYPE	IO	Explanation / Notes (Sketch Shall Be Attached Depicting Location Of All Missing, Protruding, Unseated Wires)
Anchorage components for D-342 Butt. 4/ field end.	X			

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Missing Wires	H.	Cracks	O.	Other (Explain)
B.	Missing Button Heads	I.	Pitting		
C.	Protruding / Unseated Wires	J.	Nicks, Gouges, Mechanical Damage		
D.	Broken Wires	K.	Uneven Shim Stack		
E.	Active Corrosion	L.	Excessive Shim Gaps		
F.	Other Corrosion	M.	Gasket Seating Surface Damage		
G.	Evidence Of Free Water (Quantify)	N.	Surface Discontinuities, Deflections		

Supplemental Information: ☒ Yes ☐ No ☐ Sketch ☒ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Rance Robbins [signature] LEVEL II DATE 8-17-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson [signature] DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable (results Acceptable) ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RI REVIEW (as applicable) [signature] Howard T. Hill, P.E. DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 6
ASME IWE (Class CC) Containment Concrete VT-1C or VT-3C Visual Examination NDE Report
Page 1 of 1

Station: TMI Unit: 1 Date: Report No:

System: Containment Tendons Component: H13-41 Shop/Butt 1 WO No(s).: R2067551

Location: Building: Containment Elev.: Col.: Row: Azimuth/Radius:

Exam Type: ☐ DV ☐ GV ☒ VT-1C ☐ VT-3C Type Of Exam: ☒ Direct ☐ Remote Matl. Type: Concrete

Design Drawing(s) Visual Aids: None

Surface: ID (OD) Surface / Components Coated: ☐ YES ☒ NO

M&TE Used: Light meter [illegible] ☒ Test Card UTC or Serial No. N/A Cal. Due Date: N/A

Illumination Used Flashlight Illumination Verified: Date: 11-13-09 Time: 1:00 PM

Special / Specific Instructions: N/A

Component / Item Number and Description (e.g. EIN, EID, etc.)	RESULTS NI	RI TYPE	IO	Explanation / Notes (As a minimum, Record Location and Size of Recordable Indications as applicable)
H13-41 Shop/Butt 1 24" from edge of bearing plate	X			

Results Legend:
NI - No Indications RI - Recordable Indication IO - Information Only

Recordable Indication Type Codes

A	Cracks (Characterize and Size)	G	Settlements Or Deflections	M	Scaling / Dusting
B	Exposed Reinforcing Steel	H	Degraded Patches or Repairs	N	Coating Deterioration
C	Exposed Metallic Items (Other)	I	Popouts, Voids, Honeycomb	O	Abrasion, Cavitation, Wear
D	Evidence Of Grease Leakage	J	Spalls	P	Air Voids / Bug Holes
E	Evidence Of Moisture	K	Cold Joint Lines	Q	Efflorescence
F	Leaching Or Chemical Attack	L	Corrosion Staining	R	Other (Explain)

Supplemental Information: ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) Daniel P. O'Shea [signature] LEVEL II DATE 11-13-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson [signature] DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RE REVIEW (as applicable) [signature] (Howard T. Hill, P.E.) DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 6
ASME IWE (Class CC) Containment Concrete VT-1C or VT-3C Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-26-09	Report No:		
System: Containment Tendons	Component: H13-41		WO No(s): R2067551		
Location: Building: Containment	Elev.:	Col.:	Row:	Azimuth/Radius:	
Exam Type: ☐ DV ☐ GV ☒ VT-1C ☐ VT-3C	Type Of Exam: ☒ Direct ☐ Remote		Matl. Type:		
Design Drawing(s) P5-33	Visual Aids: None				
Surface: ID (OD)	Surface / Components Coated: ☐ YES ☒ NO				
M&TE Used: None ☒ Test Card	UTC or Serial No. N/A		Cal. Due Date: N/A		
Illumination Used Flashlight	Illumination Verified: Date: 8-26-09		Time: 1:PM		
Special / Specific Instructions: None					

Component / Item Number and Description (e.g. EIN, EID, etc.)	RESULTS NI	RESULTS RI TYPE	RESULTS IO	Explanation / Notes (As a minimum, Record Location and Size of Recordable Indications as applicable)
2' area of concrete around H13-41 Buttress 3 Field End	✓			

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A. Cracks (Characterize and Size)	G. Settlements Or Deflections	M. Scaling / Dusting
B. Exposed Reinforcing Steel	H. Degraded Patches or Repairs	N. Coating Deterioration
C. Exposed Metallic Items (Other)	I. Popouts, Voids, Honeycomb	O. Abrasion, Cavitation, Wear
D. Evidence Of Grease Leakage	J. Spalls	P. Air Voids / Bug Holes
E. Evidence Of Moisture	K. Cold Joint Lines	Q. Efflorescence
F. Leaching Or Chemical Attack	L. Corrosion Staining	R. Other (Explain)

Supplemental Information : ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Bruce Robbins W. Bruce Robbins LEVEL II DATE 8-26-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable (results Acceptable) ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. Initiated for Corrective Action)

LEVEL III or RE REVIEW (as applicable) Howard F. Rice, P.E. DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 6
ASME IWE (Class CC) Containment Concrete VT-1C or VT-3C Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-11-09	Report No:		
System: Cont. Bldg Tendons	Component: H 24-33		WO No(s).: R2067551		
Location: Building: Cont. Bldg.	Elev.:	Col.:	Row:	Azimuth/Radius:	
Exam Type: ☐ DV ☐ GV ☒ VT-1C ☐ VT-3C	Type Of Exam: ☒ Direct ☐ Remote		Matl. Type: Concrete		
Design Drawing(s) 25-34	Visual Aids: None				
Surface: ID (OD)	Surface / Components Coated: ☐ YES ☒ NO				
M&TE Used: 24" Scale R21 Gage ☒ Test Card	UTC or Serial No.		Cal. Due Date:		
Illumination Used Flashlight	Illumination Verified: Date: 8-11-09		Time: 7:AM		
Special / Specific Instructions: None					

Component / Item Number and Description (e.g. EIN, EID, etc.)	RESULTS NI	RI TYPE	IO	Explanation / Notes (As a minimum, Record Location and Size of Recordable Indications as applicable)
2' Area of concrete around H 24-33 Tendon Buttress 4 / Shop end			A	1 crack extending from the upper right corner of the bearing plate to the lower right corner of the bearing plate above 12" L. x < than .010" wide

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Cracks (Characterize and Size)	G.	Settlements Or Deflections	M.	Scaling / Dusting
B.	Exposed Reinforcing Steel	H.	Degraded Patches or Repairs	N.	Coating Deterioration
C.	Exposed Metallic Items (Other)	I.	Popouts, Voids, Honeycomb	O.	Abrasion, Cavitation, Wear
D.	Evidence Of Grease Leakage	J.	Spalls	P.	Air Voids / Bug Holes
E.	Evidence Of Moisture	K.	Cold Joint Lines	Q.	Efflorescence
F.	Leaching Or Chemical Attack	L.	Corrosion Staining	R.	Other (Explain)

Supplemental Information : ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Rance Robbins W. Rance Robbins LEVEL II DATE 8-11-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RE REVIEW (as applicable) Howard T. Nix, P.E. DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 6
ASME IWE (Class CC) Containment Concrete VT-1C or VT-3C Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-24-09		Report No:		
System: Cont. Tendons	Component: H24-33			WO No(s).: R2067551		
Location: Building: Containment	Elev.:	Col.:	Row:	Azimuth/Radius:		
Exam Type: ☐ DV ☐ GV ☒ VT-1C ☐ VT-3C	Type Of Exam: ☒ Direct ☐ Remote			Matl. Type: Concrete		
Design Drawing(s): P5-31	Visual Aids: None					
Surface: ID (OD)	Surface / Components Coated: ☐ YES ☒ NO					
M&TE Used: None ☒ Test Card	UTC or Serial No. N/A			Cal. Due Date: N/A		
Illumination Used Flashlight	Illumination Verified: Date: 8-24-09			Time: 8:AM		
Special / Specific Instructions: None						

Component / Item Number and Description (e.g. EIN, EID, etc.)	RESULTS NI	RI TYPE	IO	Explanation / Notes (As a minimum, Record Location and Size of Recordable Indications as applicable)
2' area of concrete around H24-33 Butt. 2 Field End	✓			

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Cracks (Characterize and Size)	G.	Settlements Or Deflections	M.	Scaling / Dusting
B.	Exposed Reinforcing Steel	H.	Degraded Patches or Repairs	N.	Coating Deterioration
C.	Exposed Metallic Items (Other)	I.	Popouts , Voids, Honeycomb	O.	Abrasion, Cavitation, Wear
D.	Evidence Of Grease Leakage	J.	Spalls	P.	Air Voids / Bug Holes
E.	Evidence Of Moisture	K.	Cold Joint Lines	Q.	Efflorescence
F.	Leaching Or Chemical Attack	L.	Corrosion Staining	R.	Other (Explain)

Supplemental Information : ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Lance Robbins W. Lance Robbins LEVEL II DATE 8-24-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RE REVIEW (as applicable) Lawrence T. Hill, PE DATE: 18 Mar 10

ANII REVIEW (as applicable) _____ DATE: _____

ATTACHMENT 6
ASME IWE (Class CC) Containment Concrete VT-1C or VT-3C Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-12-09	Report No:		
System: Cont. Tendons	Component: H46-5D		WO No(s).: R2067551		
Location: Building: Containment	Elev.:	Col.:	Row:	Azimuth/Radius:	
Exam Type: ☐ DV ☐ GV ☒ VT-1C ☐ VT-3C	Type Of Exam: ☒ Direct ☐ Remote			Matl. Type: Concrete	
Design Drawing(s) 25-46	Visual Aids:				
Surface: ID (OD)	Surface / Components Coated: ☐ YES ☒ NO				
M&TE Used: None ☒ Test Card	UTC or Serial No. N/A			Cal. Due Date: N/A	
Illumination Used Flashlight	Illumination Verified: Date: 8/12/09			Time: 7:30 AM	
Special / Specific Instructions: None					

Component / Item Number and Description (e.g. EIN, EID, etc.)	RESULTS NI	RESULTS RI TYPE	RESULTS IO	Explanation / Notes (As a minimum, Record Location and Size of Recordable Indications as applicable)
2' Area of concrete around H46-50 tendon bearing plate Buttress 6/Shop end.	X			

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A. Cracks (Characterize and Size)	G. Settlements Or Deflections	M. Scaling / Dusting
B. Exposed Reinforcing Steel	H. Degraded Patches or Repairs	N. Coating Deterioration
C. Exposed Metallic Items (Other)	I. Popouts , Voids, Honeycomb	O. Abrasion, Cavitation, Wear
D. Evidence Of Grease Leakage	J. Spalls	P. Air Voids / Bug Holes
E. Evidence Of Moisture	K. Cold Joint Lines	Q. Efflorescence
F. Leaching Or Chemical Attack	L. Corrosion Staining	R. Other (Explain)

Supplemental Information : ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Rance Robbins W. Rance Robbins LEVEL II DATE 8-12-09

STATION/ADMIN REVIEW (Print & Sign) Eva Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. Initiated for Corrective Action)

LEVEL III or RE REVIEW (as applicable) Howard T. Hice, P.E. DATE: 18 MAR 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 6
ASME IWE (Class CC) Containment Concrete VT-1C or VT-3C Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-11-09		Report No:	
System: Cont. Tendons	Component: H46-50			WO No(s).: R2067551	
Location: Building: Containment Bldg.	Elev.:	Col.:	Row:	Azimuth/Radius:	
Exam Type: ☐ DV ☐ GV ☒ VT-1C ☐ VT-3C	Type Of Exam: ☒ Direct ☐ Remote			Matl. Type: Concrete	
Design Drawing(s) P5-43	Visual Aids: None				
Surface: ID (OD)	Surface / Components Coated: ☐ YES ☒ NO				
M&TE Used: None ☒ Test Card	UTC or Serial No. N/A			Cal. Due Date: N/A	
Illumination Used Flashlight	Illumination Verified: Date: 8-11-09			Time: 8:AM	
Special / Specific Instructions: None					

Component / Item Number and Description (e.g. EIN, EID, etc.)	RESULTS NI	RI TYPE	IO	Explanation / Notes (As a minimum, Record Location and Size of Recordable Indications as applicable)
2' Area of concrete Around H46-50 Buttress 4 field end.	X			

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Cracks (Characterize and Size)	G.	Settlements Or Deflections	M.	Scaling / Dusting
B.	Exposed Reinforcing Steel	H.	Degraded Patches or Repairs	N.	Coating Deterioration
C.	Exposed Metallic Items (Other)	I.	Popouts, Voids, Honeycomb	O.	Abrasion, Cavitation, Wear
D.	Evidence Of Grease Leakage	J.	Spalls	P.	Air Voids / Bug Holes
E.	Evidence Of Moisture	K.	Cold Joint Lines	Q.	Efflorescence
F.	Leaching Or Chemical Attack	L.	Corrosion Staining	R.	Other (Explain)

Supplemental Information: ☒ Yes ☐ No ☐ Sketch ☒ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Rance Robbins W. Rance Robbins LEVEL II DATE 8-11-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RE REVIEW (as applicable) Howard T. Hall, PE DATE: 18 MAR 10

ANII REVIEW (as applicable) _____ DATE: _____

ATTACHMENT 6
ASME IWE (Class CC) Containment Concrete VT-1C or VT-3C Visual Examination NDE Report
Page 1 of 1

Station: TMI Unit: 1 Date: 11-11-09 Report No:

System: Containment Tendons Component: H51-49 Shop/Butt. 1 WO No(s): R2067551

Location: Building: Containment Elev.: Col.: Row: Azimuth/Radius:

Exam Type: ☐ DV ☐ GV ☒ VT-1C ☐ VT-3C Type Of Exam: ☒ Direct ☐ Remote Matl. Type: Concrete

Design Drawing(s) Visual Aids: None

Surface: ID (OD) Surface / Components Coated: ☐ YES ☒ NO

M&TE Used: [illegible] ☒ Test Card UTC or Serial No. N/A Cal. Due Date: N/A

Illumination Used: Flashlight Illumination Verified: Date: 11-11-09 Time: 9:00 AM

Special / Specific Instructions: N/A

Component / Item Number and Description (e.g. EIN, EID, etc.)	RESULTS NI	RI TYPE	IO	Explanation / Notes (As a minimum, Record Location and Size of Recordable Indications as applicable)
H51-49 Shop/Butt 1 24" from edge of bearing plate	X			

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A	Cracks (Characterize and Size)	G	Settlements Or Deflections	M	Scaling / Dusting
B	Exposed Reinforcing Steel	H	Degraded Patches or Repairs	N	Coating Deterioration
C	Exposed Metallic Items (Other)	I	Popouts, Voids, Honeycomb	O	Abrasion, Cavitation, Wear
D	Evidence Of Grease Leakage	J	Spalls	P	Air Voids / Bug Holes
E	Evidence Of Moisture	K	Cold Joint Lines	Q	Efflorescence
F	Leaching Or Chemical Attack	L	Corrosion Staining	R	Other (Explain)

Supplemental Information. ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results. Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) Daniel P. O'Shea / [signature] LEVEL II DATE 11-11-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson [signature] DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RE REVIEW (as applicable) [signature] (Howard T. Hill, PE) DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 6
ASME IWE (Class CC) Containment Concrete VT-1C or VT-3C Visual Examination NDE Report
Page 1 of 1

Station: TMI Unit: 1 Date: 8-26-09 Report No:

System: Containment Tendons Component: H51-49 WO No(s).: R2067551

Location: Building: Containment Elev.: Col.: Row: Azimuth/Radius:

Exam Type: ☐ DV ☐ GV ☒ VT-1C ☐ VT-3C Type Of Exam: ☒ Direct ☐ Remote Matl. Type: Concrete

Design Drawing(s) P5-44 Visual Aids: None

Surface: ID (OD) Surface / Components Coated: ☐ YES ☒ NO

M&TE Used: None ☒ Test Card UTC or Serial No. N/A Cal. Due Date: N/A

Illumination Used Flashlight Illumination Verified: Date: 8-26-09 Time: 7:30 AM

Special / Specific Instructions: None

Component / Item Number and Description (e.g. EIN, EID, etc.)	RESULTS NI	RI TYPE	IO	Explanation / Notes (As a minimum, Record Location and Size of Recordable Indications as applicable)
2' AREA of concrete around H51-49 Buttress 5 Field end Note: exam limited due to the face of butt. 5 being covered by ventilation duct.	✓			

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A. Cracks (Characterize and Size)	G. Settlements Or Deflections	M. Scaling / Dusting
B. Exposed Reinforcing Steel	H. Degraded Patches or Repairs	N. Coating Deterioration
C. Exposed Metallic Items (Other)	I. Popouts, Voids, Honeycomb	O. Abrasion, Cavitation, Wear
D. Evidence Of Grease Leakage	J. Spalls	P. Air Voids / Bug Holes
E. Evidence Of Moisture	K. Cold Joint Lines	Q. Efflorescence
F. Leaching Or Chemical Attack	L. Corrosion Staining	R. Other (Explain)

Supplemental Information : ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Bruce Robbins W. Bruce Robbins LEVEL II DATE 8-26-09

STATION/ADMIN REVIEW (Print & Sign) Eva Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RE REVIEW (as applicable) DATE: 3/15/10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 6
ASME IWE (Class CC) Containment Concrete VT-1C or VT-3C Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-12-09	Report No:		
System: Cont. Tendons	Component: H62-26		WO No(s).: R 2067551		
Location: Building: Containment	Elev.:	Col.:	Row:	Azimuth/Radius:	
Exam Type: ☐ DV ☐ GV ☒ VT-1C ☐ VT-3C	Type Of Exam: ☒ Direct ☐ Remote		Matl. Type: Concrete		
Design Drawing(s) 25-25	Visual Aids: None				
Surface: ID (OD)	Surface / Components Coated: ☐ YES ☒ NO				
M&TE Used: None ☒ Test Card	UTC or Serial No. N/A		Cal. Due Date: N/A		
Illumination Used Flashlight	Illumination Verified: Date: 8/12/09		Time: 1:PM		
Special / Specific Instructions: None					

Component / Item Number and Description (e.g. EIN, EID, etc.)	RESULTS NI	RI TYPE	IO	Explanation / Notes (As a minimum, Record Location and Size of Recordable Indications as applicable)
2' Area of concrete around H62-26 tendon Buttress 6 / Shop end	X			

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A. Cracks (Characterize and Size)	G. Settlements Or Deflections	M. Scaling / Dusting
B. Exposed Reinforcing Steel	H. Degraded Patches or Repairs	N. Coating Deterioration
C. Exposed Metallic Items (Other)	I. Popouts, Voids, Honeycomb	O. Abrasion, Cavitation, Wear
D. Evidence Of Grease Leakage	J. Spalls	P. Air Voids / Bug Holes
E. Evidence Of Moisture	K. Cold Joint Lines	Q. Efflorescence
F. Leaching Or Chemical Attack	L. Corrosion Staining	R. Other (Explain)

Supplemental Information : ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Ranee Robbins W. Ranee Robbins LEVEL II DATE 8-12-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. Initiated for Corrective Action)

LEVEL III or RE REVIEW (as applicable) Howard T. Rhie, P.E. DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 6
ASME IWE (Class CC) Containment Concrete VT-1C or VT-3C Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-28-09	Report No:		
System: Containment Tendons	Component: H62-26		WO No(s).: R2067551		
Location: Building: Containment	Elev.:	Col.:	Row:	Azimuth/Radius:	
Exam Type: ☐ DV ☐ GV ☒ VT-1C ☐ VT-3C	Type Of Exam: ☒ Direct ☐ Remote		Matl. Type: Concrete		
Design Drawing(s) P5-22	Visual Aids: None				
Surface: ID (OD)	Surface / Components Coated: ☐ YES ☒ NO				
M&TE Used: None ☒ Test Card	UTC or Serial No. N/A		Cal. Due Date: N/A		
Illumination Used Flashlight	Illumination Verified: Date: 8-28-09		Time: 7:30 AM		
Special / Specific Instructions: None					

Component / Item Number and Description (e.g. EIN, EID, etc.)	RESULTS NI	RI TYPE	IO	Explanation / Notes (As a minimum, Record Location and Size of Recordable Indications as applicable)
2' area of concrete around H62-26 buttress 2 field end.	✓			

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Cracks (Characterize and Size)	G.	Settlements Or Deflections	M.	Scaling / Dusting
B.	Exposed Reinforcing Steel	H.	Degraded Patches or Repairs	N.	Coating Deterioration
C.	Exposed Metallic Items (Other)	I.	Popouts, Voids, Honeycomb	O.	Abrasion, Cavitation, Wear
D.	Evidence Of Grease Leakage	J.	Spalls	P.	Air Voids / Bug Holes
E.	Evidence Of Moisture	K.	Cold Joint Lines	Q.	Efflorescence
F.	Leaching Or Chemical Attack	L.	Corrosion Staining	R.	Other (Explain)

Supplemental Information : ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Rance Robbins W. Rance Robbins LEVEL II DATE 8-28-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable (results Acceptable) ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. Initiated for Corrective Action)

LEVEL III or RE REVIEW (as applicable) Howard T. Hill, PE DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 6
ASME IWE (Class CC) Containment Concrete VT-1C or VT-3C Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-18-09		Report No:	
System: Cont. Tendons	Component: V-11			WO No(s).: R2067551	
Location: Building: Containment Bldg.	Elev.:	Col.:	Row:	Azimuth/Radius:	
Exam Type: ☐ DV ☐ GV ☒ VT-1C ☐ VT-3C	Type Of Exam: ☒ Direct ☐ Remote			Matl. Type: Concrete	
Design Drawing(s)	Visual Aids: None				
Surface: ID (OD)	Surface / Components Coated: ☒ YES ~~☐ NO~~ 8.18.09				
M&TE Used: None ☒ Test Card	UTC or Serial No.: N/A			Cal. Due Date: N/A	
Illumination Used: Flashlight	Illumination Verified: Date: 8-18-09			Time: 7:AM	
Special / Specific Instructions: None					

Component / Item Number and Description (e.g. EIN, EID, etc.)	RESULTS NI	RI TYPE	IO	Explanation / Notes (As a minimum, Record Location and Size of Recordable Indications as applicable)
2' area of concrete around V-11 Shop/Top end.	X			

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A. Cracks (Characterize and Size)	G. Settlements Or Deflections	M. Scaling / Dusting
B. Exposed Reinforcing Steel	H. Degraded Patches or Repairs	N. Coating Deterioration
C. Exposed Metallic Items (Other)	I. Popouts , Voids, Honeycomb	O. Abrasion, Cavitation, Wear
D. Evidence Of Grease Leakage	J. Spalls	P. Air Voids / Bug Holes
E. Evidence Of Moisture	K. Cold Joint Lines	Q. Efflorescence
F. Leaching Or Chemical Attack	L. Corrosion Staining	R. Other (Explain)

Supplemental Information : ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Rance Robbins W. Rance Robbins LEVEL II DATE 8-18-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. Initiated for Corrective Action)

LEVEL III or RE REVIEW (as applicable) Howard T. Hill, P.E. DATE: 18 Mar 10

ANII REVIEW (as applicable) _____ DATE: _____

ATTACHMENT 6
ASME IWE (Class CC) Containment Concrete VT-1C or VT-3C Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-13-09	Report No:		
System: Cont. Tendons	Component: V-11		WO No(s).: R2067581		
Location: Building: R.B. Tendon Gallery	Elev.:	Col.:	Row:	Azimuth/Radius:	
Exam Type: ☐ DV ☐ GV ☒ VT-1C ☐ VT-3C	Type Of Exam: ☒ Direct ☐ Remote		Matl. Type: Concrete		
Design Drawing(s)	Visual Aids: None				
Surface: ID (OD)	Surface / Components Coated: ☐ YES ☒ NO				
M&TE Used: None ☒ Test Card	UTC or Serial No. N/A		Cal. Due Date: N/A		
Illumination Used Flashlight	Illumination Verified: Date: 8-13-09		Time: 1:PM		
Special / Specific Instructions: None					

Component / Item Number and Description (e.g. EIN, EID, etc.)	RESULTS NI	RI TYPE	IO	Explanation / Notes (As a minimum, Record Location and Size of Recordable Indications as applicable)
2' area of concrete around the base of tendon V-11 Gallery / Field End			Q	Efflorescence on exterior wall 4" strip around entire gallery.

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Cracks (Characterize and Size)	G.	Settlements Or Deflections	M.	Scaling / Dusting
B.	Exposed Reinforcing Steel	H.	Degraded Patches or Repairs	N.	Coating Deterioration
C.	Exposed Metallic Items (Other)	I.	Popouts, Voids, Honeycomb	O.	Abrasion, Cavitation, Wear
D.	Evidence Of Grease Leakage	J.	Spalls	P.	Air Voids / Bug Holes
E.	Evidence Of Moisture	K.	Cold Joint Lines	Q.	Efflorescence
F.	Leaching Or Chemical Attack	L.	Corrosion Staining	R.	Other (Explain)

Supplemental Information: ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Lance Robbins W. Lance Robbins LEVEL II DATE 8-13-09

STATION/ADMIN REVIEW (Print & Sign) Evan Palmer DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable (results Acceptable) ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. Initiated for Corrective Action)

LEVEL III or RE REVIEW (as applicable) [signature] (Warren T. Hill, P.E.) DATE: 17 Mar 10

ANII REVIEW (as applicable) _____ DATE: _____

ATTACHMENT 6
ASME IWE (Class CC) Containment Concrete VT-1C or VT-3C Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-18-09		Report No:	
System: Cont Buildings	Component: V-32			WO No(s): R2067551	
Location: Building: Containment Bldg.	Elev.:	Col.:	Row:	Azimuth/Radius:	
Exam Type: ☐ DV ☐ GV ☒ VT-1C ☐ VT-3C	Type Of Exam: ☒ Direct ☐ Remote			Matl. Type: Concrete	
Design Drawing(s)	Visual Aids: None				
Surface: ID (OD)	Surface / Components Coated: ☒ YES ☐ NO				
M&TE Used: None ☒ Test Card	UTC or Serial No: N/A			Cal. Due Date: N/A	
Illumination Used Flashlight	Illumination Verified: Date: 8-18-09			Time: 7:AM	
Special / Specific Instructions: None					

Component / Item Number and Description (e.g. EIN, EID, etc.)	RESULTS NI	RESULTS RI TYPE	RESULTS IO	Explanation / Notes (As a minimum, Record Location and Size of Recordable Indications as applicable)
2' Area of concrete around V-32 shop / Top end.	X			

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A. Cracks (Characterize and Size)	G. Settlements Or Deflections	M. Scaling / Dusting
B. Exposed Reinforcing Steel	H. Degraded Patches or Repairs	N. Coating Deterioration
C. Exposed Metallic Items (Other)	I. Popouts, Voids, Honeycomb	O. Abrasion, Cavitation, Wear
D. Evidence Of Grease Leakage	J. Spalls	P. Air Voids / Bug Holes
E. Evidence Of Moisture	K. Cold Joint Lines	Q. Efflorescence
F. Leaching Or Chemical Attack	L. Corrosion Staining	R. Other (Explain)

Supplemental Information: ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Rance Robbins W. Rance Robbins LEVEL II DATE 8-18-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable (results Acceptable) ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. Initiated for Corrective Action)

LEVEL III or RE REVIEW (as applicable) Edward T. Hill, P.E. DATE: 18 MAR 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 6
ASME IWE (Class CC) Containment Concrete VT-1C or VT-3C Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-13-09		Report No:	
System: Cont. Tendons	Component: V-32			WO No(s).: R2067551	
Location: Building: Reactor Bldg Tendon gallery	Elev.:	Col.:	Row:	Azimuth/Radius:	
Exam Type: ☐ DV ☐ GV ☒ VT-1C ☐ VT-3C	Type Of Exam: ☒ Direct ☐ Remote			Matl. Type: Concrete	
Design Drawing(s)	Visual Aids: None				
Surface: ID (OD)	Surface / Components Coated: ☒ YES ☐ NO				
M&TE Used: None ☒ Test Card	UTC or Serial No. N/A			Cal. Due Date: N/A	
Illumination Used Flashlight	Illumination Verified: Date: 8-13-09			Time: 1:PM	
Special / Specific Instructions: NONE					

Component / Item Number and Description (e.g. EIN, EID, etc.)	RESULTS NI	RI TYPE	IO	Explanation / Notes (As a minimum, Record Location and Size of Recordable Indications as applicable)
2' Area of concrete around V-32 Gallery / Field End	X			

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A. Cracks (Characterize and Size)	G. Settlements Or Deflections	M. Scaling / Dusting
B. Exposed Reinforcing Steel	H. Degraded Patches or Repairs	N. Coating Deterioration
C. Exposed Metallic Items (Other)	I. Popouts, Voids, Honeycomb	O. Abrasion, Cavitation, Wear
D. Evidence Of Grease Leakage	J. Spalls	P. Air Voids / Bug Holes
E. Evidence Of Moisture	K. Cold Joint Lines	Q. Efflorescence
F. Leaching Or Chemical Attack	L. Corrosion Staining	R. Other (Explain)

Supplemental Information: ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Rance Robbins W. Rance Robbins LEVEL II DATE 8-13-09

STATION/ADMIN REVIEW (Print & Sign) Eva Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable (results Acceptable) ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RE REVIEW (as applicable) Howard T. Hill, P.E. DATE: 16 MAR 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 6
ASME IWE (Class CC) Containment Concrete VT-1C or VT-3C Visual Examination NDE Report
Page 1 of 1

Station: TMI Unit: 1 Date: 8-18-09 Report No:

System: Cont. Tendons Component: V-90 WO No(s).: R2067551

Location: Building: Containment Bldg. Elev.: Col.: Row: Azimuth/Radius:

Exam Type: ☐ DV ☐ GV ☒ VT-1C ☐ VT-3C Type Of Exam: ☒ Direct ☐ Remote Matl. Type: Concrete

Design Drawing(s) Visual Aids: None

Surface: ID (OD) Surface / Components Coated: ☒ YES ☐ NO

M&TE Used: None ☒ Test Card UTC or Serial No: N/A Cal. Due Date: N/A

Illumination Used Flashlight Illumination Verified: Date: 8-18-09 Time: 7:30 AM WRR 8-19-09

Special / Specific Instructions: None

Component / Item Number and Description (e.g. EIN, EID, etc.)	RESULTS NI	RI TYPE	IO	Explanation / Notes (As a minimum, Record Location and Size of Recordable Indications as applicable)
2' area of concrete around V-90 Shop/Top end.	X			

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Cracks (Characterize and Size)	G.	Settlements Or Deflections	M.	Scaling / Dusting
B.	Exposed Reinforcing Steel	H.	Degraded Patches or Repairs	N.	Coating Deterioration
C.	Exposed Metallic Items (Other)	I.	Popouts, Voids, Honeycomb	O.	Abrasion, Cavitation, Wear
D.	Evidence Of Grease Leakage	J.	Spalls	P.	Air Voids / Bug Holes
E.	Evidence Of Moisture	K.	Cold Joint Lines	Q.	Efflorescence
F.	Leaching Or Chemical Attack	L.	Corrosion Staining	R.	Other (Explain)

Supplemental Information: ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Rance Robbins *W. Rance Robbins* LEVEL II DATE 8-19-09

STATION/ADMIN REVIEW (Print & Sign) *Evan Johnson* DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable (results Acceptable) ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. Initiated for Corrective Action)

LEVEL III or RE REVIEW (as applicable) *[signature]* (Armando T. Ricci, P.E.) DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 6
ASME IWE (Class CC) Containment Concrete VT-1C or VT-3C Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-13-09	Report No:		
System: Cont. Tendons	Component: V-90		WO No(s).: R2067551		
Location: Building: Cont. bldg. Tendon Gallery	Elev.:	Col.:	Row:	Azimuth/Radius:	
Exam Type: ☐ DV ☐ GV ☒ VT-1C ☐ VT-3C	Type Of Exam: ☒ Direct ☐ Remote		Matl. Type: Concrete		
Design Drawing(s)	Visual Aids: NONE				
Surface: ID (OD)	Surface / Components Coated: ☒ YES ☐ NO				
M&TE Used: R-21 Scale Caliber 4-510 ☒ Test Card	UTC or Serial No. N/A		Cal. Due Date: N/A		
Illumination Used Flash light	Illumination Verified: Date: 8-13-09		Time: 1:PM		
Special / Specific Instructions:					

Component / Item Number and Description (e.g. EIN, EID, etc.)	RESULTS NI	RI TYPE	IO	Explanation / Notes (As a minimum, Record Location and Size of Recordable Indications as applicable)
2' Area of concrete around V-90 tendon gallery / field end			A	1 crack adjacent to the bearing plate 8' L.K < than .010" wide
			A	1 crack from corner of bearing plate to exterior wall 10" L.K < than .010" wide.

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Cracks (Characterize and Size)	G.	Settlements Or Deflections	M.	Scaling / Dusting
B.	Exposed Reinforcing Steel	H.	Degraded Patches or Repairs	N.	Coating Deterioration
C.	Exposed Metallic Items (Other)	I.	Popouts, Voids, Honeycomb	O.	Abrasion, Cavitation, Wear
D.	Evidence Of Grease Leakage	J.	Spalls	P.	Air Voids / Bug Holes
E.	Evidence Of Moisture	K.	Cold Joint Lines	Q.	Efflorescence
F.	Leaching Or Chemical Attack	L.	Corrosion Staining	R.	Other (Explain)

Supplemental Information: ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Ranee Robbins W. Ranee Robbins LEVEL II DATE 8-13-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☑ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. Initiated for Corrective Action)

LEVEL III or RE REVIEW (as applicable) (Howard T. Nix, P.E.) DATE: 12 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 6
ASME IWE (Class CC) Containment Concrete VT-1C or VT-3C Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-13-09		Report No:	
System: Cont. Bldg. Tendons	Component: V-132			WO No(s).: R2067551	
Location: Building: Cont. Bldg.	Elev.:	Col.:	Row:	Azimuth/Radius:	
Exam Type: ☐ DV ☐ GV ☒ VT-1C ☐ VT-3C	Type Of Exam: ☒ Direct ☐ Remote			Matl. Type: Concrete	
Design Drawing(s)	Visual Aids: None				
Surface: ID (OD)	Surface / Components Coated: ☒ YES ~~☒ NO~~ WR# 8-13-09				
M&TE Used: None ☒ Test Card	UTC or Serial No. N/A			Cal. Due Date: N/A	
Illumination Used Flashlight	Illumination Verified: Date: 8-13-09			Time: 8:AM	
Special / Specific Instructions: None					

Component / Item Number and Description (e.g. EIN, EID, etc.)	RESULTS NI	RI TYPE	IO	Explanation / Notes (As a minimum, Record Location and Size of Recordable Indications as applicable)
2' Area of concrete Around V-132 Shop/Top End			P	Small bugholes present in the entire Area.

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A. Cracks (Characterize and Size)	G. Settlements Or Deflections	M. Scaling / Dusting
B. Exposed Reinforcing Steel	H. Degraded Patches or Repairs	N. Coating Deterioration
C. Exposed Metallic Items (Other)	I. Popouts , Voids, Honeycomb	O. Abrasion, Cavitation, Wear
D. Evidence Of Grease Leakage	J. Spalls	P. Air Voids / Bug Holes
E. Evidence Of Moisture	K. Cold Joint Lines	Q. Efflorescence
F. Leaching Or Chemical Attack	L. Corrosion Staining	R. Other (Explain)

Supplemental Information : ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Rance Robbins W. Rance Robbins LEVEL II DATE 8-13-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated (or Corrective Action)

LEVEL III or RE REVIEW (as applicable) Howard T. Hill (A) DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 6
ASME IWE (Class CC) Containment Concrete VT-1C or VT-3C Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-13-09	Report No:		
System: Cont. Tendons	Component: V-132		WO No(s): R2067551		
Location: Building: Cont. Bldg.	Elev.:	Col.:	Row:	Azimuth/Radius:	
Exam Type: ☐ DV ☐ GV ☒ VT-1C ☐ VT-3C	Type Of Exam: ☒ Direct ☐ Remote		Matl. Type: Concrete		
Design Drawing(s)	Visual Aids: None				
Surface: ID (OD)	Surface / Components Coated: ☒ YES ☐ NO				
M&TE Used: None ☒ Test Card	UTC or Serial No. N/A		Cal. Due Date: N/A		
Illumination Used Flashlight	Illumination Verified: Date: 8-13-09		Time: 1:PM		
Special / Specific Instructions: None					

Component / Item Number and Description (e.g. EIN, EID, etc.)	RESULTS NI	RI TYPE	IO	Explanation / Notes (As a minimum, Record Location and Size of Recordable Indications as applicable)
2' Area of concrete Around V-132 gallery field end.			Q	Efflorescence on inner wall.

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Cracks (Characterize and Size)	G.	Settlements Or Deflections	M.	Scaling / Dusting
B.	Exposed Reinforcing Steel	H.	Degraded Patches or Repairs	N.	Coating Deterioration
C.	Exposed Metallic Items (Other)	I.	Popouts , Voids, Honeycomb	O.	Abrasion, Cavitation, Wear
D.	Evidence Of Grease Leakage	J.	Spalls	P.	Air Voids / Bug Holes
E.	Evidence Of Moisture	K.	Cold Joint Lines	Q.	Efflorescence
F.	Leaching Or Chemical Attack	L.	Corrosion Staining	R.	Other (Explain)

Supplemental Information : ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR: (Print & Sign) W. Lance Robbins W. Lance Robbins LEVEL II DATE 8-13-09

STATION/ADMIN REVIEW: (Print & Sign) Evan Tabor DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable (results Acceptable) ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RE REVIEW (as applicable) Howard T. Hall P.E. DATE: 18 MAR 10

ANII REVIEW (as applicable) _____ DATE: _____

ATTACHMENT 6
ASME IWE (Class CC) Containment Concrete VT-1C or VT-3C Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-17-09	Report No:		
System: Cont. bldg Tendons	Component: D-122		WO No(s).: R2067551		
Location: Building: Cont. bldg.	Elev.:	Col.:	Row:	Azimuth/Radius:	
Exam Type: ☐ DV ☐ GV ☒ VT-1C ☐ VT-3C	Type Of Exam: ☒ Direct ☐ Remote		Matl. Type: Concrete		
Design Drawing(s)	Visual Aids: None				
Surface: ID (OD)	Surface / Components Coated: ☐ YES ☒ NO				
M&TE Used: Scale R-2 Calibrated 4/10 ☒ Test Card	UTC or Serial No. N/A		Cal. Due Date: N/A		
Illumination Used Flash light	Illumination Verified: Date: 8/17/09 Time: 7:30AM				
Special / Specific Instructions: None					

Component / Item Number and Description (e.g. EIN, EID, etc.)	RESULTS NI	RI TYPE	IO	Explanation / Notes (As a minimum, Record Location and Size of Recordable Indications as applicable)
2' area of concrete around D-122 tendon buttress 5 shop end.			M	Large area of light scaling above tendon
			A	Crack from top center of bearing plate 4' long x < than .010" wide.
			A	Crack from bottom center of bearing plate 6' long x < than .010" wide.

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Cracks (Characterize and Size)	G.	Settlements Or Deflections	M.	Scaling / Dusting
B.	Exposed Reinforcing Steel	H.	Degraded Patches or Repairs	N.	Coating Deterioration
C.	Exposed Metallic Items (Other)	I.	Popouts, Voids, Honeycomb	O.	Abrasion, Cavitation, Wear
D.	Evidence Of Grease Leakage	J.	Spalls	P.	Air Voids / Bug Holes
E.	Evidence Of Moisture	K.	Cold Joint Lines	Q.	Efflorescence
F.	Leaching Or Chemical Attack	L.	Corrosion Staining	R.	Other (Explain)

Supplemental Information: ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Ranee Robbins W. Ranee Robbins LEVEL II DATE 8-17-09

STATION/ADMIN REVIEW (Print & Sign) Eva Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable (results Acceptable) ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. Initiated for Corrective Action)

LEVEL III or RE REVIEW (as applicable) (Howard T. Nici, P.E.) DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 6
ASME IWE (Class CC) Containment Concrete VT-1C or VT-3C Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 11-13-09	Report No:	
System: CONTAINMENT TENDONS	Component: D-122		WO No(s): R2067551	
Location: Building: CONTAINMENT	Elev.:	Col.:	Row:	Azimuth/Radius:
Exam Type: ☐ DV ☐ GV ☒ VT-1C ☐ VT-3C	Type Of Exam: ☒ Direct ☐ Remote		Matl. Type: CONCRETE	
Design Drawing(s)	Visual Aids: NONE			
Surface: ID (OD)	Surface / Components Coated: ☐ YES ☒ NO			
M&TE Used: LIGHT METER FOOT CANDLES Due: 5-11-10 ☒ Test Card	UTC or Serial No. N/A		Cal. Due Date: N/A	
Illumination Used FLASHLIGHT	Illumination Verified: Date: 11-18-09		Time: 1100 PM	
Special / Specific Instructions: N/A				

Component / Item Number and Description (e.g. EIN, EID, etc.)	RESULTS NI	RESULTS RI TYPE	RESULTS IO	Explanation / Notes (As a minimum, Record Location and Size of Recordable Indications as applicable)
D-122 FIELD / NE 24' FROM EDGE OF BEARING PLATE	X			

Results Legend:
NI - No Indications RI - Recordable Indication IO - Information Only

Recordable Indication Type Codes:

A	Cracks (Characterize and Size)	G	Settlements Or Deflections	M	Scaling / Dusting
B	Exposed Reinforcing Steel	H	Degraded Patches or Repairs	N	Coating Deterioration
C	Exposed Metallic Items (Other)	I	Popouts, Voids, Honeycomb	O	Abrasion, Cavitation, Wear
D	Evidence Of Grease Leakage	J	Spalls	P	Air Voids / Bug Holes
E	Evidence Of Moisture	K	Cold Joint Lines	Q	Efflorescence
F	Leaching Or Chemical Attack	L	Corrosion Staining	R	Other (Explain)

Supplemental Information: ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) DANIEL P. O'SHEA LEVEL II DATE 11-18-09

STATION/ADMIN REVIEW (Print & Sign) EVAN JOHNSON DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RE REVIEW (as applicable) (HOWARD T. HALL, P.E.) DATE: 12 MAR 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 6
ASME IWE (Class CC) Containment Concrete VT-1C or VT-3C Visual Examination NDE Report
Page 1 of 1

Station: TMI Unit: 1 Date: 8-11-09 Report No:

System: Cont. Tendons Component: D-225 WO No(s).: R2067551

Location: Building: Containment Bldg. Elev.: Col.: Row: Azimuth/Radius:

Exam Type: ☐ DV ☐ GV ☒ VT-1C ☐ VT-3C Type Of Exam: ☒ Direct ☐ Remote Matl. Type: Concrete

Design Drawing(s) — Visual Aids: None

Surface: ID (OD) Surface / Components Coated: ☐ YES ☒ NO

M&TE Used: Scale R-21 ul de 4-40 ☒ Test Card UTC or Serial No. N/A Cal. Due Date N/A

Illumination Used Flashlight Illumination Verified: Date: 8-11-09 Time: 7:AM

Special / Specific Instructions: None

Component / Item Number and Description (e.g. EIN, EID, etc.)	RESULTS NI	RI TYPE	IO	Explanation / Notes (As a minimum, Record Location and Size of Recordable Indications as applicable)
2' area of concrete around D-225 buttress 5/shoped			A	crack extending from right upper corner of bearing plate 49" long × < than .010 wide
			A	crack extending from lower right corner 49" long × < than .010" wide.

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Cracks (Characterize and Size)	G.	Settlements Or Deflections	M.	Scaling / Dusting
B.	Exposed Reinforcing Steel	H.	Degraded Patches or Repairs	N.	Coating Deterioration
C.	Exposed Metallic Items (Other)	I.	Popouts, Voids, Honeycomb	O.	Abrasion, Cavitation, Wear
D.	Evidence Of Grease Leakage	J.	Spalls	P.	Air Voids / Bug Holes
E.	Evidence Of Moisture	K.	Cold Joint Lines	Q.	Efflorescence
F.	Leaching Or Chemical Attack	L.	Corrosion Staining	R.	Other (Explain)

Supplemental Information: ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) N. Rance Robbins [signature] LEVEL II DATE 8-11-09 ~~8-18-09~~ 8-11-09

STATION/ADMIN REVIEW (Print & Sign) [signature] DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable (results Acceptable) ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RE REVIEW (as applicable) [signature] (Howard T. Hill, P.E.) DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 6
ASME IWE (Class CC) Containment Concrete VT-1C or VT-3C Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-12-09	Report No:		
System: Cont. Tendons	Component: D-225		WO No(s).: R2067551		
Location: Building: Containment Bldg.	Elev.:	Col.:	Row:	Azimuth/Radius:	
Exam Type: ☐ DV ☐ GV ☒ VT-1C ☐ VT-3C	Type Of Exam: ☒ Direct ☐ Remote		Matl. Type: Concrete		
Design Drawing(s)	Visual Aids: None				
Surface: ID (OD)	Surface / Components Coated: ☐ YES ☒ NO				
M&TE Used: None ☒ Test Card	UTC or Serial No. N/A		Cal. Due Date: N/A		
Illumination Used Flashlight	Illumination Verified: Date: 8-12-09		Time: 7:AM		
Special / Specific Instructions: None					

Component / Item Number and Description (e.g. EIN, EID, etc.)	RESULTS NI	RI TYPE	IO	Explanation / Notes (As a minimum, Record Location and Size of Recordable Indications as applicable)
2 foot area of concrete around D-225 buttress 2 field end.			H	Grout patch from lower left to upper right corner of bearing plate. Separating from concrete.

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A. Cracks (Characterize and Size)	G. Settlements Or Deflections	M. Scaling / Dusting
B. Exposed Reinforcing Steel	H. Degraded Patches or Repairs	N. Coating Deterioration
C. Exposed Metallic Items (Other)	I. Popouts, Voids, Honeycomb	O. Abrasion, Cavitation, Wear
D. Evidence Of Grease Leakage	J. Spalls	P. Air Voids / Bug Holes
E. Evidence Of Moisture	K. Cold Joint Lines	Q. Efflorescence
F. Leaching Or Chemical Attack	L. Corrosion Staining	R. Other (Explain)

Supplemental Information : ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Rance Robbins W. Rance Robbins LEVEL II DATE 8-12-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable (results Acceptable) ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RE REVIEW (as applicable) (Howard T. Nies P.E.) DATE: 18 Mar 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 6
ASME IWE (Class CC) Containment Concrete VT-1C or VT-3C Visual Examination NDE Report
Page 1 of 1

Station: TMI Unit: 1 Date: 11-16-09 Report No:

System: Containment Tendons Component: D-322 WO No(s). R2067551

Location: Building: Buttressment Elev.: Col.: Row: Azimuth/Radius:

Exam Type: ☐ DV ☐ GV ☒ VT-1C ☐ VT-3C Type Of Exam: ☒ Direct ☐ Remote Matl. Type: Concrete

Design Drawing(s) Visual Aids: None

Surface: ID (OD) Surface / Components Coated: ☐ YES ☒ NO

M&TE Used: [illegible] ☒ Test Card UTC or Serial No. N/A Cal. Due Date: N/A

Illumination Used: Flashlight Illumination Verified: Date: Time:

Special / Specific Instructions: N/A

Component / Item Number and Description (e.g. EIN, EID, etc.)	RESULTS NI	RI TYPE	IO	Explanation / Notes (As a minimum, Record Location and Size of Recordable Indications as applicable)
D-322 Shop / North	X			

Results Legend:
NI - No Indications RI - Recordable Indication IO - Information Only

Recordable Indication Type Codes

A	Cracks (Characterize and Size)	G	Settlements Or Deflections	M	Scaling / Dusting
B	Exposed Reinforcing Steel	H	Degraded Patches or Repairs	N	Coating Deterioration
C	Exposed Metallic Items (Other)	I	Popouts, Voids, Honeycomb	O	Abrasion, Cavitation, Wear
D	Evidence Of Grease Leakage	J	Spalls	P	Air Voids / Bug Holes
E	Evidence Of Moisture	K	Cold Joint Lines	Q	Efflorescence
F	Leaching Or Chemical Attack	L	Corrosion Staining	R	Other (Explain)

Supplemental Information ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe)

Results Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) Daniel P. O'Shea [signature] LEVEL II DATE 11-16-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson [signature] DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable (results Acceptable) ☒ Yes ☐ No

Additional Actions
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RE REVIEW (as applicable) [signature] (Howard T. Hill, P.E.) DATE 12 Mar 10

ANII REVIEW (as applicable) DATE

Page ___ of ___

ATTACHMENT 6
ASME IWE (Class CC) Containment Concrete VT-1C or VT-3C Visual Examination NDE Report
Page 1 of 1

Station: TMI Unit: 1 Date: Report No:

System: CONTAINMENT TENDONS Component: D-322 WO No(s).: R2067551

Location: Building: CONTAINMENT Elev.: Col.: Row: Azimuth/Radius:

Exam Type: ☐ DV ☐GV ☒VT-1C ☐VT-3C Type Of Exam: ☒Direct ☐Remote Matl. Type: CONCRETE

Design Drawing(s) Visual Aids: NONE

Surface: ID (OD circled) Surface / Components Coated: ☐ YES ☒ NO

M&TE Used: LIGHT METER ... DVK25-11-10 ☒ Test Card UTC or Serial No. N/A Cal. Due Date: N/A

Illumination Used FLASHLIGHT Illumination Verified: Date: ~~...~~ 11-16-09 Time: 8:00 AM

Special / Specific Instructions: N/A

Component / Item Number and Description (e.g. EIN, EID, etc.)	RESULTS NI	RI TYPE	IO	Explanation / Notes (As a minimum, Record Location and Size of Recordable Indications as applicable)
D322 FIELD/SOUTH 24" FROM EDGE OF BEARINGPLATE	X			

Results Legend:
NI - No Indications RI - Recordable Indication IO - Information Only

Recordable Indication Type Codes:

A	Cracks (Characterize and Size)	G	Settlements Or Deflections	M	Scaling / Dusting
B	Exposed Reinforcing Steel	H	Degraded Patches or Repairs	N	Coating Deterioration
C	Exposed Metallic Items (Other)	I	Popouts , Voids, Honeycomb	O	Abrasion, Cavitation, Wear
D	Evidence Of Grease Leakage	J	Spalls	P	Air Voids / Bug Holes
E	Evidence Of Moisture	K	Cold Joint Lines	Q	Efflorescence
F	Leaching Or Chemical Attack	L	Corrosion Staining	R	Other (Explain)

Supplemental Information . ☐Yes ☒No ☐ Sketch ☐Photo ☐Video ☐ Other (Describe):

Results. Acceptable ☒Yes ☐No

EXAMINER/EVALUATOR (Print & Sign) DANIEL P. O'SHEA [signature] LEVEL II DATE 11-16-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson [signature] DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable/results Acceptable ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RE REVIEW (as applicable) [signature] (Howard T. Hill, P.E.) DATE: 18 MAR 10

ANII REVIEW (as applicable) DATE:

ATTACHMENT 6
ASME IWE (Class CC) Containment Concrete VT-1C or VT-3C Visual Examination NDE Report
Page 1 of 1

Station: TMI   Unit: 1   Date: 8-17-09   Report No:

System: Containment Tendons   Component: D342   WO No(s).: R2067551

Location: Building: Containment Bldg.   Elev.:   Col.:   Row: Azimuth/Radius:

Exam Type: ☐ DV ☐ GV ☒ VT-1C ☐ VT-3C   Type Of Exam: ☒ Direct ☐ Remote   Matl. Type: concrete

Design Drawing(s)   Visual Aids: None

Surface: ID (OD)   Surface / Components Coated: ☐ YES ☒ NO

M&TE Used: R-21 Scale, Caliper, 4-18 ☒ Test Card   UTC or Serial No. N/A   Cal. Due Date: N/A

Illumination Used: Flashlight   Illumination Verified: Date: 8-17-09 Time: 7:30 AM

Special / Specific Instructions: None

Component / Item Number and Description (e.g. EIN, EID, etc.)	RESULTS NI	RI TYPE	IO	Explanation / Notes (As a minimum, Record Location and Size of Recordable Indications as applicable)
2' Area of concrete around D 342 tendon Shop End Buttress 6			A	3 cracks ~~3 A~~ WRR 8-17-09 2 at top and 1 at bottom of the bearing plate 12" max length x ~~thin~~ .010" wide.

Results Legend:
NI - No Indications   RI - Recordable Indication   IO – Information Only

Recordable Indication Type Codes:

A. Cracks (Characterize and Size)	G. Settlements Or Deflections	M. Scaling / Dusting
B. Exposed Reinforcing Steel	H. Degraded Patches or Repairs	N. Coating Deterioration
C. Exposed Metallic Items (Other)	I. Popouts, Voids, Honeycomb	O. Abrasion, Cavitation, Wear
D. Evidence Of Grease Leakage	J. Spalls	P. Air Voids / Bug Holes
E. Evidence Of Moisture	K. Cold Joint Lines	Q. Efflorescence
F. Leaching Or Chemical Attack	L. Corrosion Staining	R. Other (Explain)

Supplemental Information: ☐ Yes ☒ No   ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Rance Robbins [signature]   LEVEL II   DATE 8-17-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson [signature]   DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable (results Acceptable) ☒ Yes ☐ No

Additional Actions:
(Action Request, Work Order, Issue Report, etc. initiated for Corrective Action)

LEVEL III or RE REVIEW (as applicable) [signature] (Howard T. Hill, P.E.) DATE: 18 Mar 10

ANII REVIEW (as applicable)   DATE:

ATTACHMENT 6
ASME IWE (Class CC) Containment Concrete VT-1C or VT-3C Visual Examination NDE Report
Page 1 of 1

Station: TMI	Unit: 1	Date: 8-17-09	Report No:		
System: Containment Tendons	Component: D-342		WO No(s).: R2067551		
Location: Building: Cont. Bldg.	Elev.:	Col.:	Row:	Azimuth/Radius:	
Exam Type: ☐ DV ☐ GV ☒ VT-1C ☐ VT-3C	Type Of Exam: ☒ Direct ☐ Remote			Matl. Type: Concrete	
Design Drawing(s)	Visual Aids: None				
Surface: ID (OD)	Surface / Components Coated: ☐ YES ☒ NO				
M&TE Used: R-21 scale ruler 4-5 ☒ Test Card	UTC or Serial No. N/A			Cal. Due Date: N/A	
Illumination Used Flashlight	Illumination Verified: Date: 8-17-09			Time: 1:PM	
Special / Specific Instructions: None					

Component / Item Number and Description (e.g. EIN, EID, etc.)	RESULTS NI	RESULTS RI TYPE	RESULTS IO	Explanation / Notes (As a minimum, Record Location and Size of Recordable Indications as applicable)
2' Area of concrete around D-342 tendon. Buttress 4 Field End.			A	1 crack above bearing plate 17" long x <.010" wide

Results Legend:
NI - No Indications RI - Recordable Indication IO – Information Only

Recordable Indication Type Codes:

A.	Cracks (Characterize and Size)	G.	Settlements Or Deflections	M.	Scaling / Dusting
B.	Exposed Reinforcing Steel	H.	Degraded Patches or Repairs	N.	Coating Deterioration
C.	Exposed Metallic Items (Other)	I.	Popouts, Voids, Honeycomb	O.	Abrasion, Cavitation, Wear
D.	Evidence Of Grease Leakage	J.	Spalls	P.	Air Voids / Bug Holes
E.	Evidence Of Moisture	K.	Cold Joint Lines	Q.	Efflorescence
F.	Leaching Or Chemical Attack	L.	Corrosion Staining	R.	Other (Explain)

Supplemental Information: ☐ Yes ☒ No ☐ Sketch ☐ Photo ☐ Video ☐ Other (Describe):

Results: Acceptable ☒ Yes ☐ No

EXAMINER/EVALUATOR (Print & Sign) W. Ranee Robbins W. Ranee Robbins LEVEL II DATE 8-17-09

STATION/ADMIN REVIEW (Print & Sign) Evan Johnson DATE 3/15/10

This section to be completed only if Examiner/Evaluator notes RI or Unacceptable condition.

RI or Unacceptable results Acceptable ☒ Yes ☐ No

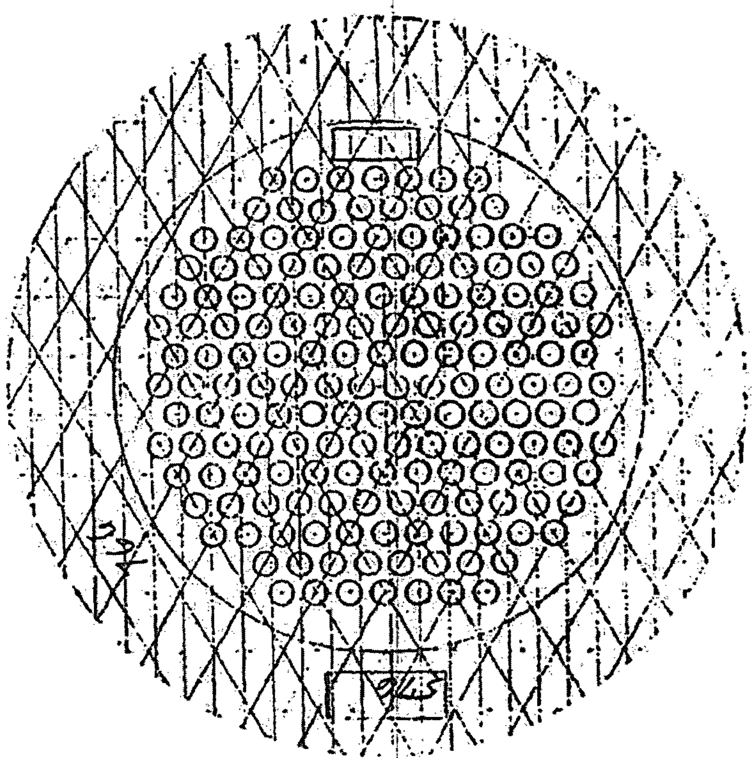
Additional Actions:
(Action Request, Work Order, Issue Report, etc. Initiated for Corrective Action)

LEVEL III or RE REVIEW (as applicable) Howard T. Nix, C.E. DATE: 18 MAR 10

ANII REVIEW (as applicable) _____ DATE: _____

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection



RB Tendon Surveillance

COMMENT: SHIM STACK 6.50" (4, 2, 4, 1/8")
NO CORROSION

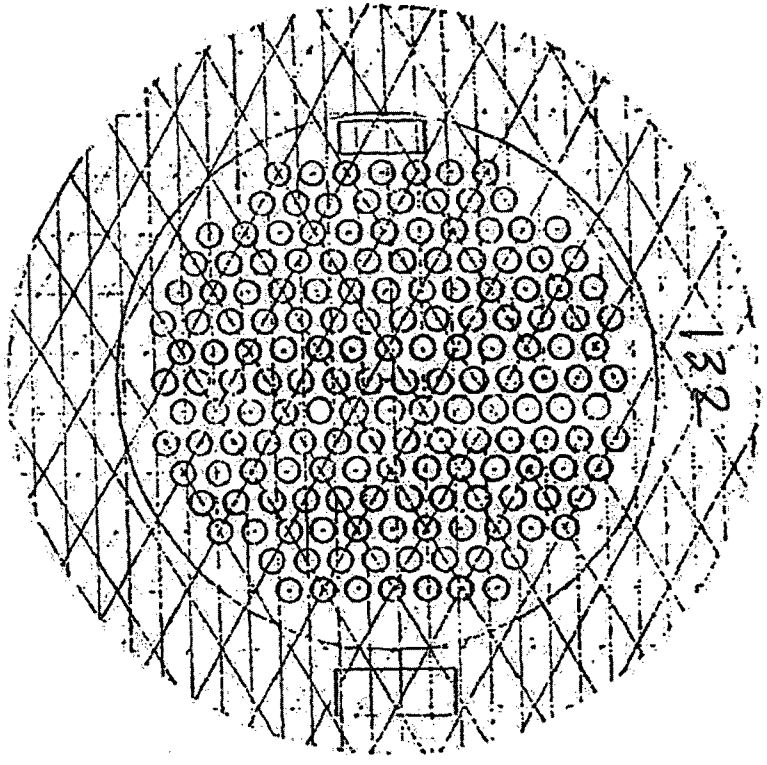
INSPECTED BY
CONTRACTOR FOREMAN n/a Date
VERIIFIED BY
COGNIZANT QV INSPECTOR [signature] Date 11-12-09
COGNIZANT MECH/STRUCT ENGINEER [signature] Date 1/7 Jan 10
REVIEWED BY

INSPECTION PERIOD 35TH YR

Tendon # H13-41 ~~H21-41~~
END: FIELD ____ (1 piece washer)
SHOP X (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection



RB Tendon Surveillance

COMMENT: Shim stack ht. – 6.7"
(4, 2, ½, ⅛)
No corrosion
Anchor head ID# did not match, we verified we were on the correct tendon by counting down from the top of the buttress.

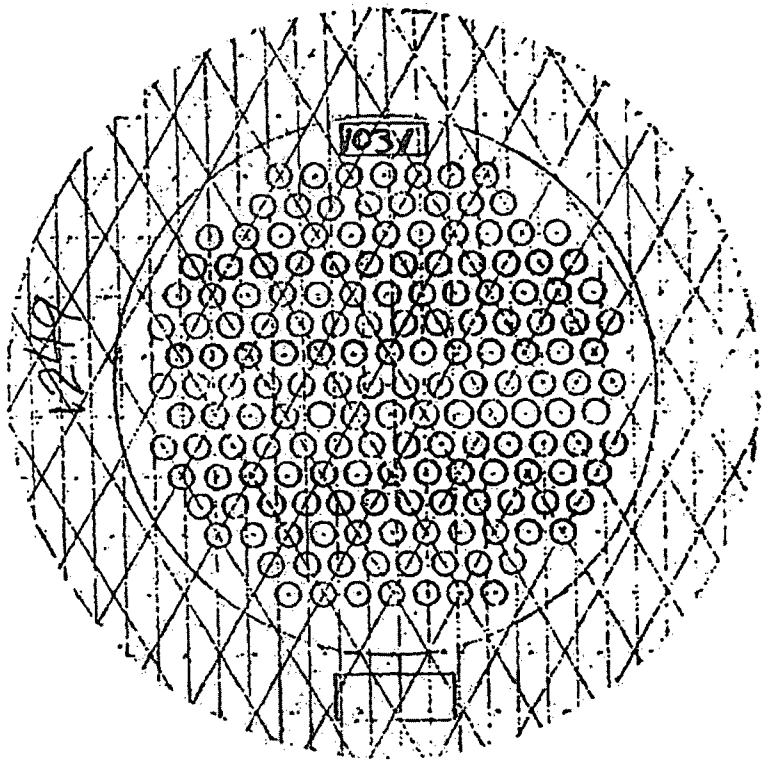
INSPECTED BY
CONTRACTOR FOREMAN N/A Date
VERIIFIED BY
COGNIZANT QV INSPECTOR W. Ramee Fallon Date 8/26/19
COGNIZANT MECH/STRUCT ENGINEER Date 8/26/19
REVIEWED BY

INSPECTION PERIOD 35th Year

Tendon # H13-41
END: FIELD X (1 piece washer)
SHOP ____ (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection



RB Tendon Surveillance

COMMENT: Shim stack ht. – 6.5" (4", 2", ½")
light surface rust on shims (no pitting)
Note: Bushing I.D.'s Did not match. We verified we were on the correct tendon by counting down from the top of the buttress.

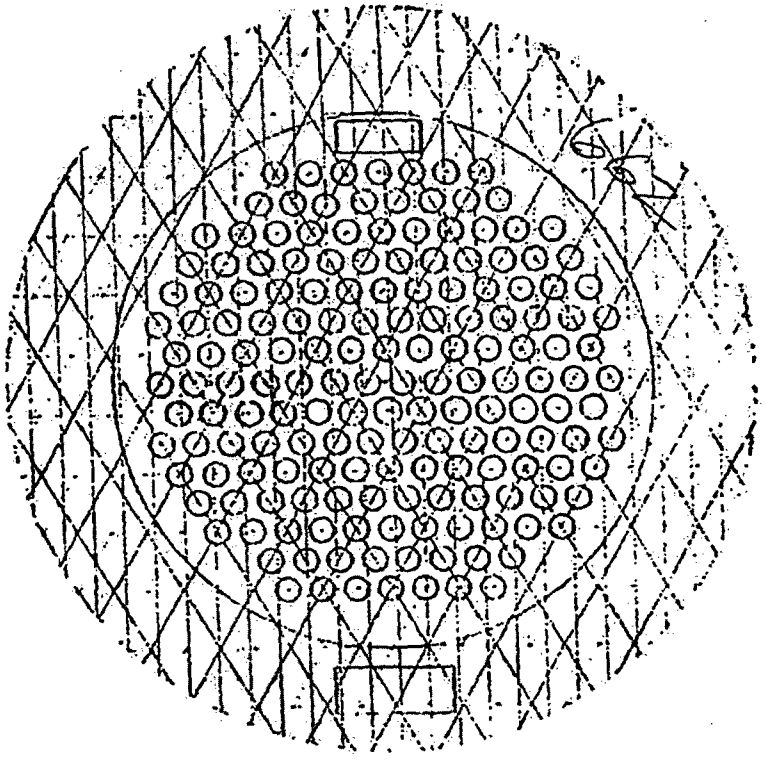
INSPECTED BY
CONTRACTOR FOREMAN N/A Date
VERIFIED BY
COGNIZANT QV INSPECTOR W. Powell Date 5-11-09
COGNIZANT MECH/STRUCT ENGINEER Date 18 MAR 10
REVIEWED BY

INSPECTION PERIOD 3.5 yr.

Tendon # H24-33
END: FIELD ____ (1 piece washer)
SHOP X (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection



RB Tendon Surveillance

COMMENT: Shim stack ht. - 7.6" (4, 2, 1, ½)
NO corrosion.

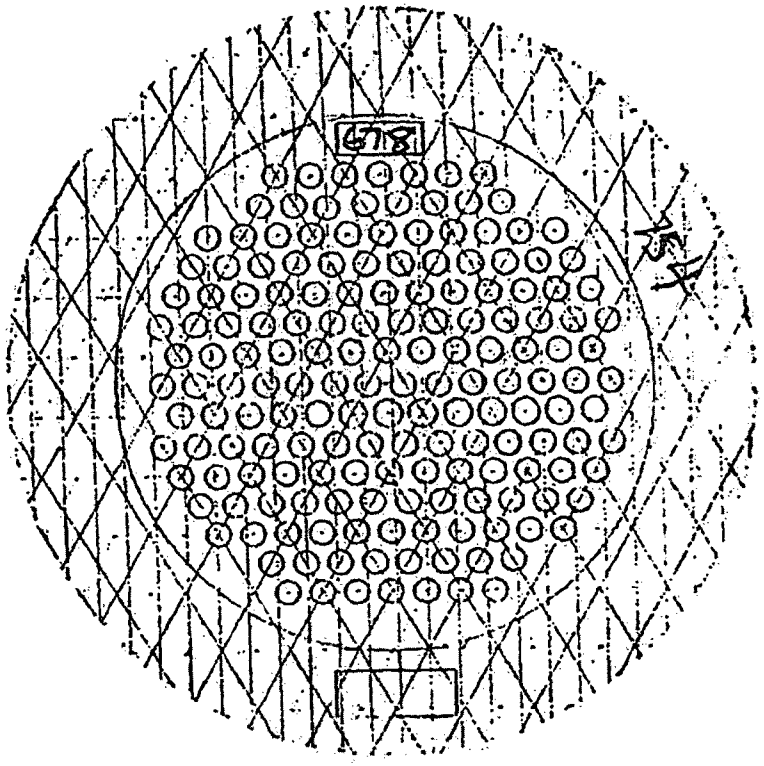
INSPECTED BY
CONTRACTOR FOREMAN N/A Date
VERIFIED BY
COGNIZANT QV INSPECTOR W. Bruce Date 8-24-09
COGNIZANT MECH/STRUCT ENGINEER Date 19 AUG 10
REVIEWED BY

INSPECTION PERIOD 35 Yr

Tendon # H29-33
END: FIELD X (1 piece washer)
SHOP ____ (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection



RB Tendon Surveillance

COMMENT: Shim stack ht ~ 6.4" (4, 2, ¼, ⅛)
No corrosion

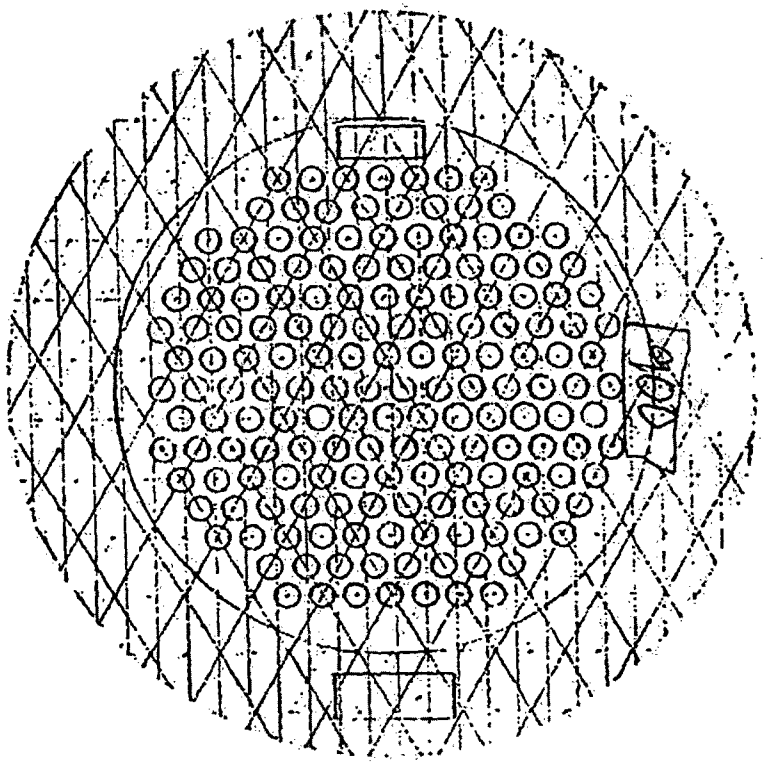
INSPECTED BY
CONTRACTOR FOREMAN N/A Date
VERIIFIED BY
COGNIZANT QV INSPECTOR W. Bruce Robb Date 8-12-09
COGNIZANT MECH/STRUCT ENGINEER [signature] Date 19 MAR 10
REVIEWED BY

INSPECTION PERIOD 35 ± ½ yr

Tendon # H 46 50
END: FIELD ____ (1 piece washer)
SHOP X (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection



RB Tendon Surveillance

COMMENT: Shim stack ht 7" (4,2,1)
Light surface rust on shims, NO pitting

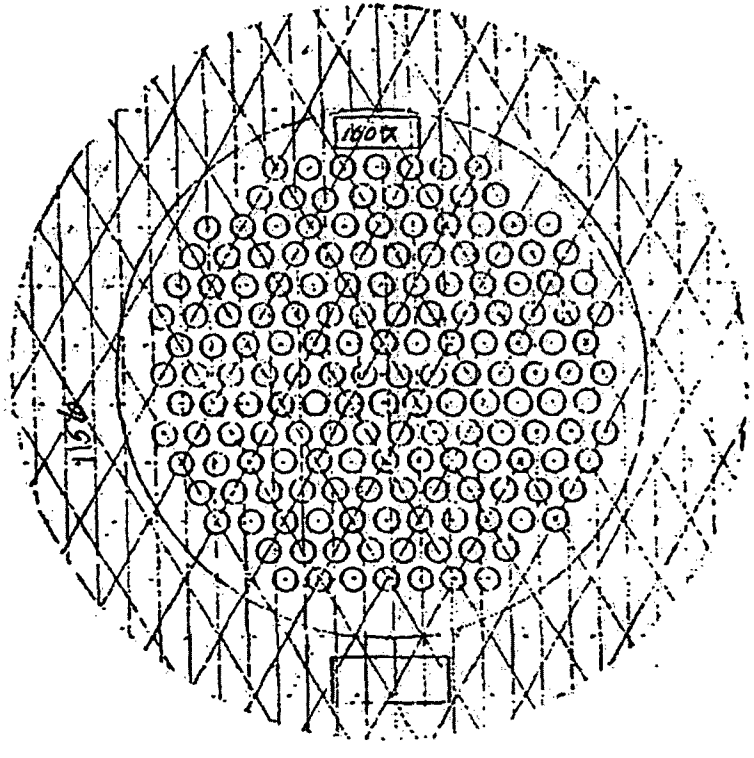
INSPECTED BY
CONTRACTOR FOREMAN N/A Date
VERIIFIED BY
COGNIZANT QV INSPECTOR W. Bruce Cobb Date 8-11-09
COGNIZANT MECH/STRUCT ENGINEER [signature] Date 8/11/09
REVIEWED BY

INSPECTION PERIOD 35th yr.

Tendon # H46-50
END: FIELD X (1 piece washer)
SHOP ____ (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection
As Found



RB Tendon Surveillance

COMMENT: SHIM STACK 7.1" (4, 2, 1°)
NO CORROSION

INSPECTED BY
CONTRACTOR FOREMAN _____ Date _____
VERIIFIED BY
COGNIZANT QV INSPECTOR _____ Date 11-11-09
COGNIZANT MECH/STRUCT ENGINEER _____ Date 11 NOV 10
REVIEWED BY

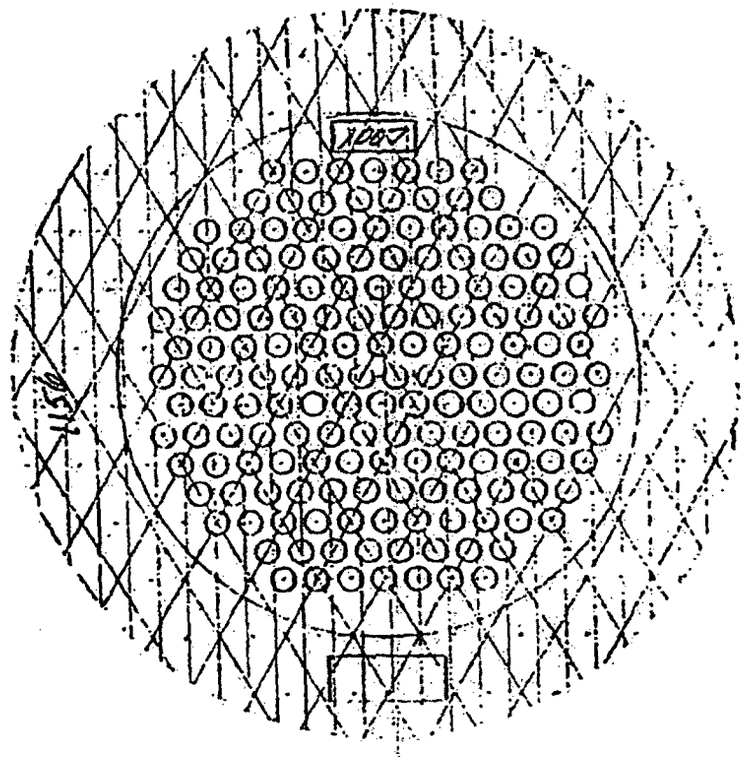
INSPECTION PERIOD 25TH YR

Tendon # H51-U9
END: FIELD ____ (1 piece washer)
SHOP X (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection

DETENSIONED



RB Tendon Surveillance

COMMENT: No change in conditions

INSPECTED BY
CONTRACTOR FOREMAN N/A Date N/A
VERIIFIED BY
COGNIZANT QV INSPECTOR [signature] Date 11-12-09
COGNIZANT MECH/STRUCT ENGINEER [signature] Date 11-12-09
REVIEWED BY

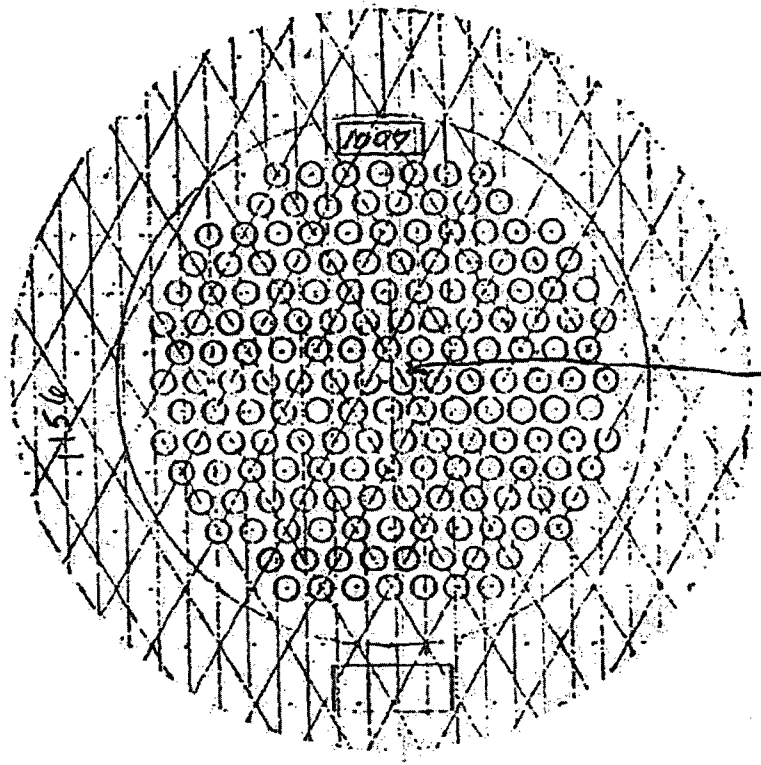
INSPECTION PERIOD 95TH %

Tendon # H51-49
END: FIELD ____ (1 piece washer)
SHOP X (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection

RETENSION



REMOVED FOR TESTING THIS SURVEILLANCE 2ND 11-12-09

RB Tendon Surveillance

COMMENT: SHIM STACK 8.5 (4, 2, 1/4, 1/8, 1/16)

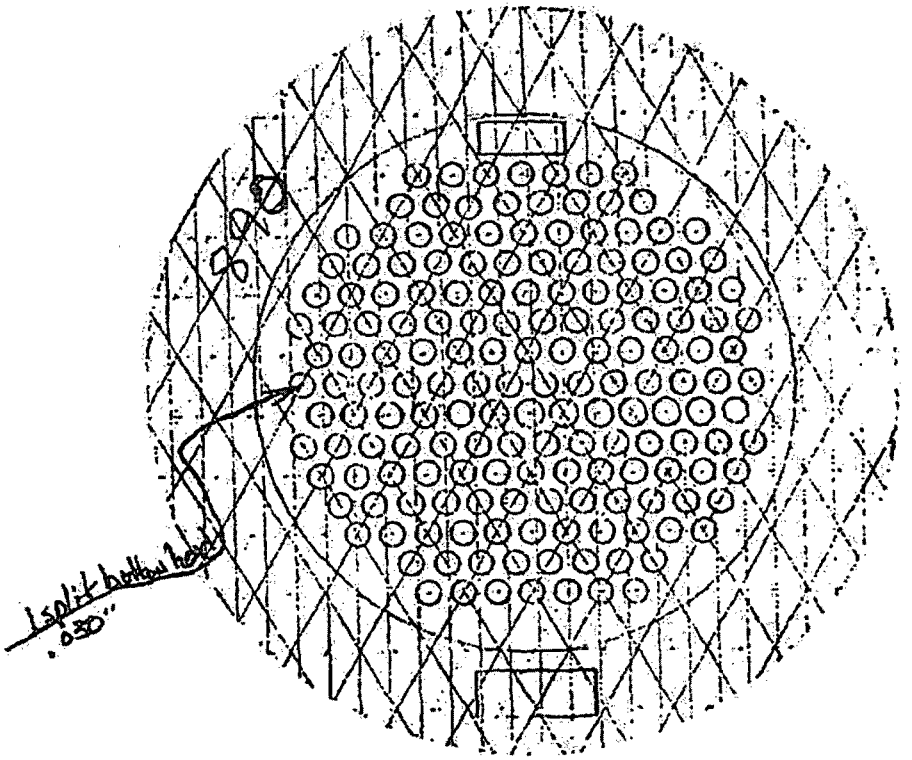
INSPECTED BY
CONTRACTOR FOREMAN N/A Date N/A
VERIIFIED BY
COGNIZANT QV INSPECTOR [signature] Date 11-12-09
COGNIZANT MECH/STRUCT ENGINEER [signature] Date 19 MAR 10
REVIEWED BY

INSPECTION PERIOD 35TH YR

Tendon # H51-49
END: FIELD ____ (1 piece washer)
SHOP X (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection
As-Found



RB Tendon Surveillance

COMMENT: Shim Stack ht. - 6.6" (4, 2, ½)
No corrosion

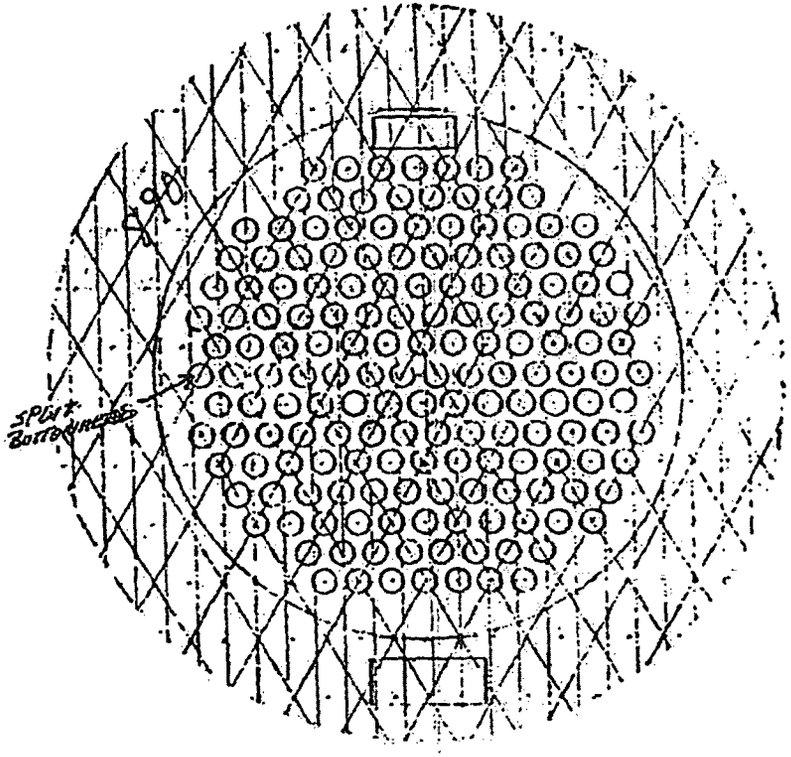
INSPECTED BY
CONTRACTOR FOREMAN N/A Date
VERIFIED BY
COGNIZANT QV INSPECTOR W. Rocco Rolle Date 8-21-09
COGNIZANT MECH/STRUCT ENGINEER [signature] Date 8/21/09
REVIEWED BY

INSPECTION PERIOD 35 ½ year

Tendon # H51-49
END: FIELD X (1 piece washer)
SHOP _____ (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection
DETENSION



RB Tendon Surveillance

COMMENT: NO CHANGE IN CONDITIONS

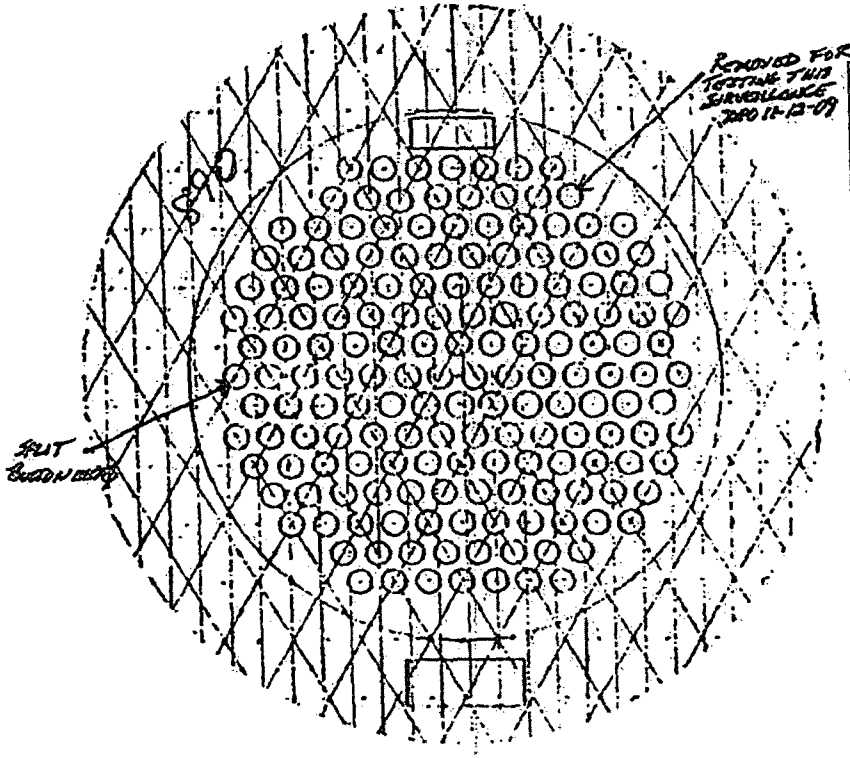
INSPECTED BY
CONTRACTOR FOREMAN N/A Date N/A
VERIIFIED BY
COGNIZANT QV INSPECTOR [signature] Date 11-11-09
COGNIZANT MECH/STRUCT ENGINEER [signature] Date 11/11/09
REVIEWED BY

INSPECTION PERIOD 35TH YR.

Tendon # H51-49
END: FIELD X (1 piece washer)
SHOP ____ (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection
REVISION



RB Tendon Surveillance

COMMENT: SHIM STACK 7.6 (3, ½, 2, 4)

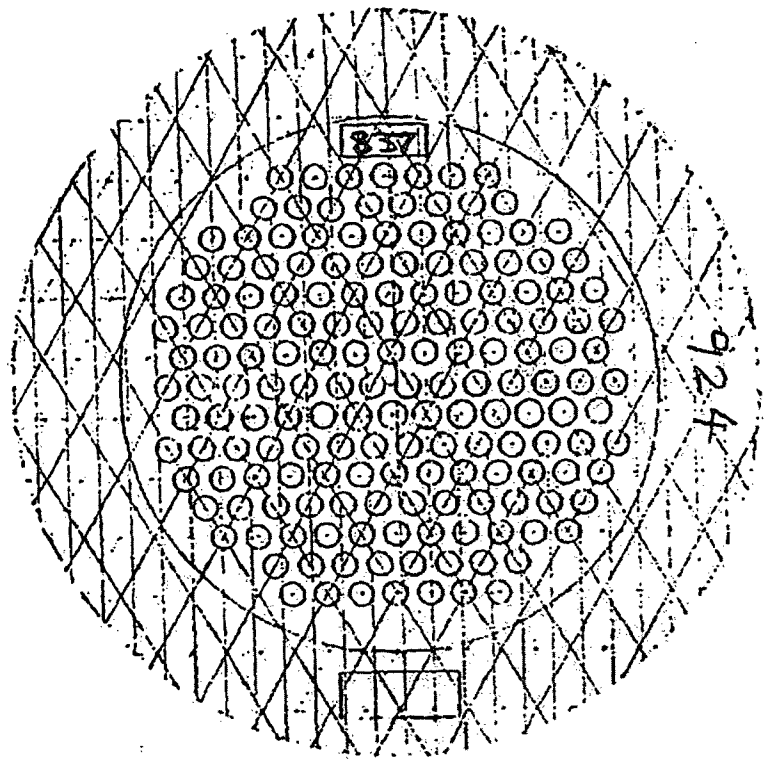
INSPECTED BY
CONTRACTOR FOREMAN N/A Date N/A
VERIIFIED BY
COGNIZANT QV INSPECTOR [signature] Date 11-12-09
COGNIZANT MECH/STRUCT ENGINEER [signature] Date 19 NOV 09
REVIEWED BY

INSPECTION PERIOD 25TH YR

Tendon # H51-49
END: FIELD X (1 piece washer)
SHOP ____ (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection



RB Tendon Surveillance

COMMENT: Shim stack ht. - 6.8"
(4, 2, ½, ¼)
NO CORROSION

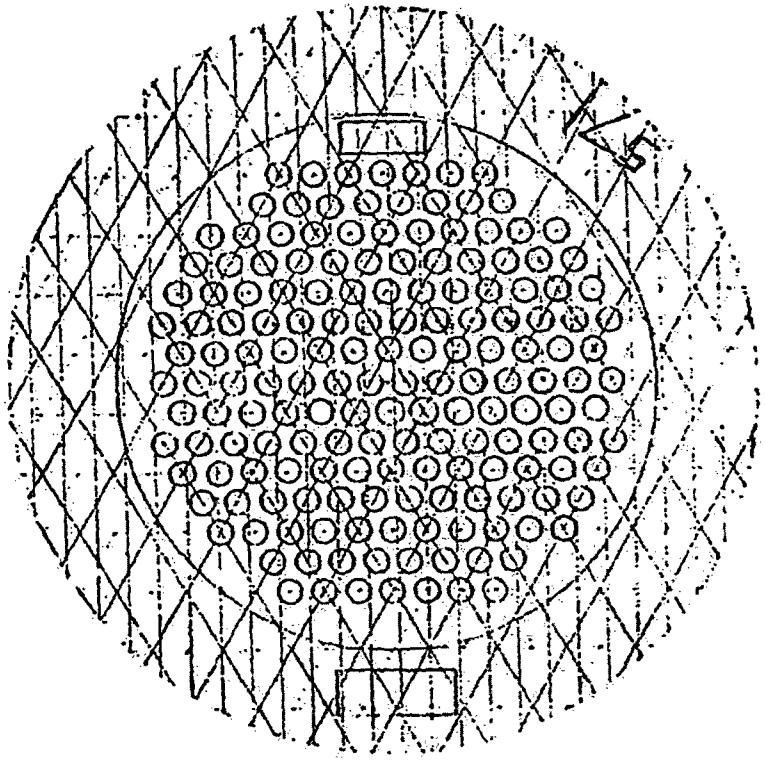
INSPECTED BY
CONTRACTOR FOREMAN N/A Date
VERIFIED BY
COGNIZANT QV INSPECTOR W. Lowe Date 8-12-09
COGNIZANT MECH/STRUCT ENGINEER [signature] Date 8/12/09
REVIEWED BY

INSPECTION PERIOD 35th yr

Tendon # H 62-26
END: FIELD ____ (1 piece washer)
SHOP X (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection



RB Tendon Surveillance

COMMENT: Shim stack ht. - 7.3" (4, 2, 1, 1/8)
No corrosion.

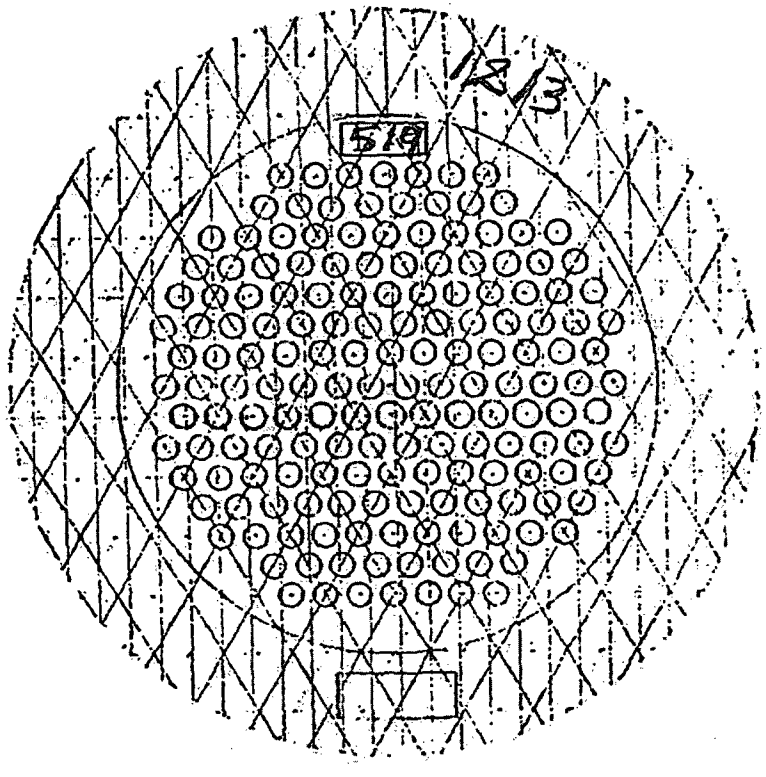
INSPECTED BY
CONTRACTOR FOREMAN N/A Date
VERIIFIED BY
COGNIZANT QV INSPECTOR N. Renee Robertson Date 8-28-09
COGNIZANT MECH/STRUCT ENGINEER [signature] Date 10/14/10
REVIEWED BY

INSPECTION PERIOD 35th year

Tendon # H62-26
END: FIELD X (1 piece washer)
SHOP _____ (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection



RB Tendon Surveillance

COMMENT: Shim stack ht. - 14,3"
(4,4,4,2)
No corrosion

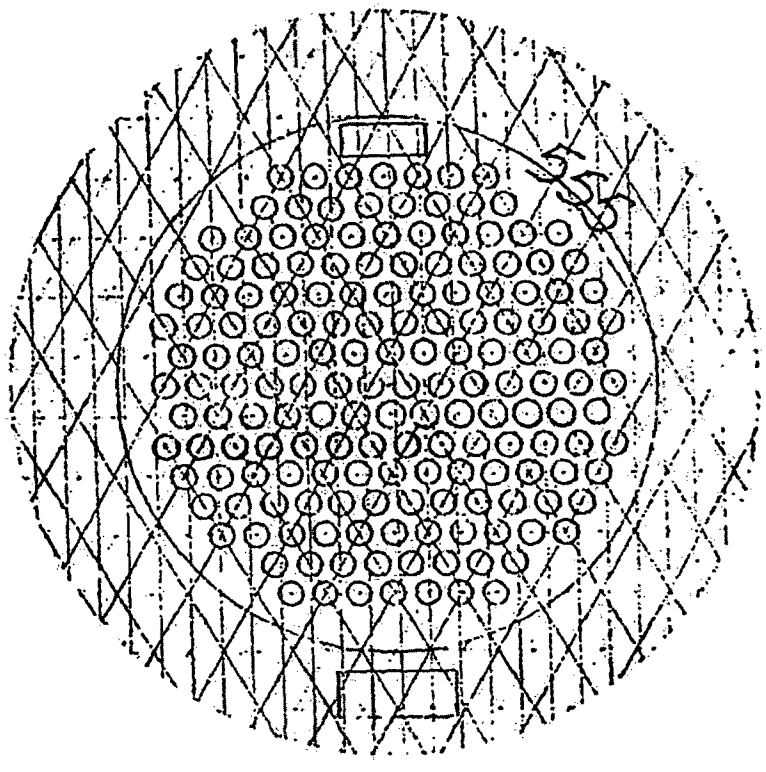
INSPECTED BY
CONTRACTOR FOREMAN N/A Date
VERIIFIED BY
COGNIZANT QV INSPECTOR W. Pearce Date 8-18-09
COGNIZANT MECH/STRUCT ENGINEER Date 19 AUG 09
REVIEWED BY

INSPECTION PERIOD 35½ year

Tendon # V-11
END: FIELD ____ (1 piece washer)
SHOP X (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection



RB Tendon Surveillance

COMMENT: Shim stack ht. – 5.75"
(4, 1/8, 1/2, 1) NO corrosion

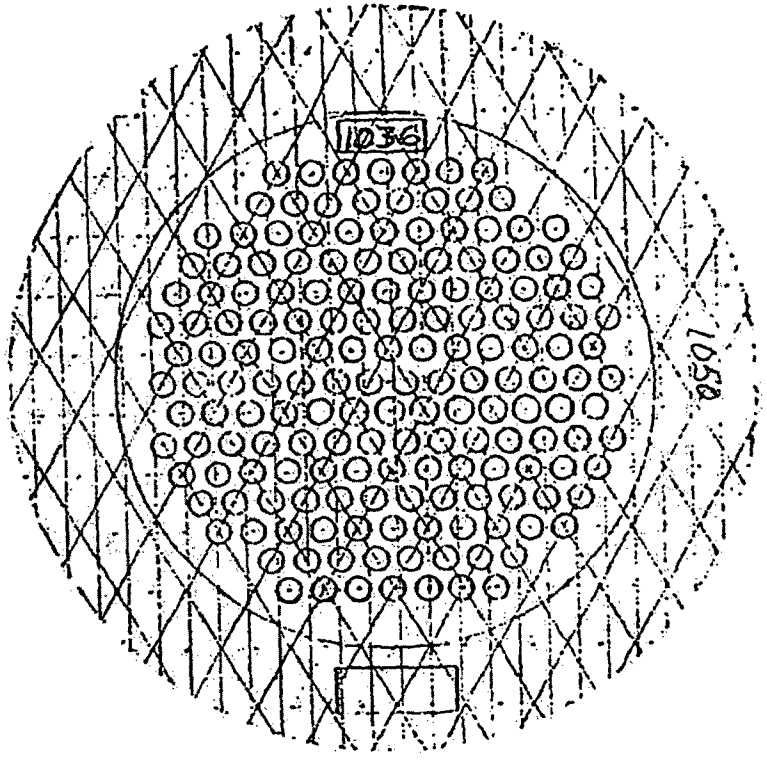
INSPECTED BY
CONTRACTOR FOREMAN N/A Date
VERIFIED BY
COGNIZANT QV INSPECTOR W. Bruce Poblete Date 8-13-09
COGNIZANT MECH/STRUCT ENGINEER Date 19 MAR 10
REVIEWED BY

INSPECTION PERIOD 35th yr.

Tendon # V-11
END: FIELD X (1 piece washer)
SHOP ____ (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection



RB Tendon Surveillance

COMMENT: Shim stack ht. - 14.15
(4, 4, 4, 1, 1/2, 1/4)
No corrosion

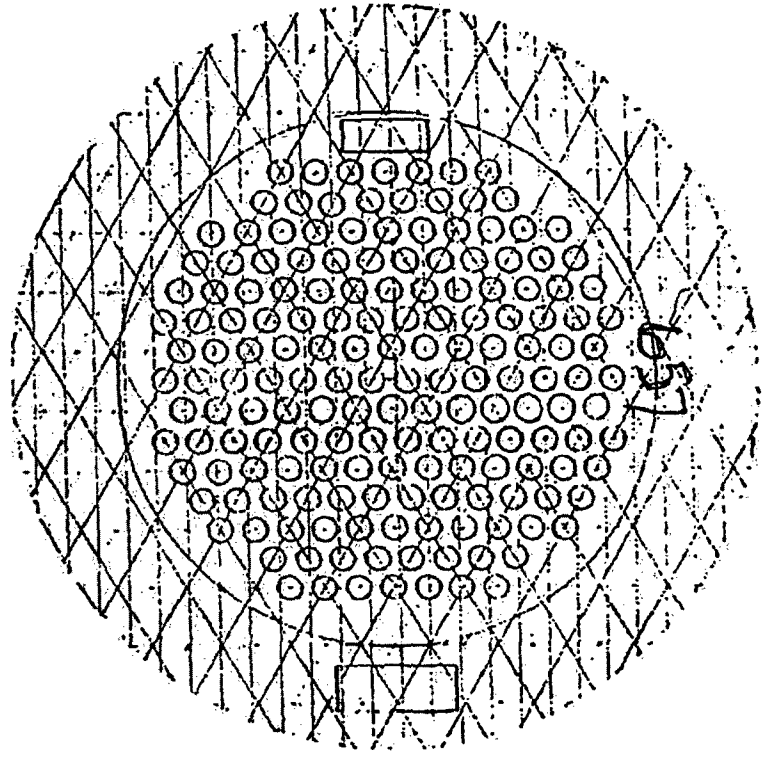
INSPECTED BY
CONTRACTOR FOREMAN N/A Date
VERIIFIED BY
COGNIZANT QV INSPECTOR W. Lance Lobb Date 9-18-09
COGNIZANT MECH/STRUCT ENGINEER [illegible] Date 9 MAR 10
REVIEWED BY

INSPECTION PERIOD 35th year

Tendon # V-32
END: FIELD ____ (1 piece washer)
SHOP X (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection



RB Tendon Surveillance

COMMENT: Shim stack ht. - 2" (1 shim) NO corrosion.

INSPECTED BY
CONTRACTOR FOREMAN N/A Date
VERIFIED BY
COGNIZANT QV INSPECTOR W. Ramey Poole Date 8-13-09
COGNIZANT MECH/STRUCT ENGINEER Date 8/14/09
REVIEWED BY

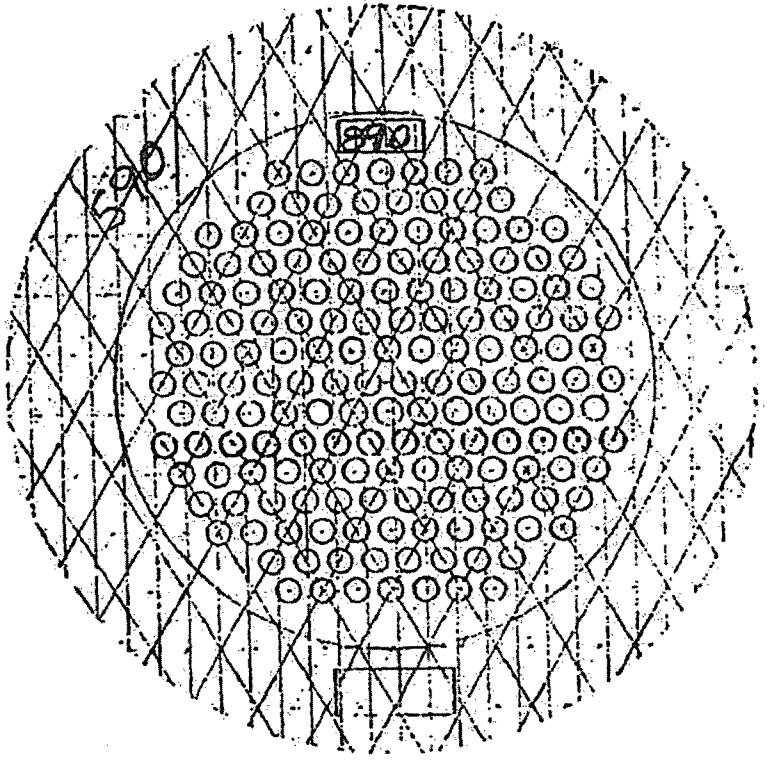
INSPECTION PERIOD 5th Yr.

Tendon # V-32
END: FIELD X (1 piece washer)
SHOP ____ (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection

AS FOUND INSPECTION



RB Tendon Surveillance

COMMENT: Shim stack ht. - 15" (4,4,4,2,½,¼)
(NO corrosion)

Note: Bushing I.D. did not match. we did verify we were on the correct tendon

INSPECTED BY
CONTRACTOR FOREMAN N/A Date
VERIIFIED BY
COGNIZANT QV INSPECTOR W. Bruce Poller Date 8/4/09
COGNIZANT MECH/STRUCT ENGINEER Date 8/4/09
REVIEWED BY

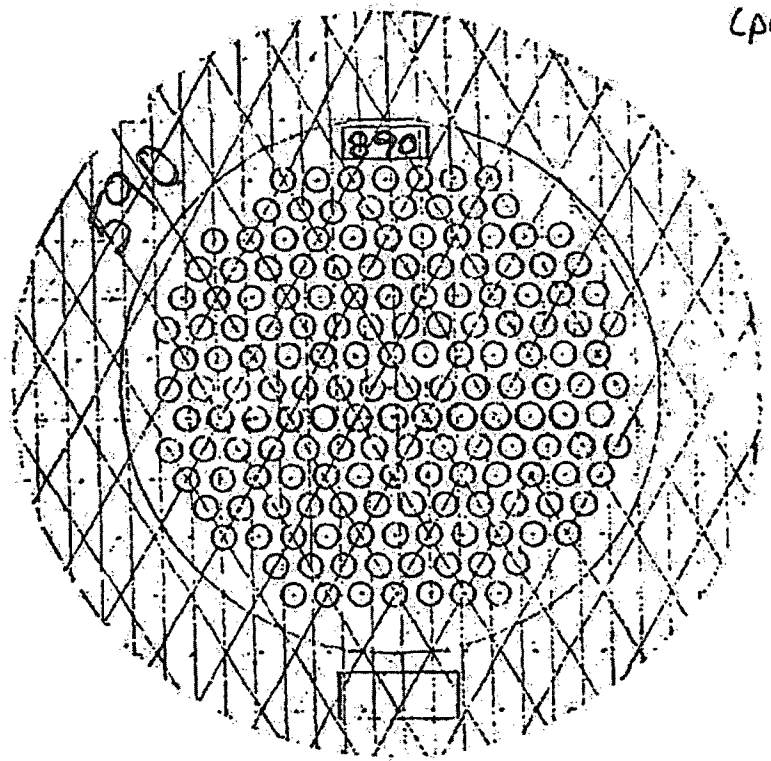
INSPECTION PERIOD 35th year

Tendon # V-90
END: FIELD ____ (1 piece washer)
SHOP X (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection

Post detension
(pre wire removal)



RB Tendon Surveillance

COMMENT: No shims
Wire is in good condition
No corrosion.

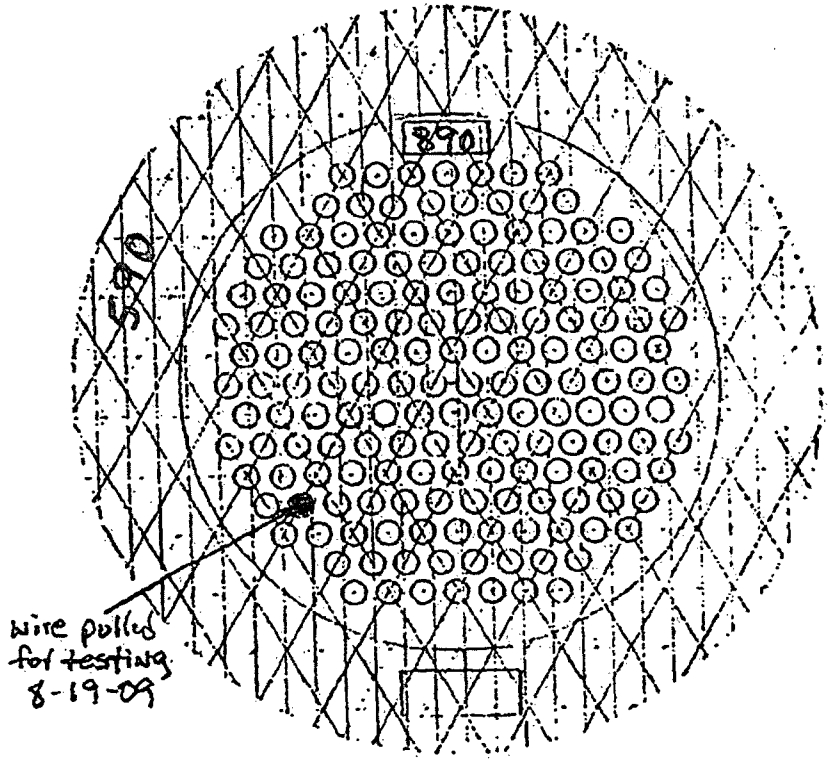
INSPECTED BY
CONTRACTOR FOREMAN N/A Date
VERIFIED BY
COGNIZANT QV INSPECTOR W. Ramey Robbins Date 8-19-09
COGNIZANT MECH/STRUCT ENGINEER Date 19 MAR 10
REVIEWED BY

INSPECTION PERIOD 35th Year

Tendon # V-90
END: FIELD ____ (1 piece washer)
SHOP X (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection
Post Retension



RB Tendon Surveillance

COMMENT: Shim stack ht. 15.8"
(4, 4, 4, 2, 1/4, 1/2, 3/4)

Added 1 new 3/4" shim heat # 401HT3010

INSPECTED BY
CONTRACTOR FOREMAN N/A Date
VERIIFIED BY
COGNIZANT QV INSPECTOR W. Lowe Date 8-20-09
COGNIZANT MECH/STRUCT ENGINEER Date 8/20/09
REVIEWED BY

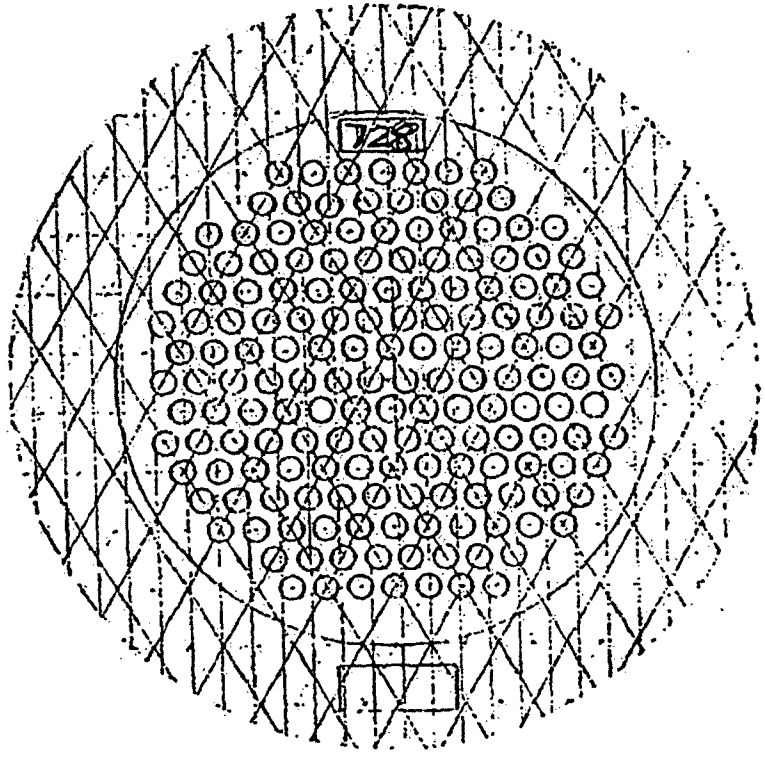
INSPECTION PERIOD 35th year

Tendon # V-90
END: FIELD ____ (1 piece washer)
SHOP X (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection

As found inspection



RB Tendon Surveillance

COMMENT: Shim stack ht. - 2.4"
(2", 3/8")
No corrosion

INSPECTED BY
CONTRACTOR FOREMAN N/A Date
VERIIFIED BY
COGNIZANT QV INSPECTOR W. Bruce Robertson Date 8-13-09
COGNIZANT MECH/STRUCT ENGINEER [illegible] Date 8/19/09
REVIEWED BY

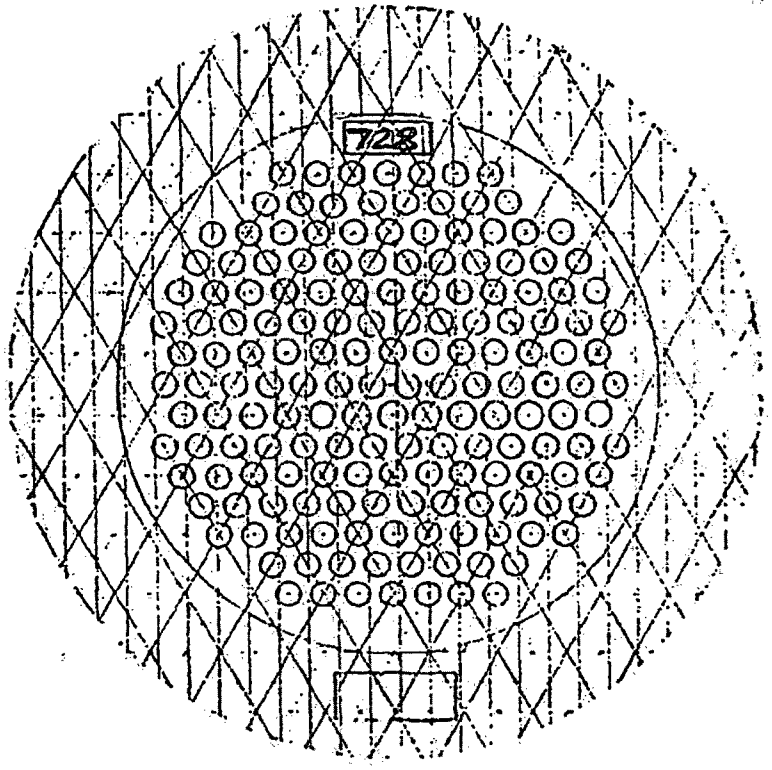
INSPECTION PERIOD 35th yr.

Tendon # V-90
END: FIELD X (1 piece washer)
SHOP ____ (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection

Post detension pre wire removal



RB Tendon Surveillance

COMMENT: No shims
No corrosion

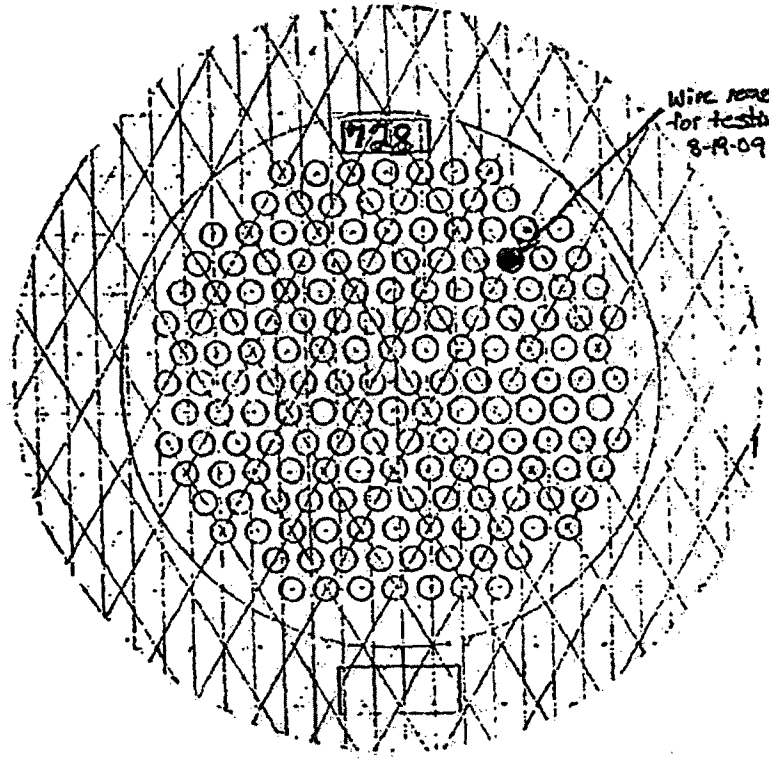
INSPECTED BY
CONTRACTOR FOREMAN N/A Date
VERIIFIED BY
COGNIZANT QV INSPECTOR W. Bruce Robb Date 8-19-09
COGNIZANT MECH/STRUCT ENGINEER Date 19 MAR 10
REVIEWED BY

INSPECTION PERIOD 35th year

Tendon # V-90
END: FIELD X (1 piece washer)
SHOP ____ (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection
Post retension



RB Tendon Surveillance

COMMENT: Shim stack height - 2.4"
(2", 3/8")

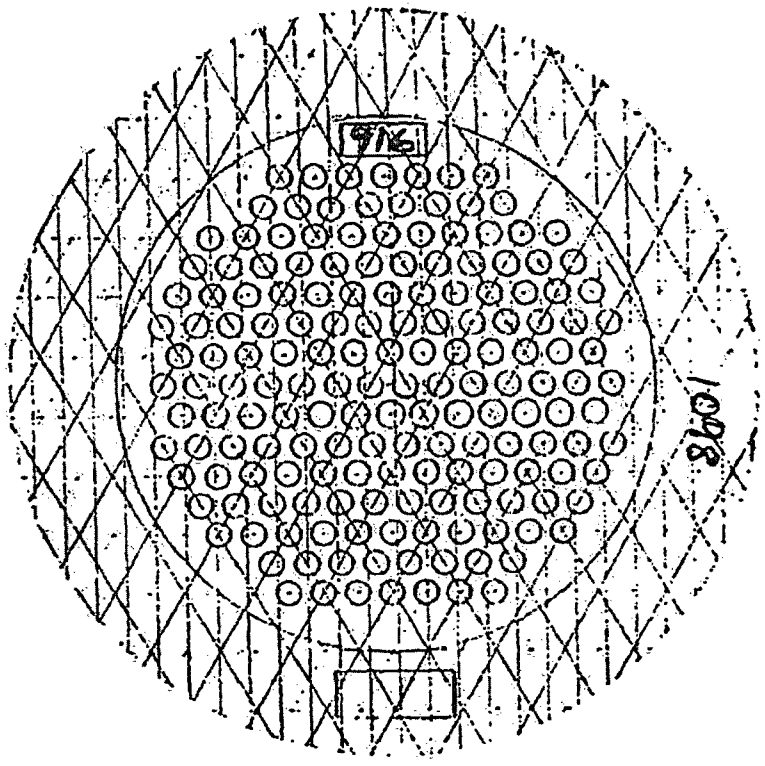
INSPECTED BY
CONTRACTOR FOREMAN N/A Date
VERIIFIED BY
COGNIZANT QV INSPECTOR W. Bruce Robertson Date 8-20-09
COGNIZANT MECH/STRUCT ENGINEER [illegible] Date [illegible]
REVIEWED BY

INSPECTION PERIOD 35 3/4 yr.

Tendon # V-90
END: FIELD X (1 piece washer)
SHOP ____ (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection



RB Tendon Surveillance

COMMENT: Shim stack ht. - 15.5" (4, 4, 4, 2, 1/16, 1, 1/4) NO CORROSION

As found exam

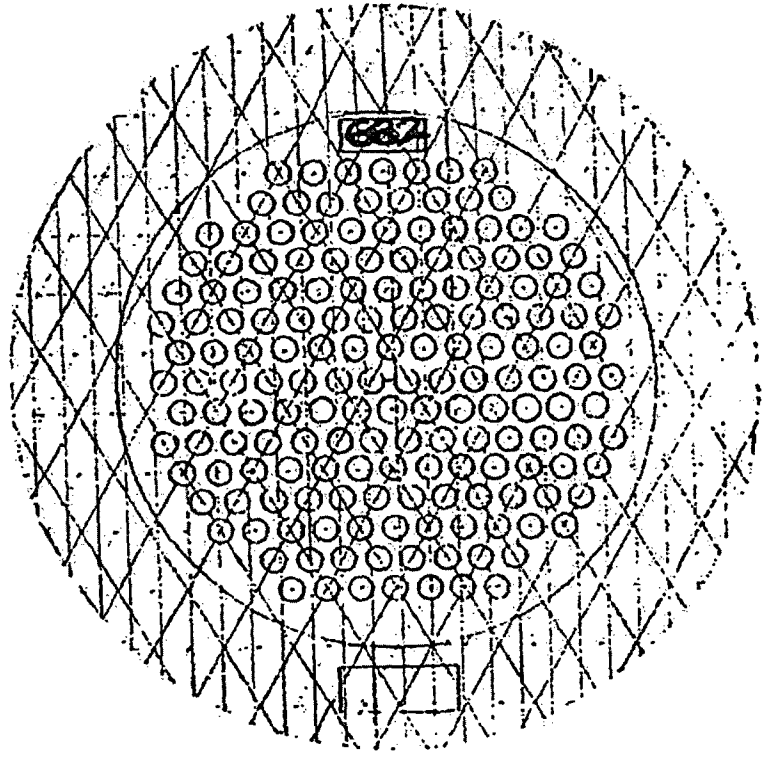
INSPECTED BY
CONTRACTOR FOREMAN N/A Date
VERIFIED BY
COGNIZANT QV INSPECTOR [signature] Date 8-13-09
COGNIZANT MECH/STRUCT ENGINEER [signature] Date 8/19/09
REVIEWED BY

INSPECTION PERIOD 3rd 4th

Tendon # V-132
END: FIELD ____ (1 piece washer)
SHOP X (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection



RB Tendon Surveillance

COMMENT: Shim stack ht. 2" (1 shim)
No corrosion

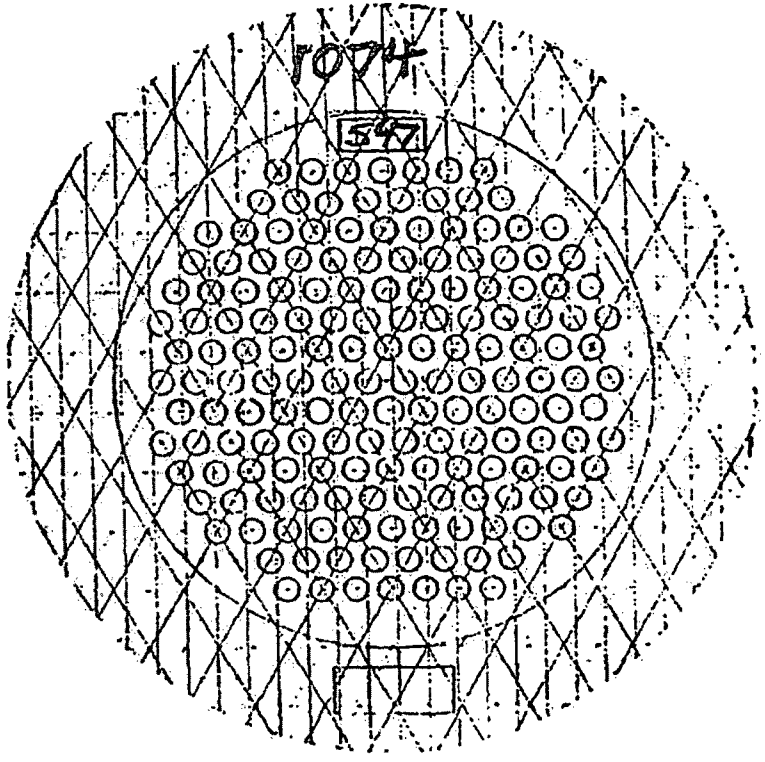
INSPECTED BY
CONTRACTOR FOREMAN N/A Date
VERIFIED BY
COGNIZANT QV INSPECTOR W. Robert Date 8-13-09
COGNIZANT MECH/STRUCT ENGINEER Date 10/16/09
REVIEWED BY

INSPECTION PERIOD 35th yr.

Tendon # V-132
END: FIELD X (1 piece washer)
SHOP ____ (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection



RB Tendon Surveillance

COMMENT: Shim stack ht. - 5.65"
(4, 1, ½)
Light surface rust on shims. (No pitting)

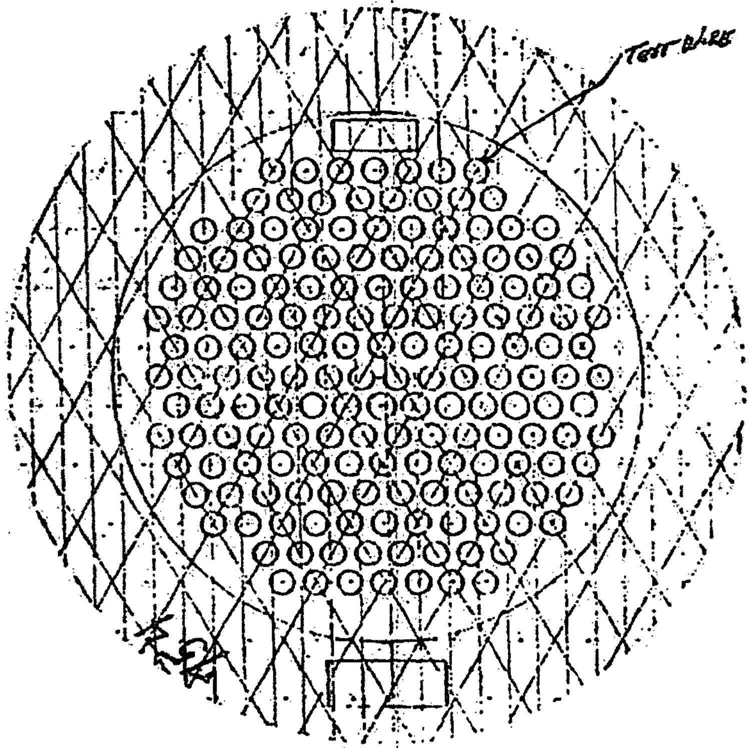
INSPECTED BY
CONTRACTOR FOREMAN N/A Date
VERIIFIED BY
COGNIZANT QV INSPECTOR W. Lance Colbert Date 8-17-09
COGNIZANT MECH/STRUCT ENGINEER Date 19 MAR 10
REVIEWED BY

INSPECTION PERIOD 35th yr.

Tendon # D-122
END: FIELD ____ (1 piece washer)
SHOP X (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection



RB Tendon Surveillance

COMMENT:
Shim Stack 7.00"
(4, 2, 1/2, 1/4, 1/8")

No Corrosion

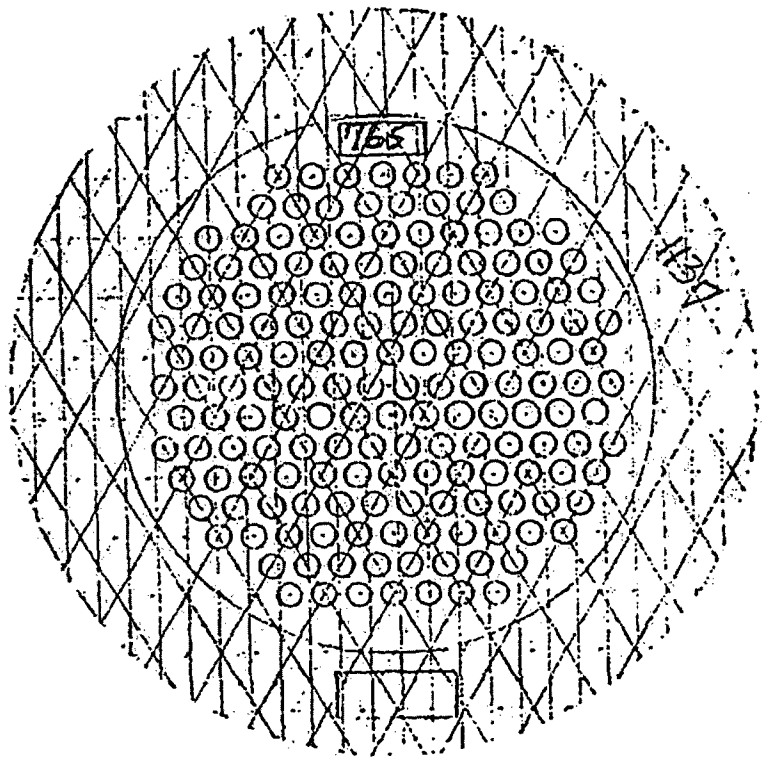
INSPECTED BY
CONTRACTOR FOREMAN N/A Date
VERIIFIED BY
COGNIZANT QV INSPECTOR [signature] Date 11-19-09
COGNIZANT MECH/STRUCT ENGINEER [signature] Date 17 MAR 10
REVIEWED BY

INSPECTION PERIOD 35TH YR

Tendon # D-122
END: FIELD X (1 piece washer)
SHOP ____ (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection



RB Tendon Surveillance

COMMENT: Shim Stack Hieght
7.7"
(2, 2, 2, 1, ½)
Light surface rust on shims and bearing plate. No pitting

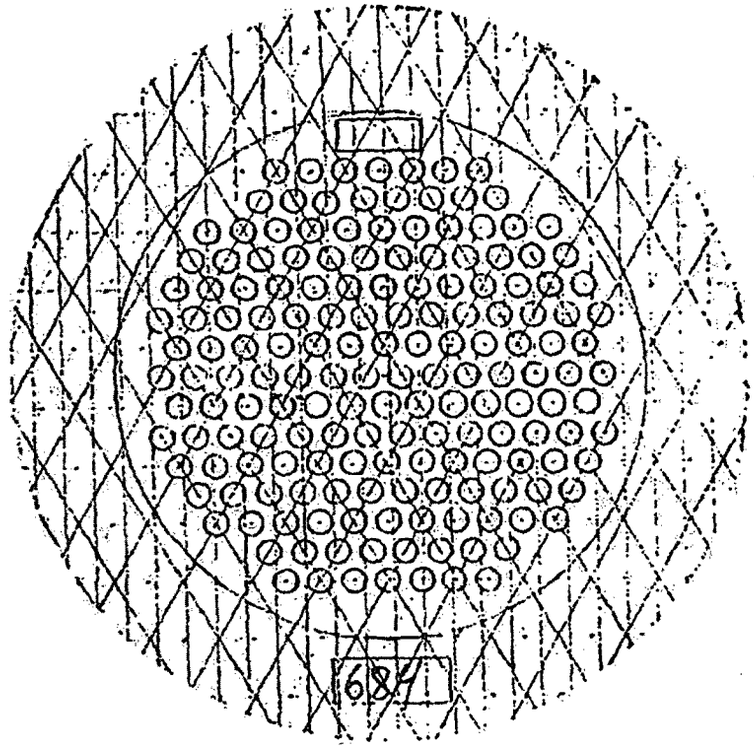
INSPECTED BY
CONTRACTOR FOREMAN N/A Date
VERIFIED BY
COGNIZANT QV INSPECTOR W. Lance Robertson Date 8-11-09
COGNIZANT MECH/STRUCT ENGINEER [signature] Date 12 AUG 10
REVIEWED BY

INSPECTION PERIOD 35th

Tendon # D-225
END: FIELD ____ (1 piece washer)
SHOP X (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection



RB Tendon Surveillance

COMMENT: Shim stack hieght 4.7"

$(2, 2, \frac{1}{2}, \frac{1}{8})$

No corrosion.

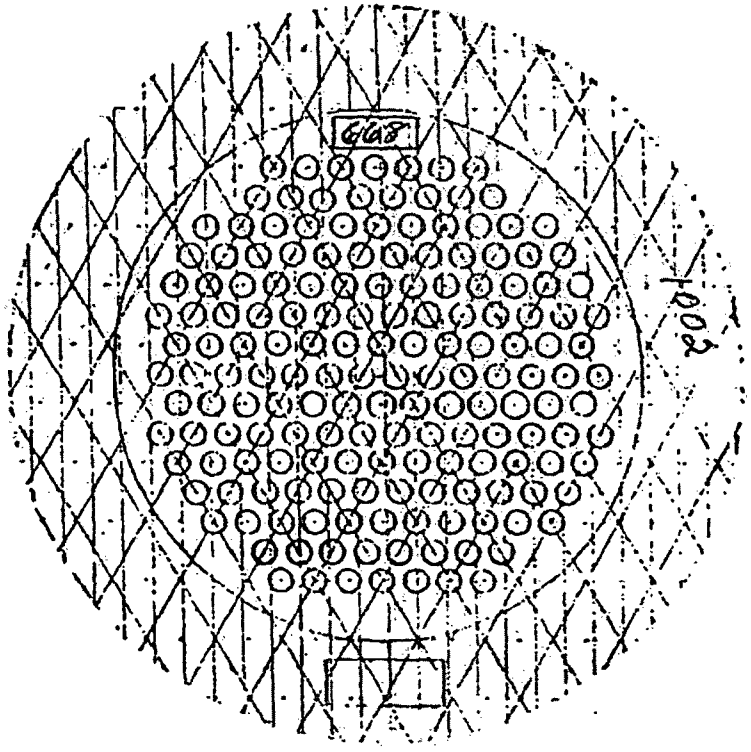
INSPECTED BY
CONTRACTOR FOREMAN N/A Date
VERIIFIED BY
COGNIZANT QV INSPECTOR W. Ramos Date 8-12-09
COGNIZANT MECH/STRUCT ENGINEER Date 8/12/09
REVIEWED BY

INSPECTION PERIOD 25th yr.

Tendon # 0225
END: FIELD X (1 piece washer)
SHOP ____ (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection
AS FOUND



RB Tendon Surveillance

COMMENT: SHIM STACK 6.65 (4, 2, ½")

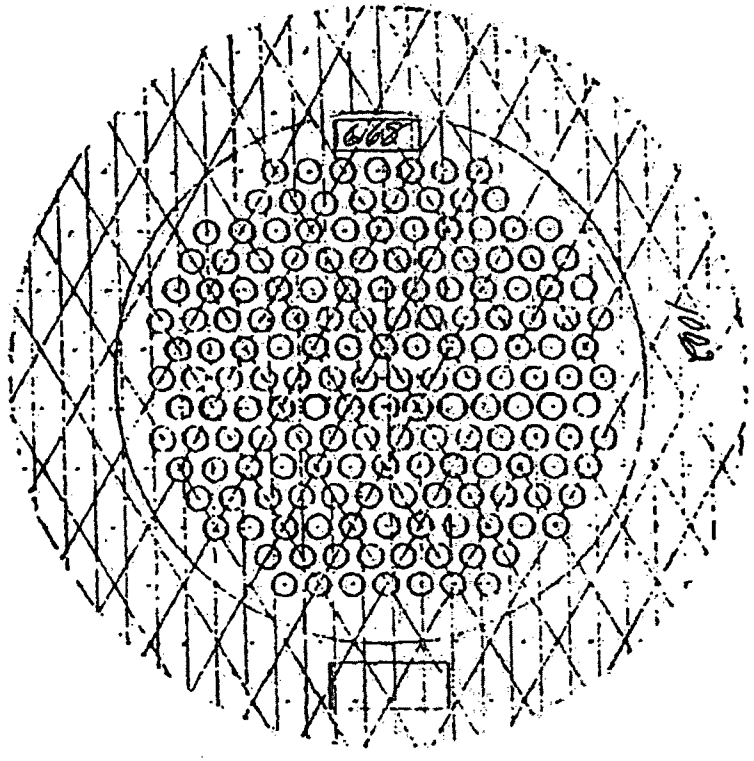
INSPECTED BY
CONTRACTOR FOREMAN _____ Date _____
VERIFIED BY
COGNIZANT QV INSPECTOR _____ Date 11-16-09
COGNIZANT MECH/STRUCT ENGINEER _____ Date 19 Nov 09
REVIEWED BY

INSPECTION PERIOD 35TH/B

Tendon # D-322
END: FIELD ____ (1 piece washer)
SHOP X (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection
DETENSIONED



RB Tendon Surveillance

COMMENT: No change in conditions

INSPECTED BY
CONTRACTOR FOREMAN N/A Date N/A
VERIFIED BY
COGNIZANT QV INSPECTOR [signature] Date 11-16-08
COGNIZANT MECH/STRUCT ENGINEER [signature] Date 12 MAR 09
REVIEWED BY

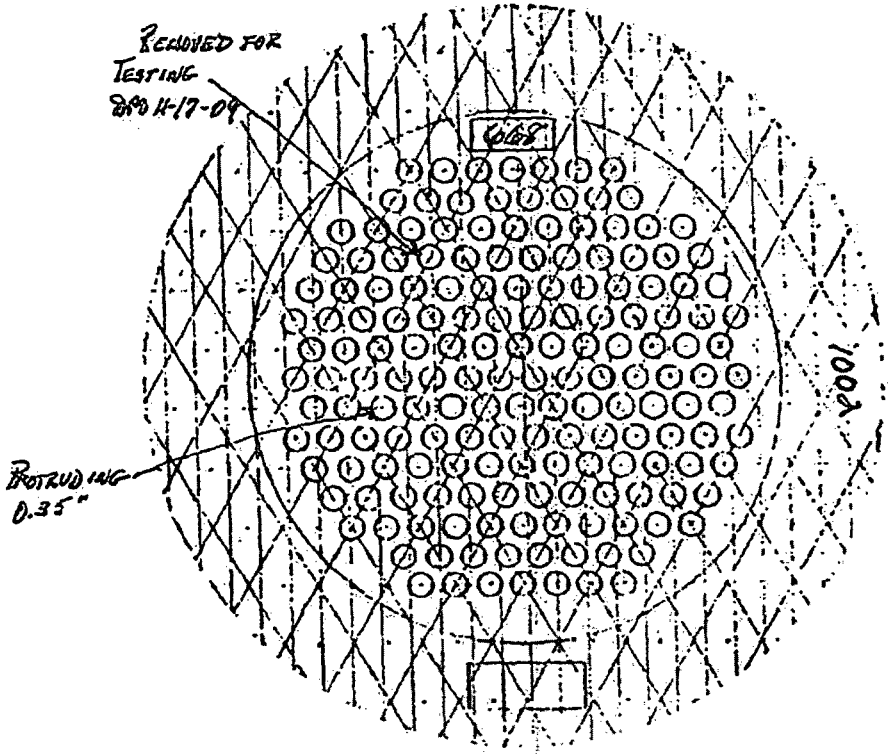
INSPECTION PERIOD 35TH YR

Tendon # 1-32a
END: FIELD ____ (1 piece washer)
SHOP X (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection

RETENSION



RB Tendon Surveillance

COMMENT: SHIM STACK 6.85"
(2, 1/8, 1/2, 4")

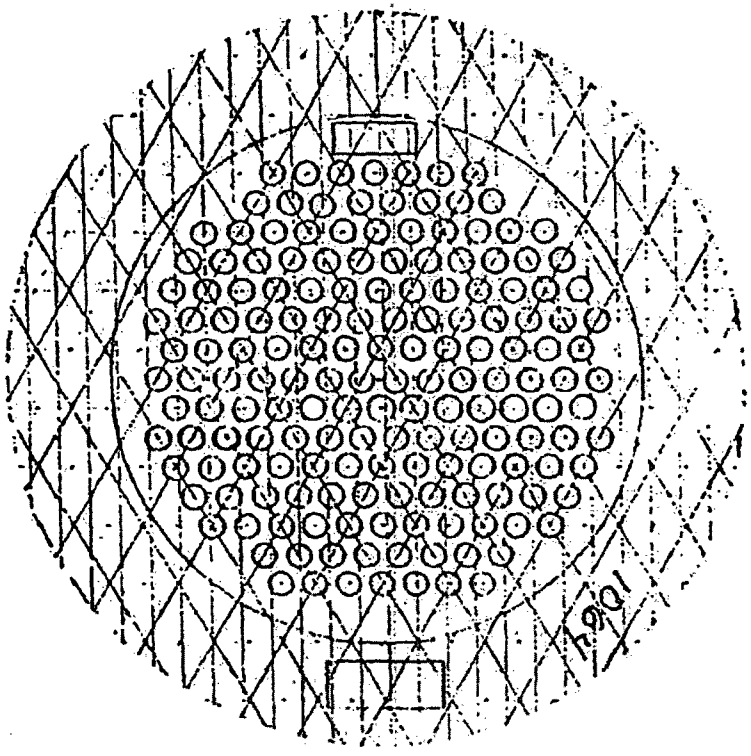
INSPECTED BY
CONTRACTOR FOREMAN N/A Date N/A
VERIIFIED BY
COGNIZANT QV INSPECTOR [signature] Date 11-17-09
COGNIZANT MECH/STRUCT ENGINEER [signature] Date 11/17/09
REVIEWED BY

INSPECTION PERIOD 35 YR

Tendon # D-322
END: FIELD ____ (1 piece washer)
SHOP X (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection
As Found



RB Tendon Surveillance

COMMENT: SMALL SCALE 6.40° (4, 2, 1/4")
NO CORROSION

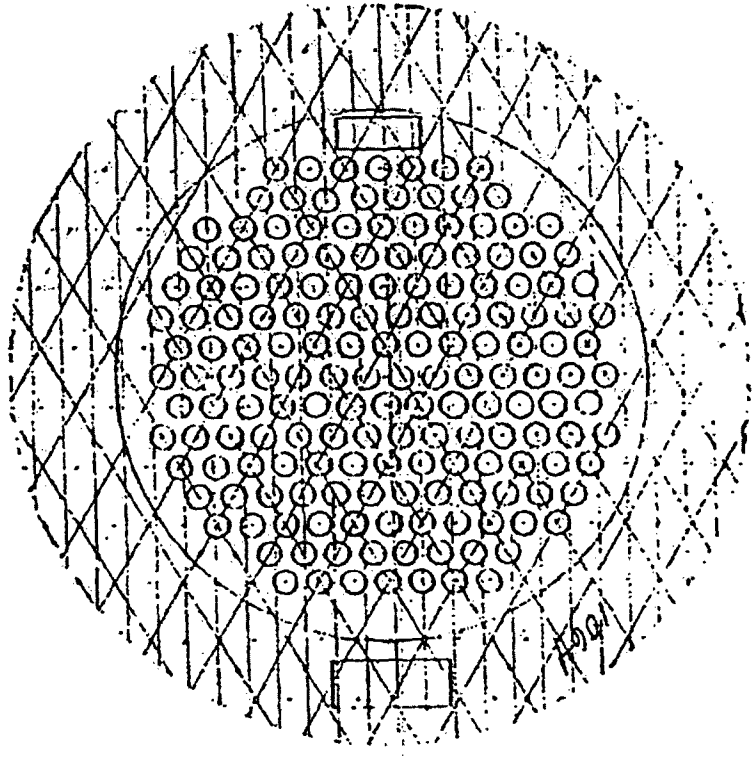
INSPECTED BY
CONTRACTOR FOREMAN N/A Date
VERIIFIED BY
COGNIZANT QV INSPECTOR [signature] Date 11-16-09
COGNIZANT MECH/STRUCT ENGINEER [signature] Date 12 NOV 09
REVIEWED BY

INSPECTION PERIOD 35 TH YR

Tendon # D-32
END: FIELD X (1 piece washer)
SHOP ____ (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection
DETENSIONED



RB Tendon Surveillance

COMMENT: NO CHANGE IN CONDITIONS

INSPECTED BY
CONTRACTOR FOREMAN N/A Date N/A
VERIIFIED BY
COGNIZANT QV INSPECTOR [signature] Date 11-16-09
COGNIZANT MECH/STRUCT ENGINEER [signature] Date 11/16/09
REVIEWED BY

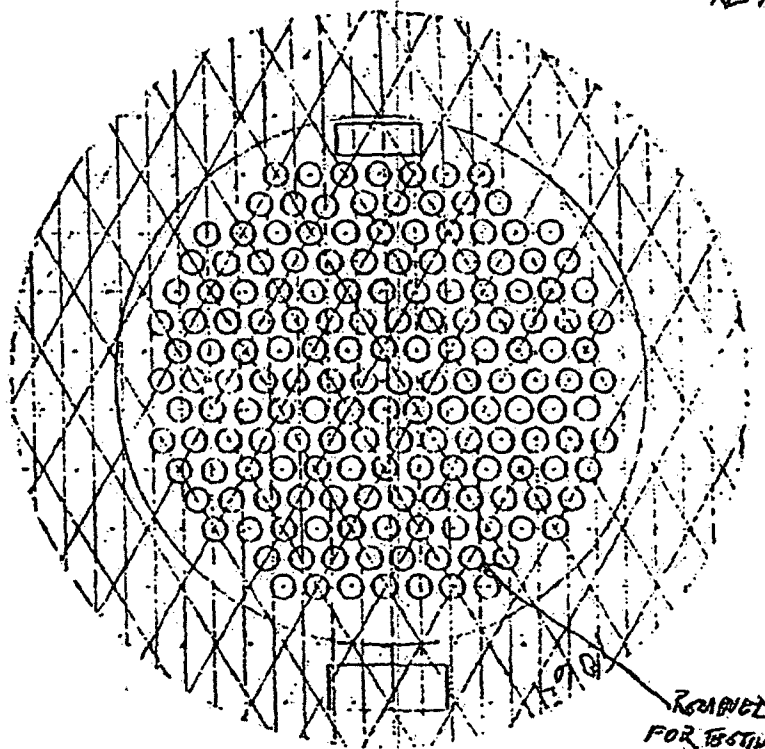
INSPECTION PERIOD 35TH YR

Tendon # D-322
END: FIELD X (1 piece washer)
SHOP _____ (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection

RETENSION



RB Tendon Surveillance

COMMENT: SHIM STACK 7.30"
(4, 1, 1/8, 2")

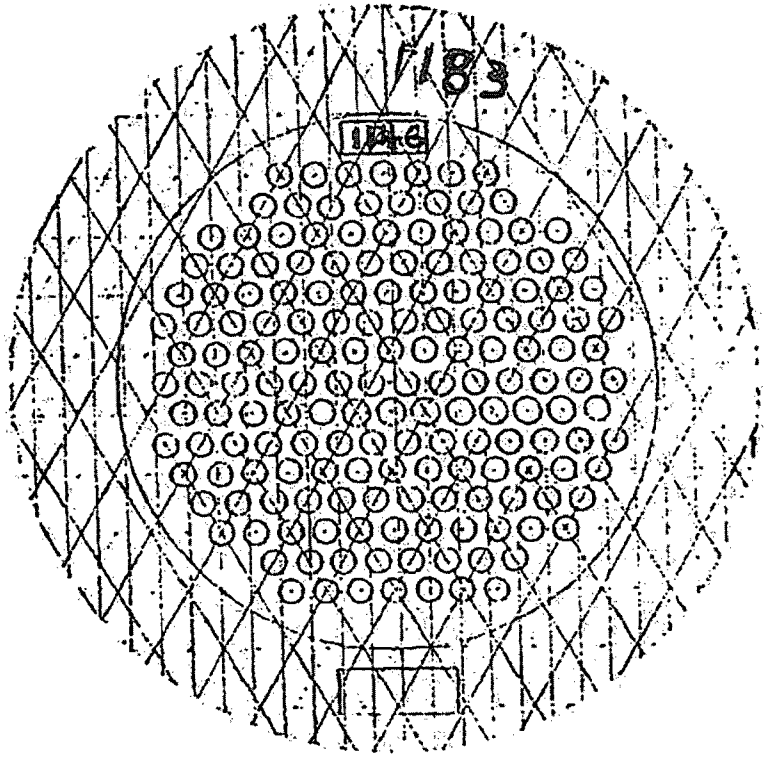
INSPECTED BY
CONTRACTOR FOREMAN N/A Date N/A
VERIIFIED BY
COGNIZANT QV INSPECTOR [signature] Date 11-17-09
COGNIZANT MECH/STRUCT ENGINEER [signature] Date 19 MAR 10
REVIEWED BY

INSPECTION PERIOD 35TH YR

Tendon # D-322
END: FIELD X (1 piece washer)
SHOP ____ (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection



RB Tendon Surveillance

COMMENT: Shim stack ht. - 5.4" (4, 1, 1/4)
Light surface rust on shims
(No pitting)

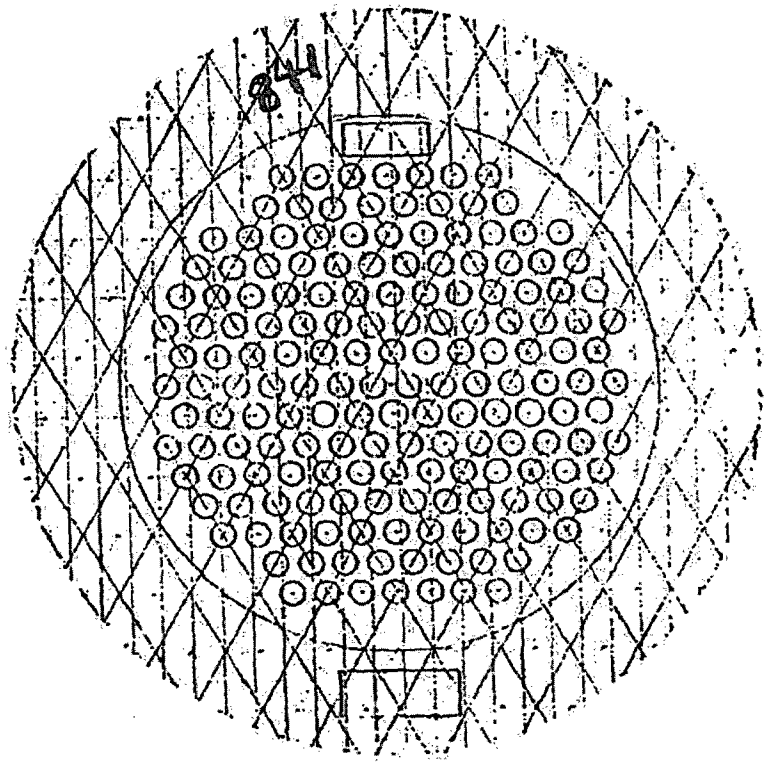
INSPECTED BY
CONTRACTOR FOREMAN N/A Date
VERIFIED BY
COGNIZANT QV INSPECTOR W. Ramos Robles Date 8-17-05
COGNIZANT MECH/STRUCT ENGINEER Date 17 AUG 05
REVIEWED BY

INSPECTION PERIOD 35+½ yr.

Tendon # D342
END: FIELD ____ (1 piece washer)
SHOP X (2 piece washer)

ENCLOSURE 6
Data Sheet 4

Tendon Buttonhead Inspection



RB Tendon Surveillance

COMMENT: Shim stack ht.- 5.1" (4,1)
No corrosion

INSPECTED BY
CONTRACTOR FOREMAN N/A Date
VERIIFIED BY
COGNIZANT QV INSPECTOR W. Bruce Cobb Date 5-17-09
COGNIZANT MECH/STRUCT ENGINEER [signature] Date 17 May 09
REVIEWED BY

INSPECTION PERIOD 35th year

Tendon # D-342
END: FIELD X (1 piece washer)
SHOP ____ (2 piece washer)

PSC PROCEDURE SQ 7.1
INSPECTION DOCUMENTATION
DATA SHEET 7.1
July 31, 2009
Page 1 of 1
Revision 0

Project: TMI – 35th YEAR TENDON SURVEILLANCE

Tendon No.: H13-41 Tendon End/Buttress No.: SHOP/BUTT 1

Anchorage ID.: 569/766 Adaptor ID: A5

EQUIPMENT	MICROMETER		WIRE		SHIMS	
Thread	Mic ID	Recal Date	ID No.	Recal Date	ID No.	Recal Date
Ext. Major	QC53	1-27-10				
Ext. Pitch	QC53	1-27-10	BLUE	2-5-10	SUR 1	2-5-10
Ext. Minor	QC53	1-27-10	BLUE	2-5-10	SUR4	2-5-10
Int. Major	N/A	N/A				
Int. Minor	N/A	N/A				

MEASUREMENTS		THREAD			Average	Wire Constant	Wire Diameter	Shim Size	Average Diameter
Thread	Read	3rd	6th	9th					
Ext. Major	1	9.369	9.372	9.375					9.372
	2	9.369	9.372	9.376					
Ext. Pitch (1)	1	9.513		9.518	9.518	.231		.032	9.255
	2	9.517		9.524					
Ext. Minor (2)	1	9.454		9.459	9.455		.120	.032	9.183
	2	9.452		9.456					
Int. Major	1	N/A		N/A					
	2	N/A		N/A					
Int. Minor	1	N/A	N/A	N/A					
	2	N/A	N/A	N/A					

Int.	Go Gauge ID:	N/A	Recal Date:	N/A	Result: N/A
Pitch	No-Go Gauge ID:	N/A	Recal Date:	N/A	Result: N/A

Notes: (1) External Pitch Diameter = [Average] – [Wire Constant] – [Shim Size]
(2) External Minor Diameter = [Average] – [2 X Wire Diameter] – [Shim Size]

DISPOSITION

	Trial 1	Trial 2	Trial 3	Trial 4
Adaptor Mark	A5			
Min. Minor Diameter from Adaptor Table	8.598			
Acceptable? (Yes or No)	YES			

QC Signoff: [signature] Level: II Date: 11-12-09

Reviewed: [signature] Level: III Date: 2/2/10

PSC PROCEDURE SQ 7.1
INSPECTION DOCUMENTATION
DATA SHEET 7.1
July 31, 2009
Page 1 of 1
Revision 0

Project: TMI – 35th YEAR TENDON SURVEILLANCE

Tendon No.: H13-41 Tendon End/Buttress No.: Buttress 3/Field End

Anchorage ID.: 132 Adaptor ID: A-5

EQUIPMENT	MICROMETER		WIRE		SHIMS	
Thread	Mic ID	Recal Date	ID No.	Recal Date	ID No.	Recal Date
Ext. Major	QC53	1-27-10				
Ext. Pitch	QC53	1-27-10	Blue	2-5-10	SUR1	2-5-10
Ext. Minor	QC53	1-27-10	Blue	2-5-10	SUR4	2-5-10
Int. Major	N/A	N/A				
Int. Minor	N/A	N/A				

MEASUREMENTS		THREAD			Average	Wire Constant	Wire Diameter	Shim Size	Average Diameter
Thread	Read	3rd	6th	9th					
Ext. Major	1	9.374	9.375	9.375					9.369
	2	9.364	9.362	9.362					
Ext. Pitch (1)	1	9.530		9.542	9.533	.231		.032	9.270
9.527	2	~~9.451~~	[illegible]	9.532					
Ext. Minor (2)	1	9.451		9.453	9.449		.120	.032	9.177
	2	9.444		9.447					
Int. Major	1	N/A		N/A					
	2	N/A		N/A					
Int. Minor	1	N/A	N/A	N/A					
	2	N/A	N/A	N/A					

Int.	Go Gauge ID: N/A	Recal Date: N/A	Result: N/A
Pitch	No-Go Gauge ID: N/A	Recal Date: N/A	Result: N/A

Notes: (1) External Pitch Diameter = [Average] – [Wire Constant] – [Shim Size]
(2) External Minor Diameter = [Average] – [2 X Wire Diameter] – [Shim Size]

DISPOSITION

	Trial 1	Trial 2	Trial 3	Trial 4
Adaptor Mark	A-5			
Min. Minor Diameter from Adaptor Table	8.579			
Acceptable? (Yes or No)	Yes			

QC Signoff: [signature] Level: III Date: 8-26-09
QC Reviewed: [signature] Level: II Date: 8-26-09

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Project: TMI – 35th YEAR TENDON SURVEILLANCE

Tendon No.: H 24-33 Tendon End/Buttress No.: Shop/Butt. 4

Anchorage ID.: 1249 Adaptor ID: A-5

EQUIPMENT	MICROMETER		WIRE		SHIMS	
Thread	Mic ID	Recal Date	ID No.	Recal Date	ID No.	Recal Date
Ext. Major	QC 53	1-27-10				
Ext. Pitch	QC 53	1-27-10	Blue	2-5-10	Sur 4	2-5-10
Ext. Minor	QC 53	1-27-10	Blue	2-5-10	Sur 1	2-5-10
Int. Major	N/A	N/A				
Int. Minor	N/A	N/A				

MEASUREMENTS		THREAD			Average	Wire Constant	Wire Diameter	Shim Size	Average Diameter
Thread	Read	3rd	6th	9th					
Ext. Major	1	9.370	9.373	9.377					9,374
	2	9.372	9.374	9.376					
Ext. Pitch (1)	1	9.512		9.514	9.512 ~~9.374~~ WRR 8-11-09	.231		.032	9,249
	2	9.510		9.513					
Ext. Minor (2)	1	9.446		9.453	9,451		.120	.032	9,179
	2	9.450		9.454					
Int. Major	1	N/A		N/A					
	2	N/A		N/A					
Int. Minor	1	N/A	N/A	N/A					
	2	N/A	N/A	N/A					

Int.	Go Gauge ID:	N/A	Recal Date: N/A	Result:	N/A
Pitch	No-Go Gauge ID:	N/A	Recal Date: N/A	Result:	N/A

Notes: (1) External Pitch Diameter = [Average] – [Wire Constant] – [Shim Size]
(2) External Minor Diameter = [Average] – [2 X Wire Diameter] – [Shim Size]

DISPOSITION

	Trial 1	Trial 2	Trial 3	Trial 4
Adaptor Mark	A-5			
Min. Minor Diameter from Adaptor Table	8,598			
Acceptable? (Yes or No)	Yes			

QC Signoff: W. Rance Robertson Level: II Date: 8-11-09

Reviewed: Thomas C. Dunn Level: I Date: 8-11-09

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Project: TMI – 35th YEAR TENDON SURVEILLANCE

Tendon No.: H 24-33 Tendon End/Buttress No.: Butt. 2

Anchorage ID.: 662 Adaptor ID: A-5

EQUIPMENT	MICROMETER		WIRE		SHIMS	
Thread	Mic ID	Recal Date	ID No.	Recal Date	ID No.	Recal Date
Ext. Major	QC-75	1-27-10				
Ext. Pitch	QC-75	1-27-10	Black	7-27-10	Sur 5	1-27-10
Ext. Minor	QC-75	1-27-10	Black	7-27-10	Sur 9	2-5-10
Int. Major	N/A	N/A				
Int. Minor	N/A	N/A				

MEASUREMENTS		THREAD			Average	Wire Constant	Wire Diameter	Shim Size	Average Diameter
Thread	Read	3rd	6th	9th					
Ext. Major	1	9.405	9.378	9.375					9.390
	2	9.424	9.380	9.380					
Ext. Pitch (1)	1	9.521		9.513	9.524	.231		.032	9.261
	2	9.530		9.533					
Ext. Minor (2)	1	9.475		9.477	9.496		.120	.032	9.204
	2	9.476		9.477					
Int. Major	1	N/A		N/A					
	2	N/A		N/A					
Int. Minor	1	N/A	N/A	N/A					
	2	N/A	N/A	N/A					

Int.	Go Gauge ID:	N/A	Recal Date: N/A	Result:	N/A
Pitch	No-Go Gauge ID:	N/A	Recal Date: N/A	Result:	N/A

Notes: (1) External Pitch Diameter = [Average] – [Wire Constant] – [Shim Size]
(2) External Minor Diameter = [Average] – [2 X Wire Diameter] – [Shim Size]

DISPOSITION

	Trial 1	Trial 2	Trial 3	Trial 4
Adaptor Mark	A-5			
Min. Minor Diameter from Adaptor Table	8.598			
Acceptable? (Yes or No)	Yes			

QC Signoff: [signature] Level: I Date: 8-24-09

Reviewed: W. Lance Rollins Level: II Date: 8.24-09

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Project: TMI – 35th YEAR TENDON SURVEILLANCE

Tendon No.: H 46-50 Tendon End/Buttress No.: Butt. 6 / Shop

Anchorage ID.: 754 Adaptor ID: A-5

EQUIPMENT	MICROMETER		WIRE		SHIMS	
Thread	Mic ID	Recal Date	ID No.	Recal Date	ID No.	Recal Date
Ext. Major	QC 53	1-27-10				
Ext. Pitch	QC 53	1-27-10	Blue	2-5-10	Sur 4	2-5-10
Ext. Minor	QC 53	1-27-10	Blue	2-5-10	WAR 8-12-10 Sur 41	2-5-10
Int. Major	N/A	N/A				
Int. Minor	N/A	N/A				

MEASUREMENTS		THREAD			Average	Wire Constant	Wire Diameter	Shim Size	Average Diameter
Thread	Read	3rd	6th	9th					
Ext. Major	1	9.372	9.373	9.378					9.375
	2	9.373	9.377	9.379					
Ext. Pitch (1)	1	9.542		9.550	9.547	.231		.032	9.284
	2	9.545		9.549					
Ext. Minor (2)	1	9.463		9.470	9,466		.120	.032	9.194
	2	9.461		9.471					
Int. Major	1	N/A		N/A					
	2	N/A		N/A					
Int. Minor	1	N/A	N/A	N/A					
	2	N/A	N/A	N/A					

Int.	Go Gauge ID:	N/A	Recal Date:	N/A	Result:	N/A
Pitch	No-Go Gauge ID:	N/A	Recal Date:	N/A	Result:	N/A

Notes: (1) External Pitch Diameter = [Average] – [Wire Constant] – [Shim Size]
(2) External Minor Diameter = [Average] – [2 X Wire Diameter] – [Shim Size]

DISPOSITION

	Trial 1	Trial 2	Trial 3	Trial 4
Adaptor Mark	A-5			
Min. Minor Diameter from Adaptor Table	8.513			
Acceptable? (Yes or No)	Yes			

QC Signoff: W. Lance Robbins Level: II Date: 8-12-09

QC Reviewed: [signature] Level: I Date: 8-13-09

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Project: TMI – 35th YEAR TENDON SURVEILLANCE

Tendon No.: H46-50 Tendon End/Buttress No.: Butt. 4 / Field end

Anchorage ID.: 900 Adaptor ID: A-5

EQUIPMENT	MICROMETER		WIRE		SHIMS	
Thread	Mic ID	Recal Date	ID No.	Recal Date	ID No.	Recal Date
Ext. Major	QC-53	1-27-10				
Ext. Pitch	QC-53	1-27-10	Blue	2-5-10	Sur 4	2-5-10
Ext. Minor	QC-53	1-27-10	Blue	2-5-10	Sur 1	2-5-10
Int. Major	N/A	N/A				
Int. Minor	N/A	N/A				

MEASUREMENTS		THREAD			Average	Wire Constant	Wire Diameter	Shim Size	Average Diameter
Thread	Read	3rd	6th	9th					
Ext. Major	1	9.368	9.370	9.372					9.371
	2	9.369	9.371	9.373					
Ext. Pitch (1)	1	9.513		9.516	9.513	.231		.032	9.250
	2	9.509		9.513					
Ext. Minor (2)	1	9.440		9.446	9.444		.120	.032	9.172
	2	9.442		9.446					
Int. Major	1	N/A		N/A					
	2	N/A		N/A					
Int. Minor	1	N/A	N/A	N/A					
	2	N/A	N/A	N/A					

Int. Pitch — Go Gauge ID: N/A — Recal Date: N/A — Result: N/A

No-Go Gauge ID: N/A — Recal Date: N/A — Result: N/A

Notes: (1) External Pitch Diameter = [Average] – [Wire Constant] – [Shim Size]
(2) External Minor Diameter = [Average] – [2 X Wire Diameter] – [Shim Size]

DISPOSITION

	Trial 1	Trial 2	Trial 3	Trial 4
Adaptor Mark	A-5			
Min. Minor Diameter from Adaptor Table	8.717			
Acceptable? (Yes or No)	Yes			

QC Signoff: W. Ramos Rabbe Level: II Date: 8-11-09

Reviewed: Tom C. Bue Level: I Date: 8-11-09

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Project: TMI – 35th YEAR TENDON SURVEILLANCE

Tendon No.: H51-49 Tendon End/Buttress No.: Shop / Butt 1

Anchorage ID.: 1007 / 1156 Adaptor ID: A5

EQUIPMENT	MICROMETER		WIRE		SHIMS	
Thread	Mic ID	Recal Date	ID No.	Recal Date	ID No.	Recal Date
Ext. Major	QC53	1-27-10				
Ext. Pitch	QC53	1-27-10	BLUE	2-5-10	SHIM 1	2-5-10
Ext. Minor	QC53	1-27-10	BLUE	2-5-10	SHIM 4	2-5-10
Int. Major	N/A	N/A				
Int. Minor	N/A	N/A				

MEASUREMENTS		THREAD			Average	Wire Constant	Wire Diameter	Shim Size	Average Diameter
Thread	Read	3rd	6th	9th					
Ext. Major	1	9.396	9.396	9.398					9.397
	2	9.397	9.397	9.398					
Ext. Pitch (1)	1	9.526		9.528	9.527	.231		.032	9.264
	2	9.525		9.529					
Ext. Minor (2)	1	9.472		9.474	9.472		.120	.032	9.200
	2	9.470		9.471					
Int. Major	1	N/A		N/A					
	2	N/A		N/A					
Int. Minor	1	N/A	N/A	N/A					
	2	N/A	N/A	N/A					

Int.	Go Gauge ID:	N/A	Recal Date:	N/A	Result: N/A
Pitch	No-Go Gauge ID:	N/A	Recal Date:	N/A	Result: N/A

Notes: (1) External Pitch Diameter = [Average] – [Wire Constant] – [Shim Size]
(2) External Minor Diameter = [Average] – [2 X Wire Diameter] – [Shim Size]

DISPOSITION

	Trial 1	Trial 2	Trial 3	Trial 4
Adaptor Mark	A5			
Min. Minor Diameter from Adaptor Table	8.443			
Acceptable? (Yes or No)	Yes			

QC Signoff: [signature] Level: II Date: 11-11-09

Reviewed: [signature] Level: III Date: 2/2/10

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Project: TMI – 35th YEAR TENDON SURVEILLANCE

Tendon No.: H5149 Tendon End/Buttress No.: Butt. 5 / Field end

Anchorage ID.: 890 Adaptor ID: X-2

EQUIPMENT	MICROMETER		WIRE		SHIMS	
Thread	Mic ID	Recal Date	ID No.	Recal Date	ID No.	Recal Date
Ext. Major	QC53	1-27-10				
Ext. Pitch	QC53	1-27-10	Blue	2-5-10	Sur 1	2-5-10
Ext. Minor	QC53	1-27-10	Blue	2-5-10	Sur 4	2-5-10
Int. Major	N/A	N/A				
Int. Minor	N/A	N/A				

MEASUREMENTS		THREAD			Average	Wire Constant	Wire Diameter	Shim Size	Average Diameter
Thread	Read	3rd	6th	9th					
Ext. Major	1	9.378	9.380	9.380					9.378
	2	9.376	9.376	9.378					
Ext. Pitch (1)	1	9.532		9.534	9.533	.231		.032	9.270
	2	9.531		9.533					
Ext. Minor (2)	1	9.438		9.440	9.438		.120	.032	9.166
	2	9.435		9.438					
Int. Major	1	N/A		N/A					
	2	N/A		N/A					
Int. Minor	1	N/A	N/A	N/A					
	2	N/A	N/A	N/A					

Int.	Go Gauge ID:	N/A	Recal Date:	N/A	Result:	N/A
Pitch	No-Go Gauge ID:	N/A	Recal Date:	N/A	Result:	N/A

Notes: (1) External Pitch Diameter = [Average] – [Wire Constant] – [Shim Size]
(2) External Minor Diameter = [Average] – [2 X Wire Diameter] – [Shim Size]

DISPOSITION

	Trial 1	Trial 2	Trial 3	Trial 4
Adaptor Mark	X-2			
Min. Minor Diameter from Adaptor Table	8.755			
Acceptable? (Yes or No)	Yes			

QC Signoff: W. Rance Robbins Level: II Date: 8-26-09
QC Reviewed: [signature] Level: I Date: 8-26-09

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Project: TMI – 35th YEAR TENDON SURVEILLANCE

Tendon No.: H 62-26 Tendon End/Buttress No.: Butt. 6 / SHOP

Anchorage ID.: 924 Adaptor ID: A-5

EQUIPMENT	MICROMETER		WIRE		SHIMS	
Thread	Mic ID	Recal Date	ID No.	Recal Date	ID No.	Recal Date
Ext. Major	QC-53	1-27-10				
Ext. Pitch	QC-53	1-27-10	Blue	2-5-10	Sur 4	2-5-10
Ext. Minor	QC-53	1-27-10	Blue	2-5-10	Sur 1	2-5-10
Int. Major	N/A	N/A				
Int. Minor	N/A	N/A				

MEASUREMENTS		THREAD			Average	Wire Constant	Wire Diameter	Shim Size	Average Diameter
Thread	Read	3rd	6th	9th					
Ext. Major	1	9.370	9.374	9.377					9.375
	2	9.373	9.376	9.379					
Ext. Pitch (1)	1	9.531		9.540	9.538	.231		.032	9.275
	2	9.536		9.542					
Ext. Minor (2)	1	9.457		9.463	9.447		.120	.032	9.175
	2	9.437		9.450					
Int. Major	1	N/A		N/A					
	2	N/A		N/A					
Int. Minor	1	N/A	N/A	N/A					
	2	N/A	N/A	N/A					

Int.	Go Gauge ID:	N/A	Recal Date:	N/A	Result:	N/A
Pitch	No-Go Gauge ID:	N/A	Recal Date:	N/A	Result:	N/A

Notes: (1) External Pitch Diameter = [Average] – [Wire Constant] – [Shim Size]
(2) External Minor Diameter = [Average] – [2 X Wire Diameter] – [Shim Size]

DISPOSITION

	Trial 1	Trial 2	Trial 3	Trial 4
Adaptor Mark	A-5			
Min. Minor Diameter from Adaptor Table	8.543			
Acceptable? (Yes or No)	Yes			

QC Signoff: W. Franco Pol[illegible] Level: III Date: 8-12-09

QC Reviewed: [signature] Level: I Date: 8-13-09

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Project: TMI – 35th YEAR TENDON SURVEILLANCE

Tendon No.: H62-26 Tendon End/Buttress No.: Buttress 2 / Field End

Anchorage ID.: 571 Adaptor ID: A-5

EQUIPMENT	MICROMETER		WIRE		SHIMS	
Thread	Mic ID	Recal Date	ID No.	Recal Date	ID No.	Recal Date
Ext. Major	QC 53	1-27-10				
Ext. Pitch	QC 53	1-27-10	Blue	2-5-10	SUR 1	2-5-10
Ext. Minor	QC 53	1-27-10	Blue	2-5-10	SUR 4	2-5-10
Int. Major	N/A	N/A				
Int. Minor	N/A	N/A				

MEASUREMENTS		THREAD			Average	Wire Constant	Wire Diameter	Shim Size	Average Diameter
Thread	Read	3rd	6th	9th					
Ext. Major	1	9.380	9.378	9.379					9.380
	2	9.381	9.377	9.385					
Ext. Pitch (1)	1	9.529		9.531	9.531	.231		.032	9.268
	2	9.530		9.535					
Ext. Minor (2)	1	9.440		9.441	9.440		.120	.032	9.168
	2	9.438		9.442					
Int. Major	1	N/A		N/A					
	2	N/A		N/A					
Int. Minor	1	N/A	N/A	N/A					
	2	N/A	N/A	N/A					

Int. Go Gauge ID: N/A Recal Date: N/A Result: N/A

Pitch No-Go Gauge ID: N/A Recal Date: N/A Result: N/A

Notes: (1) External Pitch Diameter = [Average] – [Wire Constant] – [Shim Size]
(2) External Minor Diameter = [Average] – [2 X Wire Diameter] – [Shim Size]

DISPOSITION

	Trial 1	Trial 2	Trial 3	Trial 4
Adaptor Mark	A-5			
Min. Minor Diameter from Adaptor Table	8.682			
Acceptable? (Yes or No)	Yes			

QC Signoff: W. Lance Roblee Level: II Date: 8-28-09

Reviewed: [signature] Level: I Date: 8-28-09

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Project: TMI – 35th YEAR TENDON SURVEILLANCE

Tendon No.: V-11 Tendon End/Buttress No.: Butt. 1 /shop

Anchorage ID.: 1213 Adaptor ID: X2

EQUIPMENT	MICROMETER		WIRE		SHIMS	
Thread	Mic ID	Recal Date	ID No.	Recal Date	ID No.	Recal Date
Ext. Major	QC-75	1-27-10				
Ext. Pitch	QC-75	1-27-10	Black	7-27-10	Sur 5	1-27-10
Ext. Minor	QC-75	1-27-10	Black	7-27-10	Sur 9	2-5-10
Int. Major	N/A	N/A				
Int. Minor	N/A	N/A				

MEASUREMENTS		THREAD			Average	Wire Constant	Wire Diameter	Shim Size	Average Diameter
Thread	Read	3rd	6th	9th					
Ext. Major	1	9.367	9.370	9.374					9.371
	2	9.366	9.373	9.376					
Ext. Pitch (1)	1	9.512		9.512	9.513	.231		.032	9.250
	2	9.507		~~9.274~~ 9.514 8-14-09					
Ext. Minor (2)	1	9.453		9.459	9.456		.120	.032	9.184
	2	9.451		9.461					
Int. Major	1	N/A		N/A					
	2	N/A		N/A					
Int. Minor	1	N/A	N/A	N/A					
	2	N/A	N/A	N/A					

Int. Pitch — Go Gauge ID: N/A — Recal Date: N/A — Result: N/A

No-Go Gauge ID: N/A — Recal Date: N/A — Result: N/A

Notes: (1) External Pitch Diameter = [Average] – [Wire Constant] – [Shim Size]
(2) External Minor Diameter = [Average] – [2 X Wire Diameter] – [Shim Size]

DISPOSITION

	Trial 1	Trial 2	Trial 3	Trial 4
Adaptor Mark	X2			
Min. Minor Diameter from Adaptor Table	8.697			
Acceptable? (Yes or No)	Yes			

QC Signoff: Level: I Date: 8-14-09

Reviewed: W. Ramey Robbins Level: II Date: 8-18-09

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Project: TMI – 35th YEAR TENDON SURVEILLANCE

Tendon No.: V-32 Tendon End/Buttress No.: Butt. 2 / Shop

Anchorage ID.: 1050 Adaptor ID: x2

EQUIPMENT	MICROMETER		WIRE		SHIMS	
Thread	Mic ID	Recal Date	ID No.	Recal Date	ID No.	Recal Date
Ext. Major	QC-75	1-27-10				
Ext. Pitch	QC 75	1-27-10	Black	7-27-10	Sur 5	1-27-10
Ext. Minor	QC-75	1-27-10	Black	7-27-10	Sur 9	2-5-10
Int. Major	N/A	N/A				
Int. Minor	N/A	N/A				

MEASUREMENTS		THREAD			Average	Wire Constant	Wire Diameter	Shim Size	Average Diameter
Thread	Read	3rd	6th	9th					
Ext. Major	1	9.361	9.357	9.367					9.363
	2	9.361	9.364	9.372					
Ext. Pitch (1)	1	9.517		9.517	9.515	.231		.032	9.252
	2	9.513		9.516					
Ext. Minor (2)	1	9.428		9.442	9.436		.120	.032	9.164
	2	9.432		9.443					
Int. Major	1	N/A		N/A					
	2	N/A		N/A					
Int. Minor	1	N/A	N/A	N/A					
	2	N/A	N/A	N/A					

Int. Pitch — Go Gauge ID: N/A — Recal Date: N/A — Result: N/A

No-Go Gauge ID: N/A — Recal Date: N/A — Result: N/A

Notes: (1) External Pitch Diameter = [Average] – [Wire Constant] – [Shim Size]
(2) External Minor Diameter = [Average] – [2 X Wire Diameter] – [Shim Size]

DISPOSITION

	Trial 1	Trial 2	Trial 3	Trial 4
Adaptor Mark	x2			
Min. Minor Diameter from Adaptor Table	8.720			
Acceptable? (Yes or No)	Yes			

QC Signoff: [signature] Level: I Date: 8-14-09

Reviewed: W. Rance Pebbles Level: II Date: 8-20-09

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Project: TMI – 35th YEAR TENDON SURVEILLANCE

Tendon No.: V-90 Tendon End/Buttress No.: Butt. 4/Shop

Anchorage ID.: 590 Adaptor ID: X2

EQUIPMENT	MICROMETER		WIRE		SHIMS	
Thread	Mic ID	Recal Date	ID No.	Recal Date	ID No.	Recal Date
Ext. Major	QC-75	1-27-10				
Ext. Pitch	QC-75	1-27-10	Black	7-27-10	Sur 5	1-27-10
Ext. Minor	QC-75	1-27-10	Black	7-27-10	Sno 9	2-5-10
Int. Major	N/A	N/A				
Int. Minor	N/A	N/A				

MEASUREMENTS		THREAD			Average	Wire Constant	Wire Diameter	Shim Size	Average Diameter
Thread	Read	3rd	6th	9th					
Ext. Major	1	9.360	9.361	9.362					9.362
	2	9.363	9.364	9.363					
Ext. Pitch (1)	1	9.516		9.519	9.517	.231		.032	9.254
	2	9.524		9.512					
Ext. Minor (2)	1	9.473		9.464	9.462		.120	.032	9.190
	2	9.463		9.450					
Int. Major	1	N/A		N/A					
	2	N/A		N/A					
Int. Minor	1	N/A	N/A	N/A					
	2	N/A	N/A	N/A					

Int. Go Gauge ID: N/A Recal Date: N/A Result: N/A

Pitch No-Go Gauge ID: N/A Recal Date: N/A Result: N/A

Notes: (1) External Pitch Diameter = [Average] – [Wire Constant] – [Shim Size]
(2) External Minor Diameter = [Average] – [2 X Wire Diameter] – [Shim Size]

DISPOSITION

	Trial 1	Trial 2	Trial 3	Trial 4
Adaptor Mark	X2			
Min. Minor Diameter from Adaptor Table	8.720			
Acceptable? (Yes or No)	Yes			

QC Signoff: Timothy C. Fitz Level: I Date: 8-14-09

Reviewed: W. Pierce Robb Level: II Date: 8-19-09

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Project: TMI – 35th YEAR TENDON SURVEILLANCE

Tendon No.: V-132 Tendon End/Buttress No.: Top / Shop end

Anchorage ID.: 1098 Adaptor ID: A-5

EQUIPMENT	MICROMETER		WIRE		SHIMS	
Thread	Mic ID	Recal Date	ID No.	Recal Date	ID No.	Recal Date
Ext. Major	QC53	1-27-10				
Ext. Pitch	QC53	1-27-10	Blue	2-5-10	SUR 1	2-5-10
Ext. Minor	QC53	1-27-10	Blue	2-5-10	SUR4	2-5-10
Int. Major	N/A	N/A				
Int. Minor	N/A	N/A				

MEASUREMENTS		THREAD			Average	Wire Constant	Wire Diameter	Shim Size	Average Diameter
Thread	Read	3rd	6th	9th					
Ext. Major	1	9.571	9.376	9.381					9.378
	2	9.374	9.378	9.387					
Ext. Pitch (1)	1	9.519		9.526	9.526	.231		.032	9.263
	2	9.525		9.534					
Ext. Minor (2)	1	9.457		9.464	9.462		.120	.032	9.190
	2	9.459		9.468					
Int. Major	1	N/A		N/A					
	2	N/A		N/A					
Int. Minor	1	N/A	N/A	N/A					
	2	N/A	N/A	N/A					

Int. Go Gauge ID: N/A Recal Date: N/A Result: N/A

Pitch No-Go Gauge ID: N/A Recal Date: N/A Result: N/A

Notes: (1) External Pitch Diameter = [Average] – [Wire Constant] – [Shim Size]
(2) External Minor Diameter = [Average] – [2 X Wire Diameter] – [Shim Size]

DISPOSITION

	Trial 1	Trial 2	Trial 3	Trial 4
Adaptor Mark	A-5			
Min. Minor Diameter from Adaptor Table	8.594			
Acceptable? (Yes or No)	Yes			

QC Signoff: W. Rance Level: II Date: 8-13-09

Reviewed: Level: I Date: 8-19-09

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Project: TMI – 35th YEAR TENDON SURVEILLANCE

Tendon No.: D122 Tendon End/Buttress No.: Butt. 5 / Shop end

Anchorage ID.: 1074 Adaptor ID: A-5

EQUIPMENT	MICROMETER		WIRE		SHIMS	
Thread	Mic ID	Recal Date	ID No.	Recal Date	ID No.	Recal Date
Ext. Major	QC 53	1-27-10				
Ext. Pitch	QC 53	1-27-10	Blue	2-5-10	Sur 1	2-5-10
Ext. Minor	QC 53	1-27-10	Blue	2-5-10	Sur 4	2-5-10
Int. Major	N/A	N/A				
Int. Minor	N/A	N/A				

MEASUREMENTS		THREAD			Average	Wire Constant	Wire Diameter	Shim Size	Average Diameter
Thread	Read	3rd	6th	9th					
Ext. Major	1	9.375	9.380	9.380					9.379
	2	9.375	9.381	9.385					
Ext. Pitch (1)	1	9.518		9.521	9.524	.231		.032	9.258
	2	9.527		9.528					
Ext. Minor (2)	1	9.455		9.456	9.459		.120	.032	9.187
	2	9.460		9.465					
Int. Major	1	N/A		N/A					
	2	N/A		N/A					
Int. Minor	1	N/A	N/A	N/A					
	2	N/A	N/A	N/A					

Int.	Go Gauge ID:	N/A	Recal Date:	N/A	Result:	N/A
Pitch	No-Go Gauge ID:	N/A	Recal Date:	N/A	Result:	N/A

Notes: (1) External Pitch Diameter = [Average] – [Wire Constant] – [Shim Size]
(2) External Minor Diameter = [Average] – [2 X Wire Diameter] – [Shim Size]

DISPOSITION

	Trial 1	Trial 2	Trial 3	Trial 4
Adaptor Mark	A-5			
Min. Minor Diameter from Adaptor Table	8.598			
Acceptable? (Yes or No)	Yes			

QC Signoff: W. Rance Roldan Level: II Date: 8-17-09
QC Reviewed: Timothy C. [illegible] Level: I Date: 8-17-09

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Project: TMI – 35th YEAR TENDON SURVEILLANCE

Tendon No.: D-122 Tendon End/Buttress No.: Field / NE

Anchorage ID.: 754 Adaptor ID: A5

EQUIPMENT	MICROMETER		WIRE		SHIMS	
Thread	Mic ID	Recal Date	ID No.	Recal Date	ID No.	Recal Date
Ext. Major	QC53	1-27-10				
Ext. Pitch	QC53	1-27-10	Blue	2-5-10	SVR1	2-5-10
Ext. Minor	QC53	1-27-10	Blue	2-5-10	SVR	2-5-10
Int. Major	N/A	N/A				
Int. Minor	N/A	N/A				

MEASUREMENTS		THREAD			Average	Wire Constant	Wire Diameter	Shim Size	Average Diameter
Thread	Read	3rd	6th	9th					
Ext. Major	1	9.397	9.398	9.393					9.396
	2	9.395	9.397	9.396					
Ext. Pitch (1)	1	9.503		9.507	9.506	.231		.032	9.243
	2	9.507		9.508					
Ext. Minor (2)	1	9.451		9.452	9.451		.120	.032	9.179
	2	9.449		9.453					
Int. Major	1	N/A		N/A					
	2	N/A		N/A					
Int. Minor	1	N/A	N/A	N/A					
	2	N/A	N/A	N/A					

Int. Go Gauge ID: N/A Recal Date: N/A Result: N/A

Pitch No-Go Gauge ID: N/A Recal Date: N/A Result: N/A

Notes: (1) External Pitch Diameter = [Average] – [Wire Constant] – [Shim Size]
(2) External Minor Diameter = [Average] – [2 X Wire Diameter] – [Shim Size]

DISPOSITION

	Trial 1	Trial 2	Trial 3	Trial 4
Adaptor Mark	A-5			
Min. Minor Diameter from Adaptor Table	8.576			
Acceptable? (Yes or No)	YES			

QC Signoff: [signature] Level: II Date: 11-13-09

Reviewed: [signature] Level: III Date: 2/2/10

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Project: TMI – 35th YEAR TENDON SURVEILLANCE

Tendon No.: D-225 Tendon End/Buttress No.: Butt. 5

Anchorage ID.: 1137 Adaptor ID: X2

EQUIPMENT	MICROMETER		WIRE		SHIMS	
Thread	Mic ID	Recal Date	ID No.	Recal Date	ID No.	Recal Date
Ext. Major	QC 75	1-27-10				
Ext. Pitch	QC 75	1-27-10	Black	7-27-10	Sur 5	1-27-10
Ext. Minor	QC 75	1-27-10	Black	7-27-10	Sur 9	2-5-10
Int. Major	N/A	N/A				
Int. Minor	N/A	N/A				

MEASUREMENTS		THREAD			Average	Wire Constant	Wire Diameter	Shim Size	Average Diameter
Thread	Read	3rd	6th	9th					
Ext. Major	1	9.369	9.370	9.374					9.369
	2	9.364	9.368	9.370					
Ext. Pitch (1)	1	9.519		9.523	9.517	.231		.032	9.199
	2	9.512		9.514					
Ext. Minor (2)	1	9.453		9.462	9.465		.120	.032	9.193
	2	9.472		9.473					
Int. Major	1	N/A		N/A					
	2	N/A		N/A					
Int. Minor	1	N/A	N/A	N/A					
	2	N/A	N/A	N/A					

Int.	Go Gauge ID:	N/A	Recal Date:	N/A	Result:	N/A
Pitch	No-Go Gauge ID:	N/A	Recal Date:	N/A	Result:	N/A

Notes: (1) External Pitch Diameter = [Average] – [Wire Constant] – [Shim Size]
(2) External Minor Diameter = [Average] – [2 X Wire Diameter] – [Shim Size]

DISPOSITION

	Trial 1	Trial 2	Trial 3	Trial 4
Adaptor Mark	X2			
Min. Minor Diameter from Adaptor Table	8.750			
Acceptable? (Yes or No)	Yes			

QC Signoff: Tommy C. Ortiz Level: I Date: 8-11-09

Reviewed: W. Lance Roberson Level: II Date: 8-11-09

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Project: TMI – 35th YEAR TENDON SURVEILLANCE

Tendon No.: D 225 Tendon End/Buttress No.: Butt. 2 / Field

Anchorage ID.: 684 Adaptor ID: X2

EQUIPMENT	MICROMETER		WIRE		SHIMS	
Thread	Mic ID	Recal Date	ID No.	Recal Date	ID No.	Recal Date
Ext. Major	QC-75	1-27-10				
Ext. Pitch	QC-75	1-27-10	Black	7-27-10	Sur 5	1-27-10
Ext. Minor	QC-75	1-27-10	Black	7-27-10	Sur 9	2-5-10
Int. Major	N/A	N/A				
Int. Minor	N/A	N/A				

MEASUREMENTS		THREAD			Average	Wire Constant	Wire Diameter	Shim Size	Average Diameter
Thread	Read	3rd	6th	9th					
Ext. Major	1	9.364	9.369	9.371					9.366
	2	9.358	9.366	9.369					
Ext. Pitch (1)	1	9.504		9.510	9.507	.231		.032	9.244
	2	9.503		9.512					
Ext. Minor (2)	1	9.444		9.449	9.447		.120	.032	9.175
	2	9.447		9.450					
Int. Major	1	N/A		N/A					
	2	N/A		N/A					
Int. Minor	1	N/A	N/A	N/A					
	2	N/A	N/A	N/A					

Int.	Go Gauge ID:	N/A	Recal Date:	N/A	Result: N/A
Pitch	No-Go Gauge ID:	N/A	Recal Date:	N/A	Result: N/A

Notes: (1) External Pitch Diameter = [Average] – [Wire Constant] – [Shim Size]
(2) External Minor Diameter = [Average] – [2 X Wire Diameter] – [Shim Size]

DISPOSITION

	Trial 1	Trial 2	Trial 3	Trial 4
Adaptor Mark	X2			
Min. Minor Diameter from Adaptor Table	8.695			
Acceptable? (Yes or No)	Yes			

QC Signoff: [signature] Level: I Date: 8-12-09

QC Reviewed: W. Bruce Robertson Level: II Date: 8-18-09

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Project: TMI – 35th YEAR TENDON SURVEILLANCE

Tendon No.: D-322 Tendon End/Buttress No.: Shop/North

Anchorage ID.: 668/1002 Adaptor ID: A-5

EQUIPMENT	MICROMETER		WIRE		SHIMS	
Thread	Mic ID	Recal Date	ID No.	Recal Date	ID No.	Recal Date
Ext. Major	QC53	1-27-10				
Ext. Pitch	QC53	1-27-10	Blue	2-5-10	Sur 1	2-5-10
Ext. Minor	QC53	1-27-10	Blue	2-5-10	Sur 4	2-5-10
Int. Major	N/A	N/A				
Int. Minor	N/A	N/A				

MEASUREMENTS		THREAD			Average	Wire Constant	Wire Diameter	Shim Size	Average Diameter
Thread	Read	3rd	6th	9th					
Ext. Major	1	9.369	9.376	9.379					9.375
	2	9.371	9.377	9.379					
Ext. Pitch (1)	1	9.521		9.530	9.524	.231		.032	9.261
	2	9.518		9.528					
Ext. Minor (2)	1	9.464		9.464	9.459		.120	.032	9.~~196~~ 187 DO 11-16-09
	2	9.451		9.458					
Int. Major	1	N/A		N/A					
	2	N/A		N/A					
Int. Minor	1	N/A	N/A	N/A					
	2	N/A	N/A	N/A					

Int.	Go Gauge ID:	N/A	Recal Date:	N/A	Result:	N/A
Pitch	No-Go Gauge ID:	N/A	Recal Date:	N/A	Result:	N/A

Notes: (1) External Pitch Diameter = [Average] – [Wire Constant] – [Shim Size]
(2) External Minor Diameter = [Average] – [2 X Wire Diameter] – [Shim Size]

DISPOSITION

	Trial 1	Trial 2	Trial 3	Trial 4
Adaptor Mark	A-5			
Min. Minor Diameter from Adaptor Table	8.660			
Acceptable? (Yes or No)	YES			

QC Signoff: [signature] Level: II Date: 11-16-09
QC Reviewed: [signature] Level: III Date: 2/2/10

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Project: TMI – 35th YEAR TENDON SURVEILLANCE

Tendon No.: D-322 Tendon End/Buttress No.: FIELD/SOUTH

Anchorage ID.: 1064 Adaptor ID: X2

EQUIPMENT	MICROMETER		WIRE		SHIMS	
Thread	Mic ID	Recal Date	ID No.	Recal Date	ID No.	Recal Date
Ext. Major	QC53	1-27-10				
Ext. Pitch	QC53	1-27-10	BLUE	2-5-10	SUR 1	2-5-10
Ext. Minor	QC53	1-27-10	BLUE	2-5-10	SUR 4	2-5-10
Int. Major	N/A	N/A				
Int. Minor	N/A	N/A				

MEASUREMENTS		THREAD			Average	Wire Constant	Wire Diameter	Shim Size	Average Diameter
Thread	Read	3rd	6th	9th					
Ext. Major	1	9.379	9.376	9.377					9.379
	2	9.381	9.380	9.380					
Ext. Pitch (1)	1	9.515		9.517	9.519	.231		.032	9.256
	2	9.523		9.520					
Ext. Minor (2)	1	9.451		9.451	9.455		.120	.032	9.183
	2	9.460		9.460					
Int. Major	1	N/A		N/A					
	2	N/A		N/A					
Int. Minor	1	N/A	N/A	N/A					
	2	N/A	N/A	N/A					

Int. Pitch — Go Gauge ID: N/A — Recal Date: N/A — Result: N/A
No-Go Gauge ID: N/A — Recal Date: N/A — Result: N/A

Notes: (1) External Pitch Diameter = [Average] – [Wire Constant] – [Shim Size]
(2) External Minor Diameter = [Average] – [2 X Wire Diameter] – [Shim Size]

DISPOSITION

	Trial 1	Trial 2	Trial 3	Trial 4
Adaptor Mark	X2			
Min. Minor Diameter from Adaptor Table	8.733			
Acceptable? (Yes or No)	YES			

QC Signoff: [signature] Level: II Date: 11-16-09
Reviewed: [signature] Level: III Date: 2/2/10

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Project: TMI – 35th YEAR TENDON SURVEILLANCE

Tendon No.: D-342 Tendon End/Buttress No.: Butt 6

Anchorage ID.: 1183 Adaptor ID: X2

EQUIPMENT	MICROMETER		WIRE		SHIMS	
Thread	Mic ID	Recal Date	ID No.	Recal Date	ID No.	Recal Date
Ext. Major	QC-75	1-27-10				
Ext. Pitch	QC-75	1-27-10	Black	7-27-10	Sur 5	1-27-09
Ext. Minor	QC-75	1-27-10	Black	7-27-10	Sur 9	2-5-09
Int. Major	N/A	N/A				
Int. Minor	N/A	N/A				

MEASUREMENTS		THREAD			Average	Wire Constant	Wire Diameter	Shim Size	Average Diameter
Thread	Read	3rd	6th	9th					
Ext. Major	1	9.355	9.360	9.363					9.356
	2	9.354	9.355	9.354					
Ext. Pitch (1)	1	9.504		9.506	9.508	.231		.032	9.508 24.5.09
	2	9.515		9.509					
Ext. Minor (2)	1	9.440		9.447	9.442		.120	.032	9.917
	2	9.441		9.440					
Int. Major	1	N/A		N/A					
	2	N/A		N/A					
Int. Minor	1	N/A	N/A	N/A					
	2	N/A	N/A	N/A					

Int. Pitch — Go Gauge ID: N/A — Recal Date: N/A — Result: N/A
No-Go Gauge ID: N/A — Recal Date: N/A — Result: N/A

Notes: (1) External Pitch Diameter = [Average] – [Wire Constant] – [Shim Size]
(2) External Minor Diameter = [Average] – [2 X Wire Diameter] – [Shim Size]

DISPOSITION

	Trial 1	Trial 2	Trial 3	Trial 4
Adaptor Mark	X2			
Min. Minor Diameter from Adaptor Table	8.736			
Acceptable? (Yes or No)	Yes			

QC Signoff: [signature] Level: I Date: 8-17-09
Reviewed: W. Fauver [signature] Level: II Date: 8-17-09

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Project: TMI – 35th YEAR TENDON SURVEILLANCE

Tendon No.: D-342 Tendon End/Buttress No.: Butt. 4 / ~~Stop~~ Field WRR 8-17-09

Anchorage ID.: 841 Adaptor ID: A-5

EQUIPMENT	MICROMETER		WIRE		SHIMS	
Thread	Mic ID	Recal Date	ID No.	Recal Date	ID No.	Recal Date
Ext. Major	QC 53	1-27-10				
Ext. Pitch	QC 53	1-27-10	Blue	2-5-10	Sur 1	2-5-10
Ext. Minor	QC 53	1-27-10	Blue	2-5-10	Sur 4	2-5-10
Int. Major	N/A	N/A				
Int. Minor	N/A	N/A				

MEASUREMENTS		THREAD			Average	Wire Constant	Wire Diameter	Shim Size	Average Diameter
Thread	Read	3rd	6th	9th					
Ext. Major	1	9.370	9.370	9.374					9.372
	2	9.371	9.371	9.377					
Ext. Pitch (1)	1	9.515		9.516	9.517	.231		.032	9.254
	2	9.518		9.518					
Ext. Minor (2)	1	9.440		9.442	9.442		.120	.032	9.17
	2	9.442		9.444					
Int. Major	1	N/A		N/A					
	2	N/A		N/A					
Int. Minor	1	N/A	N/A	N/A					
	2	N/A	N/A	N/A					

Int. Pitch — Go Gauge ID: N/A — Recal Date: N/A — Result: N/A

No-Go Gauge ID: N/A — Recal Date: N/A — Result: N/A

Notes: (1) External Pitch Diameter = [Average] – [Wire Constant] – [Shim Size]
(2) External Minor Diameter = [Average] – [2 X Wire Diameter] – [Shim Size]

DISPOSITION

	Trial 1	Trial 2	Trial 3	Trial 4
Adaptor Mark	A-5			
Min. Minor Diameter from Adaptor Table	8.598			
Acceptable? (Yes or No)	Yes			

QC Signoff: W. Rance Kahle Level: II Date: 8-17-09

QC Reviewed: [signature] Level: I Date: 8-17-09

	TMI - Unit 1 Surveillance Procedure	Number 1301-9.1
Title **RB Structural Integrity Tendon Surveillance**		Revision No. 20

DATA SHEET 2
As-Found Lift-Off Force Summary Results

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Group	Tendon ID	As-Found Lift Off Force, kip			Predicted Force, F_P kip	F_{acc} = 0.95 F_p	F > F_{acc} Circle Yes or No	F_{llim} = 0.90 F_p	F > F_{llim} Circle Yes or No
		Shop End	Field End	Average Force, F					
Hoop	H46-50	1204.31	1056.91	1130.62	1116	1060	(Yes) / No	1004	(Yes) / No
	H24-33	1157.38	1089.47	1123.43	1068	1015	(Yes) / No	961	(Yes) / No
	H51-49	1185.70	~~1124.50~~ 1122.86	~~1155.10~~ 1154.28	1132	1075	(Yes) / No	1019	(Yes) / No
	H62-26	1130.98	1157.51	1141.25	1105	1050	(Yes) / No	995	(Yes) / No
	H13-41	1172.50	1129.51	1151.01	1153	1095	(Yes) / No	1038	(Yes) / No
							Yes / No		Yes / No
							Yes / No		Yes / No
							Yes / No		Yes / No
							Yes / No		Yes / No
							Yes / No		Yes / No
							Yes / No		Yes / No
Vertical	V-11	1205.97	N/A	1205.97	1148	1091	(Yes) / No	1033	(Yes) / No
	V-32	1175.10	N/A	1175.10	1181	1122	(Yes) / No	1063	(Yes) / No
	V-90	1199.92	N/A	1199.92	1204	1144	(Yes) / No	1084	(Yes) / No
	V-132	1205.78	N/A	1205.78	1204	1144	(Yes) / No	1084	(Yes) / No
			N/A				Yes / No		Yes / No
			N/A				Yes / No		Yes / No
			N/A				Yes / No		Yes / No
			N/A				Yes / No		Yes / No
Dome	D-225	1093.90	1082.59	1088.25	1067	1014	(Yes) / No	960	(Yes) / No
	D-342	1118.12	1181.58	1149.85	1116	1060	(Yes) / No	1004	(Yes) / No
	D-122	1110.44	1128.39	1119.42	1082	1028	(Yes) / No	974	(Yes) / No
	D-322	1137.78	1132.80	1135.29	1128	1072	(Yes) / No	1015	(Yes) / No
							Yes / No		Yes / No
							Yes / No		Yes / No
							Yes / No		Yes / No
							Yes / No		Yes / No

Notes: (Initial & Date) ~~2-3-10~~ 2-3-10

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DATA SHEET 5
Average of the Normalized Lift Off Force

Tendon ID	(1) Lift Off Force	(2) Normalizing Factor (NF)	(3) Normalized Lift Off (1) + (2)	(4) Acceptance Yes / No
Dome Tendons				
1. D-225	1088.25	+45	1133.25	
2. D-342	1149.85	-3	1146.85	
3. D-322	1135.29	-15	1120.29	(Average Equal to or greater than 1084 kips)
4. D-122	1119.42	+31	1150.42	
5.				
6.				
		Total	4550.81	
		Average	1137.70	Yes
Vertical Tendons				
1. V-11	1205.97	+26	1231.97	
2. V-32	1175.10	-7	1168.10	(Average Equal to or greater than 1033 kips)
3. V-90	1199.92	-30	1168.92	
4. V-132	1205.78	-30	1175.78	
5.				
6.				
7.				
			4745.77	
		Total Average	1186.44	Yes
Hoop Tendons				
1. H46-50	1130.62	-9	1121.62	
2. H24-33	1123.43	+38	1161.43	
3. H62-26	1141.25	+2	1143.25	(Average Equal to or greater than 1108 kips)
4. H13-41	1151.01	-47	1104.01	
5. H51-49	~~1134.38~~ 1134.38	-25	~~1109.38~~ 1109.38	
6.				
7.				
8.				
9.				
10.				
			5059.59	
		Total	5560.44	
		Average	~~1122.08~~ 1131.93	Yes

Cognizant Mech/Struct Engineer Reviewed By: _____ Date: 2-9-10

Performed By: _____ Date: 2-9-10

DATA SHEET 1
Lift-Off Force Measurement

Surveillance No. 35TH YR   Tendon ID H13-41 ~~[illegible]~~ [illegible] 11-12-09   Predicted Force (F_p) 1153 kip   Tendon End (Circle One): (Shop) / Field

Phase (Circle One): (As-found) / Re-Tension   Ram ID 9371   Ram Calibration Constants: A = 220.599 k = -5.486

Date 11-12-09   Temp: RB Interior 68 °F / Concrete Surface 48 °F   No. Effective Wires, N_w 169   Shim Stack Ht. 6.50 in.

CAUTION

DO NOT EXCEEP A RAM PRESSURE OF $[(1{,}592 \times N_w / 169) - k] \times 1{,}000 / A$ = 7241.58 psig

Trial	Lift-Off Pressure, psig	Consecutive Three Trial Pressure Spread psi	Consecutive Three Trial Pressure Average p[1] psig[1,2]
1	5340	N/A	N/A
2	5340	N/A	N/A
3	5340	0	5340
4			
5			
6			
7			
8			
9			
10			

Stressing Washer Rotation

At Feeler Gage Insertion	Rotation, Turns CW or CCW
At Trial 1	0
At Trial 2	0
At Trial 3	0
At Trial 4	
At Trial 5	
At Trial 6	
At Trial 7	
Sum	0

End Lift-Off Force = (A x P' / 1,000) = k = 1172.5 kip

For Re-tension Only, List Nominal Thickness of Each Shim Starting at Shim in Contact with Anchorhead

N/A in.
"
"
"
"
"
"
"
"

[1] N/A if 3 trial pressure spread > 25,000 / A = 113 psi

[2] Re-tension P' range: $P'_{min} = (F_p - k) \times 1{,}000 / A$ = N/A psig < P' < $P'_{max} = [(1{,}394 \times N_w / 169) - k] \times 1{,}000 / A$ = N/A psig

For Re-Tension Only: F_p < End Lift-Off Force < $1394 \times N_w / 169$; N/A < N/A < N/A   **Yes / No (Circle One)**

Notes:

Recorded by: Signature [signature]   Date 11-12-09 / Reviewed by: Signature [signature] QV   Date 2/2/10

DATA SHEET 1
Lift-Off Force Measurement

Surveillance No. 35 th year Tendon ID H13-41 Predicted Force (F_p) 1153 kip Tendon End (Circle One): Shop (Field)

Phase (Circle One): (As-found) Re-Tension Ram ID 9371 Ram Calibration Constants: A = 220.008 k = -3.524

Date 8-26-09 Temp: RB Interior 123.6 °F / Concrete Surface 104 °F No. Effective Wires, N_w 169 Shim Stack Ht. 6.7 in.

CAUTION

DO NOT EXCEEP A RAM PRESSURE OF [(1,592 x N_w / 169) – k] x 1,000 / A = ~~1136.56~~ 7220.08 psig WPR 8-26-09

Trial	Lift-Off Pressure, psig	Consecutive Three Trial Pressure Spread psi	Consecutive Three Trial Pressure Average p'[1] psig[1,2]	Stressing Washer Rotation	Rotation, Turns CW or CCW	For Re-tension Only, List Nominal Thickness of Each Shim Starting at Shim in Contact with Anchorhead
				At Feeler Gage Insertion		
1	5150	N/A	N/A	At Trial 1	0	N/A in.
2	5150	N/A	N/A	At Trial 2	0	"
3	5150	0	5150	At Trial 3	0	"
4				At Trial 4		"
5				At Trial 5		"
6				At Trial 6		"
7				At Trial 7		"
8				Sum		"
9						"
10						

End Lift-Off Force = (A x P' / 1,000) = k = ~~1136.~~ 1129.51 kip (initialed, 1-21-10)

[1] N/A if 3 trial pressure spread > 25,000 / A = 113.63 psi

[2] Re-tension P' range: $P'_{min} = (F_p - k) \times 1{,}000 / A$ = N/A psig < P' < P'_{max} = [(1,394 x N_w / 169) – k] x 1,000 / A = N/A psig

For Re-Tension Only: F_p < End Lift-Off Force < 1394 x N_w / 169; N/A < N/A < N/A **Yes / No (Circle One)**

Notes: None

Recorded by: Signature W. Rance [signature] Date 8-26-09 / Reviewed by: Signature [signature] QV Date 8-26-09

DATA SHEET 1
Lift-Off Force Measurement

Surveillance No. 35th yr. Tendon ID H 24-33 Predicted Force (F_p) 1068 kip Tendon End (Circle One): (Shop) / Field

Phase (Circle One): (As-found) / Re-Tension Ram ID 9371 Ram Calibration Constants: A = 220.008 k = -3.524

Date 8-11-09 Temp: RB Interior 123.5 °F / Concrete Surface 95 °F No. Effective Wires, N_w 169 Shim Stack Ht. 6.5 in.

CAUTION

DO NOT EXCEEP A RAM PRESSURE OF [(1,592 x N_w / 169) – k] x 1,000 / A = ~~6315.57~~ 7220.08 psig 8-20-09

Trial	Lift-Off Pressure, psig	Consecutive Three Trial Pressure Spread psi	Consecutive Three Trial Pressure Average p' psig[1,2]
1	5280	N/A	N/A
2	5270	N/A	N/A
3	5280	10	5276.66
4			
5			
6			
7			
8			
9			
10			

Stressing Washer Rotation

	Rotation, Turns CW or CCW
At Feeler Gage Insertion	
At Trial 1	0
At Trial 2	0
At Trial 3	0
At Trial 4	
At Trial 5	
At Trial 6	
At Trial 7	
Sum	

End Lift-Off Force = (A x P' / 1,000) + k = ~~1164.43~~ 1159.38 kip 1-29-10

For Re-tension Only, List Nominal Thickness of Each Shim Starting at Shim in Contact with Anchorhead

N/A in.

[1] N/A if 3 trial pressure spread > 25,000 / A = 113.63 psi

[2] Re-tension P' range: P'_{min} = (F_p – k) x 1,000 / A = N/A psig < P' < P'_{max} = [(1,394 x N_w / 169) – k] x 1,000 / A = N/A psig

For Re-Tension Only: F_p < End Lift-Off Force < 1394 x N_w / 169; N/A < N/A < N/A **Yes / No (Circle One)**

Notes: None

Recorded by: Signature W. Ponce Robles Date 8-11-09 / Reviewed by: Signature [signature] QV Date 8-20-09

DATA SHEET 1
Lift-Off Force Measurement

Surveillance No. 35 th. yr. Tendon ID H24-33 Predicted Force (F_p) 1068 kip Tendon End (Circle One): Shop / (Field)

Phase (Circle One): (As-found) / Re-Tension Ram ID 9321 Ram Calibration Constants: A = 220.008 k = 3.524

Date 8-24-09 Temp: RB Interior 125 °F / Concrete Surface 98 °F No. Effective Wires, N_w 169 Shim Stack Ht. 7.6 in.

CAUTION

DO NOT EXCEED A RAM PRESSURE OF [(1,592 x N_w / 169) – k] x 1,000 / A = 7220.08 psig

Trial	Lift-Off Pressure, psig	Consecutive Three Trial Pressure Spread psi	Consecutive Three Trial Pressure Average p[1] psig[1,2]
1	4972	N/A	N/A
2	4969	N/A	N/A
3	4963	9	4968
4			
5			
6			
7			
8			
9			
10			

Stressing Washer Rotation

	Rotation, Turns CW or CCW
At Feeler Gage Insertion	
At Trial 1	0
At Trial 2	0
At Trial 3	0
At Trial 4	
At Trial 5	
At Trial 6	
At Trial 7	
Sum	

End Lift-Off Force = (A x P' / 1,000) = k = ~~1096.52~~ 1089.47 kip ~~1080~~ 1-29-10

For Re-tension Only, List Nominal Thickness of Each Shim Starting at Shim in Contact with Anchorhead

N/A in.

[1] N/A if 3 trial pressure spread > 25,000 / A = 113.63 psi

[2] Re-tension P' range: P'_{min} = (F_p – k) x 1,000 / A = N/A psig < P' < P'_{max} = [(1,394 x N_w / 169) – k] x 1,000 / A = N/A psig

For Re-Tension Only: F_p < End Lift-Off Force < 1394 x N_w / 169; N/A < N/A < N/A **Yes / No (Circle One)**

Notes: None

Recorded by: Signature Timothy C. Dietz Date 8-24-09 / Reviewed by: Signature W. Lance Roberts QV Date 8-24-09

DATA SHEET 1
Lift-Off Force Measurement

Surveillance No. 35th yr. Tendon ID H46-50 Predicted Force (F_p) ~~5056.52~~ 1116 kip WPR 8-12-09 Tendon End (Circle One): (Shop) / Field

Phase (Circle One): (As-found) / Re-Tension Ram ID 9371 Ram Calibration Constants: A = 220.668 k = -3.524

Date 8-12-09 Temp: RB Interior 124 °F / Concrete Surface 83 °F No. Effective Wires, N_w 169 Shim Stack Ht. 6.4 in.

CAUTION

DO NOT EXCEEP A RAM PRESSURE OF [(1,592 x N_w / 169) – k] x 1,000 / A = ~~6315.57~~ 9220.08 WD 8-20-09 psig

Trial	Lift-Off Pressure, psig	Consecutive Three Trial Pressure Spread psi	Consecutive Three Trial Pressure Average p' psig[1,2]
1	5490	N/A	N/A
2	5490	N/A	N/A
3	5490	0	5490
4			
5			
6			
7			
8			
9			
10			

Stressing Washer Rotation

At Feeler Gage Insertion	Rotation, Turns CW or CCW
At Trial 1	0
At Trial 2	0
At Trial 3	0
At Trial 4	
At Trial 5	
At Trial 6	
At Trial 7	
Sum	

End Lift-Off Force = (A x P' / 1,000) + k = ~~1211.36~~ 1204.31 kip
DDO 1-29-10

For Re-tension Only, List Nominal Thickness of Each Shim Starting at Shim in Contact with Anchorhead

N/A in.

[1] N/A if 3 trial pressure spread > 25,000 / A = 113.63 psi

[2] Re-tension P' range: P'_{min} = (F_p – k) x 1,000 / A = N/A psig < P' < P'_{max} = [(1,394 x N_w / 169) – k] x 1,000 / A = N/A psig

For Re-Tension Only: F_p < End Lift-Off Force < 1394 x N_w / 169; N/A < N/A < N/A **Yes / No (Circle One)**

Notes: None

Recorded by: Signature W. Lance Pell Date 8-12-09 / Reviewed by: Signature Timothy C. Sato QV Date 8-20-09

DATA SHEET 1
Lift-Off Force Measurement

Surveillance No. 35 th yr. Tendon ID H46-50 Predicted Force (F_p) 1116 kip Tendon End (Circle One): Shop / (Field)

Phase (Circle One): (As-found) / Re-Tension Ram ID 9371 Ram Calibration Constants: A = 220.008 k = -3.524

Date 8-11-09 Temp: RB Interior 123.5 °F / Concrete Surface 85 °F No. Effective Wires, N_w 169 Shim Stack Ht. 7 in.

CAUTION

DO NOT EXCEEP A RAM PRESSURE OF [(1,592 x N_w / 169) – k] x 1,000 / A = ~~6315.57~~ 7220.08 [initials] 8-20-09 psig

Trial	Lift-Off Pressure, psig	Consecutive Three Trial Pressure Spread psi	Consecutive Three Trial Pressure Average p[1] psig[1,2]	Stressing Washer Rotation	Rotation, Turns CW or CCW	For Re-tension Only, List Nominal Thickness of Each Shim Starting at Shim in Contact with Anchorhead
				At Feeler Gage Insertion		
1	4820	N/A	N/A	At Trial 1	0	N/A in.
2	4820	N/A	N/A	At Trial 2	0	"
3	4820	0	4820	At Trial 3	0	"
4				At Trial 4		"
5				At Trial 5		"
6				At Trial 6		"
7				At Trial 7		"
8				Sum		"
9						"
10						

End Lift-Off Force = (A x P' / 1,000) = k = ~~1663.96~~ 1056.91 [initials] 1-29-10 kip

[1] N/A if 3 trial pressure spread > 25,000 / A = 113.63 psi

[2] Re-tension P' range: $P'_{min} = (F_p - k) \times 1{,}000 / A$ = N/A psig < P' < $P'_{max} = [(1{,}394 \times N_w / 169) - k] \times 1{,}000 / A$ = N/A psig

For Re-Tension Only: F_p < End Lift-Off Force < 1394 x N_w / 169; N/A < N/A < N/A **Yes / No (Circle One)**

Notes: None

Recorded by: Signature W. Lance Robbins Date 8-11-09 / Reviewed by: Signature [signature] QV Date 8-20-09

DATA SHEET 1
Lift-Off Force Measurement

Surveillance No. 35TH YR　Tendon ID H51-49　Predicted Force (F_p) 1132 kip　Tendon End (Circle One): (Shop) / Field

Phase (Circle One): (As-found) / Re-Tension　Ram ID 9371　Ram Calibration Constants: A = 220.599　k = -5.486

Date 11-11-09　Temp: RB Interior 74 °F / Concrete Surface 56 °F　No. Effective Wires, N_w 169　Shim Stack Ht. 7.1 in.

CAUTION

DO NOT EXCEEP A RAM PRESSURE OF [(1,592 x N_w / 169) – k] x 1,000 / A = 7241.58 psig

Trial	Lift-Off Pressure, psig	Consecutive Three Trial Pressure Spread psi	Consecutive Three Trial Pressure Average p'[1] psig[1,2]
1	5400	N/A	N/A
2	5400	N/A	N/A
3	5400	0	5400
4			
5			
6			
7			
8			
9			
10			

Stressing Washer Rotation

At Feeler Gage Insertion	Rotation, Turns CW or CCW
At Trial 1	0
At Trial 2	0
At Trial 3	0
At Trial 4	
At Trial 5	
At Trial 6	
At Trial 7	
Sum	0

End Lift-Off Force = (A x P' / 1,000) = k = 1185.7 kip

For Re-tension Only, List Nominal Thickness of Each Shim Starting at Shim in Contact with Anchorhead

N/A in.

[1] N/A if 3 trial pressure spread > 25,000 / A = 113 psi

[2] Re-tension P' range: $P'_{min} = (F_p - k) \times 1{,}000 / A$ = N/A psig < P' < P'_{max} = [(1,394 x N_w / 169) – k] x 1,000 / A = N/A psig

For Re-Tension Only: F_p < End Lift-Off Force < 1394 x N_w / 169; N/A < N/A < N/A　**Yes / No (Circle One)**

Notes: None

Recorded by: Signature [signature]　Date 11-11-09　/　Reviewed by: Signature [signature] QV　Date 2/2/10

DATA SHEET 1
Lift-Off Force Measurement

Surveillance No. 35th year Tendon ID H51-49 Predicted Force (F_p) 1132 kip Tendon End (Circle One): Shop (Field)

Phase (Circle One): (As-found) / Re-Tension Ram ID 9370 Ram Calibration Constants: A = 218.894 k = -2.248

Date 8-26-09 Temp: RB Interior 123.6 °F / Concrete Surface 86 °F No. Effective Wires, N_w ~~169~~ 169 WRR 8-26-09 Shim Stack Ht. 6.6 in.

CAUTION

DO NOT EXCEEP A RAM PRESSURE OF [(1,592 x N_w / 169) – k] x 1,000 / A = 7262.65 psig

Trial	Lift-Off Pressure, psig	Consecutive Three Trial Pressure Spread psi	Consecutive Three Trial Pressure Average p'[1] psig[1,2]	Stressing Washer Rotation	Rotation, Turns CW or CCW	For Re-tension Only, List Nominal Thickness of Each Shim Starting at Shim in Contact with Anchorhead
				At Feeler Gage Insertion		
1	5140	N/A	N/A	At Trial 1	0	N/A in.
2	5140	N/A	N/A	At Trial 2	0	"
3	5140	0	5140	At Trial 3	0	"
4				At Trial 4		"
5				At Trial 5		"
6				At Trial 6		"
7				At Trial 7		"
8				Sum		"
9						"
10						

End Lift-Off Force = (A x P' / 1,000) = k = ~~1127.36~~ 1122.86 kip DRO 1-29-10

[1] N/A if 3 trial pressure spread > 25,000 / A = 114.21 psi

[2] Re-tension P' range: P'_{min} = (F_p – k) x 1,000 / A = N/A psig < P' < P'_{max} = [(1,394 x N_w / 169) – k] x 1,000 / A = N/A psig

For Re-Tension Only: F_p < End Lift-Off Force < 1394 x N_w / 169; N/A < N/A < N/A **Yes / No (Circle One)**

Notes: None

Recorded by: Signature [signature] Date 8-26-09 / Reviewed by: Signature [signature] QV Date 8-26-09

DATA SHEET 1
Lift-Off Force Measurement

Surveillance No. 35TH YR Tendon ID H51-49 Predicted Force (F_p) 1132 kip Tendon End (Circle One): Shop / (Field)

Phase (Circle One): (As-found) / Re-Tension Ram ID 9370 Ram Calibration Constants: A = 220.472 k = -4.255

Date 11-11-09 Temp: RB Interior 74 °F / Concrete Surface 54 °F No. Effective Wires, N_w 169 Shim Stack Ht. 6.6 in.

CAUTION

DO NOT EXCEED A RAM PRESSURE OF [(1,592 x N_w / 169) – k] x 1,000 / A = 7240.17 psig

Trial	Lift-Off Pressure, psig	Consecutive Three Trial Pressure Spread psi	Consecutive Three Trial Pressure Average p[1] psig[1,2]
1	5100	N/A	N/A
2	5100	N/A	N/A
3	5100	0	5140
4			
5			
6			
7			
8			
9			
10			

Stressing Washer Rotation

	Rotation, Turns CW or CCW
At Feeler Gage Insertion	
At Trial 1	0
At Trial 2	0
At Trial 3	0
At Trial 4	
At Trial 5	
At Trial 6	
At Trial 7	
Sum	0

End Lift-Off Force = (A x P' / 1,000) = k = 1124.5 kip

For Re-tension Only, List Nominal Thickness of Each Shim Starting at Shim in Contact with Anchorhead

n/a	in.
	"
	"
	"
	"
	"
	"
	"
	"
	"

LIFTOFF PERFORMED AT REQUEST OF HOWARD HILL.
FOR INFORMATION ONLY
2-24-10

[1] N/A if 3 trial pressure spread > 25,000 / A = 113 psi

[2] Re-tension P' range: P'_{min} = (F_p – k) x 1,000 / A = n/a psig < P' < P'_{max} = [(1,394 x N_w / 169) – k] x 1,000 / A = n/a psig

For Re-Tension Only: F_p < End Lift-Off Force < 1394 x N_w / 169; n/a < n/a < n/a **Yes / No (Circle One)**

Notes:

Recorded by: Signature Date 11-12-09 / Reviewed by: Signature G Bussone QV Date 2/2/10

DATA SHEET 1
Lift-Off Force Measurement

Surveillance No. 35th yr. Tendon ID H62-26 Predicted Force (F_p) 1105 kip Tendon End (Circle One) (Shop) / Field

Phase (Circle One): (As-found) / Re-Tension Ram ID 9371 Ram Calibration Constants: A = 220.008 k = -3.524

Date 8-12-09 Temp: RB Interior 124 °F / Concrete Surface 90 °F No. Effective Wires, N_w 169 Shim Stack Ht. 6.8 in.

CAUTION

DO NOT EXCEED A RAM PRESSURE OF [(1,592 x N_w / 169) – k] x 1,000 / A = ~~6315.57~~ 7220.08 psig 8-20-09

Trial	Lift-Off Pressure, psig	Consecutive Three Trial Pressure Spread psi	Consecutive Three Trial Pressure Average p' psig[1,2]
1	5160	N/A	N/A
2	5160	N/A	N/A
3	5150	10	5156.66
4			
5			
6			
7			
8			
9			
10			

Stressing Washer Rotation

	Rotation, Turns CW or CCW
At Feeler Gage Insertion	
At Trial 1	0
At Trial 2	0
At Trial 3	0
At Trial 4	
At Trial 5	
At Trial 6	
At Trial 7	
Sum	

End Lift-Off Force = (A x P' / 1,000) + k = ~~1139.03~~ 1130.98 kip 8-20-09

For Re-tension Only, List Nominal Thickness of Each Shim Starting at Shim in Contact with Anchorhead

N/A in.

[1] N/A if 3 trial pressure spread > 25,000 / A = 113.63 psi

[2] Re-tension P' range: P'_{min} = (F_p – k) x 1,000 / A = N/A psig < P' < P'_{max} = [(1,394 x N_w / 169) – k] x 1,000 / A = N/A psig

For Re-Tension Only: F_p < End Lift-Off Force < 1394 x N_w / 169; N/A < N/A < N/A **Yes / No (Circle One)**

Notes: NONE

Recorded by: Signature W. Bruce Robb Date 8-12-09 / Reviewed by: Signature Timothy C. Otto QV Date 8-13-09

DATA SHEET 1
Lift-Off Force Measurement

Surveillance No. 35th year   Tendon ID H62-26   Predicted Force (F_p) 1105 kip   Tendon End (Circle One): Shop (Field)

Phase (Circle One): (As-found) / Re-Tension   Ram ID 9371   Ram Calibration Constants: A = 220.008 k = -3.524

Date 8-28-09   Temp: RB Interior 123 °F / Concrete Surface 97 °F   No. Effective Wires, N_w 169   Shim Stack Ht. 7.3 in.

CAUTION

DO NOT EXCEEP A RAM PRESSURE OF [(1,592 x N_w / 169) – k] x 1,000 / A = 7220.08 psig

Trial	Lift-Off Pressure, psig	Consecutive Three Trial Pressure Spread psi	Consecutive Three Trial Pressure Average p'[1] psig[1,2]	Stressing Washer Rotation	Rotation, Turns CW or CCW	For Re-tension Only, List Nominal Thickness of Each Shim Starting at Shim in Contact with Anchorhead
				At Feeler Gage Insertion		
1	5250	N/A	N/A	At Trial 1	0	N/A in.
2	5250	N/A	N/A	At Trial 2	0	"
3	5250	0	5250	At Trial 3	0	"
4				At Trial 4		"
5				At Trial 5		"
6				At Trial 6		"
7				At Trial 7		"
8				Sum		"
9						"
10						

End Lift-Off Force = (A x P' / 1,000) = k = ~~1155.56~~ 1151.51 kip (initialed 1-28-10)

[1] N/A if 3 trial pressure spread > 25,000 / A = 113.63 psi

[2] Re-tension P' range: $P'_{min} = (F_p - k) \times 1{,}000 / A$ = N/A psig < P' < $P'_{max} = [(1{,}394 \times N_w / 169) - k] \times 1{,}000 / A$ = N/A psig

For Re-Tension Only: F_p < End Lift-Off Force < 1394 x N_w / 169; N/A < N/A < N/A   **Yes / No (Circle One)**

Notes: None

Recorded by: Signature W. Bruce Pebble [signature]   Date 8-28-09 / Reviewed by: Signature [signature] QV   Date 8-28-09

DATA SHEET 1
Lift-Off Force Measurement

Surveillance No. 35 +1 year Tendon ID V-11 Predicted Force (F_p) 1148 kip Tendon End (Circle One) (Shop) / Field

Phase (Circle One): (As-found) / Re-Tension Ram ID 9370 Ram Calibration Constants: A = 218.894 k = -2.248

Date 8-18-09 Temp: RB Interior 125 °F / Concrete Surface 93 °F No. Effective Wires, N_w 169 Shim Stack Ht. 14.3 in.

CAUTION

DO NOT EXCEED A RAM PRESSURE OF [(1,592 x N_w / 169) – k] x 1,000 / A = ~~6350.20~~ 7262.65 psig 8-20-09

Trial	Lift-Off Pressure, psig	Consecutive Three Trial Pressure Spread psi	Consecutive Three Trial Pressure Average p' psig[1,2]
1	5526	N/A	N/A
2	5519	N/A	N/A
3	5516	10	5519.66
4			
5			
6			
7			
8			
9			
10			

Stressing Washer Rotation

	Rotation, Turns CW or CCW
At Feeler Gage Insertion	
At Trial 1	0
At Trial 2	0
At Trial 3	0
At Trial 4	
At Trial 5	
At Trial 6	
At Trial 7	
Sum	

End Lift-Off Force = (A x P' / 1,000) = k = ~~1210.46~~ 1205.97 kip 1-29-10

For Re-tension Only, List Nominal Thickness of Each Shim Starting at Shim in Contact with Anchorhead

N/A in.

[1] N/A if 3 trial pressure spread > 25,000 / A = 114 psi

[2] Re-tension P' range: P'_{min} = (F_p – k) x 1,000 / A = N/A psig < P' < P'_{max} = [(1,394 x N_w / 169) – k] x 1,000 / A = N/A psig

For Re-Tension Only: F_p < End Lift-Off Force < 1394 x N_w / 169; N/A < N/A < N/A **Yes / No (Circle One)**

Notes: None

Recorded by: Signature [signature] Date 8-18-09 / Reviewed by: Signature W. Bruce Robbins QV Date 8-20-09

DATA SHEET 1
Lift-Off Force Measurement

Surveillance No. 35 th year Tendon ID U-32 Predicted Force (F_p) ~~1116~~ 1181 [initials] 8-18-09 kip Tendon End (Circle One): (Shop) / Field

Phase (Circle One): (As-found) / Re-Tension Ram ID 9370 Ram Calibration Constants: A = 218.894 k = -2.248

Date 8-18-09 Temp: RB Interior 125 °F / Concrete Surface 98 °F No. Effective Wires, N_w 169 Shim Stack Ht. 14.15 in.

CAUTION

DO NOT EXCEEP A RAM PRESSURE OF $[(1{,}592 \times N_w / 169) - k] \times 1{,}000 / A$ = ~~6352.20~~ 7262.65 psig WRR 8-20-09

Trial	Lift-Off Pressure, psig	Consecutive Three Trial Pressure Spread psi	Consecutive Three Trial Pressure Average p[1] psig[1,2]
1	5380	N/A	N/A
2	5376	N/A	N/A
3	5380	4	5378.66
4			
5			
6			
7			
8			
9			
10			

Stressing Washer Rotation

	Rotation, Turns CW or CCW
At Feeler Gage Insertion	
At Trial 1	0
At Trial 2	0
At Trial 3	0
At Trial 4	
At Trial 5	
At Trial 6	
At Trial 7	
Sum	

End Lift-Off Force = (A x P' / 1,000) = k = ~~1179.60~~ 1175.10 kip SRO 1-29-10

For Re-tension Only, List Nominal Thickness of Each Shim Starting at Shim in Contact with Anchorhead

N/A in. (all lines)

[1] N/A if 3 trial pressure spread > 25,000 / A = 114.21 psi

[2] Re-tension P' range: $P'_{min} = (F_p - k) \times 1{,}000 / A$ = N/A psig < P' < $P'_{max} = [(1{,}394 \times N_w / 169) - k] \times 1{,}000 / A$ = N/A psig

For Re-Tension Only: F_p < End Lift-Off Force < 1394 x N_w / 169; N/A < N/A < N/A **Yes / No (Circle One)**

Notes: None

Recorded by: Signature [signature] Date 8-18-09 / Reviewed by: Signature W. Bruce [signature] QV Date 8-20-09

DATA SHEET 1
Lift-Off Force Measurement

Surveillance No. 35th year Tendon ID V-90 Predicted Force (F_p) 1204 kip Tendon End (Circle One): (Shop) / Field

Phase (Circle One): (As-found) / Re-Tension Ram ID 9371 Ram Calibration Constants: A = 220.068 k = -3.524

Date 8-18-09 (9) Temp: RB Interior 125 °F / Concrete Surface 89 °F No. Effective Wires, N_w 169 Shim Stack Ht. 15 in.
WRR 8-19-09

CAUTION

DO NOT EXCEED A RAM PRESSURE OF [(1,592 x N_w / 169) – k] x 1,000 / A = ~~6315.57~~ 7220.082 psig 8-20-09

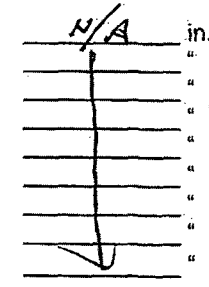
Trial	Lift-Off Pressure, psig	Consecutive Three Trial Pressure Spread psi	Consecutive Three Trial Pressure Average p[1] psig[1,2]
1	5470	N/A	N/A
2	5470	N/A	N/A
3	5470	0	5470
4			
5			
6			
7			
8			
9			
10			

Stressing Washer Rotation

	Rotation, Turns CW or CCW
At Feeler Gage Insertion	
At Trial 1	0
At Trial 2	0
At Trial 3	0
At Trial 4	
At Trial 5	
At Trial 6	
At Trial 7	
Sum	

End Lift-Off Force = (A x P' / 1,000) = k = 1206.96 / 1199.91 kip
SMD 8-4-10

For Re-tension Only, List Nominal Thickness of Each Shim Starting at Shim in Contact with Anchorhead



[1] N/A if 3 trial pressure spread > 25,000 / A = 113.63 psi

[2] Re-tension P' range: P'_{min} = (F_p – k) x 1,000 / A = N/A psig < P' < P'_{max} = [(1,394 x N_w / 169) – k] x 1,000 / A = N/A psig

For Re-Tension Only: F_p < End Lift-Off Force < 1394 x N_w / 169; N/A < N/A < N/A **Yes / No (Circle One)**

Notes: NONC

Recorded by: Signature W. Ramon Rodden Date 8-19-09 / Reviewed by: Signature Timothy C. Dunn QV Date 8-20-09

DATA SHEET 1
Lift-Off Force Measurement

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Page 1 of 1

Surveillance No. 35th yr. Tendon ID V-132 Predicted Force (F_p) 1204 kip Tendon End (Circle One): (Shop) / Field

Phase (Circle One): (As-found) / Re-Tension Ram ID 9371 Ram Calibration Constants: A = 220.008 k = -3.524

Date 8-13-09 Temp: RB Interior 124 °F / Concrete Surface 79 °F No. Effective Wires, N_w 169 Shim Stack Ht. 15.5 in.

CAUTION

DO NOT EXCEEP A RAM PRESSURE OF [(1,592 x N_w / 169) – k] x 1,000 / A = ~~1315.57~~ 1220.08 psig 8-20-09

Trial	Lift-Off Pressure, psig	Consecutive Three Trial Pressure Spread psi	Consecutive Three Trial Pressure Average p[1] psig[1,2]
1	5490	N/A	N/A
2	5500	N/A	N/A
3	5500	10	5496.66
4			
5			
6			
7			
8			
9			
10			

Stressing Washer Rotation

	Rotation, Turns CW or CCW
At Feeler Gage Insertion	
At Trial 1	0
At Trial 2	0
At Trial 3	0
At Trial 4	
At Trial 5	
At Trial 6	
At Trial 7	
Sum	

End Lift-Off Force = (A x P' / 1,000) = k = ~~1212.83~~ 1205.78 kip 8801-29-10

For Re-tension Only, List Nominal Thickness of Each Shim Starting at Shim in Contact with Anchorhead

N/A in.

[1] N/A if 3 trial pressure spread > 25,000 / A = 113.63 psi

[2] Re-tension P' range: P'_{min} = (F_p – k) x 1,000 / A = N/A psig < P' < P'_{max} = [(1,394 x N_w / 169) – k] x 1,000 / A = N/A psig

For Re-Tension Only: F_p < End Lift-Off Force < 1394 x N_w / 169; N/A < N/A < N/A **Yes / No (Circle One)**

Notes: NONE

Recorded by: Signature W. Rance Rollins Date 8-13-09 / Reviewed by: Signature [signature] QV Date 8-20-09

DATA SHEET 1
Lift-Off Force Measurement

Surveillance No. 35 Yr. Tendon ID D-122 Predicted Force (F_p) 1082 kip Tendon End (Circle One) (Shop) / Field

Phase (Circle One): (As-found) / Re-Tension Ram ID 9371 Ram Calibration Constants: A = 220.088 k = -3.524

Date 8-17-09 Temp: RB Interior 126 °F / Concrete Surface 85 °F No. Effective Wires, N_w 169 Shim Stack Ht. 5.65 in.

CAUTION

DO NOT EXCEEP A RAM PRESSURE OF [(1,592 x N_w / 169) – k] x 1,000 / A = ~~6315.57~~ psig 9220.08 1.65 8-20-09

Trial	Lift-Off Pressure, psig	Consecutive Three Trial Pressure Spread psi	Consecutive Three Trial Pressure Average p[1] psig[1,2]
1	5070	N/A	N/A
2	5060	N/A	N/A
3	5060	10	5063.33
4			
5			
6			
7			
8			
9			
10			

Stressing Washer Rotation

	Rotation, Turns CW or CCW
At Feeler Gage Insertion	
At Trial 1	0
At Trial 2	0
At Trial 3	0
At Trial 4	
At Trial 5	
At Trial 6	
At Trial 7	
Sum	

End Lift-Off Force = (A x P' / 1,000) = k = ~~1117.19~~ 1110.44 kip BPO 1-29-10

For Re-tension Only, List Nominal Thickness of Each Shim Starting at Shim in Contact with Anchorhead

N/A in.

[1] N/A if 3 trial pressure spread > 25,000 / A = 113.63 psi

[2] Re-tension P' range: P'_{min} = (F_p – k) x 1,000 / A = N/A psig < P' < P'_{max} = [(1,394 x N_w / 169) – k] x 1,000 / A = N/A psig

For Re-Tension Only: F_p < End Lift-Off Force < 1394 x N_w / 169; N/A < N/A < N/A **Yes / No (Circle One)**

Notes: None

Recorded by: Signature W. Ramon Rollins Date 8-17-09 / Reviewed by: Signature [signature] QV Date 8-20-09

DATA SHEET 1
Lift-Off Force Measurement

Surveillance No. 35TH YR. Tendon ID D-122 Predicted Force (F_p) 1082 kip Tendon End (Circle One): Shop / (Field)

Phase (Circle One): (As-found) / Re-Tension Ram ID 9371 Ram Calibration Constants: A = 220.599 k = -5.486

Date 11-13-09 Temp: RB Interior 72 °F / Concrete Surface 46 °F No. Effective Wires, N_w 169 Shim Stack Ht. 7.00 in.

CAUTION

DO NOT EXCEED A RAM PRESSURE OF [(1.592 x N_w / 169) – k] x 1,000 / A = 7241.58 psig

Trial	Lift-Off Pressure, psig	Consecutive Three Trial Pressure Spread psi	Consecutive Three Trial Pressure Average p' psig[1,2]
1	5140	N/A	N/A
2	5140	N/A	N/A
3	5140	0	5140
4			
5			
6			
7			
8			
9			
10			

Stressing Washer Rotation

	Rotation, Turns CW or CCW
At Feeler Gage Insertion	
At Trial 1	0
At Trial 2	0
At Trial 3	0
At Trial 4	
At Trial 5	
At Trial 6	
At Trial 7	
Sum	0

End Lift-Off Force = (A x P' / 1,000) = k = 1128.39 kip

For Re-tension Only, List Nominal Thickness of Each Shim Starting at Shim in Contact with Anchorhead

n/a in.
" "
" "
" "
" "
" "
" "
" "
" "

[1] N/A if 3 trial pressure spread > 25,000 / A = 113 psi

[2] Re-tension P' range: P'_{min} = (F_p – k) x 1,000 / A = n/a psig < P' < P'_{max} = [(1.394 x N_w / 169) – k] x 1,000 / A = n/a psig

For Re-Tension Only: F_p < End Lift-Off Force < 1394 x N_w / 169; n/a < n/a < n/a **Yes / No (Circle One)**

Notes: none

Recorded by: Signature [signature] Date 11-13-09 / Reviewed by: Signature [signature] QV Date 11-14

DATA SHEET 1
Lift-Off Force Measurement

Surveillance No. 35 th. yr. Tendon ID D-225 Predicted Force (F_p) 1067 kip Tendon End (Circle One): (Shop) / Field

Phase (Circle One): (As-found) / Re-Tension Ram ID 9370 Ram Calibration Constants: A = 218.894 k = -2.248

Date 8-11-09 Temp: RB Interior 123.5 °F / Concrete Surface 80 °F No. Effective Wires, N_w 169 Shim Stack Ht. 7.7 in.

CAUTION

DO NOT EXCEED A RAM PRESSURE OF [(1,592 x N_w / 169) – k] x 1,000 / A = ~~6352.20~~ 7262.65 psig WRR 8-20-09

Trial	Lift-Off Pressure, psig	Consecutive Three Trial Pressure Spread psi	Consecutive Three Trial Pressure Average p[1] psig[1,2]
1	5008	N/A	N/A
2	5009	N/A	N/A
3	5006	3	5007.66
4			
5			
6			
7			
8			
9			
10			

Stressing Washer Rotation

	Rotation, Turns CW or CCW
At Feeler Gage Insertion	
At Trial 1	0
At Trial 2	0
At Trial 3	0
At Trial 4	
At Trial 5	
At Trial 6	
At Trial 7	
Sum	

End Lift-Off Force = (A x P' / 1,000) = k = ~~1098.70~~ 1093.90 kip 8-11-09

For Re-tension Only, List Nominal Thickness of Each Shim Starting at Shim in Contact with Anchorhead

N/A in.

[1] N/A if 3 trial pressure spread > 25,000 / A = 114.21 psi

[2] Re-tension P' range: P'_{min} = (F_p – k) x 1,000 / A = N/A psig < P' < P'_{max} = [(1,394 x N_w / 169) – k] x 1,000 / A = N/A psig

For Re-Tension Only: F_p < End Lift-Off Force < 1394 x N_w / 169; N/A < N/A < N/A **Yes / No (Circle One)**

Notes: None

Recorded by: Signature [signature] Date ~~8-10-09~~ 8-11-09 / Reviewed by: Signature [signature] QV Date 8-20-09

7.43.8-11-09

DATA SHEET 1
Lift-Off Force Measurement

Surveillance No. 35 yr. +L. Tendon ID D 225 Predicted Force (F_p) 1067 kip Tendon End (Circle One): Shop (Field)

Phase (Circle One) (As-found) / Re-Tension Ram ID 9370 Ram Calibration Constants: A = 218.894 k = -2.248

Date 8-12-09 Temp: RB Interior 124 °F / Concrete Surface 89 °F No. Effective Wires, N_w 169 Shim Stack Ht. 4.7 in.

CAUTION

DO NOT EXCEEP A RAM PRESSURE OF $[(1{,}592 \times N_w / 169) - k] \times 1{,}000 / A$ = ~~6352.20~~ 7262.65 psig WRR 8-20-09

Trial	Lift-Off Pressure, psig	Consecutive Three Trial Pressure Spread psi	Consecutive Three Trial Pressure Average p[1] psig[1,2]
1	4965	N/A	N/A
2	4950	N/A	N/A
3	4953	15	4956
4			
5			
6			
7			
8			
9			
10			

Stressing Washer Rotation

	Rotation, Turns CW or CCW
At Feeler Gage Insertion	
At Trial 1	0
At Trial 2	0
At Trial 3	0
At Trial 4	
At Trial 5	
At Trial 6	
At Trial 7	
Sum	

For Re-tension Only, List Nominal Thickness of Each Shim Starting at Shim in Contact with Anchorhead: N/A in.

End Lift-Off Force = (A x P' / 1,000) = k = ~~1089.08~~ 1082.59 **kip** SBO 1-28-10

[1] N/A if 3 trial pressure spread > 25,000 / A = 114.21 psi

[2] Re-tension P' range: $P'_{min} = (F_p - k) \times 1{,}000 / A$ = N/A psig < P' < $P'_{max} = [(1{,}394 \times N_w / 169) - k] \times 1{,}000 / A$ = N/A psig

For Re-Tension Only: F_p < End Lift-Off Force < 1394 x N_w / 169; N/A < N/A < N/A **Yes / No (Circle One)**

Notes: None

Recorded by: Signature [signature] Date 8-18-09 / Reviewed by: Signature W. Ramos Robles QV Date 8-20-09

DATA SHEET 1
Lift-Off Force Measurement

Surveillance No. 35TH YR Tendon ID D-322 Predicted Force (F_p) 1128 kip Tendon End (Circle One): (Shop) / Field

Phase (Circle One): (As-found) / Re-Tension Ram ID 9370 Ram Calibration Constants: A = 220.472 k = -4.255

Date 11-16-09 Temp: RB Interior 71 °F / Concrete Surface 48 °F No. Effective Wires, N_w 169 Shim Stack Ht. 60.65 in.

CAUTION

DO NOT EXCEED A RAM PRESSURE OF [(1.592 x N_w / 169) – k] x 1,000 / A = 7240.17 psig

Trial	Lift-Off Pressure, psig	Consecutive Three Trial Pressure Spread psi	Consecutive Three Trial Pressure Average p' psig[1,2]
1	5180	N/A	N/A
2	5180	N/A	N/A
3	5180	0	5180
4			
5			
6			
7			
8			
9			
10			

Stressing Washer Rotation

	Rotation, Turns CW or CCW
At Feeler Gage Insertion	
At Trial 1	0
At Trial 2	0
At Trial 3	0
At Trial 4	
At Trial 5	
At Trial 6	
At Trial 7	
Sum	0

End Lift-Off Force = (A x P' / 1,000) = k = 1137.78 kip

For Re-tension Only, List Nominal Thickness of Each Shim Starting at Shim in Contact with Anchorhead

n/a in.
"
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"
"
"
"
"
"
"

[1] N/A if 3 trial pressure spread > 25,000 / A = 113 psi

[2] Re-tension P' range: P'_{min} = (F_p – k) x 1,000 / A = N/A psig < P' < P'_{max} = [(1,394 x N_w / 169) – k] x 1,000 / A = N/A psig

For Re-Tension Only: F_p < End Lift-Off Force < 1394 x N_w / 169; N/A < N/A < N/A **Yes / No (Circle One)**

Notes: NONE

Recorded by: Signature [signature] Date 11-16-09 / Reviewed by: Signature [signature] QV Date 2/2/10

DATA SHEET 1
Lift-Off Force Measurement

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Surveillance No. 35TH YR. Tendon ID D-322 Predicted Force (F_p) 1128 kip Tendon End (Circle One): Shop / (Field)

Phase (Circle One): (As-found) / Re-Tension Ram ID 9371 Ram Calibration Constants: A = 220.599 k = -5.486

Date 11-16-09 Temp: RB Interior 71 °F / Concrete Surface 50 °F No. Effective Wires, N_w 169 Shim Stack Ht. 60.40 in.

CAUTION

DO NOT EXCEED A RAM PRESSURE OF [(1.592 x N_w / 169) – k] x 1,000 / A = 7241.58 psig

Trial	Lift-Off Pressure, psig	Consecutive Three Trial Pressure Spread psi	Consecutive Three Trial Pressure Average p[1] psig[1,2]
1	5160	N/A	N/A
2	5160	N/A	N/A
3	5160	0	5160
4			
5			
6			
7			
8			
9			
10			

Stressing Washer Rotation

	Rotation, Turns CW or CCW
At Feeler Gage Insertion	
At Trial 1	0
At Trial 2	0
At Trial 3	0
At Trial 4	
At Trial 5	
At Trial 6	
At Trial 7	
Sum	0

End Lift-Off Force = (A x P' / 1,000) = k = 1192.8 kip

For Re-tension Only, List Nominal Thickness of Each Shim Starting at Shim in Contact with Anchorhead

N/A in.
"
"
"
"
"
"
"
"
"

[1] N/A if 3 trial pressure spread > 25,000 / A = 113 psi

[2] Re-tension P' range: P'_{min} = (F_p – k) x 1,000 / A = N/A psig < P' < P'_{max} = [(1,394 x N_w / 169) – k] x 1,000 / A = N/A psig

For Re-Tension Only: F_p < End Lift-Off Force < 1394 x N_w / 169; N/A < N/A < N/A **Yes / No (Circle One)**

Notes: NONE

Recorded by: Signature [signature] Date 11-16-09 / Reviewed by: Signature [signature] QV Date 2/2/10

DATA SHEET 1
Lift-Off Force Measurement

Surveillance No. 35th yr. Tendon ID D-342 Predicted Force (F_p) 1116 kip Tendon End (Circle One): (Shop) / Field

Phase (Circle One): (As-found) / Re-Tension Ram ID 9370 Ram Calibration Constants: A = 218.894 k = -2.248

Date 8-17-09 Temp: RB Interior 126 °F / Concrete Surface 81 °F No. Effective Wires, N_w 169 Shim Stack Ht. 5.4 in.

CAUTION

DO NOT EXCEED A RAM PRESSURE OF [(1,592 x N_w / 169) – k] x 1,000 / A = ~~6352.20~~ 7262.65 7262 8-20-09 psig

Trial	Lift-Off Pressure, psig	Consecutive Three Trial Pressure Spread psi	Consecutive Three Trial Pressure Average p[1] psig[1,2]
1	5121	N/A	N/A
2	5118	N/A	N/A
3	5116	5	5118.33
4			
5			
6			
7			
8			
9			
10			

Stressing Washer Rotation

	Rotation, Turns CW or CCW
At Feeler Gage Insertion	
At Trial 1	0
At Trial 2	0
At Trial 3	0
At Trial 4	
At Trial 5	
At Trial 6	
At Trial 7	
Sum	

End Lift-Off Force = (A x P' / 1,000) + k = ~~1122.67~~ 1118.12 kip 1118 1-29-10

For Re-tension Only, List Nominal Thickness of Each Shim Starting at Shim in Contact with Anchorhead

N/A in.

[1] N/A if 3 trial pressure spread > 25,000 / A = 114.21 psi

[2] Re-tension P' range: P'_{min} = (F_p – k) x 1,000 / A = N/A psig < P' < P'_{max} = [(1,394 x N_w / 169) – k] x 1,000 / A = N/A psig

For Re-Tension Only: F_p < End Lift-Off Force < 1394 x N_w / 169; N/A < N/A < N/A **Yes / No (Circle One)**

Notes: None

Recorded by: Signature [signature] Date 8-17-09 / Reviewed by: Signature W. Bruce Rabbe QV Date 8-21-09

DATA SHEET 1
Lift-Off Force Measurement

Surveillance No. 35th year Tendon ID D 342 Predicted Force (F_p) 1116 kip Tendon End (Circle One): Shop / (Field)

Phase (Circle One): (As-found) / Re-Tension Ram ID 9371 Ram Calibration Constants: A = 220.608 k = -3.524

Date 8-17-09 Temp: RB Interior 126 °F / Concrete Surface 110 °F No. Effective Wires, N_w 169 Shim Stack Ht. 5.1 in.

CAUTION

DO NOT EXCEEP A RAM PRESSURE OF [(1,592 x N_w / 169) – k] x 1,000 / A = ~~6315.57~~ 7220.08 TCS 8-20-09 psig

Trial	Lift-Off Pressure, psig	Consecutive Three Trial Pressure Spread psi	Consecutive Three Trial Pressure Average p[1] psig[1,2]
1	5390	N/A	N/A
2	5390	N/A	N/A
3	5380	10	5386.66
4			
5			
6			
7			
8			
9			
10			

Stressing Washer Rotation

	Rotation, Turns CW or CCW
At Feeler Gage Insertion	
At Trial 1	0
At Trial 2	0
At Trial 3	0
At Trial 4	
At Trial 5	
At Trial 6	
At Trial 7	
Sum	

End Lift-Off Force = (A x P' / 1,000) = k = ~~1188.67~~ 1181.58 SPD 1-29-10 kip

For Re-tension Only, List Nominal Thickness of Each Shim Starting at Shim in Contact with Anchorhead

N/A in. (arrow down through remaining lines)

[1] N/A if 3 trial pressure spread > 25,000 / A = 113.63 psi

[2] Re-tension P' range: $P'_{min} = (F_p - k) \times 1{,}000 / A$ = N/A psig < P' < P'_{max} = [(1,394 x N_w / 169) – k] x 1,000 / A = N/A psig

For Re-Tension Only: F_p < End Lift-Off Force < 1394 x N_w / 169; N/A < N/A < N/A **Yes / No (Circle One)**

Notes: None

Recorded by: Signature W. [signature] Date 8-17-09 / Reviewed by: Signature [signature] QV Date 8-20-09

PSC PROCEDURE SQ10.2
TEST WIRE REMOVAL
Data Sheet 10.2
July 31, 2009
Page 1 of 1
Revision 0

Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

Tendon No.: H51-49 Tendon End: Btm S ☒ Shop ☐ Field

Removal Date: 11-11-09 Inspection Date: 11-11-09

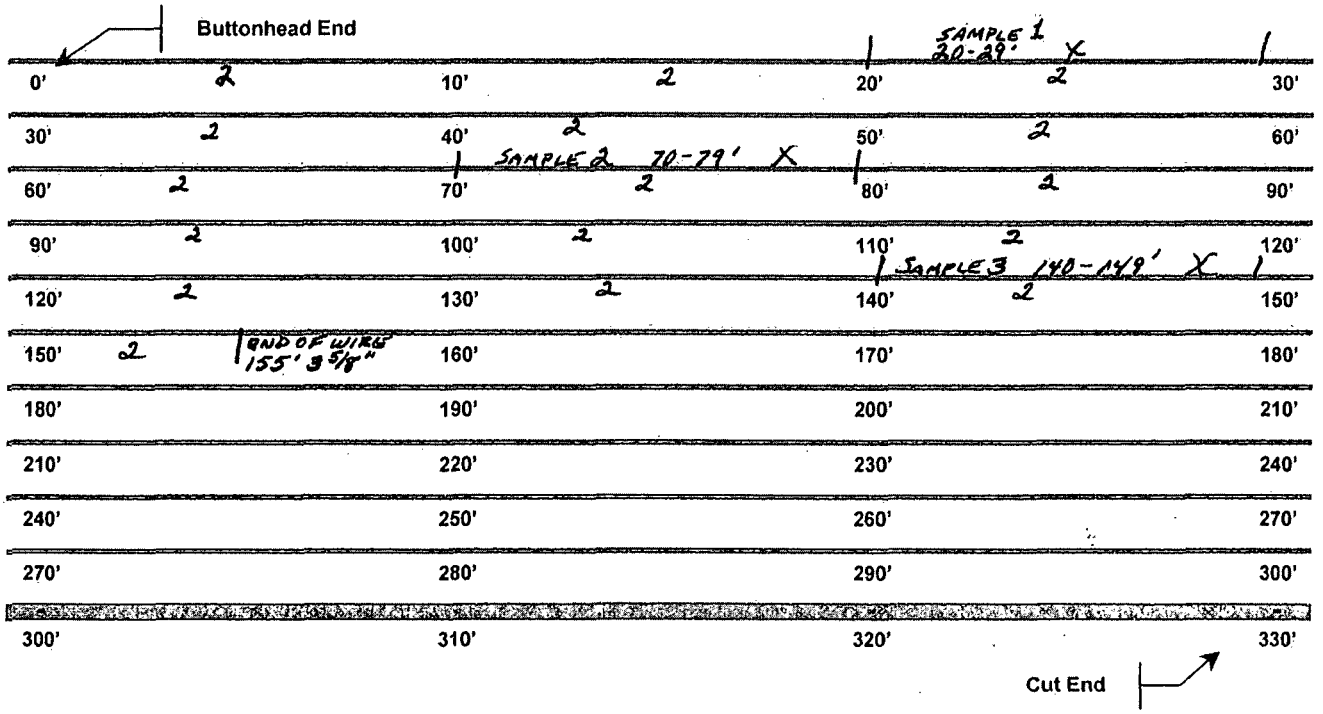
WIRE REMOVAL INSPECTION

CORROSION INSPECTION @ LENGTH INTERVALS

(8.5.4.1.1) Document the Corrosion Category for each 10' of wire in the increments below. Use Categories described in PSC SQ 8.0.

For Corrosion Level E document condition on an NCR. NCR Req'd: ☒ NO ☐ YES NCR# N/A

(8.5.4.3.1) Document the total length of the wire on the diagram below. Completed: ☐ NO ☒ YES



(8.5.4.6.2) Was the wire cut for samples: , ☐ NO ☒ YES document the area of removal above using symbol X.

(8.7) Document the location of wire removed on Data Sheet 8.0, ANCHORAGE INSPECTION: ☒ Completed

(8.8) Measuring Device: 24" STEEL RULER ID Number: R-22 Recal Date: 4-6-10

(8.8) Wire Pull Ram ID Number: N/A

Q.C Inspector: [signature] Level: II Date: 11-11-09

QC Reviewed [signature] Level: III Date: 2/2/10

PSC PROCEDURE SQ 10.3
TESTING TENDON WIRES
Data Sheet 10.3
July 31, 2009
Page 1 of 1
Revision 0

Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

Tendon No.: H51-49

WIRE TEST DOCUMENTATION

(8.5.2) Sample No.: 1

Wire ID and Location of removal: SAMPLE 1 20-29 feet Length: 108 in.

(8.6.1) Wire Diameters: Tag End .250 in. Middle .250 in. Ram End .250 in. Avg. .250 in.

Measuring Device ID: QC 79 Recal Date: 6-29-10

(8.9.1) Buttonhead Inspection: Tag End OK Ram End OK

(8.10.1) Gauge Length of Wire: 100 in. Measuring Device ID: R-88 Recal Date: 12-29-10

(8.12.1) Preload force: 2.45 kips

Preload pressure: 1390 psi Pressure Gauge ID: A-005 Recal Date: DAILY ON USE

Ram ID: 7702 Ram Area: 1.696 in^2 K = 0.091 kips Recal Date: JOB END

(8.13.1) Force reduced to zero (0): OK

(8.14.1) Initial load of wire force: 1.42 kips (0.1% elongation)

Initial load of pressure: 780 psi Elongation: 13.90 in.

(8.15.1) Preset Dial Indicator: OK (0.9% elongation) Indicator ID: ECC24 Recal Date: 12-29-10

(8.16.1) Force at 1% elongation: 10.91 kips Pressure: 6380 psi

(8.17.1) "Rule" reading measurement at 1% elongation: 14.80 in.

(8.18.1) Maximum elongation at failure, from "Rule" reading: 19.20 in.

(8.18.2) Maximum force at failure: 13.86 kips Pressure: 8120 psi

(8.20) Type of break: DUCTILE Location of break: 1" OPPOSITE RAM END in.

CALCULATIONS:

(8.21.1) Ultimate Stress: 282.389 ksi Stress (ksi) = Force (kips) ÷ [π (dia^2) ÷ 4] (in^2)

(8.21.2) Yield Stress @ 1% elongation: 222.275 ksi Stress (ksi) = Force (kips) @ 1% ÷ [π (dia^2) ÷ 4] (in^2)

(8.21.3) % elongation @ failure: 5.40 % [1 in. + ("Rule" Dimension @ Failure – "Rule" Dimension @ 1%)]

(8.21.4) Results: ☒ Acceptable ☐ Unacceptable Customer Notified NCR No.: N/A

QC Inspector: [signature] Level: II Date: 12-29-09

QC Reviewed: [signature] Level: III Date: 12/29/09

PSC PROCEDURE SQ 10.3
TESTING TENDON WIRES
Data Sheet 10.3
July 31, 2009
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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

Tendon No.: H51-49

WIRE TEST DOCUMENTATION

(8.5.2) Sample No.: 2

Wire ID and Location of removal: SAMPLE 2 feet Length: 108 in.

(8.6.1) Wire Diameters: Tag End .250 in. Middle .250 in. Ram End .250 in. Avg. .250 in.

Measuring Device ID: QC 79 Recal Date: 6-29-10

(8.9.1) Buttonhead Inspection: Tag End OK Ram End OK

(8.10.1) Gauge Length of Wire: 100 in. Measuring Device ID: R-88 Recal Date: 12-29-10

(8.12.1) Preload force: 2.45 kips

Preload pressure: 1390 psi Pressure Gauge ID: A-005 Recal Date: DAILY OR USE

Ram ID: 7702 Ram Area: 1.696 in^2 K = 0.091 kips Recal Date: JOB END

(8.13.1) Force reduced to zero (0): OK

(8.14.1) Initial load of wire force: 1.42 kips (0.1% elongation)

Initial load of pressure: 780 psi Elongation: 13.90 in.

(8.15.1) Preset Dial Indicator: OK (0.9% elongation) Indicator ID: ECC24 Recal Date: 12-29-10

(8.16.1) Force at 1% elongation: 10.84 kips Pressure: 6340 psi

(8.17.1) "Rule" reading measurement at 1% elongation: 14.80 in.

(8.18.1) Maximum elongation at failure, from "Rule" reading: 19.00 in.

(8.18.2) Maximum force at failure: 13.72 kips Pressure: 8040 psi

(8.20) Type of break: DUCTILE Location of break: 1" BAMEND in.

CALCULATIONS:

(8.21.1) Ultimate Stress: 279.625 ksi Stress (ksi) = Force (kips) ÷ [π (dia^2) ÷ 4] (in^2)

(8.21.2) Yield Stress @ 1% elongation: 220.893 ksi Stress (ksi) = Force (kips) @ 1% ÷ [π (dia^2) ÷ 4] (in^2)

(8.21.3) % elongation @ failure: 5.20 % [1 in. + ("Rule" Dimension @ Failure – "Rule" Dimension @ 1%)]

(8.21.4) Results: ☒ Acceptable ☐ Unacceptable Customer Notified NCR No.: N/A

QC Inspector: [signature] Level: II Date: 12-29-09

QC Reviewed: [signature] Level: III Date: 12/29/09

PSC PROCEDURE SQ 10.3
TESTING TENDON WIRES
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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

Tendon No.: H51-49

WIRE TEST DOCUMENTATION

(8.5.2) Sample No.: 3

Wire ID and Location of removal: SAMPLE 3 140-149 feet Length: 108 in.

(8.6.1) Wire Diameters: Tag End .250 in. Middle .250 in. Ram End .250 in. Avg. .250 in.

Measuring Device ID: QC 79 Recal Date: 6-29-10

(8.9.1) Buttonhead Inspection: Tag End OK Ram End OK

(8.10.1) Gauge Length of Wire: 100 in. Measuring Device ID: R-88 Recal Date: 12-29-10

(8.12.1) Preload force: 2.45 kips

Preload pressure: 1390 psi Pressure Gauge ID: A-005 Recal Date: DAILY ON USE

Ram ID: 7702 Ram Area: 1.696 in^2 K = 0.091 kips Recal Date: JOB END

(8.13.1) Force reduced to zero (0): OK

(8.14.1) Initial load of wire force: 1.42 kips (0.1% elongation)

Initial load of pressure: 780 psi Elongation: 13.90 in.

(8.15.1) Preset Dial Indicator: OK (0.9% elongation) Indicator ID: ECC24 Recal Date: 12-29-10

(8.16.1) Force at 1% elongation: 11.14 kips Pressure: 6520 psi

(8.17.1) "Rule" reading measurement at 1% elongation: 14.80 in.

(8.18.1) Maximum elongation at failure, from "Rule" reading: 18.90 in.

(8.18.2) Maximum force at failure: 13.65 kips Pressure: 8000 psi

(8.20) Type of break: DUCTILE Location of break: 1" RAM END in.

CALCULATIONS:

(8.21.1) Ultimate Stress: 278.244 ksi Stress (ksi) = Force (kips) ÷ [π (dia^2) ÷ 4] (in^2)

(8.21.2) Yield Stress @ 1% elongation: 227.111 ksi Stress (ksi) = Force (kips) @ 1% ÷ [π (dia^2) ÷ 4] (in^2)

(8.21.3) % elongation @ failure: 5.10 % [1 in. + ("Rule" Dimension @ Failure – "Rule" Dimension @ 1%)]

(8.21.4) Results: ☒ Acceptable ☐ Unacceptable Customer Notified NCR No.: N/A

QC Inspector: [signature] Level: II Date: 12-29-09

QC Reviewed: [signature] Level: III Date: 12/29/09

PSC PROCEDURE SQ10.2
TEST WIRE REMOVAL
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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

Tendon No.: V-90 Tendon End: Top ☒ Shop ☐ Field

Removal Date: 8-19-09 Inspection Date: 8-19-09

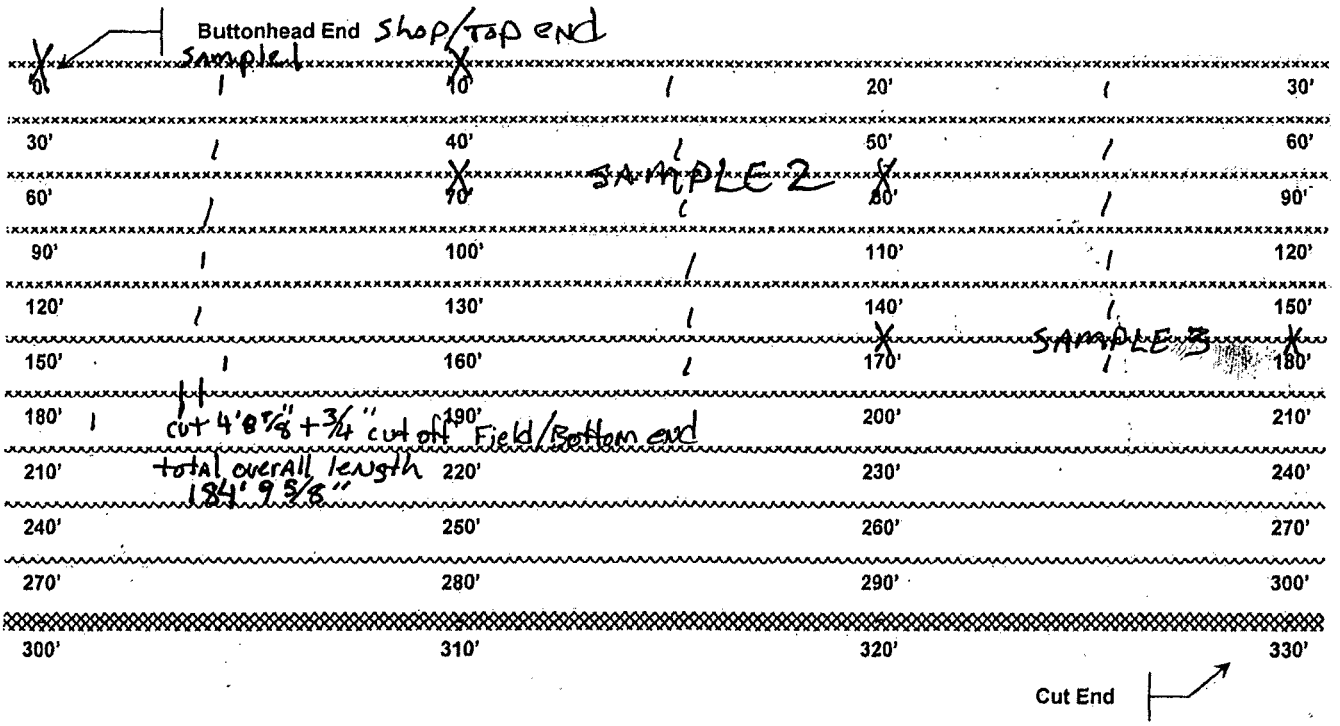
WIRE REMOVAL INSPECTION

CORROSION INSPECTION @ LENGTH INTERVALS

(8.5.4.1.1) Document the Corrosion Category for each 10' of wire in the increments below. Use Categories described in PSC SQ 8.0.

For Corrosion Level E document condition on an NCR. NCR Req'd: ☒ NO ☐ YES NCR# N/A

(8.5.4.3.1) Document the total length of the wire on the diagram below. Completed: ☐ NO ☒ YES



(8.5.4.6.2) Was the wire cut for samples: , ☐ NO ☒ YES document the area of removal above using symbol ✕.

(8.7) Document the location of wire removed on Data Sheet 8.0, ANCHORAGE INSPECTION: N/A ☐ Completed

(8.8) Measuring Device: R-21 Steel scale ID Number: R-21 Recal Date: 4-6-10

(8.8) Wire Pull Ram ID Number: N/A

Q.C Inspector:	W. Pence Robb	Level:	II	Date:	8-19-09
QC Reviewed	[signature]	Level:	I	Date:	8-20-09

PSC PROCEDURE SQ 10.3
TESTING TENDON WIRES
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Revision 0

Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

Tendon No.: V90

WIRE TEST DOCUMENTATION

(8.5.2) Sample No.: 1

Wire ID and Location of removal: Sample 1 0-10' feet Length: 120 in.

(8.6.1) Wire Diameters: Tag End .250 in. Middle .250 in. Ram End .250 in. Avg. .250 in.

Measuring Device ID: QC 79 Recal Date: 6-29-10

(8.9.1) Buttonhead Inspection: Tag End OK Ram End OK

(8.10.1) Gauge Length of Wire: 100 in. Measuring Device ID: R-88 Recal Date: 12-29-10

(8.12.1) Preload force: 2.45 kips

Preload pressure: 1390 psi Pressure Gauge ID: A-005 Recal Date: DAILY ON RIG

Ram ID: 7702 Ram Area: 1.696 in^2 K = 0.091 kips Recal Date: JOB END

(8.13.1) Force reduced to zero (0): OK

(8.14.1) Initial load of wire force: 1.42 kips (0.1% elongation)

Initial load of pressure: 780 psi Elongation: 13.90 in.

(8.15.1) Preset Dial Indicator: OK (0.9% elongation) Indicator ID: ECC24 Recal Date: 12-29-10

(8.16.1) Force at 1% elongation: 11.62 kips Pressure: 6800 psi

(8.17.1) "Rule" reading measurement at 1% elongation: 14.80 in.

(8.18.1) Maximum elongation at failure, from "Rule" reading: 19.10 in.

(8.18.2) Maximum force at failure: 14.09 kips Pressure: 8260 psi

(8.20) Type of break: DUCTILE Location of break: 1" RAM END in.

CALCULATIONS:

(8.21.1) Ultimate Stress: 287,226 ksi Stress (ksi) = Force (kips) ÷ [π (dia^2) ÷ 4] (in^2)

(8.21.2) Yield Stress @ 1% elongation: 236,785 ksi Stress (ksi) = Force (kips) @ 1% ÷ [π (dia^2) ÷ 4] (in^2)

(8.21.3) % elongation @ failure: 5.30 % [1 in. + ("Rule" Dimension @ Failure – "Rule" Dimension @ 1%)]

(8.21.4) Results: ☒ Acceptable ☐ Unacceptable Customer Notified NCR No.: n/a

QC Inspector: [signature] Level: II Date: 12-29-09

QC Reviewed: [signature] Level: III Date: 12/29/09

PSC PROCEDURE SQ 10.3
TESTING TENDON WIRES
Data Sheet 10.3
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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

Tendon No.: V90

WIRE TEST DOCUMENTATION

(8.5.2) Sample No.: SAMPLE 2

Wire ID and Location of removal: SAMPLE 2 70-80 feet Length: 120 in.

(8.6.1) Wire Diameters: Tag End .250 in. Middle .250 in. Ram End .250 in. Avg. .250 in.

Measuring Device ID: QC 79 Recal Date: 6-29-10

(8.9.1) Buttonhead Inspection: Tag End OK Ram End OK

(8.10.1) Gauge Length of Wire: 100 in. Measuring Device ID: R-88 Recal Date: 12-29-10

(8.12.1) Preload force: 2.45 kips

Preload pressure: 1390 psi Pressure Gauge ID: A-005 Recal Date: DAILY ON USE

Ram ID: 7702 Ram Area: 1.696 in^2 K = 0.091 kips Recal Date: JOB END

(8.13.1) Force reduced to zero (0): OK

(8.14.1) Initial load of wire force: 1.42 kips (0.1% elongation)

Initial load of pressure: 780 psi Elongation: 13.90 in.

(8.15.1) Preset Dial Indicator: OK (0.9% elongation) Indicator ID: ECC24 Recal Date: 12-29-10

(8.16.1) Force at 1% elongation: 11.25 kips Pressure: 6580 psi

(8.17.1) "Rule" reading measurement at 1% elongation: 14.80 in.

(8.18.1) Maximum elongation at failure, from "Rule" reading: 19.10 in.

(8.18.2) Maximum force at failure: 14.09 kips Pressure: 8260 psi

(8.20) Type of break: DUCTILE Location of break: 42 1/4" RAMOND in.

CALCULATIONS:

(8.21.1) Ultimate Stress: 287.226 ksi Stress (ksi) = Force (kips) ÷ [π (dia^2) ÷ 4] (in^2)

(8.21.2) Yield Stress @ 1% elongation: 229.184 ksi Stress (ksi) = Force (kips) @ 1% ÷ [π (dia^2) ÷ 4] (in^2)

(8.21.3) % elongation @ failure: 5.30 % [1 in. + ("Rule" Dimension @ Failure – "Rule" Dimension @ 1%)]

(8.21.4) Results: ☒ Acceptable ☐ Unacceptable Customer Notified NCR No.: N/A

QC Inspector: W. P. O'Hara Level: II Date: 12-29-09

QC Reviewed: J Bussone Level: III Date: 12/29/09

PSC PROCEDURE SQ 10.3
TESTING TENDON WIRES
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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

Tendon No.: V90

WIRE TEST DOCUMENTATION

(8.5.2) Sample No.: 3

Wire ID and Location of removal: SAMPLE 3 170-180' feet Length: 120 in.

(8.6.1) Wire Diameters: Tag End .250 in. Middle .250 in. Ram End .250 in. Avg. .250 in.

Measuring Device ID: QC 79 Recal Date: 6-29-10

(8.9.1) Buttonhead Inspection: Tag End OK Ram End OK

(8.10.1) Gauge Length of Wire: 100 in. Measuring Device ID: R-88 Recal Date: 12-29-10

(8.12.1) Preload force: 2.45 kips

Preload pressure: 1390 psi Pressure Gauge ID: A-005 Recal Date: DAILY ON BOX

Ram ID: 7702 Ram Area: 1.696 in^2 K = 0.091 kips Recal Date: JOB END

(8.13.1) Force reduced to zero (0): OK

(8.14.1) Initial load of wire force: 1.42 kips (0.1% elongation)

Initial load of pressure: 780 psi Elongation: 13.90 in.

(8.15.1) Preset Dial Indicator: OK (0.9% elongation) Indicator ID: ECC24 Recal Date: 12-29-10

(8.16.1) Force at 1% elongation: 11.35 kips Pressure: 6640 psi

(8.17.1) "Rule" reading measurement at 1% elongation: 14.80 in.

(8.18.1) Maximum elongation at failure, from "Rule" reading: 19.10 in.

(8.18.2) Maximum force at failure: 14.06 kips Pressure: 8240 psi

(8.20) Type of break: DUCTILE Location of break: 1" RAM END in.

CALCULATIONS:

(8.21.1) Ultimate Stress: 286,535 ksi Stress (ksi) = Force (kips) ÷ [π (dia^2) ÷ 4] (in^2)

(8.21.2) Yield Stress @ 1% elongation: 231,257 ksi Stress (ksi) = Force (kips) @ 1% ÷ [π (dia^2) ÷ 4] (in^2)

(8.21.3) % elongation @ failure: 5.30 % [1 in. + ("Rule" Dimension @ Failure – "Rule" Dimension @ 1%)]

(8.21.4) Results: ☒ Acceptable ☐ Unacceptable Customer Notified NCR No.: N/A

QC Inspector: [signature] Level: II Date: 12-29-09

QC Reviewed: [signature] Level: III Date: 12/29/09

PSC PROCEDURE SQ10.2
TEST WIRE REMOVAL
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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

Tendon No.: D-322 Tendon End: NE ☐ Shop ☒ Field

Removal Date: 11-16-09 Inspection Date: 11-16-09

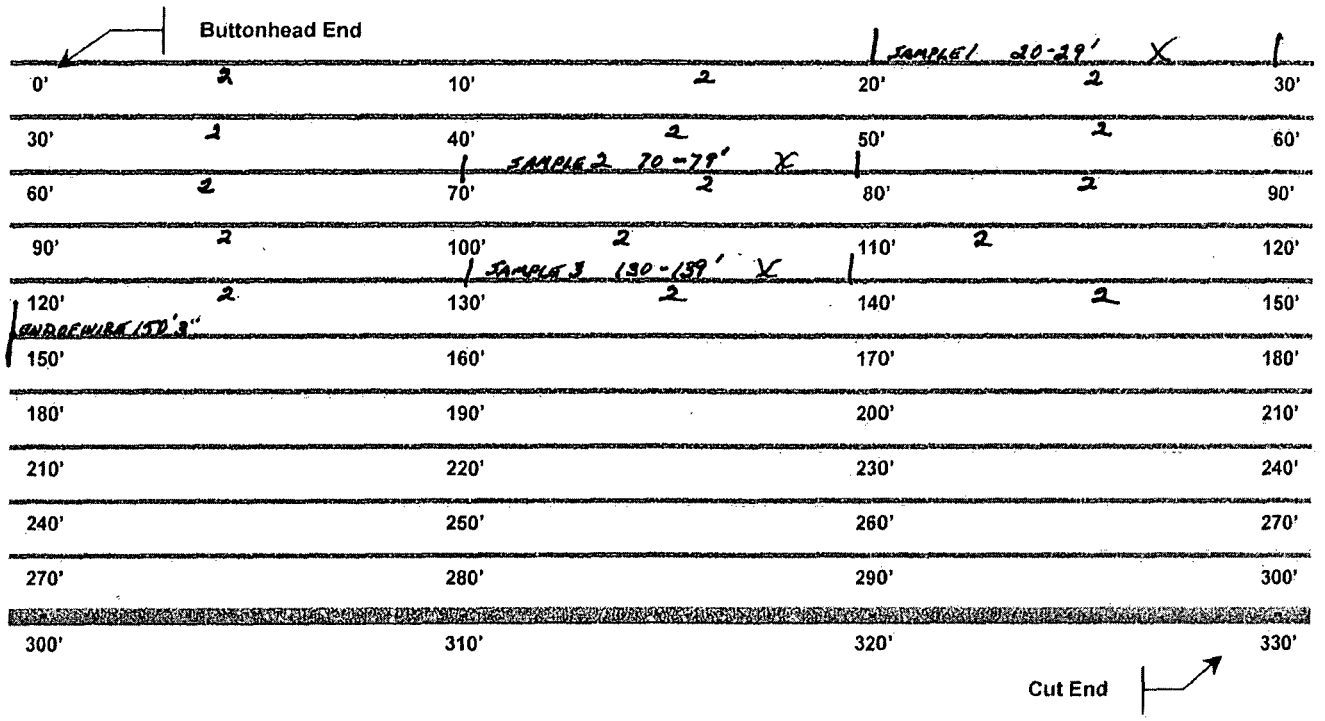
WIRE REMOVAL INSPECTION

CORROSION INSPECTION @ LENGTH INTERVALS

(8.5.4.1.1) Document the Corrosion Category for each 10' of wire in the increments below. Use Categories described in PSC SQ 8.0.

For Corrosion Level E document condition on an NCR. NCR Req'd: ☒ NO ☐ YES NCR# N/A

(8.5.4.3.1) Document the total length of the wire on the diagram below. Completed: ☐ NO ☒ YES



(8.5.4.6.2) Was the wire cut for samples: , ☐ NO ☒ YES document the area of removal above using symbol X.

(8.7) Document the location of wire removed on Data Sheet 8.0, ANCHORAGE INSPECTION: ☒ Completed

(8.8) Measuring Device: 24" STEEL RULER ID Number: R-22 Recal Date: 4-6-10

(8.8) Wire Pull Ram ID Number: N/A

Q.C Inspector: [signature] Level: II Date: 11-16-09

QC Reviewed [signature] Level: III Date: 2/2/10

PSC PROCEDURE SQ 10.3
TESTING TENDON WIRES
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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

Tendon No.: D-322

WIRE TEST DOCUMENTATION

(8.5.2) Sample No.: 1

Wire ID and Location of removal: SAMPLE 1 20-29 feet Length: 108 in.

(8.6.1) Wire Diameters: Tag End .250 in. Middle .250 in. Ram End .250 in. Avg. .250 in.

Measuring Device ID: QC 79 Recal Date: 6-29-10

(8.9.1) Buttonhead Inspection: Tag End OK Ram End OK

(8.10.1) Gauge Length of Wire: 100 in. Measuring Device ID: R-88 Recal Date: 12-29-10

(8.12.1) Preload force: 2.45 kips

Preload pressure: 1390 psi Pressure Gauge ID: A-005 Recal Date: DAILY ON JOB

Ram ID: 7702 Ram Area: 1.696 in^2 K = 0.091 kips Recal Date: JOB END

(8.13.1) Force reduced to zero (0): OK

(8.14.1) Initial load of wire force: 1.42 kips (0.1% elongation)

Initial load of pressure: 780 psi Elongation: 14.00 in.

(8.15.1) Preset Dial Indicator: OK (0.9% elongation) Indicator ID: ECC24 Recal Date: 12-29-10

(8.16.1) Force at 1% elongation: 11.53 kips Pressure: 6760 psi

(8.17.1) "Rule" reading measurement at 1% elongation: 14.90 in.

(8.18.1) Maximum elongation at failure, from "Rule" reading: 19.20 in.

(8.18.2) Maximum force at failure: 13.86 kips Pressure: 8120 psi

(8.20) Type of break: DUCTILE Location of break: 46 3/4 OPPOSITE RAM END in.

CALCULATIONS:

(8.21.1) Ultimate Stress: 282.389 ksi Stress (ksi) = Force (kips) ÷ [π (dia^2) ÷ 4] (in^2)

(8.21.2) Yield Stress @ 1% elongation: 235.403 ksi Stress (ksi) = Force (kips) @ 1% ÷ [π (dia^2) ÷ 4] (in^2)

(8.21.3) % elongation @ failure: 5.30 % [1 in. + ("Rule" Dimension @ Failure – "Rule" Dimension @ 1%)]

(8.21.4) Results: ☒ Acceptable ☐ Unacceptable Customer Notified NCR No.: N/A

QC Inspector: [signature] Level: II Date: 12-29-09

QC Reviewed: [signature] Level: III Date: 12/29/09

PSC PROCEDURE SQ 10.3
TESTING TENDON WIRES
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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

Tendon No.: D-322

WIRE TEST DOCUMENTATION

(8.5.2) Sample No.: 2

Wire ID and Location of removal: SAMPLE 2 70-79 feet Length: 108 in.

(8.6.1) Wire Diameters: Tag End .250 in. Middle .250 in. Ram End .250 in. Avg. .250 in.

Measuring Device ID: QC 79 Recal Date: 6-29-10

(8.9.1) Buttonhead Inspection: Tag End OK Ram End OK

(8.10.1) Gauge Length of Wire: 100 in. Measuring Device ID: R-88 Recal Date: 12-29-10

(8.12.1) Preload force: 2.45 kips

Preload pressure: 1390 psi Pressure Gauge ID: A-005 Recal Date: DAILY DURING USE

Ram ID: 7702 Ram Area: 1.696 in^2 K = 0.091 kips Recal Date: JOB END

(8.13.1) Force reduced to zero (0): OK

(8.14.1) Initial load of wire force: 1.42 kips (0.1% elongation)

Initial load of pressure: 780 psi Elongation: 14.00 in.

(8.15.1) Preset Dial Indicator: OK (0.9% elongation) Indicator ID: ECC24 Recal Date: 12-29-10

(8.16.1) Force at 1% elongation: 11.35 kips Pressure: 6640 psi

(8.17.1) "Rule" reading measurement at 1% elongation: 14.90 in.

(8.18.1) Maximum elongation at failure, from "Rule" reading: 19.20 in.

(8.18.2) Maximum force at failure: 13.76 kips Pressure: 8060 psi

(8.20) Type of break: DUCTILE Location of break: 27½ RAM END in.

CALCULATIONS:

(8.21.1) Ultimate Stress: 280.316 ksi Stress (ksi) = Force (kips) ÷ [π (dia^2) ÷ 4] (in^2)

(8.21.2) Yield Stress @ 1% elongation: 231.257 ksi Stress (ksi) = Force (kips) @ 1% ÷ [π (dia^2) ÷ 4] (in^2)

(8.21.3) % elongation @ failure: 5.30 % [1 in. + ("Rule" Dimension @ Failure – "Rule" Dimension @ 1%)]

(8.21.4) Results: ☒ Acceptable ☐ Unacceptable Customer Notified NCR No.: N/A

QC Inspector: [signature] Level: II Date: 12-29-09

QC Reviewed: [signature] Level: III Date: 12/29/09

PSC PROCEDURE SQ 10.3
TESTING TENDON WIRES
Data Sheet 10.3
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Project: TMI 35TH YEAR TENDON SURVEILLANCE ☒ UNIT 1

Tendon No.: D-322

WIRE TEST DOCUMENTATION

(8.5.2) Sample No.: 3

Wire ID and Location of removal: SAMPLE 3 130-139 feet Length: 108 in.

(8.6.1) Wire Diameters: Tag End .250 in. Middle .250 in. Ram End .250 in. Avg. .250 in.

Measuring Device ID: QC 79 Recal Date: 6-29-10

(8.9.1) Buttonhead Inspection: Tag End OK Ram End OK

(8.10.1) Gauge Length of Wire: 100 in. Measuring Device ID: R-88 Recal Date: 12-29-10

(8.12.1) Preload force: 2.45 kips

Preload pressure: 1390 psi Pressure Gauge ID: A-005 Recal Date: DAILY ON USE

Ram ID: 7702 Ram Area: 1.696 in^2 K = 0.091 kips Recal Date: JOB END

(8.13.1) Force reduced to zero (0): OK

(8.14.1) Initial load of wire force: 1.42 kips (0.1% elongation)

Initial load of pressure: 780 psi Elongation: 14.00 in.

(8.15.1) Preset Dial Indicator: OK (0.9% elongation) Indicator ID: ECC24 Recal Date: 12-29-10

(8.16.1) Force at 1% elongation: 11.42 kips Pressure: 6680 psi

(8.17.1) "Rule" reading measurement at 1% elongation: 14.90 in.

(8.18.1) Maximum elongation at failure, from "Rule" reading: 19.50 in.

(8.18.2) Maximum force at failure: 13.79 kips Pressure: 8080 psi

(8.20) Type of break: DUCTILE Location of break: 33" OPPOSITE RAM END in.

CALCULATIONS:

(8.21.1) Ultimate Stress: 281.007 ksi Stress (ksi) = Force (kips) ÷ [π (dia^2) ÷ 4] (in^2)

(8.21.2) Yield Stress @ 1% elongation: 232.639 ksi Stress (ksi) = Force (kips) @ 1% ÷ [π (dia^2) ÷ 4] (in^2)

(8.21.3) % elongation @ failure: 5.60 % [1 in. + ("Rule" Dimension @ Failure – "Rule" Dimension @ 1%)]

(8.21.4) Results: ☒ Acceptable ☐ Unacceptable Customer Notified NCR No.: N/A

QC Inspector: [signature] Level: II Date: 12-29-09

QC Reviewed: [signature] Level: III Date: 12/29/09

	TMI - Unit 1 Surveillance Procedure	Number 1301-9.1
Title **RB Structural Integrity Tendon Surveillance**		Revision No. 20

ENCLOSURE 4
Data Sheet 1
Tendon Wire Inspection Data

INSPECTION PERIOD 32ND YR

Tendon Identification: D322

0 — 2 — SAMPLE 1 — 25'

25' 20-29' — 2 — 50'

50' — 2 — SAMPLE 2 — 75'

75' 70-79' — 2 — 100'

100' — 2 — 125'

125' — 2 — SAMPLE 3 130-139' — 150'

150' CONCRETE — 175'

175' — 180'

180' — 185'

185' — 190'

Sample for Tensile Test[2]	Wire Sample Diameters At 1/4-Points			At Breaking Points
Sample 1: 20 ft to 29 ft	.250	.250	.250	.248
Sample 2: 70 ft to 79 ft	.250	.250	.250	.248
Sample 3: 130 ft to 139 ft	.250	.250	.250	.248

NOTE

1. Corrosion or any signs of deterioration shall be indicated full length as shown on the above chart.
2. Sample shall include areas representative of significant corrosion or pitting if they exist on removed tendon wire.
3. Diameter at Breaking Point is to be interpolated from 1/4-point diameters on either side of breaking points.

Laboratory Technician prepared by: _____ Date 12-29-09

Laboratory Supervisor Verified by: _____ Date 2/25/10

Cognizant Mech/Struct Engineer Approved by: _____ Date 19 MAR 10

	TMI - Unit 1 Surveillance Procedure	Number 1301-9.1
Title: RB Structural Integrity Tendon Surveillance		Revision No. 20

ENCLOSURE 4
Data Sheet 1
Tendon Wire Inspection Data

INSPECTION PERIOD 35th YEAR

Tendon Identification: V-90

0 X 0'to 10' sample 1 X 2 25'
25' 2 50'
50' 2 X 75'
75' sample 2 X 70'to80'X 2 100'
100' 2 125'
125' 2 150'
150' 2 X Sample 3 175'
175' 2 170'to180' X 180'
180' 2 185' Total length 184'9 5/8"
185' 190'

Sample for Tensile Test[2]	Wire Sample Diameters At 1/4-Points	At Breaking Points
Sample 1: 0 ft to 10 ft	.250 .250 .250	.245
Sample 2: 70 ft to 80 ft	.250 .250 .250	.243
Sample 3: 170 ft to 180 ft	.250 .250 .250	.245

NOTE

1. Corrosion or any signs of deterioration shall be indicated full length as shown on the above chart.
2. Sample shall include areas representative of significant corrosion or pitting if they exist on removed tendon wire.
3. Diameter at Breaking Point is to be interpolated from 1/4-point diameters on either side of breaking points.

Laboratory Technician prepared by: _____ Date 12-28-09

Laboratory Supervisor Verified by: _____ Date 2/25/10

Cognizant Mech/Struct Engineer Approved by: _____ Date 2/25/10

		Number
	TMI - Unit 1 Surveillance Procedure	1301-9.1
Title		Revision No.
RB Structural Integrity Tendon Surveillance		**20**

ENCLOSURE 4
Data Sheet 1
Tendon Wire Inspection Data

INSPECTION PERIOD 35TH YEAR

Tendon Identification: H51-49

From	Entry	To
0	2 — SAMPLE 1 20-29'	25'
25'	1 2	50'
50'	2 — SAMPLE 2	75'
75'	70-79' 2	100'
100'	2	125'
125'	2 — SAMPLE 3 140-149'	150'
150'	1 ... WIRE 165'3 9/16"	175'
		180'
180'		185'
		190'

Sample for Tensile Test(2)	Wire Sample Diameters At 1/4-Points			At Breaking Points
Sample 1: 20 ft to 29 ft	.250	.250	.250	.245
Sample 2: 70 ft to 79 ft	.250	.250	.250	.245
Sample 3: 140 ft to 149 ft	.250	.250	.250	.245

NOTE

1. Corrosion or any signs of deterioration shall be indicated full length as shown on the above chart.
2. Sample shall include areas representative of significant corrosion or pitting if they exist on removed tendon wire.
3. Diameter at Breaking Point is to be interpolated from 1/4-point diameters on either side of breaking points.

Laboratory Technician prepared by: [signature] Date 12-29-09

Laboratory Supervisor Verified by: [signature] Date 2/25/10

Cognizant Mech/Struct Engineer Approved by: [signature] Date 19 MAR 10

ENCLOSURE 4
Data Sheet 2
Tendon Wire Test Results

INSPECTION PERIOD 35TH YR.

TENDON WIRE [1] SAMPLE NO.	LOCATION [2] FROM END OF WIRE	YIELD [3] STRESS (ksi)	ULTIMATE STRESS (ksi)	PERCENT [4] ELONGATION	COMMENTS (IDENTIFY MOST CORRODED SECTION)
DOME					
1. D-322 #1	46 3/4"	235.403	282.389	5.3	NONE
2. D-322 #2	27 1/2	231.257	280.316	5.3	NONE
3. D-322 #3	33"	232.639	281.007	5.6	NONE
VERTICAL					
1. V-90 #1	1"	236.785	287.226	5.3	NONE
2. V-90 #2	42 1/4"	229.184	277.226	5.3	NONE
3. V-90 #3	1"	231.257	276.535	5.3	NONE
HOOP					
1. H51-49 #1	1"	222.275	282.389	5.4	NONE
2. H51-49 #2	1"	220.893	279.625	5.2	NONE
3. H51-49 #3	1"	227.111	278.244	5.1	NONE

NOTES:

(1) See Section 7 of this enclosure.
(2) End starts from end of zero length as indicated on Data Sheet 1 of this enclosure.
(3) Yield stress is defined per ASTM A421.
(4) At Ultimate Tensile Strength.

Laboratory Technician Prepared By: _____ Date 2-25-10

Laboratory Supervisor Verified By: _____ Date 2/25/10

Cognizant Mech/Struct Engineer Approved By: _____ Date 19 MAR 10

	TMI - Unit 1 Surveillance Procedure	Number 1301-9.1
Title **RB Structural Integrity Tendon Surveillance**		Revision No. 20

DATA SHEET 4 Page 1 of 4

Elongation / Tendon Force Record
Re-Tensioning Data for De-Tensioned Tendons

Tendon ID H51-49 Surveillance No. 35TH YR

Part 1
Original Stressing Data

NOTE

PTF force is that equivalent to a ram pressure of 1,000 psi. PTF removes tendon slack and is the starting point for elongation measurements. OSF force is 80% (may be less) of tendon ultimate strength. The tendon is loaded to OSF in order to provide the required force distribution. It is also the force at which final elongation is measured. PTF force / elongation, OSF force / elongation and number of effective wires are documented in construction records.

Table 1

Row, R	Parameter	Value
1	Shop End PTF Force	208.3 kip
2	Field end PTF force	208.3 kip
3	Mean PTF Force = (R1 + R2) / 2	208.3 kip
4	Shop End PTF Reference Distance	6.10 in.
5	Field End PTF Reference Distance	1.35 in.
6	Net PTF Reference Distance = R4 + R5	7.45 in.
7	Shop End OSF Force	1564 kip
8	Field end OSF force	1564 kip
9	Mean OSF Force = (R7 + R8) / 2	1564 kip
10	Shop End OSF Reference Distance	11.50 in.
11	Field End OSF Reference Distance	6.50 in.
12	Net OSF Reference Distance = R10 + R11	18.00 in.
13	Differential Force = R9 – R3	1355.7 kip
14	Differential Elongation = R12 – R6	10.55 in.
15	Number of Effective Wires	169
16	Elongation Rate = R14 x R15 / R13	~~1.23~~ 1.31

D80 11-13-09

	TMI - Unit 1 Surveillance Procedure	Number 1301-9.1
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DATA SHEET 4 Page 2 of 4
Elongation / Tendon Force Record
Re-Tensioning Data for De-Tensioned Tendons

Tendon ID H51-49 Surveillance No. 35TH YR.

Part 2
Shop End Re-Tensioning Data

Ram ID 9371 Ram Area, A 220.599 in^2 Ram k -5.486 kip

NOTE

The number of effective wires entered in R1 must be the same as the number entered for the field end in Table 3. Also, the calculations identified in Rows 4, 16, 18 & 19 (shaded) may be done after stressing work at both ends of the tendon is complete.

Table 2

Row, R	Parameter	Value	Signature	Date
1	Number of Effective Wires	168	GBussone	11/17/09
2	PTF Target Pressure	960 ~~1,000~~ psi	GBussone	11/17/09
3	PTF Actual Pressure	960 psi	GBussone	11/17/09
4	PTF Actual Force = R3 x A/1000 = k	211.8 kip	GBussone	11/17/09
5	PTF Reference Distance	3.5 in.	GBussone	11/17/09
6	OSF Maximum Force = R1 x 9.4	1579.2 kip	GBussone	11/17/09
7	OSF Max. Pressure = 1000 (R6 + k) / A	7183.5 psi	GBussone	11/17/09
8	1/3 Pressure Interval = R7 / 3 – 330	2064 psi	GBussone	11/17/09
9	Target 1/3 Pressure = 1,000 + R8	3064 psi	GBussone	11/17/09
10	Actual 1/3 Pressure	3060 psi	GBussone	11/17/09
11	1/3 Reference Distance	4.5 in.	GBussone	11/17/09
12	Target 2/3 Pressure = R9 + R8	5128 psi	GBussone	11/17/09
13	Actual 2/3 Pressure	5130 psi	GBussone	11/17/09
14	2/3 Reference Distance	6.6 in.	GBussone	11/17/09
15	OSF Actual Pressure	7070 psi	GBussone	11/17/09
16	OSF Actual Force = R15 x A/1000 = k	1554 kip	GBussone	11/17/09
17	OSF Reference Distance	8.8 in.	GBussone	11/17/09
18	Differential Force = R16 – R4	1342 kip	GBussone	11/17/09
19	Differential Elongation = R17 – R5	5.3 in.	GBussone	11/17/09

	TMI - Unit 1 Surveillance Procedure	Number 1301-9.1
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DATA SHEET 4 Page 3 of 4
Elongation / Tendon Force Record
Re-Tensioning Data for De-Tensioned Tendons

Tendon ID H51-49 Surveillance No. 35TH YR.

Part 3
Field End Re-Tensioning Data

Ram ID 9370 Ram Area, A 220.472 in^2 Ram k -4.255 kip

NOTE

The number of effective wires entered in R1 must be the same as the number entered for the shop end in Table 2. Also, the calculations identified in Rows 4, 16, 18 & 19 (shaded) may be done after stressing work at both ends of the tendon is complete.

Table 3

Row, R	Parameter	Value	Signature	Date
1	Number of Effective Wires	168		11-12-09
2	PTF Target Pressure	960 ~~1,000~~ psi		11-12-09
3	PTF Actual Pressure	960 psi		11-12-09
4	PTF Actual Force = R3 x A/1000 = k	2073 kip		11-12-09
5	PTF Reference Distance	3.1 in.		11-12-09
6	OSF Maximum Force = R1 x 9.4	1579.2 kip		11-12-09
7	OSF Max. Pressure = 1000 (R6 + k) / A	7182 psi		11-12-09
8	1/3 Pressure Interval = R7 / 3 - 330	2064 psi		11-12-09
9	Target 1/3 Pressure = 1,000 + R8	3064 psi		11-12-09
10	Actual 1/3 Pressure	3060 psi		11-12-09
11	1/3 Reference Distance	4.6 in.		11-12-09
12	Target 2/3 Pressure = R9 + R8	5128 psi		11-12-09
13	Actual 2/3 Pressure	5130 psi		11-12-09
14	2/3 Reference Distance	6.7 in		11-12-09
15	OSF Actual Pressure	7070 psi		11-12-09
16	OSF Actual Force = R15 x A/1000 = k	1558.4 kip		11-12-09
17	OSF Reference Distance	8.7 in.		11-12-09
18	Differential Force = R16 - R4	-514.6 kip		11-12-09
19	Differential Elongation = R17 - R5	5.6 in.		11-12-09

	TMI - Unit 1 Surveillance Procedure	Number 1301-9.1
Title: RB Structural Integrity Tendon Surveillance		Revision No. 20

DATA SHEET 4 Page 4 of 4
Elongation / Tendon Force Record
Re-Tensioning Data for De-Tensioned Tendons

Tendon ID H51-49 Surveillance No. 35TH YR.

Part 4
Elongation Comparison

Table 4

Row, R	Parameter	Value
1	Shop End Differential Force from Table 2, R18	1347.7 kip
2	Field End Differential Force from Table 3, R18	1348.8 kip
3	Average Differential Force = (R1 + R2) / 2*	1348.2 kip
4	Shop End Differential Elongation from Table 2, R19	5.6 in.
5	Field End Differential Elongation from Table 3, R19	5.3 in.
6	Total Elongation = R4 + R5**	10.9 in.
7	Number of Effective Wires from Table 2, R1	168
8	Re-Tensioning Elongation Rate = R6 x R7 / R3	1.35
9	Original Elongation Rate from Table 1, R16	1.35 3/ 3011-18-01
10	Fractional Difference in Rates = (R8 – R9) / R9	0.0 3/ 3011-18-09 0.03

Absolute value of the above Fractional Difference in Rates ≤ 0.1 Yes X

No _____

* For vertical tendon = R1
** For vertical tendon = R4

Signature: [signature] Date: 11-13-09

	TMI - Unit 1 Surveillance Procedure	Number 1301-9.1
Title **RB Structural Integrity Tendon Surveillance**		Revision No. 20

DATA SHEET 4

Elongation / Tendon Force Record
Re-Tensioning Data for De-Tensioned Tendons

Tendon ID V-90

Surveillance No. 35th year

Part 1
Original Stressing Data

NOTE

PTF force is that equivalent to a ram pressure of 1,000 psi. PTF removes tendon slack and is the starting point for elongation measurements. OSF force is 80% (may be less) of tendon ultimate strength. The tendon is loaded to OSF in order to provide the required force distribution. It is also the force at which final elongation is measured. PTF force / elongation, OSF force / elongation and number of effective wires are documented in construction records.

Table 1

Row, R	Parameter	Value
1	Shop End PTF Force	208.3 kip
2	Field end PTF force	N/A kip
3	Mean PTF Force = (R1 + R2) / 2	208.3 kip
4	Shop End PTF Reference Distance	1.2 in.
5	Field End PTF Reference Distance	N/A in.
6	Net PTF Reference Distance = R4 + R5	1.2 in.
7	Shop End OSF Force	1478 kip
8	Field end OSF force	N/A kip
9	Mean OSF Force = (R7 + R8) / 2	1478 kip
10	Shop End OSF Reference Distance	7.3 in.
11	Field End OSF Reference Distance	N/A in.
12	Net OSF Reference Distance = R10 + R11	7.3 in.
13	Differential Force = R9 – R3	1269.7 kip
14	Differential Elongation = R12 – R6	12.35 ~~6.1~~ in. NRR 8-20-09
15	Number of Effective Wires	169
16	Elongation Rate = R14 x R15 / R13	.8179 NRR 8-20-09

	TMI - Unit 1 Surveillance Procedure	Number 1301-9.1
Title: **RB Structural Integrity Tendon Surveillance**		Revision No. 20

DATA SHEET 4 Page 2 of 4
Elongation / Tendon Force Record
Re-Tensioning Data for De-Tensioned Tendons

Tendon ID V-90 Surveillance No. 35th yr

Part 2
Shop End Re-Tensioning Data

Ram ID 9371 Ram Area, A 220.008 in^2 Ram k -3.524 kip

NOTE

The number of effective wires entered in R1 must be the same as the number entered for the field end in Table 3. Also, the calculations identified in Rows 4, 16, 18 & 19 (shaded) may be done after stressing work at both ends of the tendon is complete.

Table 2

Row, R	Parameter	Value	Signature	Date
1	Number of Effective Wires	168	W. Lance Fallin	8-19-09
2	PTF Target Pressure	~~1,000~~ 925 WRR 8-19-09 psi	W. Lance Fallin	8-19-09
3	PTF Actual Pressure	925 psi	W. Lance Fallin	8-19-09
4	PTF Actual Force = R3 x A/1000 = k	2037 kip	W. Lance Fallin	8-19-09
5	PTF Reference Distance	5.9 in.	W. Lance Fallin	8-19-09
6	OSF Maximum Force = R1 x 9.4	1579.2 kip	W. Lance Fallin	8-19-09
7	OSF Max. Pressure = 1000 (R6 + k) / A	7161.9 psi	W. Lance Fallin	8-19-09
8	1/3 Pressure Interval = R7 / 3 – 330	2057.3 psi	W. Lance Fallin	8-19-09
9	Target 1/3 Pressure = ~~1,000~~ WRR 8-19-09 R-2 + R8	2982.3 psi	W. Lance Fallin	8-19-09
10	Actual 1/3 Pressure	2980 psi	W. Lance Fallin	8-19-09
11	1/3 Reference Distance	10.3 in.	W. Lance Fallin	8-19-09
12	Target 2/3 Pressure = R9 + R8	5039.6 psi	W. Lance Fallin	8-19-09
13	Actual 2/3 Pressure	5040 psi	W. Lance Fallin	8-19-09
14	2/3 Reference Distance	14.5 in.	W. Lance Fallin	8-19-09
15	OSF Actual Pressure	7160 psi	W. Lance Fallin	8-19-09
16	OSF Actual Force = R15 x A/1000 = k	1578.18 kip	W. Lance Fallin	8-19-09
17	OSF Reference Distance	17.8 in.	W. Lance Fallin	8-19-09
18	Differential Force = R16 – R4	1371.78 kip	W. Lance Fallin	8-19-09
19	Differential Elongation = R17 – R5	11.9 in.	W. Lance Fallin	8-19-09

	TMI - Unit 1 Surveillance Procedure	Number 1301-9.1
Title **RB Structural Integrity Tendon Surveillance**		Revision No. 20

DATA SHEET 4
Elongation / Tendon Force Record
Re-Tensioning Data for De-Tensioned Tendons

Tendon ID V-90 Surveillance No. 35th YEAR

Part 4
Elongation Comparison

Table 4

Row, R	Parameter	Value
1	Shop End Differential Force from Table 2, R18	1371.78 kip
2	Field End Differential Force from Table 3, R18	N/A kip
3	Average Differential Force = (R1 + R2) / 2*	1371.78 kip
4	Shop End Differential Elongation from Table 2, R19	11.9 in.
5	Field End Differential Elongation from Table 3, R19	N/A in.
6	Total Elongation = R4 + R5**	11.9 in.
7	Number of Effective Wires from Table 2, R1	168
8	Re-Tensioning Elongation Rate = R6 x R7 / R3	1.45
9	Original Elongation Rate from Table 1, R16	.81
10	Fractional Difference in Rates = (R8 – R9) / R9	.79

Absolute value of the above Fractional Difference in Rates ≤ 0.1 Yes _____

No X

* For vertical tendon = R1
** For vertical tendon = R4

Signature: W. Pence Robinson Date: 8-20-09

	TMI - Unit 1 Surveillance Procedure	Number 1301-9.1
Title **RB Structural Integrity Tendon Surveillance**		Revision No. 20

DATA SHEET 4 Page 1 of 4

Elongation / Tendon Force Record
Re-Tensioning Data for De-Tensioned Tendons

Tendon ID D-322 Surveillance No. 35TH YR

Part 1
Original Stressing Data

NOTE

PTF force is that equivalent to a ram pressure of 1,000 psi. PTF removes tendon slack and is the starting point for elongation measurements. OSF force is 80% (may be less) of tendon ultimate strength. The tendon is loaded to OSF in order to provide the required force distribution. It is also the force at which final elongation is measured. PTF force / elongation, OSF force / elongation and number of effective wires are documented in construction records.

Table 1

Row, R	Parameter	Value
1	Shop End PTF Force	208.3 kip
2	Field end PTF force	208.3 kip
3	Mean PTF Force = (R1 + R2) / 2	208.3 kip
4	Shop End PTF Reference Distance	1.70 in.
5	Field End PTF Reference Distance	1.80 in.
6	Net PTF Reference Distance = R4 + R5	3.50 in.
7	Shop End OSF Force	1564 kip
8	Field end OSF force	1564 kip
9	Mean OSF Force = (R7 + R8) / 2	1564 kip
10	Shop End OSF Reference Distance	6.80 in.
11	Field End OSF Reference Distance	7.40 in.
12	Net OSF Reference Distance = R10 + R11	14.20 in.
13	Differential Force = R9 – R3	1355.7 kip
14	Differential Elongation = R12 – R6	10.7 in.
15	Number of Effective Wires	169
16	Elongation Rate = R14 x R15 / R13	1.33

	TMI - Unit 1 Surveillance Procedure	Number 1301-9.1
Title		Revision No.
RB Structural Integrity Tendon Surveillance		**20**

DATA SHEET 4 Page 2 of 4
Elongation / Tendon Force Record
Re-Tensioning Data for De-Tensioned Tendons

Tendon ID D-322 Surveillance No. 35TY/R

Part 2
Shop End Re-Tensioning Data

Ram ID 9370 Ram Area, A 220.472 in^2 Ram k -4,255 kip

NOTE

The number of effective wires entered in R1 must be the same as the number entered for the field end in Table 3. Also, the calculations identified in Rows 4, 16, 18 & 19 (shaded) may be done after stressing work at both ends of the tendon is complete.

Table 2

Row, R	Parameter	Value	Signature	Date
1	Number of Effective Wires	168	GBrosnac	11/17/09
2	PTF Target Pressure	~~958~~ ~~1,000 psi~~	GBrosnac	11/17/09
3	PTF Actual Pressure	960 psi	GBrosnac	11/17/09
4	PTF Actual Force = R3 x A/1000 = k	211.3 kip	GBrosnac	11/17/09
5	PTF Reference Distance	4.0 in.	GBrosnac	11/17/09
6	OSF Maximum Force = R1 x 9.4	15792 kip	GBrosnac	11/17/09
7	OSF Max. Pressure = 1000 (R6 + k) / A	7182 psi	GBrosnac	11/17/09
8	1/3 Pressure Interval = R7 / 3 – 330	2064 psi	GBrosnac	11/17/09
9	Target 1/3 Pressure = 1,000 + R8	3064 psi	GBrosnac	11/17/09
10	Actual 1/3 Pressure	3060 psi	GBrosnac	11/17/09
11	1/3 Reference Distance	5.3 in.	GBrosnac	11/17/09
12	Target 2/3 Pressure = R9 + R8	5128 psi	GBrosnac	11/17/09
13	Actual 2/3 Pressure	5130 psi	GBrosnac	11/17/09
14	2/3 Reference Distance	6.6 in.	GBrosnac	11/17/09
15	OSF Actual Pressure	6950 psi	GBrosnac	11/17/09
16	OSF Actual Force = R15 x A/1000 = k	~~[illegible]~~ kip	GBrosnac	11/17/09
17	OSF Reference Distance	8.6 in.	GBrosnac	11/17/09
18	Differential Force = R16 – R4	[illegible] kip	GBrosnac	11/17/09
19	Differential Elongation = R17 – R5	[illegible] in.	GBrosnac	11/17/09

	TMI - Unit 1 Surveillance Procedure	Number 1301-9.1
Title **RB Structural Integrity Tendon Surveillance**		Revision No. 20

DATA SHEET 4 Page 3 of 4
Elongation / Tendon Force Record
Re-Tensioning Data for De-Tensioned Tendons

Tendon ID D-322 Surveillance No. 35 TY/R

Part 3
Field End Re-Tensioning Data

Ram ID 9371 Ram Area, A 220.599 in^2 Ram k -5.486 kip

NOTE

The number of effective wires entered in R1 must be the same as the number entered for the shop end in Table 2. Also, the calculations identified in Rows 4, 16, 18 & 19 (shaded) may be done after stressing work at both ends of the tendon is complete.

Table 3

Row, R	Parameter	Value	Signature	Date
1	Number of Effective Wires	168	Daniel P. O'Hern	11-17-09
2	PTF Target Pressure	~~11-17-09~~ 960 ~~1,000~~ psi	Daniel P. O'Hern	11-17-09
3	PTF Actual Pressure	9600 psi	Daniel P. O'Hern	11-17-09
4	PTF Actual Force = R3 x A/1000 = k	2116 kip	Daniel P. O'Hern	11-17-09
5	PTF Reference Distance	3.0 in.	Daniel P. O'Hern	11-17-09
6	OSF Maximum Force = R1 x 9.4	1579.2 kip	Daniel P. O'Hern	11-17-09
7	OSF Max. Pressure = 1000 (R6 + k) / A	7183.5 psi	Daniel P. O'Hern	11-17-09
8	1/3 Pressure Interval = R7 / 3 - 330	2064 psi	Daniel P. O'Hern	11-17-09
9	Target 1/3 Pressure = 1,000 + R8	3064 psi	Daniel P. O'Hern	11-17-09
10	Actual 1/3 Pressure	3060 psi	Daniel P. O'Hern	11-17-09
11	1/3 Reference Distance	4.9 in.	Daniel P. O'Hern	11-17-09
12	Target 2/3 Pressure = R9 + R8	5128 psi	Daniel P. O'Hern	11-17-09
13	Actual 2/3 Pressure	5130 psi	Daniel P. O'Hern	11-17-09
14	2/3 Reference Distance	6.8 in.	Daniel P. O'Hern	11-17-09
15	OSF Actual Pressure	6950 psi	Daniel P. O'Hern	11-17-09
16	OSF Actual Force = R15 x A/1000 = k	1527.7 kip	Daniel P. O'Hern	11-17-09
17	OSF Reference Distance	8.4 in.	Daniel P. O'Hern	11-17-09
18	Differential Force = R16 - R4	1411.7 kip	Daniel P. O'Hern	11-17-09
19	Differential Elongation = R17 - R5	5.4 in.	Daniel P. O'Hern	11-17-09

	TMI - Unit 1 Surveillance Procedure	Number 1301-9.1
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DATA SHEET 4 Page 4 of 4
Elongation / Tendon Force Record
Re-Tensioning Data for De-Tensioned Tendons

Tendon ID D-322 Surveillance No. 35TH YR.

Part 4
Elongation Comparison

Table 4

Row, R	Parameter	Value
1	Shop End Differential Force from Table 2, R18	1320.7 kip
2	Field End Differential Force from Table 3, R18	1321.4 kip
3	Average Differential Force = (R1 + R2) / 2*	1321.05 kip
4	Shop End Differential Elongation from Table 2, R19	4.6 in.
5	Field End Differential Elongation from Table 3, R19	5.4 in.
6	Total Elongation = R4 + R5**	10 in.
7	Number of Effective Wires from Table 2, R1	168
8	Re-Tensioning Elongation Rate = R6 x R7 / R3	1.27
9	Original Elongation Rate from Table 1, R16	1.33
10	Fractional Difference in Rates = (R8 – R9) / R9	-0.045

Absolute value of the above Fractional Difference in Rates ≤ 0.1 Yes X

No _____

* For vertical tendon = R1
** For vertical tendon = R4

Signature: [signature] Date: 11-17-08

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DATA SHEET 6
Retensioning Criteria Confirmation

(1) TENDON ID	(2) NUMBER OF EFFECTIVE WIRES	(3) 70 % OF ULTIMATE STRENGTH [8.24 X (2)]	(4) PREDICTED BASE FORCE[1]	(5) AVERAGE [(3)+(4)]÷2	(6) LOCK-OFF FORCE	(7) (4)<(6)<(3) Yes / No
DOME						
D-322 SHOP END	168	1384.32	1128	1256.16	1168.6	Yes
D-322 FIELD END	168	1384.32	1128	1256.16	1172.57	Yes
_____ SHOP END	_____	_____	_____	_____	_____	_____
_____ FIELD END	_____	_____	_____	_____	_____	_____
VERTICAL						
V90 SHOP END	168	1384.32	1204	1294.16	1238.14	Yes
_____ SHOP END	_____	_____	_____	_____	_____	_____
_____ SHOP END	_____	_____	_____	_____	_____	_____
HOOP TENDONS						
1151-49 SHOP END	168	1384.32	1132	1258.16	1225.4	Yes
FIELD END	168	1384.32	1132	1258.16	1203.9	Yes
_____ SHOP END	_____	_____	_____	_____	_____	_____
FIELD END	_____	_____	_____	_____	_____	_____
_____ SHOP END	_____	_____	_____	_____	_____	_____
FIELD END	_____	_____	_____	_____	_____	_____

Cognizant Mech/Struct Engineer Reviewed By: _____ Date: 19 MAR 10

Performed By: _____ Date: 2-3-10

[1] Predicted Base Force from DC-5390-225.01-SE or separate calculation.

DATA SHEET 1
Lift-Off Force Measurement

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Page 1 of 1

Surveillance No. 35TH YR Tendon ID H51-49 Predicted Force (F_p) 1132 kip Tendon End (Circle One): (Shop) / Field

Phase (Circle One): As-found / (Re-Tension) Ram ID 9371 Ram Calibration Constants: A = 220.599 k = -5.486

Date 11-12-09 Temp: RB Interior 68 °F / Concrete Surface 48 °F No. Effective Wires, N_w 168 Shim Stack Ht. 8.8 in.

CAUTION

DO NOT EXCEED A RAM PRESSURE OF [(1,592 x N_w / 169) – k] x 1,000 / A = 7198.88 psig

Trial	Lift-Off Pressure, psig	Consecutive Three Trial Pressure Spread psi	Consecutive Three Trial Pressure Average p[1] psig[1,2]
1	5580	N/A	N/A
2	5580	N/A	N/A
3	5580	0	5580
4			
5			
6			
7			
8			
9			
10			

Stressing Washer Rotation

	Rotation, Turns CW or CCW
At Feeler Gage Insertion	
At Trial 1	0
At Trial 2	0
At Trial 3	0
At Trial 4	
At Trial 5	
At Trial 6	
At Trial 7	
Sum	0

End Lift-Off Force = (A x P' / 1,000) = k = 1225.4 kip

For Re-tension Only, List Nominal Thickness of Each Shim Starting at Shim in Contact with Anchorhead

1	in.
1	"
1/4	"
1/4	"
2	"
4	"
	"
	"
	"

[1] N/A if 3 trial pressure spread > 25,000 / A = 113 psi

[2] Re-tension P' range: P'_{min} = (F_p – k) x 1,000 / A = 5156 psig < P' < P'_{max} = [(1,394 x N_w / 169) – k] x 1,000 / A = 6306 psig

For Re-Tension Only: F_p < End Lift-Off Force < 1394 x N_w / 169; 1132 < 1225 < 1385 (Yes) / No (Circle One)

Notes: _____

Recorded by: Signature _____ Date 11-12-09 / Reviewed by: Signature _____ QV Date 2/2/10

DATA SHEET 1
Lift-Off Force Measurement

Surveillance No. 35TH YR Tendon ID H51-45 Predicted Force (F_p) 1132 kip Tendon End (Circle One): Shop / (Field)

Phase (Circle One): As-found / (Re-Tension) Ram ID 9370 Ram Calibration Constants: A = 220.472 k = -4.255

Date 11-12-09 Temp: RB Interior 68 °F / Concrete Surface 46 °F No. Effective Wires, N_w 168 Shim Stack Ht. 7.6 in.

CAUTION

DO NOT EXCEEP A RAM PRESSURE OF [(1,592 x N_w / 169) – k] x 1,000 / A = 7197.4 psig

Trial	Lift-Off Pressure, psig	Consecutive Three Trial Pressure Spread psi	Consecutive Three Trial Pressure Average p' psig[1,2]
1	5480	N/A	N/A
2	5480	N/A	N/A
3	5480	0	5480
4			
5			
6			
7			
8			
9			
10			

Stressing Washer Rotation

	Rotation, Turns CW or CCW
At Feeler Gage Insertion	
At Trial 1	0
At Trial 2	0
At Trial 3	0
At Trial 4	
At Trial 5	
At Trial 6	
At Trial 7	
Sum	0

End Lift-Off Force = (A x P' / 1,000) = k = 1203.9 kip

For Re-tension Only, List Nominal Thickness of Each Shim Starting at Shim in Contact with Anchorhead

1 in.
½ "
2 "
4 "

[1] N/A if 3 trial pressure spread > 25,000 / A = 113 psi

[2] Re-tension P' range: P'_{min} = (F_p – k) x 1,000 / A = 5153 psig < P' < P'_{max} = [(1,394 x N_w / 169) – k] x 1,000 / A = 6304.6 psig

For Re-Tension Only: F_p < End Lift-Off Force < 1394 x N_w / 169; 1132 < 1203 < 1385 (Yes) / No (Circle One)

Notes: _____

Recorded by: Signature _____ Date 11-12-09 / Reviewed by: Signature _____ QV Date 2/2/10

DATA SHEET 1
Lift-Off Force Measurement

Surveillance No. 35th year   Tendon ID V90   Predicted Force (F_p) 1204 kip   Tendon End (Circle One): (Shop) / Field

Phase (Circle One): As-found / (Re-Tension)   Ram ID 9370   Ram Calibration Constants: A = 218.894 k = -2.248

Date 8-20-09   Temp: RB Interior 125.5 °F / Concrete Surface 98 °F   No. Effective Wires, N_w 168   Shim Stack Ht. 15.8 in.

CAUTION

DO NOT EXCEEP A RAM PRESSURE OF [(1,592 x N_w / 169) – k] x 1,000 / A = ~~6353.54~~ 7262.65 WRR 8-20-09 psig

Trial	Lift-Off Pressure, psig	Consecutive Three Trial Pressure Spread psi	Consecutive Three Trial Pressure Average p'[1] psig[1,2]	Stressing Washer Rotation	Rotation, Turns CW or CCW	For Re-tension Only, List Nominal Thickness of Each Shim Starting at Shim in Contact with Anchorhead
				At Feeler Gage Insertion		
1	5660	N/A	N/A	At Trial 1	0	3/4 in.
2	5670	N/A	N/A	At Trial 2	0	1/2 "
3	5670	10	5666.66	At Trial 3	0	1/4 "
4				At Trial 4		2 "
5				At Trial 5		4 "
6				At Trial 6		4 "
7				At Trial 7		4 "
8				Sum		"
9						"
10						

End Lift-Off Force = (A x P' / 1,000) = k = ~~1242.64~~ 1238.14 kip DP 01-29-10

[1] N/A if 3 trial pressure spread > 25,000 / A = 114.21 psi

[2] Re-tension P' range: P'_{min} = (F_p – k) x 1,000 / A = 5490.10 psig < P' < P'_{max} = [(1,394 x N_w / 169) – k] x 1,000 / A = 6340.96 psig

For Re-Tension Only: F_p < End Lift-Off Force < 1394 x N_w / 169; 1204 < 1591.99 < 1385.75 (Yes) / No (Circle One)

Notes: None

Recorded by: Signature W. Lance [signature]   Date 8-20-09 / Reviewed by: Signature [signature] QV   Date 8-21-09

DATA SHEET 1
Lift-Off Force Measurement

Surveillance No. 35TH YR. Tendon ID D-322 Predicted Force (F_p) 1128 kip Tendon End (Circle One): (Shop) / Field

Phase (Circle One): As-found / (Re-Tension) Ram ID 9370 Ram Calibration Constants: A = 220.472 k = -4.255

Date 11-17-09 Temp: RB Interior 67 °F / Concrete Surface 52 °F No. Effective Wires, N_w 168 Shim Stack Ht. 6.85 in.

CAUTION

DO NOT EXCEED A RAM PRESSURE OF [(1,592 x N_w / 169) – k] x 1,000 / A = 7197.44 psig

Trial	Lift-Off Pressure, psig	Consecutive Three Trial Pressure Spread psi	Consecutive Three Trial Pressure Average p[1] psig[1,2]
1	5320	N/A	N/A
2	5320	N/A	N/A
3	5320	0	5320
4			
5			
6			
7			
8			
9			
10			

Stressing Washer Rotation

	Rotation, Turns CW or CCW
At Feeler Gage Insertion	
At Trial 1	0
At Trial 2	0
At Trial 3	0
At Trial 4	
At Trial 5	
At Trial 6	
At Trial 7	
Sum	0

End Lift-Off Force = (A x P' / 1,000) = k = 1168.6 kip

For Re-tension Only, List Nominal Thickness of Each Shim Starting at Shim in Contact with Anchorhead

4	in.
½	"
⅛	"
2	"
	"
	"
	"
	"
	"

[1] N/A if 3 trial pressure spread > 25,000 / A = 113 psi

[2] Re-tension P' range: P'_{min} = (F_p – k) x 1,000 / A = 5135 psig < P' < P'_{max} = [(1,394 x N_w / 169) – k] x 1,000 / A = 6342 psig

For Re-Tension Only: F_p < End Lift-Off Force < 1394 x N_w / 169; 1128 < 1168.6 < 1385 (Yes) No (Circle One)

Notes: _____

Recorded by: Signature Gerald F. Brassow Date 11/17/09 / Reviewed by: Signature G Brassow QV Date 2/2/10

DATA SHEET 1
Lift-Off Force Measurement

Surveillance No. 35TH YR Tendon ID 2-322 Predicted Force (F_p) 1128 kip Tendon End (Circle One): Shop / (Field)

Phase (Circle One): As-found / (Re-Tension) Ram ID 9371 Ram Calibration Constants: A = 220.599 k = -5.486

Date 11-17-09 Temp: RB Interior 67 °F / Concrete Surface 54 °F No. Effective Wires, N_w 168 Shim Stack Ht. 7.30 in.

CAUTION

DO NOT EXCEEP A RAM PRESSURE OF [(1,592 x N_w / 169) – k] x 1,000 / A = 7198.88 psig

Trial	Lift-Off Pressure, psig	Consecutive Three Trial Pressure Spread psi	Consecutive Three Trial Pressure Average p[1] psig[1,2]
1	5340	N/A	N/A
2	5340	N/A	N/A
3	5340	0	5340
4			
5			
6			
7			
8			
9			
10			

Stressing Washer Rotation

	Rotation, Turns CW or CCW
At Feeler Gage Insertion	
At Trial 1	0
At Trial 2	0
At Trial 3	0
At Trial 4	
At Trial 5	
At Trial 6	
At Trial 7	
Sum	0

End Lift-Off Force = (A x P' / 1,000) = k = 1172.51 kip

For Re-tension Only, List Nominal Thickness of Each Shim Starting at Shim in Contact with Anchorhead

2 in.
1/8 "
1 "
4 "

[1] N/A if 3 trial pressure spread > 25,000 / A = 113 psi

[2] Re-tension P' range: P'_{min} = (F_p – k) x 1,000 / A = 5338.2 psig < P' < P'_{max} = [(1,394 x N_w / 169) – k] x 1,000 / A = 6306.6 psig

For Re-Tension Only: F_p < End Lift-Off Force < 1394 x N_w / 169; 1128 < 1172.51 < 1385 (Yes) / No (Circle One)

Notes: _____

Recorded by: Signature _____ Date 11-17-09 / Reviewed by: Signature _____ QV Date 2/2/10

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Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: H13-41 Tendon End: SHOP / BUTT ☒ Shop ☐ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS

NONE

CREW FOREMAN SIGNOFF [signature] Date: 11-12-09

QC Reviewed: [signature] Level: II Date: 11-12-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: H13-41 Tendon End: Butt. 3 ☐ Shop ☒ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS None

CREW FOREMAN SIGNOFF [signature] Date: 8-26-09

QC Reviewed: [signature] Level: I Date: 8-27-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: H-24-33 Tendon End: Butt. 4 ☒ Shop ☐ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS None

CREW FOREMAN SIGNOFF [signature] Date: 8-13-09

QC Reviewed: [signature] Level: I Date: 8-11-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: H24-33 Tendon End: Butt. 2 ☐ Shop ☒ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS None

CREW FOREMAN SIGNOFF [signature] Date: 8-24-09

QC Reviewed: [signature] Level: I Date: 8-24-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: H46-50 Tendon End: Butt. 6 ☒ Shop ☐ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS None

CREW FOREMAN SIGNOFF [signature] Date: 8-13-09

QC Reviewed: [signature] Level: I Date: 8-13-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: H46-50 Tendon End: Butt. 4 ☐ Shop ☒ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS None

CREW FOREMAN SIGNOFF [signature] Date: 8-13-09

QC Reviewed: [signature] Level: I Date: 8-11-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: H51-49 Tendon End: SHOP / BUTT ☒ Shop ☐ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS

NONE

CREW FOREMAN SIGNOFF _____ Date: 11-13-09

QC Reviewed: _____ Level: II Date: 11-13-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: H51-49 Tendon End: Field/Buttress ☐ Shop ☒ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS

NONE

CREW FOREMAN SIGNOFF [signature] Date: 11-13-09

QC Reviewed: [signature] Level: II Date: 11-13-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: H62-26 Tendon End: Butt. ☒ Shop ☐ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS None

CREW FOREMAN SIGNOFF [signature] Date: 8-13-09

QC Reviewed: [signature] Level: I Date: 8-13-09

PSC PROCEDURE SQ 12.0
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Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: H62-26 Tendon End: Buttress 2 ☐ Shop ☒ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS None

CREW FOREMAN SIGNOFF [signature] Date: 8-28-09

QC Reviewed: [signature] Level: I Date: 8-28-09

PSC PROCEDURE SQ 12.0
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Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: V-11 Tendon End: Top ☒ Shop ☐ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS None

CREW FOREMAN SIGNOFF [signature] Date: 8-18-09

QC Reviewed: W. Rance Cobb Level: II Date: 8-18-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: V-11 Tendon End: Gallery ☐ Shop ☒ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS None

CREW FOREMAN SIGNOFF [signature] Date: 8-13-09

QC Reviewed: W. Rance Robertson Level: II Date: 8-18-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: V-32 Tendon End: Top ☒ Shop ☐ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS None

CREW FOREMAN SIGNOFF [signature] Date: 8-18-09

QC Reviewed: [signature] Level: II Date: 8-18-09

PSC PROCEDURE SQ 12.0
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Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: V-32 Tendon End: Gallery ☐ Shop ☒ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS None

CREW FOREMAN SIGNOFF [signature] Date: 8-13-09

QC Reviewed: [signature] Level: I Date: 8-13-09

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Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: V-90 Tendon End: Top ☒ Shop ☐ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS None

CREW FOREMAN SIGNOFF Jeffrey Cox Date: 8-20-09

QC Reviewed: W. Rance Robertson Level: II Date: 8-20-09

PSC PROCEDURE SQ 12.0
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Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: V-90 Tendon End: Gallery ☐ Shop ☒ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS None

CREW FOREMAN SIGNOFF [signature] Date: 8-20-09

QC Reviewed: [signature] Level: I Date: 8-21-09

PSC PROCEDURE SQ 12.0
REPLACE GREASE CAP
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Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: V-132 Tendon End: Shop/Top ☒ Shop ☐ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS None

CREW FOREMAN SIGNOFF Jeffrey Estep Date: 8-19-09

QC Reviewed: Timothy C Date Level: I Date: 8/19/09

PSC PROCEDURE SQ 12.0
REPLACE GREASE CAP
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Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: V-132 Tendon End: Gallery ☐ Shop ☒ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS None

CREW FOREMAN SIGNOFF [signature] Date: 8-13-09

QC Reviewed: W. Lance Pebbles [signature] Level: II Date: 8-18-09

PSC PROCEDURE SQ 12.0
REPLACE GREASE CAP
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Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: D.122 Tendon End: Buttress 5 ☒ Shop ☐ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS None

CREW FOREMAN SIGNOFF [signature] Craig Date: 8-18-09

QC Reviewed: [signature] Level: I Date: 8-18-09

PSC PROCEDURE SQ 12.0
REPLACE GREASE CAP
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Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: 3722 Tendon End: FIELD/NE ☐ Shop ☒ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS

NONE

CREW FOREMAN SIGNOFF David P. O'Hara / Jeffrey Gay Date: 11-13-09

QC Reviewed: J Brosne Level: III Date: 2/2/10

PSC PROCEDURE SQ 12.0
REPLACE GREASE CAP
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Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: D-225 Tendon End: Butt. S ☒ Shop ☐ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS None

CREW FOREMAN SIGNOFF [signature] Date: 8-13-09

QC Reviewed: [signature] Level: I Date: 8-20-09

PSC PROCEDURE SQ 12.0
REPLACE GREASE CAP
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Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: D225 Tendon End: Butt. 2 ☐ Shop ☒ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS None

CREW FOREMAN SIGNOFF [signature] Date: 8-13-09

QC Reviewed: W. Pierce Robb Level: II Date: 8-18-09

PSC PROCEDURE SQ 12.0
REPLACE GREASE CAP
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Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: 1-322 Tendon End: SHOP/NORTH ☒ Shop ☐ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS

NONE

CREW FOREMAN SIGNOFF [signature] Date: 11-17-09

QC Reviewed: [signature] Level: III Date: 2/2/10

PSC PROCEDURE SQ 12.0
REPLACE GREASE CAP
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Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: D-322 Tendon End: FIELD/SOUTH ☐ Shop ☒ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS

NONE

CREW FOREMAN SIGNOFF [signature] Date: 11-17-09

QC Reviewed: [signature] Level: II Date: 11-17-09

PSC PROCEDURE SQ 12.0
REPLACE GREASE CAP
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Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: D-342 Tendon End: Butt. 6 ☒ Shop ☐ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS None

CREW FOREMAN SIGNOFF [signature] Date: 8-17-09

QC Reviewed: W. Ronee Robb Level: II Date: 8-17-09

PSC PROCEDURE SQ 12.0
REPLACE GREASE CAP
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Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: D342 Tendon End: Butt. 4/Field ☐ Shop ☒ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	~~☒ NO~~ URR 8-17-09
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS None

CREW FOREMAN SIGNOFF [signature] Date: 8-17-09

QC Reviewed: [signature] Level: I Date: 8/17/09

PSC PROCEDURE SQ 12.0
REPLACE GREASE CAP
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Gasket Repair

Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: V- 10 Tendon End: Gallery ☐ Shop ☒ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS None

CREW FOREMAN SIGNOFF [signature] Date: 8-21-09

QC Reviewed: W. Ponce Robles Level: II Date: 8-21-09

PSC PROCEDURE SQ 12.0
REPLACE GREASE CAP
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GREASE LEAK REPAIR

Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: V55 Tendon End: BOTTOM ☐ Shop ☒ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS

NONE

CREW FOREMAN SIGNOFF [signature] Date: 11-19-09

QC Reviewed: [signature] Level: II Date: 11-19-09

PSC PROCEDURE SQ 12.0
REPLACE GREASE CAP
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Gasket Repair

Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: V- 60 Tendon End: Gallery ☐ Shop ☒ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS None

CREW FOREMAN SIGNOFF _____ Date: 8-21-09

QC Reviewed: W. Ponce _____ Level: II Date: 8-21-09

PSC PROCEDURE SQ 12.0
REPLACE GREASE CAP
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Gasket Repair

Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: V-62 Tendon End: Gallery ☐ Shop ☒ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS None

CREW FOREMAN SIGNOFF [signature] Date: 8-21-09

QC Reviewed: [signature] Level: II Date: 8-21-09

PSC PROCEDURE SQ 12.0
REPLACE GREASE CAP
Data Sheet 12.0
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Gasket Repair

Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: V- 71 Tendon End: Gallery ☐ Shop ☒ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS None

CREW FOREMAN SIGNOFF Jeffrey Coats Date: 8-21-09

QC Reviewed: W. Rance Robertson Level: II Date: 8-21-09

PSC PROCEDURE SQ 12.0
REPLACE GREASE CAP
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GREASE LEAK REPAIR

Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: V84 Tendon End: BOTTOM ☐ Shop ☒ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS

NONE

CREW FOREMAN SIGNOFF n/a Date: 11-19-09

QC Reviewed: [signature] Level: II Date: 11-19-09

PSC PROCEDURE SQ 12.0
REPLACE GREASE CAP
Data Sheet 12.0
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Gasket Repair

Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: V- 88 Tendon End: Gallery ☐ Shop ☒ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS None

CREW FOREMAN SIGNOFF Jerry Estep Date: 8-20-09

QC Reviewed: W. Pence Robb Level: II Date: 8-21-09

PSC PROCEDURE SQ 12.0
REPLACE GREASE CAP
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Gasket Repair

Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: V- 98 Tendon End: Gallery ☐ Shop ☒ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS None

CREW FOREMAN SIGNOFF Jeffery Estep Date: 8-20-09

QC Reviewed: [signature] Level: I Date: 8-21-09

PSC PROCEDURE SQ 12.0
REPLACE GREASE CAP
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Gasket Repair

Project: TMI 35TH YEAR TENDON SURVEILLANCE

Tendon No.: V- 99 Tendon End: Gallery ☐ Shop ☒ Field

ANCHORAGE INSPECTION CRITERIA

BEARING PLATE SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GREASE CAP SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
GASKET MATING SURFACE PROPERLY PREPARED:	☒ YES	☐ NO
STUD/BOLT HOLES PROPERLY PREPARED:	☒ YES	☐ NO
FOREIGN MATERIAL EXCLUSION CONTROLLED:	☒ YES	☐ NO

COMMENTS None

CREW FOREMAN SIGNOFF [signature] Date: 8-20-09

QC Reviewed: [signature] Level: I Date: 8-20-09

PSC PROCEDURE SQ 12.1
GREASE REPLACEMENT
Data Sheet 12.1b – Hand Pumping
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Project: TMI 35th YEAR TENDON SURVEILLANCE Tendon No.: H13-41

GREASE REPLACEMENT

QC SIGNOFFS

(8.4) Grease Used ☒ NEW ☐ OLD - TEST DATE: ☐ ACCEPTABLE ☐ APPROVAL LETTER DATED: — ~~RO~~ 11-13-09

8.0 PREREQUISITES

(8.5) Total Grease Loss from Data Sheet 6.0 for Butt. 3/Field tendon end: 5 gal. WRR 8-26-09

(8.6) Total Grease Loss from Data Sheet 6.0 for Butt 1/Shop tendon end: 6½ gal. ~~RO~~ 11-13-09

(8.7) Estimated grease losses from leaks for Butt. 3/Field tendon end: 0 gal. WRR 8-26-09

(8.8) Estimated grease losses from leaks for Butt 1/Shop tendon end: 0 gal. ~~RO~~ 11-13-09

(8.9) TOTAL Tendon Grease Loss: 11½ gal. ~~RO~~ 11-13-09

13.0 POURING AND HAND PUMPING – FIRST END

(13.6) Ambient Temp.: 99 °F Thermometer ID: PK-104 Recal Date: 7-27-10

(13.7) Grease Temp.: 195 °F Thermometer ID: PK-104 Recal Date: 7-27-10

(13.9) **Initial** Grease Height (a) 14 in. (13.12) **Final** Grease Height (b) 11 in.

(13.14) Total amount of Grease added: 5.31 gal. (a – b) x 1.77 into the Field end

(13.16) Quantity of Waste Grease: 0 gal. (13.15) ☒ Poured ☐ Hand Pumped

(13.17) Total Grease **Replaced** this end: 5.31 gal. WS 8-27-09

13.0 HAND PUMPING – SECOND END

(13.6) Ambient Temp.: 52 °F Thermometer ID: PK104 Recal Date: 7-27-10

(13.7) Grease Temp.: 180 °F Thermometer ID: PK104 Recal Date: 7-27-10

(13.9) **Initial** Grease Height (a) 14 in. (13.12) **Final** Grease Height (b) 9½ in.

(13.14) Total amount of Grease added: 7.96 gal. (a – b) x 1.77 into the ____ end

(13.16) Quantity of Waste Grease: 0 gal. (13.15) ☐ Poured ☐ Hand Pumped

(13.17) Total Grease **Replaced** this end: 7.96 gal. ~~RO~~ 11-13-09

14.0 CALCULATION OF PRESSURE PUMPING

(14.1) Total **Tendon** Grease Replaced: 13.27 gal. *(13.17 + 13.17)*

(14.2) Net Tendon Duct Grease Volume: 103.5 gal. *Refer to SQ 12.2 – GREASE VOLUMES, for the Tendon Net Duct Volume*

(14.3) Percent Difference: $\frac{\text{Total Tendon Replaced (14.1) - Total Tendon Loss (8.9)}}{\text{Net Tendon Duct Grease Volume (14.2)}} \times 100 =$ 1.71 % Difference ~~RO~~ 1-29-10

(14.4) Grease Leaks: ☐ Yes ☒ No ~~RO~~ 1-29-10

(14.5) Refill Acceptable: ☒ Yes *(less than 10%)* ☐ No *(greater than 10%)* ~~RO~~ 1-29-10

If No – Customer Notified NCR No.: n/a ~~RO~~ 1-29-10

(14.6) Comments: NONE

Reviewed: G Bussone Level: III Date: 2/2/10

PSC PROCEDURE SQ 12.1
GREASE REPLACEMENT
Data Sheet 12.1b – Hand Pumping
July 31, 2009
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Project: TMI 35th YEAR TENDON SURVEILLANCE Tendon No.: H24-33

GREASE REPLACEMENT

QC SIGNOFFS

(8.4) Grease Used ☒ NEW ☐ OLD - TEST DATE: ☐ ACCEPTABLE ☐ APPROVAL LETTER DATED: — WD 8-24-09

8.0 PREREQUISITES

(8.5) Total Grease Loss from Data Sheet 6.0 for Field/Butt. 2 tendon end: 4 gal. — WD 8-24-09

(8.6) Total Grease Loss from Data Sheet 6.0 for Shop/Butt. 2 tendon end: 5 gal. — WD 8-24-09

(8.7) Estimated grease losses from leaks for Field/Butt 2 tendon end: 0 gal. — WD 8-24-09

(8.8) Estimated grease losses from leaks for Shop/Butt. 2 tendon end: 0 gal. — WD 8-24-09

(8.9) TOTAL Tendon Grease Loss: 9 gal. — WD 8-24-09

13.0 POURING AND HAND PUMPING – FIRST END

(13.6) Ambient Temp.: 89 °F Thermometer ID: PK-104 Recal Date: 7-27-09

(13.7) Grease Temp.: 195 °F Thermometer ID: PK-104 Recal Date: 7-27-09

(13.9) Initial Grease Height (a) 19 in. (13.12) Final Grease Height (b) 14.5 in.

(13.14) Total amount of Grease added: 4.42 gal. (a – b) x 1.77 into the Field end

(13.16) Quantity of Waste Grease: 0 gal. (13.15) ☒ Poured ☐ Hand Pumped

(13.17) Total Grease Replaced this end: 4.42 gal. — WD 8-24-09

13.0 HAND PUMPING – SECOND END

(13.6) Ambient Temp.: 91 °F Thermometer ID: PK-104 Recal Date: 7-27-10

(13.7) Grease Temp.: 196 °F Thermometer ID: PK-104 Recal Date: 7-27-10

(13.9) Initial Grease Height (a) 7.5 in. (13.12) Final Grease Height (b) 3 in.

(13.14) Total amount of Grease added: 7.96 gal. (a – b) x 1.77 into the Shop end

(13.16) Quantity of Waste Grease: 0 gal. (13.15) ☒ Poured ☐ Hand Pumped

(13.17) Total Grease Replaced this end: 7.96 gal. — WD 8-24-09

14.0 CALCULATION OF PRESSURE PUMPING

(14.1) Total Tendon Grease Replaced: 12.38 gal. *(13.17 + 13.17)*

(14.2) Net Tendon Duct Grease Volume: 103.2 gal. *Refer to SQ 12.2 – GREASE VOLUMES, for the Tendon Net Duct Volume*

(14.3) Percent Difference: $\frac{\text{Total Tendon Replaced (14.1) - Total Tendon Loss (8.9)}}{\text{Net Tendon Duct Grease Volume (14.2)}} \times 100 = 3.27$ % Difference — WD 8-24-09

(14.4) Grease Leaks: ☐ Yes ☒ No — WD 8-24-09

(14.5) Refill Acceptable: ☒ Yes *(less than 10%)* ☐ No *(greater than 10%)* — WD 8-24-09

If No – Customer Notified NCR No.: N/A — WD 8-24-09

(14.6) Comments: None

Reviewed: W. Rance Cole Level: II Date: 8-24-09

PSC PROCEDURE SQ 12.1
GREASE REPLACEMENT
Data Sheet 12.1b – Hand Pumping
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Project: TMI 35th YEAR TENDON SURVEILLANCE Tendon No.: H46-50

GREASE REPLACEMENT		QC SIGNOFFS
(8.4) Grease Used ☒ NEW ☐ OLD - TEST DATE: ☐ ACCEPTABLE ☐ APPROVAL LETTER DATED:		JCD 8-14-09
8.0 PREREQUISITES		
(8.5) Total Grease Loss from Data Sheet 6.0 for Butt.4/Field tendon end:	4.5 gal.	WRR 8-11-09
(8.6) Total Grease Loss from Data Sheet 6.0 for Butt.6/Shop tendon end:	4.5 gal.	JCD 8-14-09
(8.7) Estimated grease losses from leaks for Butt.4/Field tendon end:	0 gal.	WRR 8-11-09
(8.8) Estimated grease losses from leaks for Butt.6/Shop tendon end:	0 gal.	JCD 8-14-09
(8.9) TOTAL Tendon Grease Loss:	9 gal.	JCD 8-14-09
13.0 POURING AND HAND PUMPING – FIRST END		
(13.6) Ambient Temp.: 91 °F Thermometer ID: ST-83 Recal Date: 3-26-10		
(13.7) Grease Temp.: 196 °F Thermometer ID: PK-104 Recal Date: 7-27-10		
(13.9) Initial Grease Height (a) 12 in. (13.12) Final Grease Height (b) 7.5 in.		
(13.14) Total amount of Grease added: 7.96 gal. (a – b) x 1.77 into the Field end		
(13.16) Quantity of Waste Grease: 0 gal. (13.15) ☒ Poured ☐ Hand Pumped		
(13.17) Total Grease **Replaced** this end: 7.96 gal.		JCD 8-14-09
13.0 HAND PUMPING – SECOND END		
(13.6) Ambient Temp.: 91 °F Thermometer ID: ST-83 Recal Date: 3-26-10		
(13.7) Grease Temp.: 196 °F Thermometer ID: PK-104 Recal Date: 7-27-10		
(13.9) Initial Grease Height (a) 16 in. (13.12) Final Grease Height (b) 12 in.		
(13.14) Total amount of Grease added: 7.08 gal. (a – b) x 1.77 into the Shop end		
(13.16) Quantity of Waste Grease: 0 gal. (13.15) ☒ Poured ☐ Hand Pumped		
(13.17) Total Grease **Replaced** this end: 7.08 gal.		JCD 8-14-09
14.0 CALCULATION OF PRESSURE PUMPING		
(14.1) Total **Tendon** Grease Replaced: 15.04 gal. *(13.17 + 13.17)*		
(14.2) Net Tendon Duct Grease Volume: 103.4 gal. *Refer to SQ 12.2 – GREASE VOLUMES, for the Tendon Net Duct Volume*		
(14.3) Percent Difference: $\frac{\text{Total Tendon Replaced (14.1) - Total Tendon Loss (8.9)}}{\text{Net Tendon Duct Grease Volume (14.2)}} \times 100 =$ 5.84 % Difference		JCD 8-14-09
(14.4) Grease Leaks: ☐ Yes ☒ No		JCD 8-14-09
(14.5) Refill Acceptable: ☒ Yes *(less than 10%)* ☐ No *(greater than 10%)*		JCD 8-14-09
If No – Customer Notified NCR No.: N/A		JCD 8-14-09
(14.6) Comments: None		

Reviewed: W. Ronce Pollet Level: II Date: 8-20-09

PSC PROCEDURE SQ 12.1
GREASE REPLACEMENT
Data Sheet 12.1b – Hand Pumping
July 31, 2009
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Project: TMI 35th YEAR TENDON SURVEILLANCE Tendon No.: H51H9

GREASE REPLACEMENT — QC SIGNOFFS

(8.4) Grease Used ☒ NEW ☐ OLD - TEST DATE: ☐ ACCEPTABLE ☐ APPROVAL LETTER DATED: — JHO 11-13-09

8.0 PREREQUISITES

(8.5) Total Grease Loss from Data Sheet 6.0 for SHOP tendon end: 7 gal. — JHO 11-13-09

(8.6) Total Grease Loss from Data Sheet 6.0 for FIELD tendon end: 4 gal. — JHO 11-13-09

(8.7) Estimated grease losses from leaks for SHOP tendon end: 0 gal. — JHO 11-13-09

(8.8) Estimated grease losses from leaks for FIELD tendon end: 0 gal. — JHO 11-13-09

(8.9) TOTAL Tendon Grease Loss: 11 gal. — JHO 11-13-09

13.0 POURING AND HAND PUMPING – FIRST END

(13.6) Ambient Temp.: 52 °F Thermometer ID: PK104 Recal Date: 7-27-10

(13.7) Grease Temp.: 180 °F Thermometer ID: PK104 Recal Date: 7-27-10

(13.9) **Initial** Grease Height (a) 31 in. (13.12) **Final** Grease Height (b) 27 in.

(13.14) Total amount of Grease added: 7.08 gal. (a – b) x 1.77 into the SHOP end

(13.16) Quantity of Waste Grease: 0 gal. (13.15) ☒ Poured ☐ Hand Pumped

(13.17) Total Grease **Replaced** this end: 7.08 gal. — JHO 11-13-09

13.0 HAND PUMPING – SECOND END

(13.6) Ambient Temp.: 54 °F Thermometer ID: PK104 Recal Date: 7-27-10

(13.7) Grease Temp.: 200 °F Thermometer ID: PK104 Recal Date: 7-27-10

(13.9) **Initial** Grease Height (a) 18 in. (13.12) **Final** Grease Height (b) 14 in.

(13.14) Total amount of Grease added: 7.08 gal. (a – b) x 1.77 into the FIELD end

(13.16) Quantity of Waste Grease: 0 gal. (13.15) ☒ Poured ☐ Hand Pumped

(13.17) Total Grease **Replaced** this end: 7.08 gal. — JHO 11-13-09

14.0 CALCULATION OF PRESSURE PUMPING

(14.1) Total **Tendon** Grease Replaced: 14.16 gal. *(13.17 + 13.17)*

(14.2) Net Tendon Duct Grease Volume: 103.4 gal. *Refer to SQ 12.2 – GREASE VOLUMES, for the Tendon Net Duct Volume*

(14.3) Percent Difference: $\frac{\text{Total Tendon Replaced (14.1) - Total Tendon Loss (8.9)}}{\text{Net Tendon Duct Grease Volume (14.2)}} \times 100 =$ 3.05 % Difference — JHO 11-13-09

(14.4) Grease Leaks: ☐ Yes ☒ No — JHO 11-13-09

(14.5) Refill Acceptable: ☒ Yes *(less than 10%)* ☐ No *(greater than 10%)* — JHO 11-13-09

If No – Customer Notified NCR No.: n/a — JHO 11-13-09

(14.6) Comments: NONE

Reviewed: JBrusone Level: III Date: 2/2/10

PSC PROCEDURE SQ 12.1
GREASE REPLACEMENT
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Project: TMI 35th YEAR TENDON SURVEILLANCE Tendon No.: H62-26

GREASE REPLACEMENT		QC SIGNOFFS
(8.4) Grease Used ☒ NEW ☐ OLD - TEST DATE: ☐ ACCEPTABLE ☐ APPROVAL LETTER DATED:		
8.0 PREREQUISITES		
(8.5) Total Grease Loss from Data Sheet 6.0 for Butt.6/Shop tendon end:	4 gal.	WRR 8-12-09
(8.6) Total Grease Loss from Data Sheet 6.0 for Butt.2/Field tendon end:	5.25 gal.	JCS 8-28-09
(8.7) Estimated grease losses from leaks for Butt.6/Shop tendon end:	0 gal.	WRR 8-12-09
(8.8) Estimated grease losses from leaks for Butt.2/Field tendon end:	0 gal.	JCS 8-28-09
(8.9) TOTAL Tendon Grease Loss:	9.25 gal.	JCS 8-28-09
13.0 POURING AND HAND PUMPING – FIRST END		
(13.6) Ambient Temp.: 86 °F Thermometer ID: PK-102 Recal Date: 7-27-10		
(13.7) Grease Temp.: 190 °F Thermometer ID: PK-102 Recal Date: 7-27-10		
(13.9) Initial Grease Height (a) 28 in. (13.12) Final Grease Height (b) 24 in.		
(13.14) Total amount of Grease added: 7.08 gal. (a – b) x 1.77 into the Butt.6/Shop end		
(13.16) Quantity of Waste Grease: 0 gal. (13.15) ☒ Poured ☐ Hand Pumped		
(13.17) Total Grease **Replaced** this end: 7.08 gal.		WRR 8-12-09
13.0 HAND PUMPING – SECOND END		
(13.6) Ambient Temp.: 96 °F Thermometer ID: PK-104 Recal Date: 7-27-10		
(13.7) Grease Temp.: 196 °F Thermometer ID: PK-104 Recal Date: 7-27-10		
(13.9) Initial Grease Height (a) 11 in. (13.12) Final Grease Height (b) 7.5 in.		
(13.14) Total amount of Grease added: 6.19 gal. (a – b) x 1.77 into the Field/Butt.2 end		
(13.16) Quantity of Waste Grease: 0 gal. (13.15) ☒ Poured ☐ Hand Pumped		
(13.17) Total Grease **Replaced** this end: 6.19 gal.		JCS 8-28-09
14.0 CALCULATION OF PRESSURE PUMPING		
(14.1) Total **Tendon** Grease Replaced: 13.27 gal. *(13.17 + 13.17)*		
(14.2) Net Tendon Duct Grease Volume: 102.2 gal. *Refer to SQ 12.2 – GREASE VOLUMES, for the Tendon Net Duct Volume*		
(14.3) Percent Difference: $\frac{\text{Total Tendon Replaced (14.1) - Total Tendon Loss (8.9)}}{\text{Net Tendon Duct Grease Volume (14.2)}} \times 100 =$ 3.89 % Difference		JCS 8-28-09
(14.4) Grease Leaks: ☐ Yes ☒ No		JCS 8-28-09
(14.5) Refill Acceptable: ☒ Yes *(less than 10%)* ☐ No *(greater than 10%)*		JCS 8-28-09
If No – Customer Notified NCR No.: N/A		JCS 8-28-09
(14.6) Comments: None		

Reviewed: Tommy C. Bolt Level: I Date: 8-28-09

PSC PROCEDURE SQ 12.1
GREASE REPLACEMENT
Data Sheet 12.1a – Pressure Pumping
July 31, 2009
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Project: TMI 35th YEAR TENDON SURVEILLANCE Tendon No.: V-11

GREASE REPLACEMENT — QC SIGNOFFS

(8.4) Grease Used ☐ NEW ☐ OLD - TEST DATE: ☐ ACCEPTABLE ☐ APPROVAL LETTER DATED: — 1-14-10

8.0 PREREQUISITES

(8.5) Total Grease Loss from Data Sheet 6.0 for Gallery/Field tendon end: 57.5 gal. — WRR 8-13-09

(8.6) Total Grease Loss from Data Sheet 6.0 for Shop/Top tendon end: 4.0 gal. — 1-14-10

(8.7) Estimated grease losses from leaks for Gallery Field tendon end: 0 gal. — WRR 8-13-09

(8.8) Estimated grease losses from leaks for Shop/Top tendon end: 0 gal. — 1-14-10

(8.9) TOTAL Tendon Grease Loss: 61.5 gal. — 1-14-10

12.0 INITIAL PRESSURE PUMPING

(12.6) Ambient Temp.: 72 °F Thermometer ID: PK102 Recal Date: 7-27-10

(12.7) Grease Temp.: 210 °F Thermometer ID: PK102 Recal Date: 7-27-10

(12.9) **Initial** Grease Height (a) 16 ½ in. (12.14) **Final** Grease Height (b) 9 in.

(12.16) Total amount of Grease **Pumped**: 73.05 gal. (a – b) x 1.77 into the Field/Bottom end

(12.18) Quantity of Waste Grease: 4.50 gal. (12.17) Was Exit Achieved? ☒ Yes ☐ No

(12.19) Total Grease **Replaced** this end: 68.55 gal. If no, Pressure Held for N/A psi N/A min — 1-14-10

13.0 HAND PUMPING – SECOND END (if necessary) N/A

(13.6) Ambient Temp.: °F Thermometer ID: Recal Date:

(13.7) Grease Temp.: °F Thermometer ID: Recal Date:

(13.9) **Initial** Grease Height (a) in. (13.12) **Final** Grease Height (b) in.

(13.14) Total amount of Grease added: gal. (a – b) x 1.77 into the end

(13.16) Quantity of Waste Grease: gal. (13.15) ☐ Poured ☐ Hand Pumped

(13.17) Total Grease **Replaced** this end: gal.

14.0 CALCULATION OF PRESSURE PUMPING

(14.1) Total **Tendon** Grease Replaced: 68.55 gal. *(12.19 + 13.17)*

(14.2) Net Tendon Duct Grease Volume: 123.80 gal. *Refer to SQ 12.2 – GREASE VOLUMES, for the Tendon Net Duct Volume*

(14.3) Percent Difference: $\frac{\text{Total Tendon Replaced (14.1) - Total Tendon Loss (8.9)}}{\text{Net Tendon Duct Grease Volume (14.2)}} \times 100 =$ 5.69 % Difference — 1-14-10

(14.4) Grease Leaks: ☐ Yes ☒ No — 1-14-10

(14.5) Refill Acceptable: ☒ Yes *(less than 10%)* ☐ No *(greater than 10%)* — 1-14-10

If No – Customer Notified NCR No.: N/A — 1-14-10

(14.6) Comments: NONE

QC Reviewed: J Bussone Level: III Date: 2/2/10

PSC PROCEDURE SQ 12.1
GREASE REPLACEMENT
Data Sheet 12.1b – Hand Pumping
July 31, 2009
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Project: TMI 35th YEAR TENDON SURVEILLANCE Tendon No.: V-32

GREASE REPLACEMENT

QC SIGNOFFS

(8.4) Grease Used ☒ NEW ☐ OLD - TEST DATE: ☐ ACCEPTABLE ☐ APPROVAL LETTER DATED: — J.C.S 8-18-09

8.0 PREREQUISITES

(8.5) Total Grease Loss from Data Sheet 6.0 for Top/shop tendon end: 4.5 gal. — J.C.S 8-18-09

(8.6) Total Grease Loss from Data Sheet 6.0 for Bottom/field tendon end: 8 gal.

(8.7) Estimated grease losses from leaks for Top/shop tendon end: 0 gal. — J.C.S. 8-18-09

(8.8) Estimated grease losses from leaks for Bottom/field tendon end: 0 gal. — J.C.S 8-18-09

(8.9) TOTAL Tendon Grease Loss: 12.5 gal. — J.C.S 8-18-09

13.0 POURING AND HAND PUMPING – FIRST END

(13.6) Ambient Temp.: 92 °F Thermometer ID: PH-104 Recal Date: 7-27-10

(13.7) Grease Temp.: 195 °F Thermometer ID: PH-104 Recal Date: 7-27-10

(13.9) **Initial** Grease Height (a) 28.5 in. (13.12) **Final** Grease Height (b) 15.5 in.

(13.14) Total amount of Grease added: 23.01 gal. (a – b) x 1.77 into the Top end

(13.16) Quantity of Waste Grease: 0 gal. (13.15) ☐ Poured ☒ Hand Pumped

(13.17) Total Grease **Replaced** this end: 23.01 gal. — J.C.S 8-18-09

13.0 HAND PUMPING – SECOND END

(13.6) Ambient Temp.: °F Thermometer ID: Recal Date:

(13.7) Grease Temp.: °F ~~Thermometer ID:~~ Recal Date:

(13.9) **Initial** Grease Height (a) in. (13.12) **Final** Grease Height (b) in.

(13.14) Total amount of Grease added: gal. (a – b) x 1.77 into the end

(13.16) Quantity of Waste Grease: gal. (13.15) ☐ Poured ☐ Hand Pumped

(13.17) Total Grease **Replaced** this end: gal. — J.C.S 8-18-09

14.0 CALCULATION OF PRESSURE PUMPING

(14.1) Total **Tendon** Grease Replaced: 23.01 gal. *(13.17 + 13.17)*

(14.2) Net Tendon Duct Grease Volume: 125.2 gal. *Refer to SQ 12.2 – GREASE VOLUMES, for the Tendon Net Duct Volume*

(14.3) Percent Difference: $\frac{\text{Total Tendon Replaced (14.1) - Total Tendon Loss (8.9)}}{\text{Net Tendon Duct Grease Volume (14.2)}} \times 100 = 8.39$ % Difference — J.C.S. 8-18-09

(14.4) Grease Leaks: ☐ Yes ☒ No — J.C.S 8-18-09

(14.5) Refill Acceptable: ☒ Yes *(less than 10%)* ☐ No *(greater than 10%)* — J.C.S 8-18-09

If No – Customer Notified NCR No.: — J.C.S 8-18-09

(14.6) Comments: None

Reviewed: W. Rance Fobbs Level: II Date: 8-20-09

PSC PROCEDURE SQ 12.1
GREASE REPLACEMENT
Data Sheet 12.1a – Pressure Pumping
July 31, 2009
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Project: TMI 35th YEAR TENDON SURVEILLANCE Tendon No.: V-90

GREASE REPLACEMENT		QC SIGNOFFS
(8.4) Grease Used ☒ NEW ☐ OLD - TEST DATE: ☐ ACCEPTABLE ☐ APPROVAL LETTER DATED:		
8.0 PREREQUISITES		
(8.5) Total Grease Loss from Data Sheet 6.0 for Gallery/Field tendon end:	70.5 gal.	WRP 8-19-09
(8.6) Total Grease Loss from Data Sheet 6.0 for Top/Shop tendon end:	4.0 gal.	WD. 8-14-09
(8.7) Estimated grease losses from leaks for Gallery/Field tendon end:	0 gal.	WRP 8-19-09
(8.8) Estimated grease losses from leaks for Top/Shop tendon end:	0 gal.	WD. 8-14-09
(8.9) TOTAL Tendon Grease Loss:	74.5 gal.	WD. 8-21-09
12.0 INITIAL PRESSURE PUMPING		
(12.6) Ambient Temp.: 72 °F Thermometer ID: PK102 Recal Date: 7-27-10		
(12.7) Grease Temp.: 210 °F Thermometer ID: PK102 Recal Date: 7-27-10		
(12.9) **Initial** Grease Height (a) 16 1/4 in. (12.14) **Final** Grease Height (b) 8 in.		
(12.16) Total amount of Grease **Pumped**: 80.35 gal. (a – b) x 1.77 into the Gallery/Bottom end		
(12.18) Quantity of Waste Grease: 3.50 gal. (12.17) Was Exit Achieved? ☒ Yes ☐ No		
(12.19) Total Grease **Replaced** this end: 76.85 gal. If no, Pressure Held for n/a psi n/a min		KRD 1-18-10
13.0 HAND PUMPING – SECOND END (if necessary) N/A		
(13.6) Ambient Temp.: °F Thermometer ID: Recal Date:		
(13.7) Grease Temp.: °F Thermometer ID: Recal Date:		
(13.9) **Initial** Grease Height (a) in. (13.12) **Final** Grease Height (b) in.		
(13.14) Total amount of Grease added: gal. (a – b) x 1.77 into the end		
(13.16) Quantity of Waste Grease: gal. (13.15) ☐ Poured ☐ Hand Pumped		
(13.17) Total Grease **Replaced** this end: gal.		
14.0 CALCULATION OF PRESSURE PUMPING		
(14.1) Total **Tendon** Grease Replaced: 76.85 gal. *(12.19 + 13.17)*		
(14.2) Net Tendon Duct Grease Volume: 124.90 gal. *Refer to SQ 12.2 – GREASE VOLUMES, for the Tendon Net Duct Volume*		
(14.3) Percent Difference: $\frac{\text{Total Tendon Replaced (14.1) - Total Tendon Loss (8.9)}}{\text{Net Tendon Duct Grease Volume (14.2)}} \times 100 =$ 1.88 % Difference		KRD 1-18-10
(14.4) Grease Leaks: ☐ Yes ☒ No		KRD 1-18-10
(14.5) Refill Acceptable: ☒ Yes *(less than 10%)* ☐ No *(greater than 10%)*		KRD 1-18-10
If No – Customer Notified NCR No.: n/a		KRD 1-18-10
(14.6) Comments: NONE		

QC Reviewed: GBrussone Level: III Date: 2/2/10

PSC PROCEDURE SQ 12.1
GREASE REPLACEMENT
Data Sheet 12.1a – *Pressure Pumping*
July 31, 2009
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Project: TMI 35th YEAR TENDON SURVEILLANCE Tendon No.: V-132

GREASE REPLACEMENT — QC SIGNOFFS

(8.4) Grease Used ☒ NEW ☐ OLD - TEST DATE: ☐ ACCEPTABLE ☐ APPROVAL LETTER DATED: ~~2001-18-10~~

8.0 PREREQUISITES

(8.5) Total Grease Loss from Data Sheet 6.0 for Gallery/Field tendon end: 56.5 gal. WRR 8-13-09

(8.6) Total Grease Loss from Data Sheet 6.0 for ____ tendon end: 2.0 gal. ~~2001-18-10~~

(8.7) Estimated grease losses from leaks for Gallery/field tendon end: 0 gal. WRR 8-13-09

(8.8) Estimated grease losses from leaks for ____ tendon end: 0 gal. ~~2001-18-10~~

(8.9) TOTAL Tendon Grease Loss: 58.5 gal. ~~2001-18-10~~

~~**12.0 INITIAL PRESSURE PUMPING**~~

~~(12.6) Ambient Temp.: °F Thermometer ID: Recal Date:~~

~~(12.7) Grease Temp.: °F Thermometer ID: Recal Date:~~

~~(12.9) Initial Grease Height (a) in. (12.14) Final Grease Height (b) in.~~ N/A

~~(12.16) Total amount of Grease Pumped: gal. (a – b) x 1.77 into the end~~

~~(12.18) Quantity of Waste Grease: gal. (12.17) Was Exit Achieved? ☐ Yes ☐ No~~

~~(12.19) Total Grease Replaced this end: gal. If no, Pressure Held for psi min~~

~~**13.0 HAND PUMPING – SECOND END** (if necessary)~~

~~(13.6) Ambient Temp.: °F Thermometer ID: Recal Date:~~

~~(13.7) Grease Temp.: °F Thermometer ID: Recal Date:~~

~~(13.9) Initial Grease Height (a) in. (13.12) Final Grease Height (b) in.~~ N/A

~~(13.14) Total amount of Grease added: gal. (a – b) x 1.77 into the end~~

~~(13.16) Quantity of Waste Grease: gal. (13.15) ☐ Poured ☐ Hand Pumped~~

~~(13.17) Total Grease Replaced this end: gal.~~

14.0 CALCULATION OF PRESSURE PUMPING

(14.1) Total Tendon Grease Replaced: N/A gal. *(12.19 + 13.17)*

(14.2) Net Tendon Duct Grease Volume: N/A gal. *Refer to SQ 12.2 – GREASE VOLUMES, for the Tendon Net Duct Volume*

(14.3) Percent Difference: $\frac{\text{Total Tendon Replaced (14.1) - Total Tendon Loss (8.9)}}{\text{Net Tendon Duct Grease Volume (14.2)}} \times 100 =$ N/A % Difference — N/A

(14.4) Grease Leaks: N/A ☐ Yes ☐ No — N/A

(14.5) Refill Acceptable: N/A ☐ Yes *(less than 10%)* ☐ No *(greater than 10%)* — N/A

If No – Customer Notified NCR No.: N/A — N/A

(14.6) Comments: THIS IS A STEAM GENERATOR REPLACEMENT TENDON, REFER SGT DATA SHEET. ~~2001-18-10~~

QC Reviewed: JJBussone Level: III Date: 2/2/10

PSC PROCEDURE SQ 12.1
GREASE REPLACEMENT
Data Sheet 12.1a – *Pressure Pumping*
July 31, 2009
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Project: TMI 35th YEAR TENDON SURVEILLANCE Tendon No.: D-122

GREASE REPLACEMENT — QC SIGNOFFS

(8.4) Grease Used ☒ NEW ☐ OLD - TEST DATE: ☐ ACCEPTABLE ☐ APPROVAL LETTER DATED: — JRB 11-18-09

8.0 PREREQUISITES

(8.5) Total Grease Loss from Data Sheet 6.0 for Butt.S/Shop tendon end: 34.5 gal. — WRR 8-17-09

(8.6) Total Grease Loss from Data Sheet 6.0 for Field/NE tendon end: 5 1/2 gal. — JRB 11-18-09

(8.7) Estimated grease losses from leaks for Butt.S/Shop tendon end: 0 gal. — WRR 8-17-09

(8.8) Estimated grease losses from leaks for Field/NE tendon end: 0 gal. — JRB 11-18-09

(8.9) TOTAL Tendon Grease Loss: 40 gal. — JRB 11-18-09

12.0 INITIAL PRESSURE PUMPING

(12.6) Ambient Temp.: 52 °F Thermometer ID: PK104 Recal Date: 7-27-10

(12.7) Grease Temp.: 194 °F Thermometer ID: PK104 Recal Date: 7-27-10

(12.9) **Initial** Grease Height (a) 30 in. (12.14) **Final** Grease Height (b) 4 in.

(12.16) Total amount of Grease **Pumped**: 46.02 gal. (a – b) x 1.77 into the Shop end

(12.18) Quantity of Waste Grease: 2 gal. (12.17) Was Exit Achieved? ☒ Yes ☐ No

(12.19) Total Grease **Replaced** this end: 44.02 gal. If no, Pressure Held for n/a psi n/a min — JRB 11-18-09

13.0 HAND PUMPING – SECOND END (if necessary) NA

(13.6) Ambient Temp.: °F Thermometer ID: Recal Date:

(13.7) Grease Temp.: °F Thermometer ID: Recal Date:

(13.9) **Initial** Grease Height (a) in. (13.12) **Final** Grease Height (b) in.

(13.14) Total amount of Grease added: gal. (a – b) x 1.77 into the end

(13.16) Quantity of Waste Grease: gal. (13.15) ☐ Poured ☐ Hand Pumped

(13.17) Total Grease **Replaced** this end: gal.

14.0 CALCULATION OF PRESSURE PUMPING

(14.1) Total **Tendon** Grease Replaced: 44.02 gal. *(12.19 + 13.17)*

(14.2) Net Tendon Duct Grease Volume: 118.7 gal. *Refer to SQ 12.2 – GREASE VOLUMES, for the Tendon Net Duct Volume*

(14.3) Percent Difference: $\frac{\text{Total Tendon Replaced (14.1) - Total Tendon Loss (8.9)}}{\text{Net Tendon Duct Grease Volume (14.2)}} \times 100 =$ 3.38 % Difference — JRB 11-18-09

(14.4) Grease Leaks: ☐ Yes ☒ No — JRB 11-18-09

(14.5) Refill Acceptable: ☒ Yes *(less than 10%)* ☐ No *(greater than 10%)* — JRB 11-18-09

If No – Customer Notified NCR No.: N/A — JRB 11-18-09

(14.6) Comments: NONE

QC Reviewed: JBussone Level: III Date: 2/2/10

PSC PROCEDURE SQ 12.1
GREASE REPLACEMENT
Data Sheet 12.1b – Hand Pumping
July 31, 2009
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Project: TMI 35th YEAR TENDON SURVEILLANCE Tendon No.: D 225

GREASE REPLACEMENT — QC SIGNOFFS

(8.4) Grease Used ☒ NEW ☐ OLD - TEST DATE: ☐ ACCEPTABLE ☐ APPROVAL LETTER DATED: — WCB 8-13-09

8.0 PREREQUISITES

(8.5) Total Grease Loss from Data Sheet 6.0 for Shop/Butt 5 tendon end: 7 gal. — WCB 8-13-09

(8.6) Total Grease Loss from Data Sheet 6.0 for Field/Butt 2 tendon end: 8.75 gal. — WCB 8-13-09

(8.7) Estimated grease losses from leaks for Shop/Butt 5 tendon end: 0 gal. — WCB 8-13-09

(8.8) Estimated grease losses from leaks for Field/Butt 2 tendon end: 0 gal. — WCB 8-13-09

(8.9) TOTAL Tendon Grease Loss: 15.75 gal. — WCB 8-13-09

13.0 POURING AND HAND PUMPING – FIRST END

(13.6) Ambient Temp.: 91 °F Thermometer ID: PK-104 Recal Date: 7-27-10

(13.7) Grease Temp.: 183 °F Thermometer ID: PK-104 Recal Date: 7-27-10

(13.9) Initial Grease Height (a) 31 in. (13.12) Final Grease Height (b) 26.5 in.

(13.14) Total amount of Grease added: 7.96 gal. (a – b) x 1.77 into the Shop end

(13.16) Quantity of Waste Grease: 0 gal. (13.15) ☒ Poured ☐ Hand Pumped

(13.17) Total Grease **Replaced** this end: 7.96 gal. — WCB 8-13-09

13.0 HAND PUMPING – SECOND END

(13.6) Ambient Temp.: 89 °F Thermometer ID: PK-104 Recal Date: 7-27-10

(13.7) Grease Temp.: 185 °F Thermometer ID: PK-104 Recal Date: 7-27-10

(13.9) Initial Grease Height (a) 26.5 in. (13.12) Final Grease Height (b) 20.5 in.

(13.14) Total amount of Grease added: 10.62 gal. (a – b) x 1.77 into the Field end

(13.16) Quantity of Waste Grease: 0 gal. (13.15) ☐ Poured ☒ Hand Pumped

(13.17) Total Grease **Replaced** this end: 10.62 gal. — WCB 8-13-09

14.0 CALCULATION OF PRESSURE PUMPING

(14.1) Total **Tendon** Grease Replaced: 18.58 gal. *(13.17 + 13.17)*

(14.2) Net Tendon Duct Grease Volume: 119.9 gal. *Refer to SQ 12.2 – GREASE VOLUMES, for the Tendon Net Duct Volume*

(14.3) Percent Difference: $\frac{\text{Total Tendon Replaced (14.1) - Total Tendon Loss (8.9)}}{\text{Net Tendon Duct Grease Volume (14.2)}} \times 100 = 2.36$ % Difference — WCB 8-13-09

(14.4) Grease Leaks: ☐ Yes ☒ No — WCB 8-13-09

(14.5) Refill Acceptable: ☒ Yes *(less than 10%)* ☐ No *(greater than 10%)* — WCB 8-13-09

If No – Customer Notified NCR No.: N/A — WCB 8-13-09

(14.6) Comments: None

Reviewed: W. Ronce Robertson Level: II Date: 8-18-09

PSC PROCEDURE SQ 12.1
GREASE REPLACEMENT
Data Sheet 12.1b – Hand Pumping
July 31, 2009
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Project: TMI 35th YEAR TENDON SURVEILLANCE Tendon No.: D-322

GREASE REPLACEMENT

QC SIGNOFFS

(8.4) Grease Used ☒ NEW ☐ OLD - TEST DATE: ☐ ACCEPTABLE ☐ APPROVAL LETTER DATED: — JHO 11-17-09

8.0 PREREQUISITES

(8.5) Total Grease Loss from Data Sheet 6.0 for SHOP tendon end: 8 1/2 gal. — JHO 11-17-09

(8.6) Total Grease Loss from Data Sheet 6.0 for FIELD tendon end: 6 1/2 gal. — JHO 11-17-09

(8.7) Estimated grease losses from leaks for SHOP tendon end: 0 gal. — JHO 11-17-09

(8.8) Estimated grease losses from leaks for FIELD tendon end: 0 gal. — JHO 11-17-09

(8.9) TOTAL Tendon Grease Loss: 15 gal. — JHO 11-17-09

13.0 POURING AND HAND PUMPING – FIRST END

(13.6) Ambient Temp.: 54 °F Thermometer ID: PK104 Recal Date: 7-27-10

(13.7) Grease Temp.: 194 °F Thermometer ID: PK104 Recal Date: 7-27-10

(13.9) **Initial** Grease Height (a) 19 in. (13.12) **Final** Grease Height (b) 13 in.

(13.14) Total amount of Grease added: ~~13.36~~ 10.62 gal. (a – b) x 1.77 into the SHOP end — JHO 1-29-10

(13.16) Quantity of Waste Grease: 0 gal. (13.15) ☐ Poured ☒ Hand Pumped

(13.17) Total Grease **Replaced** this end: ~~13.36~~ 10.62 gal. — JHO 1-29-10 — JHO 11-17-09

13.0 HAND PUMPING – SECOND END

(13.6) Ambient Temp.: 54 °F Thermometer ID: PK104 Recal Date: 7-27-10

(13.7) Grease Temp.: 194 °F Thermometer ID: PK104 Recal Date: 7-27-10

(13.9) **Initial** Grease Height (a) 24 in. (13.12) **Final** Grease Height (b) 19 in.

(13.14) Total amount of Grease added: 8.85 gal. (a – b) x 1.77 into the FIELD end

(13.16) Quantity of Waste Grease: 0 gal. (13.15) ☐ Poured ☒ Hand Pumped

(13.17) Total Grease **Replaced** this end: 8.85 gal. — JHO 11-17-09

14.0 CALCULATION OF PRESSURE PUMPING

(14.1) Total **Tendon** Grease Replaced: ~~21.21~~ 19.47 gal. (13.17 + 13.17) — JHO 1-29-10

(14.2) Net Tendon Duct Grease Volume: 120.2 gal. *Refer to SQ 12.2 – GREASE VOLUMES, for the Tendon Net Duct Volume*

(14.3) Percent Difference: $\frac{\text{Total Tendon Replaced (14.1) - Total Tendon Loss (8.9)}}{\text{Net Tendon Duct Grease Volume (14.2)}} \times 100 = \frac{\text{3.71}}{\text{~~5.79~~}}$ % Difference — JHO 1-29-10 — JHO 11-17-09

(14.4) Grease Leaks: ☐ Yes ☒ No — JHO 11-17-09

(14.5) Refill Acceptable: ☒ Yes *(less than 10%)* ☐ No *(greater than 10%)* — JHO 11-17-09

If No – Customer Notified NCR No.: N/A — JHO 11-17-09

(14.6) Comments: N/A

Reviewed: [signature] Level: III Date: 2/2/10

PSC PROCEDURE SQ 12.1
GREASE REPLACEMENT
Data Sheet 12.1a – Pressure Pumping
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Project: TMI 35th YEAR TENDON SURVEILLANCE Tendon No.: D342

GREASE REPLACEMENT — QC SIGNOFFS

(8.4) Grease Used ☒ NEW ☐ OLD - TEST DATE: ☐ ACCEPTABLE ☐ APPROVAL LETTER DATED: — WRR 8-18-09

8.0 PREREQUISITES

(8.5) Total Grease Loss from Data Sheet 6.0 for Butt.4/Field tendon end: 10 gal. — WRR 8-17-09

(8.6) Total Grease Loss from Data Sheet 6.0 for Butt.6/Shop tendon end: 40 gal. — WRR 8-18-09

(8.7) Estimated grease losses from leaks for Butt.4/Field tendon end: 0 gal. — WRR 8-17-09

(8.8) Estimated grease losses from leaks for Butt.6/Shop tendon end: 0 gal. — WRR 8-18-09

(8.9) TOTAL Tendon Grease Loss: 50 gal. — WRR 8-18-09

12.0 INITIAL PRESSURE PUMPING

(12.6) Ambient Temp.: 80 °F Thermometer ID: PK-104 Recal Date: 7-27-10

(12.7) Grease Temp.: 190 °F Thermometer ID: PK-104 Recal Date: 7-27-10

(12.9) **Initial** Grease Height (a) 61.5 in. (12.14) **Final** Grease Height (b) 26.625 in.

(12.16) Total amount of Grease **Pumped**: 61.72 gal. (a – b) x 1.77 into the Butt.6/Shop end

(12.18) Quantity of Waste Grease: 3 gal. (12.17) Was Exit Achieved? ☒ Yes ☐ No

(12.19) Total Grease **Replaced** this end: 58.72 gal. If no, Pressure Held for N/A psi N/A min — WRR 8-18-09

13.0 HAND PUMPING – SECOND END (if necessary)

(13.6) Ambient Temp.: °F Thermometer ID: Recal Date:

(13.7) Grease Temp.: °F Thermometer ID: Recal Date:

(13.9) **Initial** Grease Height (a) N/A in. (13.12) **Final** Grease Height (b) in.

(13.14) Total amount of Grease added: gal. (a – b) x 1.77 into the end

(13.16) Quantity of Waste Grease: gal. (13.15) ☐ Poured ☐ Hand Pumped

(13.17) Total Grease **Replaced** this end: gal. — WRR 8-18-09

14.0 CALCULATION OF PRESSURE PUMPING

(14.1) Total **Tendon** Grease Replaced: 58.72 gal. *(12.19 + 13.17)*

(14.2) Net Tendon Duct Grease Volume: 107.8 gal. *Refer to SQ 12.2 – GREASE VOLUMES, for the Tendon Net Duct Volume*

(14.3) Percent Difference: $\frac{\text{Total Tendon Replaced (14.1) - Total Tendon Loss (8.9)}}{\text{Net Tendon Duct Grease Volume (14.2)}} \times 100 =$ 8.08 % Difference — WRR 8-18-09

(14.4) Grease Leaks: ☐ Yes ☒ No — WRR 8-18-09

(14.5) Refill Acceptable: ☒ Yes *(less than 10%)* ☐ No *(greater than 10%)* — WRR 8-18-09

If No – Customer Notified NCR No.: N/A — WRR 8-18-09

(14.6) Comments: None

QC Reviewed: [signature] Level: I Date: 8-18-09

PSC PROCEDURE SQ 12.1
GREASE REPLACEMENT
Data Sheet 12.1a – Pressure Pumping
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Gasket Repair

Project: TMI 35th YEAR TENDON SURVEILLANCE Tendon No.: V- 10

GREASE REPLACEMENT — QC SIGNOFFS

(8.4) Grease Used ☒ NEW ☐ OLD - TEST DATE: ☐ ACCEPTABLE ☐ APPROVAL LETTER DATED: — JCD 8-21-09

8.0 PREREQUISITES

(8.5) Total Grease Loss from Data Sheet 6.0 for Gallery/Field tendon end: 53 gal. — JCD 8-21-09

(8.6) Total Grease Loss from Data Sheet 6.0 for N/A tendon end: N/A gal. — JCD 8-21-09

(8.7) Estimated grease losses from leaks for Gallery/Field tendon end: 0 gal. — JCD 8-21-09

(8.8) Estimated grease losses from leaks for N/A tendon end: N/A gal. — JCD 8-21-09

(8.9) TOTAL Tendon Grease Loss: 53 gal. — JCD 8-21-09

12.0 INITIAL PRESSURE PUMPING

(12.6) Ambient Temp.: 72 °F Thermometer ID: PK102 Recal Date: 7-27-10

(12.7) Grease Temp.: 210 °F Thermometer ID: PK102 Recal Date: 7-27-10

(12.9) Initial Grease Height (a) 22 1/2 in. (12.14) Final Grease Height (b) 16 1/2 in.

(12.16) Total amount of Grease Pumped: 58.44 gal. (a – b) x 1.77 into the Field/Bottom end

(12.18) Quantity of Waste Grease: 3.50 gal. (12.17) Was Exit Achieved? ☒ Yes ☐ No

(12.19) Total Grease Replaced this end: 54.94 gal. If no, Pressure Held for N/A psi N/A min — JCD 1-14-10

13.0 HAND PUMPING – SECOND END (if necessary)

N/A

(13.6) Ambient Temp.: °F Thermometer ID: Recal Date:

(13.7) Grease Temp.: °F Thermometer ID: Recal Date:

(13.9) Initial Grease Height (a) in. (13.12) Final Grease Height (b) in.

(13.14) Total amount of Grease added: gal. (a – b) x 1.77 into the end

(13.16) Quantity of Waste Grease: gal. (13.15) ☐ Poured ☐ Hand Pumped

(13.17) Total Grease Replaced this end: gal.

14.0 CALCULATION OF PRESSURE PUMPING

(14.1) Total Tendon Grease Replaced: 54.94 gal. *(12.19 + 13.17)*

(14.2) Net Tendon Duct Grease Volume: 124.80 gal. *Refer to SQ 12.2 – GREASE VOLUMES, for the Tendon Net Duct Volume*

(14.3) Percent Difference: $\frac{\text{Total Tendon Replaced (14.1) - Total Tendon Loss (8.9)}}{\text{Net Tendon Duct Grease Volume (14.2)}} \times 100 = 1.55$ % Difference — JCD 1-14-10

(14.4) Grease Leaks: ☐ Yes ☒ No — JCD 1-14-10

(14.5) Refill Acceptable: ☒ Yes *(less than 10%)* ☐ No *(greater than 10%)* — JCD 1-14-10

If No – Customer Notified NCR No.: — JCD 1-14-10

(14.6) Comments: This is a gasket repair tendon. Top CAN WAS not removed.

QC Reviewed: JBussone Level: III Date: 1/26/10

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GREASE REPLACEMENT
Data Sheet 12.1b – Hand Pumping
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GREASE LEAK REPAIR

Project: TMI 35th YEAR TENDON SURVEILLANCE Tendon No.: V55

GREASE REPLACEMENT — QC SIGNOFFS

(8.4) Grease Used ☒ NEW ☐ OLD - TEST DATE: ☐ ACCEPTABLE ☐ APPROVAL LETTER DATED: — KRO 1-19-10

8.0 PREREQUISITES

(8.5) Total Grease Loss from Data Sheet 6.0 for SHOP/TOP tendon end: 0 gal. — KRO 1-19-10

(8.6) Total Grease Loss from Data Sheet 6.0 for FIELD/BOTTOM tendon end: 1/4 gal. — KRO 1-19-10

(8.7) Estimated grease losses from leaks for SHOP/TOP tendon end: 0 gal. — KRO 1-19-10

(8.8) Estimated grease losses from leaks for FIELD/BOTTOM tendon end: 0 gal. — KRO 1-19-10

(8.9) TOTAL Tendon Grease Loss: 1/4 gal. — KRO 1-19-10

13.0 POURING AND HAND PUMPING – FIRST END

(13.6) Ambient Temp.: 30 °F Thermometer ID: PK102 Recal Date: 7-27-10

(13.7) Grease Temp.: 918 °F Thermometer ID: PK102 Recal Date: 7-27-10

(13.9) **Initial** Grease Height (a) 9 in. (13.12) **Final** Grease Height (b) 8 in.

(13.14) Total amount of Grease added: 1.77 gal. (a – b) x 1.77 into the SHOP/TOP end

(13.16) Quantity of Waste Grease: 0 gal. (13.15) ☒ Poured ☐ Hand Pumped

(13.17) Total Grease **Replaced** this end: 1.77 gal. — KRO 1-19-10

13.0 HAND PUMPING – SECOND END

(13.6) Ambient Temp.: °F Thermometer ID: Recal Date:

(13.7) Grease Temp.: °F Thermometer ID: Recal Date:

(13.9) **Initial** Grease Height (a) in. N/A (13.12) **Final** Grease Height (b) in.

(13.14) Total amount of Grease added: gal. (a – b) x 1.77 into the end

(13.16) Quantity of Waste Grease: gal. (13.15) ☐ Poured ☐ Hand Pumped

(13.17) Total Grease **Replaced** this end: gal.

14.0 CALCULATION OF PRESSURE PUMPING

(14.1) Total **Tendon** Grease Replaced: 1.77 gal. *(13.17 + 13.17)*

(14.2) Net Tendon Duct Grease Volume: 120.00 gal. *Refer to SQ 12.2 – GREASE VOLUMES, for the Tendon Net Duct Volume*

(14.3) Percent Difference: $\frac{\text{Total Tendon Replaced (14.1) - Total Tendon Loss (8.9)}}{\text{Net Tendon Duct Grease Volume (14.2)}} \times 100 =$ 1.26 % Difference — KRO 1-19-10

(14.4) Grease Leaks: ☐ Yes ☒ No — KRO 1-19-10

(14.5) Refill Acceptable: ☒ Yes *(less than 10%)* ☐ No *(greater than 10%)* — KRO 1-19-10

If No – Customer Notified NCR No.: N/A — KRO 1-19-10

(14.6) Comments: NONE

Reviewed: A Bussone Level: III Date: 1/26/10

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Gasket Repair

Project: TMI 35th YEAR TENDON SURVEILLANCE Tendon No.: V-60

GREASE REPLACEMENT — QC SIGNOFFS

(8.4) Grease Used ☒ NEW ☐ OLD - TEST DATE: ☐ ACCEPTABLE ☐ APPROVAL LETTER DATED: — JCB 8-21-09

8.0 PREREQUISITES

(8.5) Total Grease Loss from Data Sheet 6.0 for Gallery/Field tendon end: 34.25 gal. — JCB 8-21-09

(8.6) Total Grease Loss from Data Sheet 6.0 for N/A tendon end: N/A gal. — JCB 8-21-09

(8.7) Estimated grease losses from leaks for Gallery/Field tendon end: 0 gal. — JCB 8-21-09

(8.8) Estimated grease losses from leaks for N/A tendon end: N/A gal. — JCB 8-21-09

(8.9) TOTAL Tendon Grease Loss: 34.25 gal. — JCB 8-21-09

12.0 INITIAL PRESSURE PUMPING

(12.6) Ambient Temp.: 72 °F Thermometer ID: PK102 Recal Date: 7-27-10

(12.7) Grease Temp.: 214 °F Thermometer ID: PK102 Recal Date: 7-27-10

(12.9) Initial Grease Height (a) 16 in. (12.14) Final Grease Height (b) 14½ in.

(12.16) Total amount of Grease Pumped: 14.61 gal. (a – b) x 1.77 into the Field/Bottom end

(12.18) Quantity of Waste Grease: 0 gal. (12.17) Was Exit Achieved? ☐ Yes ☒ No

(12.19) Total Grease Replaced this end: 14.61 gal. If no, Pressure Held for 110 psi 30 min — JRO1-18-10

13.0 HAND PUMPING – SECOND END (if necessary)

(13.6) Ambient Temp.: 80 °F Thermometer ID: PK102 Recal Date: 7-27-10

(13.7) Grease Temp.: 210 °F Thermometer ID: PK102 Recal Date: 7-27-10

(13.9) Initial Grease Height (a) 21 in. (13.12) Final Grease Height (b) 9 3/4 in.

(13.14) Total amount of Grease added: 19.91 gal. (a – b) x 1.77 into the Shop/Top end

(13.16) Quantity of Waste Grease: 0 gal. (13.15) ☒ Poured ☐ Hand Pumped

(13.17) Total Grease Replaced this end: 19.91 gal. — JRO1-19-10

14.0 CALCULATION OF PRESSURE PUMPING

(14.1) Total Tendon Grease Replaced: 34.52 gal. *(12.19 + 13.17)*

(14.2) Net Tendon Duct Grease Volume: 120.00 gal. *Refer to SQ 12.2 – GREASE VOLUMES, for the Tendon Net Duct Volume*

(14.3) Percent Difference: $\frac{\text{Total Tendon Replaced (14.1) - Total Tendon Loss (8.9)}}{\text{Net Tendon Duct Grease Volume (14.2)}} \times 100 =$ 0.22 % Difference — JRO1-19-10

(14.4) Grease Leaks: ☐ Yes ☒ No — JRO1-19-10

(14.5) Refill Acceptable: ☒ Yes *(less than 10%)* ☐ No *(greater than 10%)* — JRO1-19-10

If No – Customer Notified NCR No.: N/A — JRO1-19-10

(14.6) Comments: This is A gasket repair tendon. Top CAN WAS Not removed.

QC Reviewed: JBussone Level: III Date: 1/26/10

PSC PROCEDURE SQ 12.1
GREASE REPLACEMENT
Data Sheet 12.1a – Pressure Pumping
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Gasket Repair

Project: TMI 35th YEAR TENDON SURVEILLANCE Tendon No.: V-62

GREASE REPLACEMENT		QC SIGNOFFS
(8.4) Grease Used ☒ NEW ☐ OLD - TEST DATE: ☐ ACCEPTABLE ☐ APPROVAL LETTER DATED:		TLS-8-21-09
8.0 PREREQUISITES		
(8.5) Total Grease Loss from Data Sheet 6.0 for Gallery/Field tendon end:	46.50 gal.	TLS-8-21-09
(8.6) Total Grease Loss from Data Sheet 6.0 for N/A tendon end:	N/A gal.	TLS 8-21-09
(8.7) Estimated grease losses from leaks for Gallery/Field tendon end:	0 gal.	TLS 8-21-09
(8.8) Estimated grease losses from leaks for N/A tendon end:	N/A gal.	TLS 8-21-09
(8.9) TOTAL Tendon Grease Loss:	46.50 gal.	TLS 8-21-09
12.0 INITIAL PRESSURE PUMPING		
(12.6) Ambient Temp.: 72 °F Thermometer ID: PK102 Recal Date: 7-27-10		
(12.7) Grease Temp.: 220 °F Thermometer ID: PK102 Recal Date: 7-27-10		
(12.9) **Initial** Grease Height (a) 17 3/4 in. (12.14) **Final** Grease Height (b) 16 in.		
(12.16) Total amount of Grease **Pumped**: 17.09 gal. (a – b) x 1.77 into the Field/Bottom end		
(12.18) Quantity of Waste Grease: 0 gal. (12.17) Was Exit Achieved? ☐ Yes ☒ No		
(12.19) Total Grease **Replaced** this end: 17.09 gal. If no, Pressure Held for 110 psi 30 min		~~TLS~~ 1-19-10
13.0 HAND PUMPING – SECOND END (if necessary)		
(13.6) Ambient Temp.: 30 °F Thermometer ID: PK102 Recal Date: 7-27-10		
(13.7) Grease Temp.: 218 °F Thermometer ID: PK102 Recal Date: 7-27-10		
(13.9) **Initial** Grease Height (a) 30 in. (13.12) **Final** Grease Height (b) 13 in.		
(13.14) Total amount of Grease added: 30.09 gal. (a – b) x 1.77 into the Shop/Top end		
(13.16) Quantity of Waste Grease: 0 gal. (13.15) ☒ Poured ☐ Hand Pumped		
(13.17) Total Grease **Replaced** this end: 30.09 gal.		~~TLS~~ 1-19-10
14.0 CALCULATION OF PRESSURE PUMPING		
(14.1) Total **Tendon** Grease Replaced: 47.13 gal. *(12.19 + 13.17)*		
(14.2) Net Tendon Duct Grease Volume: 120.00 gal. *Refer to SQ 12.2 – GREASE VOLUMES, for the Tendon Net Duct Volume*		
(14.3) Percent Difference: $\frac{\text{Total Tendon Replaced (14.1) - Total Tendon Loss (8.9)}}{\text{Net Tendon Duct Grease Volume (14.2)}} \times 100 =$ 0.52 % Difference		~~TLS~~ 1-19-10
(14.4) Grease Leaks: ☐ Yes ☒ No		~~TLS~~ 1-19-10
(14.5) Refill Acceptable: ☒ Yes *(less than 10%)* ☐ No *(greater than 10%)*		~~TLS~~ 1-19-10
If No – Customer Notified NCR No.: N/A		~~TLS~~ 1-19-10
(14.6) Comments: This is a gasket repair tendon. Top can was not removed.		

QC Reviewed: A Bussone Level: III Date: 1/26/10

PSC PROCEDURE SQ 12.1
GREASE REPLACEMENT
Data Sheet 12.1a – Pressure Pumping
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Gasket Repair

Project: TMI 35th YEAR TENDON SURVEILLANCE Tendon No.: V-71

GREASE REPLACEMENT — QC SIGNOFFS

(8.4) Grease Used ☒ NEW ☐ OLD - TEST DATE: ☐ ACCEPTABLE ☐ APPROVAL LETTER DATED: — 1CD.8-21-09

8.0 PREREQUISITES

(8.5) Total Grease Loss from Data Sheet 6.0 for Gallery/Field tendon end: 46 gal. — 1CD.8-21-09

(8.6) Total Grease Loss from Data Sheet 6.0 for N/A tendon end: N/A gal. — 1CD.8-21-09

(8.7) Estimated grease losses from leaks for Gallery/Field tendon end: 0 gal. — 1CD.8-24-09

(8.8) Estimated grease losses from leaks for N/A tendon end: N/A gal. — 1CD.8-21-09

(8.9) TOTAL Tendon Grease Loss: 46 gal. — 1CD.8-21-09

12.0 INITIAL PRESSURE PUMPING

(12.6) Ambient Temp.: 72 °F Thermometer ID: PK102 Recal Date: 7-27-10

(12.7) Grease Temp.: 220 °F Thermometer ID: PK102 Recal Date: 7-27-10

(12.9) **Initial** Grease Height (a) 22 3/4 in. (12.14) **Final** Grease Height (b) 17 3/4 in.

(12.16) Total amount of Grease **Pumped**: 48.7 gal. (a – b) x 1.77 into the Field/Bottom end

(12.18) Quantity of Waste Grease: 2.5 gal. (12.17) Was Exit Achieved? ☒ Yes ☐ No

(12.19) Total Grease **Replaced** this end: 46.2 gal. If no, Pressure Held for N/A psi N/A min — 1CD 1-18-10

13.0 HAND PUMPING – SECOND END (if necessary) N/A

(13.6) Ambient Temp.: °F Thermometer ID: Recal Date:

(13.7) Grease Temp.: °F Thermometer ID: Recal Date:

(13.9) **Initial** Grease Height (a) in. (13.12) **Final** Grease Height (b) in.

(13.14) Total amount of Grease added: gal. (a – b) x 1.77 into the end

(13.16) Quantity of Waste Grease: gal. (13.15) ☐ Poured ☐ Hand Pumped

(13.17) Total Grease **Replaced** this end: gal.

14.0 CALCULATION OF PRESSURE PUMPING

(14.1) Total **Tendon** Grease Replaced: 46.2 gal. *(12.19 + 13.17)*

(14.2) Net Tendon Duct Grease Volume: 120.00 gal. *Refer to SQ 12.2 – GREASE VOLUMES, for the Tendon Net Duct Volume*

(14.3) Percent Difference: $\frac{\text{Total Tendon Replaced (14.1) - Total Tendon Loss (8.9)}}{\text{Net Tendon Duct Grease Volume (14.2)}} \times 100 =$ 0.16 % Difference — 1CD 1-18-10

(14.4) Grease Leaks: ☐ Yes ☒ No — 1CD 1-18-10

(14.5) Refill Acceptable: ☒ Yes *(less than 10%)* ☐ No *(greater than 10%)* — 1CD 1-18-10

If No – Customer Notified NCR No.: N/A — 1CD 1-18-10

(14.6) Comments: This is a gasket repair tendon. Top can was not removed.

QC Reviewed: J Bussone Level: III Date: 1/26/10

PSC PROCEDURE SQ 12.1
GREASE REPLACEMENT
Data Sheet 12.1b – Hand Pumping
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Project: TMI 35th YEAR TENDON SURVEILLANCE Tendon No.: V84

GREASE REPLACEMENT	QC SIGNOFFS
(8.4) Grease Used ☒ NEW ☐ OLD - TEST DATE: ☐ ACCEPTABLE ☐ APPROVAL LETTER DATED:	~~KC~~ 1-19-10
8.0 PREREQUISITES	
(8.5) Total Grease Loss from Data Sheet 6.0 for SHOP/TOP tendon end: 0 gal.	~~KC~~ 1-19-10
(8.6) Total Grease Loss from Data Sheet 6.0 for FIELD/BOTTOM tendon end: 1/4 gal.	~~KC~~ 1-19-10
(8.7) Estimated grease losses from leaks for SHOP/TOP tendon end: 0 gal.	~~KC~~ 1-19-10
(8.8) Estimated grease losses from leaks for FIELD/BOTTOM tendon end: 0 gal.	~~KC~~ 1-19-10
(8.9) TOTAL Tendon Grease Loss: 1/4 gal.	~~KC~~ 1-19-10
13.0 POURING AND HAND PUMPING – FIRST END	
(13.6) Ambient Temp.: 90 °F Thermometer ID: PK102 Recal Date: 7-27-10	
(13.7) Grease Temp.: 212 °F Thermometer ID: PK102 Recal Date: 7-27-10	
(13.9) **Initial** Grease Height (a) 22 in. (13.12) **Final** Grease Height (b) 21 in.	
(13.14) Total amount of Grease added: 1.77 gal. (a – b) x 1.77 into the SHOP/TOP end	
(13.16) Quantity of Waste Grease: 0 gal. (13.15) ☒ Poured ☐ Hand Pumped	
(13.17) Total Grease **Replaced** this end: 1.77 gal.	~~KC~~ 1-19-10
13.0 HAND PUMPING – SECOND END	
(13.6) Ambient Temp.: °F Thermometer ID: Recal Date:	
(13.7) Grease Temp.: °F Thermometer ID: Recal Date:	
N/A	
(13.9) **Initial** Grease Height (a) in. (13.12) **Final** Grease Height (b) in.	
(13.14) Total amount of Grease added: gal. (a – b) x 1.77 into the end	
(13.16) Quantity of Waste Grease: gal. (13.15) ☐ Poured ☐ Hand Pumped	
(13.17) Total Grease **Replaced** this end: gal.	
14.0 CALCULATION OF PRESSURE PUMPING	
(14.1) Total **Tendon** Grease Replaced: 1.77 gal. *(13.17 + 13.17)*	
(14.2) Net Tendon Duct Grease Volume: 120.00 gal. *Refer to SQ 12.2 – GREASE VOLUMES, for the Tendon Net Duct Volume*	
(14.3) Percent Difference: $\frac{\text{Total Tendon Replaced (14.1) - Total Tendon Loss (8.9)}}{\text{Net Tendon Duct Grease Volume (14.2)}} \times 100 =$ 1.26 % Difference	~~KC~~ 1-19-10
(14.4) Grease Leaks: ☐ Yes ☒ No	~~KC~~ 1-19-10
(14.5) Refill Acceptable: ☒ Yes *(less than 10%)* ☐ No *(greater than 10%)*	~~KC~~ 1-19-10
If No – Customer Notified NCR No.: N/A	~~KC~~ 1-19-10
(14.6) Comments: NONE	

Reviewed: J. Bussone Level: III Date: 1/26/10

PSC PROCEDURE SQ 12.1
GREASE REPLACEMENT
Data Sheet 12.1a – Pressure Pumping
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Gasket Repair

Project: TMI 35th YEAR TENDON SURVEILLANCE Tendon No.: V-88

GREASE REPLACEMENT — QC SIGNOFFS

(8.4) Grease Used ☒ NEW ☐ OLD - TEST DATE: ☐ ACCEPTABLE ☐ APPROVAL LETTER DATED: — JCD 8-20-09

8.0 PREREQUISITES

(8.5) Total Grease Loss from Data Sheet 6.0 for Gallery/Field tendon end: 53.56 gal. — JCD 8-20-09

(8.6) Total Grease Loss from Data Sheet 6.0 for N/A tendon end: N/A gal. — JCD 8-20-09

(8.7) Estimated grease losses from leaks for Gallery/Field tendon end: 0 gal. — JCD 8-20-09

(8.8) Estimated grease losses from leaks for N/A tendon end: N/A gal. — JCD 8-20-09

(8.9) TOTAL Tendon Grease Loss: 53.56 gal. — JCD 8-20-09

12.0 INITIAL PRESSURE PUMPING

(12.6) Ambient Temp.: 72 °F Thermometer ID: PK102 Recal Date: 7-27-10

(12.7) Grease Temp.: 214 °F Thermometer ID: PK102 Recal Date: 7-27-10

(12.9) **Initial** Grease Height (a) 14 3/4 in. (12.14) **Final** Grease Height (b) 9 in.

(12.16) Total amount of Grease **Pumped**: 56.00 gal. (a – b) x 1.77 into the Field/Bottom end

(12.18) Quantity of Waste Grease: 2 1/2 gal. (12.17) Was Exit Achieved? ☒ Yes ☐ No

(12.19) Total Grease **Replaced** this end: 53.50 gal. If no, Pressure Held for N/A psi N/A min — ~~JHO~~ 1-18-10

13.0 HAND PUMPING – SECOND END (if necessary)

(13.6) Ambient Temp.: °F Thermometer ID: Recal Date:

(13.7) Grease Temp.: °F Thermometer ID: Recal Date:

(13.9) **Initial** Grease Height (a) N/A in. (13.12) **Final** Grease Height (b) in.

(13.14) Total amount of Grease added: gal. (a – b) x 1.77 into the end

(13.16) Quantity of Waste Grease: gal. (13.15) ☐ Poured ☐ Hand Pumped

(13.17) Total Grease **Replaced** this end: gal.

14.0 CALCULATION OF PRESSURE PUMPING

(14.1) Total **Tendon** Grease Replaced: 53.50 gal. *(12.19 + 13.17)*

(14.2) Net Tendon Duct Grease Volume: 120.00 gal. *Refer to SQ 12.2 – GREASE VOLUMES, for the Tendon Net Duct Volume*

(14.3) Percent Difference: $\frac{\text{Total Tendon Replaced (14.1) - Total Tendon Loss (8.9)}}{\text{Net Tendon Duct Grease Volume (14.2)}} \times 100 =$ -0.5 % Difference — ~~JHO~~ 1-19-10

(14.4) Grease Leaks: ☐ Yes ☒ No — ~~JHO~~ 1-18-10

(14.5) Refill Acceptable: ☒ Yes *(less than 10%)* ☐ No *(greater than 10%)* — ~~JHO~~ 1-19-10

If No – Customer Notified NCR No.: N/A — ~~JHO~~ 1-18-10

(14.6) Comments: This is A gasket repair tendon. Top CAN WAS not removed.

QC Reviewed: J Bussone Level: III Date: 1/26/10

PSC PROCEDURE SQ 12.1
GREASE REPLACEMENT
Data Sheet 12.1a – Pressure Pumping
July 31, 2009
Page 1 of 1
Revision 0

Gasket Repair

Project: TMI 35th YEAR TENDON SURVEILLANCE Tendon No.: V- 98

GREASE REPLACEMENT — QC SIGNOFFS

(8.4) Grease Used ☒ NEW ☐ OLD - TEST DATE: ☐ ACCEPTABLE ☐ APPROVAL LETTER DATED: — JCB 8-20-09

8.0 PREREQUISITES

(8.5) Total Grease Loss from Data Sheet 6.0 for Gallery/Field tendon end: 40.28 gal. — JCB 8-20-09

(8.6) Total Grease Loss from Data Sheet 6.0 for N/A tendon end: N/A gal. — JCB 8-20-09

(8.7) Estimated grease losses from leaks for Gallery/Field tendon end: 0 gal. — JCB 8-20-09

(8.8) Estimated grease losses from leaks for N/A tendon end: N/A gal. — JCB 8-20-09

(8.9) TOTAL Tendon Grease Loss: 40.28 gal. — JCB 8-20-09

12.0 INITIAL PRESSURE PUMPING

(12.6) Ambient Temp.: 72 °F Thermometer ID: PK102 Recal Date: 7-27-10

(12.7) Grease Temp.: 210 °F Thermometer ID: PK102 Recal Date: 7-27-10

(12.9) Initial Grease Height (a) 16 1/4 in. (12.14) Final Grease Height (b) 14 3/4 in.

(12.16) Total amount of Grease Pumped: 14.61 gal. (a – b) x 1.77 into the FIELD/BOTTOM end

(12.18) Quantity of Waste Grease: 0 gal. (12.17) Was Exit Achieved? ☐ Yes ☒ No

(12.19) Total Grease Replaced this end: 14.61 gal. If no, Pressure Held for 110 psi 30 min — MAA-18-10

13.0 HAND PUMPING – SECOND END (if necessary)

(13.6) Ambient Temp.: 30 °F Thermometer ID: PK102 Recal Date: 7-27-10

(13.7) Grease Temp.: 220 °F Thermometer ID: PK102 Recal Date: 7-27-10

(13.9) Initial Grease Height (a) 30 in. (13.12) Final Grease Height (b) 10 in.

(13.14) Total amount of Grease added: 35.40 gal. (a – b) x 1.77 into the SHOP/TOP end

(13.16) Quantity of Waste Grease: 0 gal. (13.15) ☒ Poured ☐ Hand Pumped

(13.17) Total Grease Replaced this end: 35.40 gal. — MAA 1-19-10

14.0 CALCULATION OF PRESSURE PUMPING

(14.1) Total Tendon Grease Replaced: 50.01 gal. *(12.19 + 13.17)*

(14.2) Net Tendon Duct Grease Volume: 120.00 gal. *Refer to SQ 12.2 – GREASE VOLUMES, for the Tendon Net Duct Volume*

(14.3) Percent Difference: $\frac{\text{Total Tendon Replaced (14.1) - Total Tendon Loss (8.9)}}{\text{Net Tendon Duct Grease Volume (14.2)}} \times 100 =$ 8.10 % Difference — MAA 1-19-10

(14.4) Grease Leaks: ☐ Yes ☒ No — MAA 1-19-10

(14.5) Refill Acceptable: ☒ Yes *(less than 10%)* ☐ No *(greater than 10%)* — MAA 1-19-10

If No – Customer Notified NCR No.: N/A — MAA 1-19-10

(14.6) Comments: This is A gasket repair tendon. Top CAN WAS Not removed.

QC Reviewed: J Bussone Level: III Date: 1/26/10

PSC PROCEDURE SQ 12.1
GREASE REPLACEMENT
Data Sheet 12.1a – Pressure Pumping
July 31, 2009
Page 1 of 1
Revision 0

Gasket Repair

Project: TMI 35th YEAR TENDON SURVEILLANCE Tendon No.: V-99

GREASE REPLACEMENT — QC SIGNOFFS

(8.4) Grease Used ☒ NEW ☐ OLD - TEST DATE: ☐ ACCEPTABLE ☐ APPROVAL LETTER DATED: — JCS 8-20-09

8.0 PREREQUISITES

(8.5) Total Grease Loss from Data Sheet 6.0 for Gallery/Field tendon end: 44.25 gal. — JCS 8-20-09

(8.6) Total Grease Loss from Data Sheet 6.0 for N/A tendon end: N/A gal. — JCS 8-20-09

(8.7) Estimated grease losses from leaks for Gallery/Field tendon end: 0 gal. — JCS 8-20-09

(8.8) Estimated grease losses from leaks for N/A tendon end: N/A gal. — JCS 8-20-09

(8.9) TOTAL Tendon Grease Loss: 44.25 gal. — JCS 8-20-09

12.0 INITIAL PRESSURE PUMPING

(12.6) Ambient Temp.: 72 °F Thermometer ID: PK102 Recal Date: 7-27-10

(12.7) Grease Temp.: 218 °F Thermometer ID: PK102 Recal Date: 7-27-10

(12.9) **Initial** Grease Height (a) 21 1/2 in. (12.14) **Final** Grease Height (b) 16 1/2 in.

(12.16) Total amount of Grease **Pumped**: 48.70 gal. (a – b) x 1.77 into the FIELD/BOTTOM end

(12.18) Quantity of Waste Grease: 3.50 gal. (12.17) Was Exit Achieved? ☒ Yes ☐ No

(12.19) Total Grease **Replaced** this end: 45.20 gal. If no, Pressure Held for N/A psi N/A min — JAP01-18-10

13.0 HAND PUMPING – SECOND END (if necessary)

(13.6) Ambient Temp.: °F Thermometer ID: Recal Date:

(13.7) Grease Temp.: °F Thermometer ID: Recal Date:

(13.9) **Initial** Grease Height (a) N/A in. (13.12) **Final** Grease Height (b) in.

(13.14) Total amount of Grease added: gal. (a – b) x 1.77 into the end

(13.16) Quantity of Waste Grease: gal. (13.15) ☐ Poured ☐ Hand Pumped

(13.17) Total Grease **Replaced** this end: gal.

14.0 CALCULATION OF PRESSURE PUMPING

(14.1) Total **Tendon** Grease Replaced: 45.20 gal. *(12.19 + 13.17)*

(14.2) Net Tendon Duct Grease Volume: 120.00 gal. *Refer to SQ 12.2 – GREASE VOLUMES, for the Tendon Net Duct Volume*

(14.3) Percent Difference: $\frac{\text{Total Tendon Replaced (14.1) - Total Tendon Loss (8.9)}}{\text{Net Tendon Duct Grease Volume (14.2)}} \times 100 =$ 0.79 % Difference — JAP01-19-10

(14.4) Grease Leaks: ☐ Yes ☒ No — JAP01-18-10

(14.5) Refill Acceptable: ☒ Yes *(less than 10%)* ☐ No *(greater than 10%)* — JAP01-19-10

If No – Customer Notified NCR No.: N/A — JAP01-18-10

(14.6) Comments: This is A gasket repair tendon. Top CAN WAS Not removed.

QC Reviewed: J Bussone Level: III Date: 1/26/10

DATA SHEET 11
Tendon Surveillance Program

Inspection Period 35th.yr.

	Tendon No.	Gallons Removed* Shop End	Field End	Sum (Q1) Shop & Field End	Net Duct Volume, (Q_N), Gallons	Gallons Replaced* Shop End	Field End	Sum (Q_2) Shop & Field End	100 x (Q_2 - Q_1) / Q_N,%	Acceptable (Yes or No)
1.	V-11	4	57.5	61.5	123.8	~~68.0~~	68.55	68.55	5.69	Yes
2.	V-32	4.5	8	12.5	125.2	23.01	N/A	23.01	8.39	Yes
3.	V-90	4	70.5	74.5	124.9	0	76.35	76.35	1.55	Yes
4.	V-132	4.5	56.5	61	124.2					THIS IS A SGR BOTTOM REFER SGT [illegible]
5.	D-122	34.5	5.5	40	118.7	44.02	N/A	44.02	3.38	YES
6.	D-225	7	8.75	15.75	119.9	7.96	10.62	18.58	2.36	Yes
7.	D-322	8½	6½	15	120.2	12.39	8.85	21.24	5.19	YES
8.	D-342	40	10	50	107.8	58.72	N/A	58.72	8.08	Yes
9.	H-13-41	6.5	5	11.5	103.5	7.96	5.31	13.27	1.71	YES
10.	H 24-33	5	4	9	103.2	7.96	4.42	12.38	3.27	Yes
11.	H46-50	4.5	4.5	9	103.4	7.08	7.96	15.04	5.84	Yes

* Only one end of vertical tendons may be used for removal and replacement of grease.
** Differences greater than 4 gallons require TMI-1 evaluation. Acceptance limit is not > 10% of net duct volume per 9.4.3.

Cognizant QV Inspector [signature] 11-19-09
Verification By: [signature] Date: 8-26-09
Cognizant Mech/Struct Engineer
Review By: [signature] Date: 19 MAR 10

Due to the relatively high coefficient of thermal expansion of the grease that is installed at a high temperature, experience during surveillances has been that the quantity of replacement grease frequently exceeds the arbitrary acceptance criteria. Exceeding the acceptance criteria is primarily an indication that an inspection and assessment for possible grease leakage within the structure is necessary. The visual examination of the anchorage and wire will determine whether the corrosion protection system is functioning effectively.

DATA SHEET 11
Tendon Surveillance Program

Inspection Period 3.5 +/- yr.

	Tendon No.	Shop End	Gallons Removed* Field End	Sum (Q_1) Shop & Field End	Net Duct Volume, (Q_N), Gallons	Gallons Replaced* Shop End	Field End	Sum (Q_2) Shop & Field End	100 x (Q_2 - Q_1) / Q_N,%	Acceptable (Yes or No)
1.	H51-49	7	4	11	103.4	7.08	7.08	14.16	3.05	Yes
2.	H62-26	4	5.25	9.25	103.2	7.08	6.19	13.27	3.89	Yes
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										
11.										

* Only one end of vertical tendons may be used for removal and replacement of grease.

** Differences greater than 4 gallons require TMI-1 evaluation. Acceptance limit is not > 10% of net duct volume per 9.4.3.

Cognizant QV Inspector Verification By: _____ Date: 11-19-09 / 8-26-09

Cognizant Mech/Struct Engineer Review By: _____ Date: 19 MAR 10

Due to the relatively high coefficient of thermal expansion of the grease that is installed at a high temperature, experience during surveillances has been that the quantity of replacement grease frequently exceeds the arbitrary acceptance criteria. Exceeding the acceptance criteria is primarily an indication that an inspection and assessment for possible grease leakage within the structure is necessary. The visual examination of the anchorage and wire will determine whether the corrosion protection system is functioning effectively.

ATTACHMENT 1
Data Sheet 1

1410-Y-83
Revision 7
Page 1 of 1

Regreasing of RB Tendon End Caps

8.1 Tendon Identity: H13-41 Tendon End: SHOP

8.3.2 Amount of grease removed: 6 1/2 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: 180 °F (140°F to 200°F)

8.4.7 Grease level below vent hole 2 inches (1½ to 2")

8.4.9 Grease leaking _____ Yes X No

8.4.9 Amount of grease added 7.96 gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature N/A °F (140°F to 200°F)

8.5.6(2) Grease level below vent hole N/A inches (2" to 3")

8.5.6(4) Grease leaking N/A Yes N/A No

8.5.6(5) Amount of grease added N/A gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature N/A °F (140°F to 200°F)

8.6.6 Grease leaking N/A Yes N/A No

8.6.7 Amount of grease added N/A gallons

10.0 PMT Sat X Unsat _____

Comments: N/A

Calibrated Test Equip.: Pocket Thermometer #PK104 Cal. Due Date: 7-27-10 (2008) 11-13-08

QC
~~Supervisor~~ Signoff: _____ Date: 11-13-08

Attach filled out and signed copies of this data sheet to the Job Closeout or Tendon Surveillance Report Package for any end caps which have been removed/regreased.

ATTACHMENT 1
Data Sheet 1

1410-Y-83
Revision 7
Page 1 of 1

Regreasing of RB Tendon End Caps

8.1 Tendon Identity: H13-41 Tendon End: Bott. 3/Field End

8.3.2 Amount of grease removed: 5 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: 195 °F (140°F to 200°F)

8.4.7 Grease level below vent hole 2 inches (1½ to 2")

8.4.9 Grease leaking ____ Yes X No

8.4.9 Amount of grease added 5.31 gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature N/A °F (140°F to 200°F)

8.5.6(2) Grease level below vent hole N/A inches (2" to 3")

8.5.6(4) Grease leaking N/A Yes N/A No

8.5.6(5) Amount of grease added N/A gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature N/A °F (140°F to 200°F)

8.6.6 Grease leaking N/A Yes N/A No

8.6.7 Amount of grease added N/A gallons

10.0 PMT Sat X Unsat ____

Comments: N/A

Calibrated Test Equip.: ____ Cal. Due Date: ____

TRANSFERED FROM SQ12.1 DATA SHEET

QC Supervisor Signoff: [signature] Date: 2-25-10

Attach filled out and signed copies of this data sheet to the Job Closeout or Tendon Surveillance Report Package for any end caps which have been removed/regreased.

ATTACHMENT 1
Data Sheet 1

1410-Y-83
Revision 7
Page 1 of 1

Regreasing of RB Tendon End Caps

8.1 Tendon Identity: H 24-33 Tendon End: Butt. 4 / Shop end

8.3.2 Amount of grease removed: 5 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: 196 °F (140°F to 200°F)

8.4.7 Grease level below vent hole 2 inches (1½ to 2")

8.4.9 Grease leaking ____ Yes X No

8.4.9 Amount of grease added 7.96 gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature N °F (140°F to 200°F)

8.5.6(2) Grease level below vent hole ____ inches (2" to 3")

8.5.6(4) Grease leaking ____ Yes A No

~~8.5.6~~(5) Amount of grease added ____ gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature N °F (140°F to 200°F)

8.6.6 Grease leaking ____ Yes A No

8.6.7 ~~Amount~~ of grease added ____ gallons

10.0 PMT Sat X Unsat ____

Comments: n/a

Calibrated Test Equip.: Probe Thermometer P-K 104 Cal. Due Date: 7-27-10

QC
~~Supervisor Signoff~~: Timothy C. Date: 8-14-09

Attach filled out and signed copies of this data sheet to the Job Closeout or Tendon Surveillance Report Package for any end caps which have been removed/regreased.

ATTACHMENT 1
Data Sheet 1

1410-Y-83
Revision 7
Page 1 of 1

Regreasing of RB Tendon End Caps

8.1 Tendon Identity: H-24-33 Tendon End: Butt. 2/Field

8.3.2 Amount of grease removed: 4 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: 195 °F (140°F to 200°F)

8.4.7 Grease level below vent hole 2" inches (1½ to 2")

8.4.9 Grease leaking ____ Yes X No

8.4.9 Amount of grease added 4.42 gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature ____ °F (140°F to 200°F)

8.5.6(2) Grease level below vent hole ____ inches (2" to 3")

8.5.6(4) Grease leaking ____ Yes ____ No

8.5.6(5) Amount of grease added ____ gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature ____ °F (140°F to 200°F)

8.6.6 Grease leaking ____ Yes ____ No

8.6.7 Amount of grease added ____ gallons

10.0 PMT Sat X Unsat ____

Comments: None

Calibrated Test Equip.: Probe Thermometer PK-104 Cal. Due Date: 7-27-10

QC
~~Supervisor~~ Signoff: [signature] Date: 8-24-09

Attach filled out and signed copies of this data sheet to the Job Closeout or Tendon Surveillance Report Package for any end caps which have been removed/regreased.

ATTACHMENT 1
Data Sheet 1

1410-Y-83
Revision 7
Page 1 of 1

Regreasing of RB Tendon End Caps

8.1 Tendon Identity: H46-50 Tendon End: Buttress 6 / Shop

8.3.2 Amount of grease removed: 4.5 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: 196 °F (140°F to 200°F)

8.4.7 Grease level below vent hole 1½ inches (1½ to 2")

8.4.9 Grease leaking ____ Yes X No

8.4.9 Amount of grease added 2.08 gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature N °F ~~(140°F to 200°F)~~

8.5.6(2) Grease level below vent hole ____ inches (2" to 3")

8.5.6(4) Grease leaking ____ Yes A No

~~8.5.6~~(5) Amount of grease added ____ gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature N °F ~~(140°F to 200°F)~~

8.6.6 Grease leaking ____ Yes A No

~~8.6.7~~ Amount of grease added A gallons

10.0 PMT Sat X Unsat ____

Comments: None

Calibrated Test Equip.: Probe Thermometer PK-104 Cal. Due Date: 7-27-10

~~Supervisor~~ QC Signoff: Frank C. [illegible] Date: 8-14-09

Attach filled out and signed copies of this data sheet to the Job Closeout or Tendon Surveillance Report Package for any end caps which have been removed/regreased.

ATTACHMENT 1
Data Sheet 1

1410-Y-83
Revision 7
Page 1 of 1

Regreasing of RB Tendon End Caps

8.1 Tendon Identity: H46-50 Tendon End: Butt. 4 / Field End

8.3.2 Amount of grease removed: 4.5 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: 196 °F (140°F to 200°F)

8.4.7 Grease level below vent hole 1 3/4 inches (1½ to 2")

8.4.9 Grease leaking ____ Yes X No

8.4.9 Amount of grease added 7.96 gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature N °F ~~(140°F to 200°F)~~

8.5.6(2) Grease level below vent hole ____ inches (2" to 3")

8.5.6(4) Grease leaking ____ Yes A No

~~8.5.6(5)~~ Amount of grease added ____ gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature N °F (140°F to 200°F)

8.6.6 Grease leaking ____ Yes A No

~~8.6.7~~ Amount of grease added ____ gallons

10.0 PMT Sat X Unsat ____

Comments: None

Calibrated Test Equip.: Probe Thermometer PK-104 Cal. Due Date: 7-27-10

QC
~~Supervisor Signoff:~~ Tim C. Date: 8-14-09

Attach filled out and signed copies of this data sheet to the Job Closeout or Tendon Surveillance Report Package for any end caps which have been removed/regreased.

ATTACHMENT 1
Data Sheet 1

1410-Y-83
Revision 7
Page 1 of 1

Regreasing of RB Tendon End Caps

8.1 Tendon Identity: H51-H7 Tendon End: SHOP

8.3.2 Amount of grease removed: 7 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: 180 °F (140°F to 200°F)

8.4.7 Grease level below vent hole 2 inches (1½ to 2")

8.4.9 Grease leaking ____ Yes X No

8.4.9 Amount of grease added 7.08 gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature N/A °F (140°F to 200°F)

8.5.6(2) Grease level below vent hole N/A inches (2" to 3")

8.5.6(4) Grease leaking N/A Yes N/A No

8.5.6(5) Amount of grease added N/A gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature N/A °F (140°F to 200°F)

8.6.6 Grease leaking N/A Yes N/A No

8.6.7 Amount of grease added N/A gallons

10.0 PMT Sat X Unsat ____

Comments: NONE

Calibrated Test Equip.: Pocket Thermometer # PK104 Cal. Due Date: 7-27-10

QC
Supervisor Signoff: [signature] Date: 11-13-09

Attach filled out and signed copies of this data sheet to the Job Closeout or Tendon Surveillance Report Package for any end caps which have been removed/regreased.

ATTACHMENT 1
Data Sheet 1

1410-Y-83
Revision 7
Page 1 of 1

Regreasing of RB Tendon End Caps

8.1 Tendon Identity: H51-49 Tendon End: Field / Butt 5

8.3.2 Amount of grease removed: 4 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: 200 °F (140°F to 200°F)

8.4.7 Grease level below vent hole 2" inches (1½ to 2")

8.4.9 Grease leaking ____ Yes X No

8.4.9 Amount of grease added 7.08 gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature n/a °F (140°F to 200°F)

8.5.6(2) Grease level below vent hole n/a inches (2" to 3")

8.5.6(4) Grease leaking n/a Yes n/a No

8.5.6(5) Amount of grease added n/a gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature n/a °F (140°F to 200°F)

8.6.6 Grease leaking n/a Yes n/a No

8.6.7 Amount of grease added n/a gallons

10.0 PMT Sat X Unsat ____

Comments: NONE

Calibrated Test Equip.: Pocket Thermometer # PK104 Cal. Due Date: 7-27-10

QC
Supervisor Signoff: [signature] Date: 11-13-09

Attach filled out and signed copies of this data sheet to the Job Closeout or Tendon Surveillance Report Package for any end caps which have been removed/regreased.

ATTACHMENT 1
Data Sheet 1

1410-Y-83
Revision 7
Page 1 of 1

Regreasing of RB Tendon End Caps

8.1 Tendon Identity: H62-26 Tendon End: Butt. 6 / Shop

8.3.2 Amount of grease removed: 4 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: 190 °F (140°F to 200°F)

8.4.7 Grease level below vent hole 1 1/2 inches (1½ to 2")

8.4.9 Grease leaking ____ Yes ____ No (circled)

8.4.9 Amount of grease added 7.08 gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature N °F ~~(140°F to 200°F)~~

8.5.6(2) Grease level below vent hole ____ inches (2" to 3")

8.5.6(4) Grease leaking ____ Yes A No

~~8.5.6~~(5) Amount of grease added ____ gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature N °F (140°F to 200°F)

8.6.6 Grease leaking ____ Yes A No

~~8.6.7~~ Amount of grease added ____ gallons

10.0 PMT Sat X Unsat ____

Comments: n/a

Calibrated Test Equip.: Probe thermometer PK102 Cal. Due Date: 7-27-10

~~Supervisor Signoff:~~ QC W. Bruce Robertson Date: 8-12-09

Attach filled out and signed copies of this data sheet to the Job Closeout or Tendon Surveillance Report Package for any end caps which have been removed/regreased.

ATTACHMENT 1
Data Sheet 1

1410-Y-83
Revision 7
Page 1 of 1

Regreasing of RB Tendon End Caps

8.1 Tendon Identity: H62-26 Tendon End: Buttress 2 / Field

8.3.2 Amount of grease removed: 5.25 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: 196 °F (140°F to 200°F)

8.4.7 Grease level below vent hole 2" inches (1½ to 2")

8.4.9 Grease leaking _____ Yes X No

8.4.9 Amount of grease added 6.19 gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature _____ °F (140°F to 200°F)

8.5.6(2) Grease level below vent hole _____ inches (2" to 3")

8.5.6(4) Grease leaking _____ Yes _____ No

8.5.6(5) Amount of grease added _____ gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature _____ °F (140°F to 200°F)

8.6.6 Grease leaking _____ Yes _____ No

8.6.7 Amount of grease added _____ gallons

10.0 PMT Sat X Unsat _____

Comments: None

Calibrated Test Equip.: PK-104 Cal. Due Date: 7-27-10

QC
~~Supervisor~~ Signoff: [signature] Date: 8-28-09

Attach filled out and signed copies of this data sheet to the Job Closeout or Tendon Surveillance Report Package for any end caps which have been removed/regreased.

ATTACHMENT 1
Data Sheet 1

1410-Y-83
Revision 7
Page 1 of 1

Regreasing of RB Tendon End Caps

8.1 Tendon Identity: V-11 Tendon End: Gallery / Field

8.3.2 Amount of grease removed: 57.5 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: N °F ~~(140°F to 200°F)~~

8.4.7 Grease level below vent hole _____ inches (1½ to 2")

8.4.9 Grease leaking _____ Yes X No

8.4.9 Amount of grease added _____ gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature n/a °F (140°F to 200°F)

8.5.6(2) Grease level below vent hole n/a inches (2" to 3")

8.5.6(4) Grease leaking n/a Yes X No

8.5.6(5) Amount of grease added 0 gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature 210 °F (140°F to 200°F)

8.6.6 Grease leaking _____ Yes X No

8.6.7 Amount of grease added 68.55 gallons

10.0 PMT Sat X Unsat _____

Comments: PUMP THRU ACHIEVED

Calibrated Test Equip.: POCKET THERMOMETER PK102 Cal. Due Date: 7-27-10

Supervisor Signoff: [signature] Date: 1-14-10

Attach filled out and signed copies of this data sheet to the Job Closeout or Tendon Surveillance Report Package for any end caps which have been removed/regreased.

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Regreasing of RB Tendon End Caps

8.1 Tendon Identity: V-32 Tendon End: Top / Shop

8.3.2 Amount of grease removed: 4.5 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: _____ °F (140°F to 200°F)

8.4.7 Grease level below vent hole _____ inches (1⅛ to 2")

8.4.9 Grease leaking _____ Yes N/A No

8.4.9 Amount of grease added _____ gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature 195 °F (140°F to 200°F)

8.5.6(2) Grease level below vent hole 3 inches (2" to 3")

8.5.6(4) Grease leaking _____ Yes X No

8.5.6(5) Amount of grease added 23.01 gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature _____ °F (140°F to 200°F)

8.6.6 Grease leaking _____ Yes N/A No

8.6.7 Amount of grease added _____ gallons

10.0 PMT Sat X Unsat _____

Comments: None

Calibrated Test Equip.: Probe Thermometer PK-104 Cal. Due Date: 7-27-10

~~Supervisor~~ QC Signoff: [signature] Date: 8-18-09

Attach filled out and signed copies of this data sheet to the Job Closeout or Tendon Surveillance Report Package for any end caps which have been removed/regreased.

ATTACHMENT 1
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Regreasing of RB Tendon End Caps

8.1 Tendon Identity: V-32 Tendon End: Gallery / Field

8.3.2 Amount of grease removed: 8 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: _____ °F (140°F to 200°F)

8.4.7 Grease level below vent hole N inches (1½ to 2")

8.4.9 Grease leaking _____ Yes A No

8.4.9 Amount of grease added _____ gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature _____ °F (140°F to 200°F)

8.5.6(2) Grease level below vent hole _____ inches (2" to 3")

8.5.6(4) Grease leaking _____ Yes _____ No

8.5.6(5) Amount of grease added _____ gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature 195 °F (140°F to 200°F)

8.6.6 Grease leaking _____ Yes X No

8.6.7 Amount of grease added 23,01 gallons

10.0 PMT Sat X Unsat _____

Comments: Grease hand powered from top/shop end.

Calibrated Test Equip.: Probe thermometer PR-104 Cal. Due Date: 7-2-10

QC.
~~Supervisor~~ Signoff: Timothy C. Date: 8-13-09

Attach filled out and signed copies of this data sheet to the Job Closeout or Tendon Surveillance Report Package for any end caps which have been removed/regreased.

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Regreasing of RB Tendon End Caps

8.1 Tendon Identity: V-90 Tendon End: Gallery / Field

8.3.2 Amount of grease removed: 70.5 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: _____ °F ~~(140°F to 200°F)~~

8.4.7 Grease level below vent hole N/A inches (1½ to 2")

8.4.9 Grease leaking _____ Yes N/A No

8.4.9 Amount of grease added _____ gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature _____ °F ~~(140°F to 200°F)~~

8.5.6(2) Grease level below vent hole N/A inches (2" to 3")

8.5.6(4) Grease leaking _____ Yes N/A No

8.5.6(5) Amount of grease added _____ gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature 210 °F (140°F to 200°F)

8.6.6 Grease leaking _____ Yes X No

8.6.7 Amount of grease added 76.85 gallons

10.0 PMT Sat X Unsat _____

Comments: PUMP THRU ACHIEVED

Calibrated Test Equip.: Pocket Thermometer PK102 Cal. Due Date: 7-27-10

Supervisor Signoff: [signature] Date: 1-18-10

Attach filled out and signed copies of this data sheet to the Job Closeout or Tendon Surveillance Report Package for any end caps which have been removed/regreased.

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Regreasing of RB Tendon End Caps

8.1 Tendon Identity: V-132 Tendon End: Top Shop

8.3.2 Amount of grease removed: ~~5~~ 4.5 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: _____ °F (140°F to 200°F)

8.4.7 Grease level below vent hole _____ inches (1½ to 2")

8.4.9 Grease leaking _____ Yes ~~X~~ No

8.4.9 Amount of grease added _____ gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature _____ °F (140°F to 200°F)

8.5.6(2) Grease level below vent hole N/A inches (2" to 3")

8.5.6(4) Grease leaking _____ Yes _____ No

8.5.6(5) Amount of grease added _____ gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature _____ °F (140°F to 200°F)

8.6.6 Grease leaking _____ Yes N/A No

8.6.7 Amount of grease added _____ gallons

10.0 PMT Sat n/a Unsat n/a

Comments: THIS IS A STEAM GENERATOR REPLACEMENT TENDON, REFER SGT DATA SHEET

Calibrated Test Equip.: n/a Cal. Due Date: n/a

Supervisor Signoff: [signature] Date: 1-18-10

Attach filled out and signed copies of this data sheet to the Job Closeout or Tendon Surveillance Report Package for any end caps which have been removed/regreased.

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Regreasing of RB Tendon End Caps

8.1 Tendon Identity: D-122 Tendon End: Butt. 5 / Shop-end

8.3.2 Amount of grease removed: 34.5 gallons + 5½ GAL. FIELD END = 40 GAL.

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: 194 °F (140°F to 200°F)

8.4.7 Grease level below vent hole 2 inches (1⅛ to 2")

8.4.9 Grease leaking ____ Yes X No

8.4.9 Amount of grease added 44.02 gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature ____ °F (140°F to 200°F)

8.5.6(2) Grease level below vent hole ____ inches (2" to 3")

8.5.6(4) Grease leaking ____ Yes ____ No

8.5.6(5) Amount of grease added ____ gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature ____ °F (140°F to 200°F)

8.6.6 Grease leaking ____ Yes ____ No

8.6.7 Amount of grease added ____ gallons

10.0 PMT Sat X Unsat ____

Comments: NONE

Calibrated Test Equip.: POCKET THERMOMETER # PK104 Cal. Due Date: 7-27-10

QC
Supervisor Signoff: [signature] Date: 11-18-09

Attach filled out and signed copies of this data sheet to the Job Closeout or Tendon Surveillance Report Package for any end caps which have been removed/regreased.

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Regreasing of RB Tendon End Caps

8.1 Tendon Identity: D-225 Tendon End: Shop

8.3.2 Amount of grease removed: 7 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: 183 °F (140°F to 200°F)

8.4.7 Grease level below vent hole 1½ inches (1⅛ to 2")

8.4.9 Grease leaking ____ Yes X No

8.4.9 Amount of grease added 8 gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature ____ °F (140°F to 200°F)

8.5.6(2) Grease level below vent hole ____ inches (2" to 3")

8.5.6(4) Grease leaking ____ Yes ____ No

8.5.6(5) Amount of grease added ____ gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature ____ °F (140°F to 200°F)

8.6.6 Grease leaking ____ Yes ____ No

8.6.7 Amount of grease added ____ gallons

10.0 PMT Sat X Unsat ____

Comments: None

Calibrated Test Equip.: Probe Thermometer PK-104 Cal. Due Date: 7-27-10

Recorded By
~~Supervisor Signoff~~: [signature] Date: 8-11-09

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Regreasing of RB Tendon End Caps

8.1 Tendon Identity: D225 Tendon End: Butt. 2/Field

8.3.2 Amount of grease removed: 8.75 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: 185 °F (140°F to 200°F)

8.4.7 Grease level below vent hole 1½ inches (1⅛ to 2")

8.4.9 Grease leaking ____ Yes X No

8.4.9 Amount of grease added 10.62 gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature ____ °F (140°F to 200°F)

8.5.6(2) Grease level below vent hole ____ inches (2" to 3")

8.5.6(4) Grease leaking ____ Yes ____ No

8.5.6(5) Amount of grease added ____ gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature ____ °F (140°F to 200°F)

8.6.6 Grease leaking ____ Yes ____ No

8.6.7 Amount of grease added ____ gallons

10.0 PMT Sat X Unsat ____

Comments: N/A

Calibrated Test Equip.: Probe Thermometer PK-104 Cal. Due Date: 7-27-10

~~Supervisor Signoff~~ QC: [signature] Date: 8-12-09

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Regreasing of RB Tendon End Caps

8.1 Tendon Identity: D-322 Tendon End: SHOP / NORTH

8.3.2 Amount of grease removed: 8 1/2 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: 194 °F (140°F to 200°F)

8.4.7 Grease level below vent hole 2 inches (1½ to 2")

8.4.9 Grease leaking _____ Yes X No

8.4.9 Amount of grease added 12.39 gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature N/A °F (140°F to 200°F)

8.5.6(2) Grease level below vent hole N/A inches (2" to 3")

8.5.6(4) Grease leaking N/A Yes N/A No

8.5.6(5) Amount of grease added N/A gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature N/A °F (140°F to 200°F)

8.6.6 Grease leaking N/A Yes N/A No

8.6.7 Amount of grease added N/A gallons

10.0 PMT Sat X Unsat _____

Comments: NONE

Calibrated Test Equip.: POCKET THERMOMETER # PK104 Cal. Due Date: 7-27-10

QC Supervisor Signoff: [signature] Date: 11-17-09

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Regreasing of RB Tendon End Caps

8.1 Tendon Identity: D-322 Tendon End: FIELD

8.3.2 Amount of grease removed: 6 1/2 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: 194 °F (140°F to 200°F)

8.4.7 Grease level below vent hole 2 inches (1½ to 2")

8.4.9 Grease leaking ____ Yes X No

8.4.9 Amount of grease added 8.85 gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature N/A °F (140°F to 200°F)

8.5.6(2) Grease level below vent hole N/A inches (2" to 3")

8.5.6(4) Grease leaking N/A Yes N/A No

8.5.6(5) Amount of grease added N/A gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature N/A °F (140°F to 200°F)

8.6.6 Grease leaking N/A Yes N/A No

8.6.7 Amount of grease added N/A gallons

10.0 PMT Sat X Unsat ____

Comments: NONE

Calibrated Test Equip.: POCKET THERMOMETER #PK104 Cal. Due Date: 7-27-10

QC
~~Supervisor~~ Signoff: [signature] Date: 11-17-09

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Regreasing of RB Tendon End Caps

8.1 Tendon Identity: D342 Tendon End: Butt. 6 / Shop end

8.3.2 Amount of grease removed: 40 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: 190 °F (140°F to 200°F)

8.4.7 Grease level below vent hole 1 1/2 inches (1½ to 2")

8.4.9 Grease leaking ____ Yes ____ (No)

8.4.9 Amount of grease added 58.72 gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature N °F ~~(140°F to 200°F)~~

8.5.6(2) Grease level below vent hole N inches (2" to 3")

8.5.6(4) Grease leaking ____ Yes A No

~~8.5.6~~(5) Amount of grease added ____ gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature N °F ~~(140°F to 200°F)~~

8.6.6 Grease leaking ~~Yes~~ A No

8.6.7 ~~Amount of~~ grease added A gallons

10.0 PMT Sat X Unsat ____

Comments: None

Calibrated Test Equip.: PK104 Cal. Due Date: 7-27-10

QC
~~Supervisor~~ Signoff: W. Rance Robb Date: 8-18-09

Attach filled out and signed copies of this data sheet to the Job Closeout or Tendon Surveillance Report Package for any end caps which have been removed/regreased.

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Regreasing of RB Tendon End Caps

8.1 Tendon Identity: D 342 Tendon End: Butt. 4 / Field

8.3.2 Amount of grease removed: 10 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: 190 °F (140°F to 200°F)

8.4.7 Grease level below vent hole 1½ inches (1½ to 2")

8.4.9 Grease leaking _____ Yes _____ No (circled)

8.4.9 Amount of grease added 58.72 gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature _____ °F (140°F to 200°F)

8.5.6(2) Grease level below vent hole N/A inches (2" to 3")

8.5.6(4) Grease leaking _____ Yes N/A No

8.5.6(5) Amount of grease added _____ gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature N/A °F (140°F to 200°F)

8.6.6 Grease leaking _____ Yes N/A No

8.6.7 Amount of grease added N/A gallons

10.0 PMT Sat X Unsat _____

Comments: None

Calibrated Test Equip.: PK 104 Cal. Due Date: 7-27-10

QC
~~Supervisor~~ Signoff: W. Lance Robbins Date: 8-18-09

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Regreasing of RB Tendon End Caps

8.1 Tendon Identity: V-10 Tendon End: Bottom / Field

8.3.2 Amount of grease removed: 53 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: N/A °F (140°F to 200°F)

8.4.7 Grease level below vent hole N/A inches (1½ to 2")

8.4.9 Grease leaking N/A Yes N/A No

8.4.9 Amount of grease added N/A gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature N/A °F (140°F to 200°F)

8.5.6(2) Grease level below vent hole 2 inches (2" to 3")

8.5.6(4) Grease leaking _____ Yes X No

8.5.6(5) Amount of grease added ~~54.94~~ 260 144-00 gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature 210 °F (140°F to 200°F)

8.6.6 Grease leaking _____ Yes X No

8.6.7 Amount of grease added 54.94 gallons

10.0 PMT Sat X Unsat _____

Comments: PUMP THRU ACHIEVED

Calibrated Test Equip.: POCKET THERMOMETER PK102 Cal. Due Date: 7-27-10

Supervisor Signoff: [signature] Date: 1-14-10

Attach filled out and signed copies of this data sheet to the Job Closeout or Tendon Surveillance Report Package for any end caps which have been removed/regreased.

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Regreasing of RB Tendon End Caps

8.1 Tendon Identity: V55 Tendon End: Bottom

8.3.2 Amount of grease removed: 1/4 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: n/a °F (140°F to 200°F)

8.4.7 Grease level below vent hole n/a inches (1½ to 2")

8.4.9 Grease leaking n/a Yes n/a No

8.4.9 Amount of grease added n/a gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature 218 °F (140°F to 200°F)

8.5.6(2) Grease level below vent hole 2 inches (2" to 3")

8.5.6(4) Grease leaking Yes X No

8.5.6(5) Amount of grease added 1.77 gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature n/a °F (140°F to 200°F)

8.6.6 Grease leaking Yes X No

8.6.7 Amount of grease added n/a gallons

10.0 PMT Sat X Unsat

Comments: n/a

Calibrated Test Equip.: Fluke Thermometer FK102 Cal. Due Date: 7-27-10

Supervisor Signoff: [signature] Date: 1-19-10

Attach filled out and signed copies of this data sheet to the Job Closeout or Tendon Surveillance Report Package for any end caps which have been removed/regreased.

ATTACHMENT 1
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1410-Y-83
Revision 7
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Regreasing of RB Tendon End Caps

8.1 Tendon Identity: V-60 Tendon End: Bottom / Field

8.3.2 Amount of grease removed: 34.25 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: n/A °F (140°F to 200°F)

8.4.7 Grease level below vent hole n/A inches (1½ to 2")

8.4.9 Grease leaking n/A Yes n/A No

8.4.9 Amount of grease added n/A gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature 210 °F (140°F to 200°F)

8.5.6(2) Grease level below vent hole 2 inches (2" to 3")

8.5.6(4) Grease leaking Yes X No

8.5.6(5) Amount of grease added 19.91 gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature 214 °F (140°F to 200°F)

8.6.6 Grease leaking Yes X No

8.6.7 Amount of grease added 14.61 gallons

10.0 PMT Sat X Unsat

Comments: n/a

Calibrated Test Equip.: Pocket Thermometers PK102 Cal. Due Date: 7-27-10

Supervisor Signoff: [signature] Date: 1-18-10

Attach filled out and signed copies of this data sheet to the Job Closeout or Tendon Surveillance Report Package for any end caps which have been removed/regreased.

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Regreasing of RB Tendon End Caps

8.1 Tendon Identity: V-62 Tendon End: Bottom / Field

8.3.2 Amount of grease removed: 46.50 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: n/a °F (140°F to 200°F)

8.4.7 Grease level below vent hole n/a inches (1½ to 2")

8.4.9 Grease leaking n/a Yes n/a No

8.4.9 Amount of grease added n/a gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature 218 °F (140°F to 200°F)

8.5.6(2) Grease level below vent hole 2 inches (2" to 3")

8.5.6(4) Grease leaking ____ Yes X No

8.5.6(5) Amount of grease added 30.09 gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature 220 °F (140°F to 200°F)

8.6.6 Grease leaking ____ Yes X No

8.6.7 Amount of grease added 17.04 gallons

10.0 PMT Sat X Unsat ____

Comments: n/a

Calibrated Test Equip.: Pocket Thermometer PK102 Cal. Due Date: 7-27-10

Supervisor Signoff: [signature] Date: 1-12-10

Attach filled out and signed copies of this data sheet to the Job Closeout or Tendon Surveillance Report Package for any end caps which have been removed/regreased.

ATTACHMENT 1
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Regreasing of RB Tendon End Caps

8.1 Tendon Identity: V-71 Tendon End: Bottom / Field

8.3.2 Amount of grease removed: 46 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: n/a °F (140°F to 200°F)

8.4.7 Grease level below vent hole n/a inches (1½ to 2")

8.4.9 Grease leaking n/a Yes n/a No

8.4.9 Amount of grease added n/a gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature n/a °F (140°F to 200°F)

8.5.6(2) Grease level below vent hole 2 inches (2" to 3")

8.5.6(4) Grease leaking Yes X No

8.5.6(5) Amount of grease added n/a gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature 200 °F (140°F to 200°F)

8.6.6 Grease leaking Yes X No

8.6.7 Amount of grease added 46.2 gallons

10.0 PMT Sat X Unsat

Comments: n/a

Calibrated Test Equip.: Pocket Thermometer PK102 Cal. Due Date: 7-27-10

Supervisor Signoff: [signature] Date: 1-18-10

Attach filled out and signed copies of this data sheet to the Job Closeout or Tendon Surveillance Report Package for any end caps which have been removed/regreased.

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Regreasing of RB Tendon End Caps

8.1 Tendon Identity: V84 Tendon End: Bottom

8.3.2 Amount of grease removed: 4/4 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: n/a °F (140°F to 200°F)

8.4.7 Grease level below vent hole n/a inches (1½ to 2")

8.4.9 Grease leaking n/a Yes n/a No

8.4.9 Amount of grease added n/a gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature 212 °F (140°F to 200°F)

8.5.6(2) Grease level below vent hole 2 inches (2" to 3")

8.5.6(4) Grease leaking Yes X No

8.5.6(5) Amount of grease added 1.77 gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature n/a °F (140°F to 200°F)

8.6.6 Grease leaking Yes X No

8.6.7 Amount of grease added n/a gallons

10.0 PMT Sat X Unsat

Comments: n/a

Calibrated Test Equip.: Pocket Thermometer PK102 Cal. Due Date: 7-27-10

Supervisor Signoff: David P. Oldham Date: 1-19-10

Attach filled out and signed copies of this data sheet to the Job Closeout or Tendon Surveillance Report Package for any end caps which have been removed/regreased.

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Regreasing of RB Tendon End Caps

8.1 Tendon Identity: V-88 Tendon End: Gallery / Field

8.3.2 Amount of grease removed: 53.56 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: n/A °F (140°F to 200°F)

8.4.7 Grease level below vent hole n/A inches (1½ to 2")

8.4.9 Grease leaking n/A Yes n/A No

8.4.9 Amount of grease added n/A gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature n/A °F (140°F to 200°F)

8.5.6(2) Grease level below vent hole 2 inches (2" to 3")

8.5.6(4) Grease leaking ______ Yes X No

8.5.6(5) Amount of grease added n/A gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature 214 °F (140°F to 200°F)

8.6.6 Grease leaking ______ Yes X No

8.6.7 Amount of grease added 53.50 gallons

10.0 PMT Sat X Unsat ______

Comments: n/A

Calibrated Test Equip.: Pocket Thermometer PK102 Cal. Due Date: 7-27-10

QC ~~Supervisor~~ Signoff: [signature] Date: 1-19-10

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Regreasing of RB Tendon End Caps

8.1 Tendon Identity: V-98 Tendon End: Gallery / Field

8.3.2 Amount of grease removed: 40.28 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: n/a °F (140°F to 200°F)

8.4.7 Grease level below vent hole n/a inches (1½ to 2")

8.4.9 Grease leaking n/a Yes n/a No

8.4.9 Amount of grease added n/a gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature 220 °F (140°F to 200°F)

8.5.6(2) Grease level below vent hole 2 inches (2" to 3")

8.5.6(4) Grease leaking Yes X No

8.5.6(5) Amount of grease added 35.40 gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature 210 °F (140°F to 200°F)

8.6.6 Grease leaking Yes X No

8.6.7 Amount of grease added 14.61 gallons

10.0 PMT Sat X Unsat

Comments: n/a

Calibrated Test Equip.: Fluke Thermometer FK02 Cal. Due Date: 7-27-10

QC
~~Supervisor~~ Signoff: [signature] Date: 1-19-10

Attach filled out and signed copies of this data sheet to the Job Closeout or Tendon Surveillance Report Package for any end caps which have been removed/regreased.

ATTACHMENT 1
Data Sheet 1

1410-Y-83
Revision 7
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Regreasing of RB Tendon End Caps

8.1 Tendon Identity: V-99 Tendon End: Gallery / Field

8.3.2 Amount of grease removed: 44.25 gallons

8.4 Hoop and Dome Tendons

8.4.6 Replacement grease temperature: n/a °F (140°F to 200°F)

8.4.7 Grease level below vent hole n/a inches (1½ to 2")

8.4.9 Grease leaking n/a Yes n/a No

8.4.9 Amount of grease added n/a gallons

8.5 Top Vertical Tendons

8.5.6(1) Replacement grease temperature n/a °F (140°F to 200°F)

8.5.6(2) Grease level below vent hole 2 inches (2" to 3")

8.5.6(4) Grease leaking ____ Yes X No

8.5.6(5) Amount of grease added n/a gallons

8.6 Lower Vertical Tendons

8.6.5 Replacement grease temperature 218 °F (140°F to 200°F)

8.6.6 Grease leaking ____ Yes X No

8.6.7 Amount of grease added 45.20 gallons

10.0 PMT Sat X Unsat ____

Comments: n/a

Calibrated Test Equip.: Pocket Thermometer PK102 Cal. Due Date: 7-27-10

QC
~~Supervisor~~ Signoff: [signature] Date: 1-19-10

Attach filled out and signed copies of this data sheet to the Job Closeout or Tendon Surveillance Report Package for any end caps which have been removed/regreased.