



Tennessee Valley Authority, Post Office Box 2000, Decatur, Alabama 35609-2000

March 2, 2009

10 CFR 50.55a

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Stop: OWFN P1-35
Washington, D.C. 20555-0001

In the Matter of)
Tennessee Valley Authority)

Docket No. 50-259

BROWNS FERRY NUCLEAR PLANT (BFN) - UNIT 1 - AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) SECTION XI, INSERVICE INSPECTION, SYSTEM PRESSURE TEST, CONTAINMENT INSPECTION (IWE), AND REPAIR AND REPLACEMENT PROGRAMS - SUMMARY REPORTS FOR CYCLE 7 OPERATION

In accordance with paragraphs IWA-6230, and IWA-6240 of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, TVA is submitting the BFN Unit 1 outage summary reports for NRC review. The summary reports are for Inservice Inspection, System Pressure Test, Containment Inspection, and Repair and Replacement activities for Unit 1 Cycle 7 operation.

The summary reports contain an overview of the inservice examination results that were performed on ASME Class 1 and 2 components up to and including the Unit 1 Cycle 7 refueling outage during the first inspection period of the Second 10-year inspection interval. The enclosure contains the Owner's Activity Report, and abstract of examinations and tests (Table 1), evaluation of conditions for continued service (Table 2), repair and replacement activities (Table 3), and the ASME Section XI, Subsection IWE containment inspections. This report is being provided in accordance with ASME Section XI and Code Case N-532-4.

TVA has determined that 3 welds received ASME Section XI Code examination coverage less than 90 percent. These welds are listed in Attachment A of the enclosure. TVA will submit a request for relief for these weld examinations in separate correspondence.

ACH
NRR

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There are no new regulatory commitments in this letter. If you have any questions regarding these reports, please contact me at (256) 729-2636.

Sincerely,

A handwritten signature in black ink, appearing to read 'F. R. Godwin', written in a cursive style.

F. R. Godwin
Manager of Licensing
and Industry Affairs

Enclosure
cc (see page 3)

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Enclosure

cc (Enclosure):

Ms. Heather J. Gepford, Acting Branch Chief
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ENCLOSURE

**TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT (BFN)
UNIT 1
AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME),
SECTION XI, SECOND TEN-YEAR INSPECTION INTERVAL**

**INSERVICE INSPECTION (ISI), SYSTEM PRESSURE TEST (SPT), CONTAINMENT
INSPECTION, AND AUGMENTED EXAMINATIONS PROGRAM**

SUMMARY REPORT FOR CYCLE 7 OPERATION

(SEE ATTACHED)

FORM OAR-1 OWNER'S ACTIVITY REPORT

Report Number BFNU1C7

Plant Browns Ferry Nuclear Plant, P.O. Box 2000, Decatur, AL 35602-2000

Unit No. 1 Commercial service date August 1, 1974 Refueling Outage no. Cycle 7
(if applicable)

Current Inspection Interval Second Ten Year Inspection Interval
(1st, 2nd, 3rd, other)

Current Inspection Period First Period
(1st, 2nd, 3rd)

Edition and Addenda of Section XI applicable to the inspection plans 2001 Edition through 2003 Addenda

Date and Revision of inspection plan 1-SI-4.6.G, Revision 013, 02/13/2009

Edition and Addenda of Section XI applicable to repairs and replacements, if different than the inspection plan Same as above

Code Cases used: N-460, N-498-4, N-513-2, N-526, N-532-4, N-552, N-586-1, N-613-1, N-624, N-648-1, N-658, N-663, N-664, N-686, N-695, N-700, N-504-3.
(if applicable)

CERTIFICATE OF CONFORMANCE

I certify that (a) the statements made in this report are correct; (b) the examinations and tests meet the Inspection Plan as required by the ASME Code, Section XI; and (c) the repair/replacement activities and evaluations supporting the completion of U1C7 conform to the requirements of Section XI.
(refueling outage number)

Signed [Signature] Date 2/18/09
Owner or Owner's Designee, Title

all
SCW
5/17

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 Tennessee and employed by HSB CT of Hartford, Connecticut have inspected the items described in this Owner's Activity Report and state that to the best of my knowledge and belief, the Owner has performed all activities represented by this report in accordance with the requirement of Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations, tests, repairs, replacements, evaluations, and corrective measures described in this 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 TN 4011
Inspector's Signature National Board, State, Province and Endorsements

Date 2/25/09

FORM OAR-1 OWNER'S ACTIVITY REPORT

TABLES

Report Number	BFNU1C7		
Plant	Browns Ferry		
Unit No.	1	Commercial service date	08/01/1974
		Refueling outage no.	7
Current inspection interval	2nd	Current inspection period	1st

**TABLE 1
ITEMS WITH FLAWS OR RELEVANT CONDITIONS THAT REQUIRE
EVALUATIONS FOR CONTINUED SERVICE**

Examination Category and Item Number	Item Description	Evaluation Description
F-A, Item F1.20C	Cracked Weld, Physical Displacement, Misalignment. (HPAS-1-H-8) [NOI U1C7-020]	EVALUATED ACCEPTABLE (No Corrective Measures Required. Weld is not required to maintain position of spring on top channels. The slight misalignment and relocation have no adverse affect on the ability of the support to carry the design load.)
F-A, Item F1.10C	As-Found variable spring setting out of range. (1-47B465-462) [NOI U1C7-019]	EVALUATED ACCEPTABLE (No Corrective Measures Required. The as-found spring setting was 0.25" from the upper working range of the spring. Thermal movement upwards at this spring is 0.1758". Therefore, the spring can should not have topped or bottomed out during operation. To evaluate the as-found setting a TPIPE run was made using the as-found setting. The results of that analysis showed stresses in the pipe and RPV nozzle loads were less than the associated allowables for the loading conditions experienced during this run cycle. Spring cans were reset to setting specified.)
F-A, Item F1.40C	Physical damage and deformation. Constant force housing dented and housing seam separation. (1-47B465-502) [NOI U1C7-018]	EVALUATED ACCEPTABLE (Identified damage was cosmetic in nature and had no adverse effect on the function of the enclosed spring. The dent in the cover was less than 1/4" deep. The distance from the cover to the spring is approximately 2". The separation of the cover seam is localized and will not result in separation of the cover joints.)

FORM OAR-1 OWNER'S ACTIVITY REPORT

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Report Number	BFNU1C7		
Plant	Browns Ferry		
Unit No.	1	Commercial service date	08/01/1974
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**TABLE 1
ITEMS WITH FLAWS OR RELEVANT CONDITIONS THAT REQUIRE
EVALUATIONS FOR CONTINUED SERVICE (Continued)**

F-A, Item F1.40C	Physical damage and deformation. Constant force housing dented and structural member bent. (1-47B465-501) [NOI U1C7-017]	EVALUATED ACCEPTABLE (Identified damage was cosmetic in nature and had no adverse effect on the function of the enclosed spring. The dent in the cover was less than 3/4" deep. The distance from the cover to the spring is approximately 2". The bent structural member (lever link) was discussed with the current vendor. The member is subject to tensile loads only and can be expected to perform its function adequately with the slight bend. To ensure the lever link will continue to perform its design function, the vendor of the constant support hanger recommended inspection of the lever link welds that is the most common failure mode of the lever link. A magnetic particle examination was performed on the lever link; no indications were noted.)
F-A, Item F1.20C	As-Found variable spring setting out of range. (1-47B450-264) [NOI U1C7-015]	EVALUATED ACCEPTABLE (No Corrective Measures Required. The recorded reading during the inspection was two increments above the specified cold setting. This is 75 pounds more than the setting range considering the nominal setting tolerance. Based on review of piping thermal movement, this condition would not cause the spring support to top or bottom out at operating temperature. The 75 pound load deviation has no significant effect on the piping system. Resetting of the spring is not required. The recorded reading is considered to be within the acceptable reading tolerances.)

FORM OAR-1 OWNER'S ACTIVITY REPORT

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Report Number	BFNU1C7		
Plant	Browns Ferry		
Unit No.	1	Commercial service date	08/01/1974
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**TABLE 1
ITEMS WITH FLAWS OR RELEVANT CONDITIONS THAT REQUIRE
EVALUATIONS FOR CONTINUED SERVICE (Continued)**

F-A, Item F1.20D	Spherical bearings on each end of snubber are dislodged. (1-47B452-3077) [NOI U1C7-014]	EVALUATED ACCEPTABLE (No Corrective Measures Required. Engineering inspection concluded that even though the spherical bearing had become dislodged at each end of the snubber, these bearings were still engaged and would be effective to resist applied loads. The positioning of the bearings is such that they do not place the snubber in a bound condition due to thermal or seismic movement of the pipe and the snubber was capable of performing its design function in the as-found condition. The snubber was removed to perform as-found functional test and spherical bearings were replaced.)
F-A, Item F1.30C	As-Found variable spring setting out of range. (1-47B450-1) [NOI U1C7-013]	EVALUATED ACCEPTABLE (No Corrective Measures Required. The recorded reading during the inspection was 160 pounds more than the maximum setting range. Based on review of the piping thermal movement, this condition would not cause the spring support to bottom out at operating temperature and the support would continue to function. The stress calculation was reviewed and the 160 pound as-found load deviation has no significant adverse affect on the piping stresses or other loads. Support was reset to the specified setting.)
F-A, Item F1.30C	As-Found variable spring setting out of range. (1-47B450-381) [NOI U1C7-012]	EVALUATED ACCEPTABLE (No Corrective Measures Required. The recorded reading during the inspection was 420 pounds more than the maximum setting range. Based on review of the piping thermal movement, this condition would not cause the spring support to bottom out at operating temperature and the support would continue to function. The stress calculation was reviewed and the 420 pound as-found load deviation has no significant adverse affect on the piping stresses or other loads. Support was reset to the specified setting.)

FORM OAR-1 OWNER'S ACTIVITY REPORT

TABLES

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 Plant Browns Ferry
 Unit No. 1 Commercial service date 08/01/1974 Refueling outage 7
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**TABLE 1
 ITEMS WITH FLAWS OR RELEVANT CONDITIONS THAT REQUIRE
 EVALUATIONS FOR CONTINUED SERVICE (Continued)**

F-A, Item F1.40D	Loose bolt and nut on snubber paddle end. (1-48W1264-1) [NOI U1C7-011]	EVALUATED ACCEPTABLE (No Corrective Measures Required. The loose bolt and nut is used to allow or prevent the rotation of the attachment paddle with the piston and is not a primary load bearing feature. Even though one bolt and nut connection was loose it was still engaged and the other remained tight. Since the other bolt and nut connection remained tight, the bolt and nut connection continued to perform its design function to prevent snubber paddle rotation. The condition noted did not inhibit the snubber from performing its intended function. The bolt and nut were tightened.)
F-A, Item F1.20C	As-Found variable spring can setting out of range. (MS-1-H-17) [NOI U1C7-010]	EVALUATED ACCEPTABLE (No Corrective Measures Required. As-found reading was within plus or minus one increment tolerance specified on general note drawing and remained within working range during operation.)
F-A, Item F1.20C	Physical damage. Hanger rod bent at building steel. (HPAS-1-H-4) [NOI U1C7-009]	EVALUATED ACCEPTABLE (No Corrective Measures Required. Previously identified bent in 1985. A work request was initiated to replace the rod. The rod was not reported as bent in 2007 possibly due to access difficulty or viewing angle. The allowable load for the 5/8" diameter threaded rod is 1810 pounds. The maximum load on support HPAS-1-H-4 is 578 pounds. The bent rod even though partially yielded is capable of carrying the anticipated load in the as-found condition. The rod can be expected to carry perform its design function and does not need to be replaced.)

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**TABLE 1
ITEMS WITH FLAWS OR RELEVANT CONDITIONS THAT REQUIRE
EVALUATIONS FOR CONTINUED SERVICE (Continued)**

F-A, Item F1.20C	Locking pin installed in variable spring can. (1-47B400-2035) [NOI U1C7-008]	EVALUATED ACCEPTABLE (Corrective Measures Required Thermal movement at this location is minimal. No detrimental additional thermal stresses are considered to have been added to the piping system due to the support being pinned. The support will allow some upward movement due to clearances between connecting parts. With the support was still able to swing, horizontal movement should not have been adversely affected. Remove locking pin and verify cold setting prior to return to service.)
F-A, Item F1.20C	As-Found variable spring can setting out of range. (MSGE-1-H-20) [NOI U1C7-007]	EVALUATED ACCEPTABLE (No Corrective Measures Required. As-found reading was one increment above the 0 inch setting. Thermal movement is downward into the working range and the spring has freedom of movement four increments above the nominal working range and is therefore acceptable. The springs are considered to be set as intended and will perform their design function in the as-found condition.)
F-A, Item F1.20C	As-Found variable spring can setting out of range. (MS-1-H-13) [NOI U1C7-006]	EVALUATED ACCEPTABLE (No Corrective Measures Required. As-found reading was within the working range and therefore did not bottom or top out during operation. The load was 65 pounds less than the total load recorded on the drawing. The loading is acceptable and will have no detrimental affect on the 24" main steam piping or supports. The west spring was within plus or minus one increment of the cold load tolerance specified on general note drawing.)

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**TABLE 1
 ITEMS WITH FLAWS OR RELEVANT CONDITIONS THAT REQUIRE
 EVALUATIONS FOR CONTINUED SERVICE (Continued)**

F-A, Item F1.20C	As-Found variable spring can setting out of range. (MS-1-H-14) [NOI U1C7-005]	EVALUATED ACCEPTABLE (No Corrective Measures Required. As-found reading was within the working range and therefore did not bottom or top out during operation. The load was 365 pounds less than the total load recorded on the drawing. The loading is acceptable and will have no detrimental affect on the 24" main steam piping or supports. The west spring was within plus or minus one increment of the cold load tolerance specified on general note drawing.)
F-A, Item F1.20C	As-Found variable spring setting out of range. (MS-1-H-15) [NOI U1C7-003]	EVALUATED ACCEPTABLE (No Corrective Measures Required. The recorded reading during the inspection was 142 pounds less than the setting range. Based on review of the piping thermal movement, this condition would not cause the spring support to bottom out at operating temperature and the support would continue to function. The stress calculation was reviewed and the 142 pound as-found load deviation has no significant adverse affect on the piping stresses or other loads. Therefore, the springs will perform their design function in the as-found condition. Resetting of the springs is not required.)
F-A, Item F1.40D	Loose bolt and nut on snubber paddle end. (1-47B600-1637) [NOI U1C7-002]	EVALUATED ACCEPTABLE (No Corrective Measures Required. One of the top four bolts securing the end attachment to the snubber body was found loose. The maximum load on this snubber is 147 pounds. With the snubber normal and upset rated capacity of 1500 pounds distributed to the four bolts, three bolts are sufficient to carry the 147 pound load. Therefore, the snubber was capable of performing its design function with one loose bolt.)

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**TABLE 2
 ABSTRACT OF REPAIR/REPLACEMENT ACTIVITIES REQUIRED FOR CONTINUED SERVICE**

Code Class	Item Description	Description of Work	Date Completed	Repair/Replacement Plan Number
CODE CLASS 1	Physical damage and deformation of 7 of 12 studs and 8 of 24 nuts. Not service induced. (PCV1-1-031-PBC) [NOI U1C7-023]	STUDS/NUTS REPLACED	2/9/2009	WO 07-720625-000
CODE CLASS 1	Physical damage and deformation of 4 of 12 studs and 4 of 24 nuts. (PCV1-1-030-PBC) [NOI U1C7-022]	STUDS/NUTS REPLACED	2/10/2009	WO 07-720624-000
CODE CLASS 1	2 1-1/8" studs and 4 1-1/8" nuts were not available for examination. Studs were cut for disassembly and discarded. (N7-1-3-BC) [NOI U1C7-021]	STUDS/NUTS REPLACED	2/9/2009	WO 08-713567-000
CODE CLASS 1	Thorough wall leak on RVLIS Instrumentation line pipe to safe end weld at N11B nozzle	OVERLAY APPLIED	2/11/2009	WO 08-724426-000 DCN 69535
CODE CLASS 1	Steam cuts and physical damage to the cladding on the sealing surfaces on the RPV and head flange sealing surfaces.	REPAIRED CLADDING	2/6/2009	WO 08-723152-000 WO 08-723152-004
CODE CLASS 2	Thermowell failed 1-TW-001-0012	MODIFICATION PERFORMED TO CAP THERMOWELL.	2/11/2009	WO 08-719941-000 DCN 69460
CODE CLASS 2	Mechanical damage during valve rebuild process, 1-FCV-073-0016	REPLACED VALVE DISC	2/2/2009	WO 08-717402-000

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Summary of IWE Indications for U1C7

The summary table below is provided in accordance with the requirements of 10 CFR 50.55a(b)(2)(ix)(A) and 10 CFR 50.55a(b)(2)(ix)(D).

Examination Category and Item Number	Component Identifier	Indication Description	Acceptability/Corrective Action	Inaccessible Area (Location and Evaluation)	Additional Samples
E-A E1.11	DW LNR 1-1A	Localized pitting in liner below MSB during seal removal [U1C7-024]	No evidence of moisture intrusion in excavated areas. Localized pitting previously identified during Unit 1 recovery. Acceptable as is. MSB replaced.	None	None

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ATTACHMENT A

The following welds were calculated to have ASME Section XI Code UT examination coverage of less than 90 percent. TVA will submit a request for relief for these weld examinations in separate correspondence.

WELD ID	CONFIG	Limitation	%	Report
DRHR-1-11	Pipe to VLV	single side exam	77.5%	R258
DRHR-1-2	Pipe to VLV	single side exam	78.2%	R237
RWCU-1-005-005	VLV to Elb	single side exam	43.8%	R081