Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402

August 2, 2013

10 CFR 50.55a

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Browns Ferry Nuclear Plant, Unit 2
Renewed Facility Operating License No. DPR-52
NRC Docket No. 50-260

Subject: **American Society of Mechanical Engineers Section XI, Inservice Inspection, System Pressure Test, Containment Inservice Inspection, and Repair and Replacement Programs - Owner's Activity Report for Browns Ferry Nuclear Plant, Unit 2, Cycle 17 Operation**

The Tennessee Valley Authority is submitting the Browns Ferry Nuclear Plant (BFN), American Society of Mechanical Engineers (ASME), Section XI, Owner's Activity Report for BFN, Unit 2, Cycle 17 Operation. The report is contained in the enclosure to this letter and is in accordance with the requirements of ASME Code Case N-532-4, Repair/Replacement Documentation Requirements and Inservice Summary Report Preparation and Submission, Section XI, Division 1.

The report is an overview of the inservice examination results that were performed on components within the ASME Section XI boundary, up to and including the BFN, Unit 2, Cycle 17 refueling outage, during the first inspection period of the fourth 10-year inspection interval. The applicable provisions of the ASME Code require that this report be submitted 90 days from the end of the applicable outage. The BFN, Unit 2, Cycle 17 refueling outage ended on May 4, 2013. Accordingly, this submittal is due by August 2, 2013.

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NRR

There are no new regulatory commitments contained in this letter. Should you have any questions concerning this submittal, please contact J. E. Emens, Jr., Nuclear Site Licensing Manager, at (256) 729-2636.

Respectfully,

J. W. Shea
Vice President, Nuclear Licensing

Enclosure:

American Society of Mechanical Engineers, Section XI, Fourth 10-Year Inspection Interval, Inservice Inspection, System Pressure Test, Containment Inspection, and Repair and Replacement Programs, Owner's Activity Report for Browns Ferry Nuclear Plant, Unit 2, Cycle 17 Operation

cc (Enclosure):

NRC Regional Administrator – Region II
NRC Senior Resident Inspector – Browns Ferry Nuclear Plant

Enclosure

Tennessee Valley Authority

Browns Ferry Nuclear Plant
Unit 2

American Society of Mechanical Engineers,
Section XI, Fourth 10-Year Inspection Interval, Inservice Inspection,
System Pressure Test, Containment Inservice Inspection,
and Repair and Replacement Programs,
Owner's Activity Report for Browns Ferry Nuclear Plant, Unit 2, Cycle 17 Operation

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See Enclosed

FORM OAR-1 OWNER'S ACTIVITY REPORT

TABLES

Report Number BFNU2R17
Plant Browns Ferry
Unit No. 2 Commercial service date 03/01/1975 Refueling outage no. 17
Current inspection interval 4th Current inspection period 1st

FORM OAR-1 OWNER'S ACTIVITY REPORT

Report Number BFNU2R17

Plant Browns Ferry Nuclear Plant, P.O. Box 2000, Decatur, AL 35609

Unit No. 2 (if applicable) Commercial service date March 1, 1975 Refueling Outage no. Refueling Outage 17

Current Inspection Interval Fourth 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 2004 Edition, No Addenda

Date and Revision of inspection plan 2-SI-4.6.G, Revision 0051 04/24/13

Edition and Addenda of Section XI applicable to repairs and replacements, if different than the inspection plan N/A

Code Cases used: N-460, N-504-4, N-528-1, N-532-4, N-552, N-586-1, N-613-1, N-648-1, N-686-1, N-702 (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 U2R17 (refueling outage number) conform to the requirements of Section XI.

Signed Jeff Boyer Date 7-29-13
Owner or Owner's Designee, Title ASST BNB DIRECTOR

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 Alabama 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 requirements of Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair/replacement activities and evaluation 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.

Inspector's Signature Commissions NB 13977 A,N,I AL1092781
National Board, State, Province and Endorsements

Date 7/29/13

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Report Number BFNU2R17
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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	As-Found constant spring support setting out-of-range. Range 1575 to 1650 lbs. As-Found 1550 lbs. (2-47B455H0061) [NOI U2RF17-001]	EVALUATED ACCEPTABLE (No Corrective Measures Required.) The load used in the pipe stress analysis (CD-Q2073-880990) is 1600 lbs. Acceptable variability from the analysis load is 25% per BFN-50-C-7107. Therefore, for the analysis the load may range between 1200 lbs to 2000 lbs and remain acceptable. The working range of the spring is 1050 lbs to 2100 lbs per the support calculation (CD-Q2073-881771). The thermal piping movement is slightly more than 1/8 inch in the up direction and less than 1/32 inch in the down direction. The spring has a spring constant of 300 lbs/in. The as-found setting and any variability of the spring due to pipe movements will leave the spring within the requirements of the analysis and the working range of the spring. The as-found setting of 1550 lbs is approximately at mid-point of the spring working range, with considerable margin from topping or bottoming out. The earthquake movement vertically is approximately 0.154 inch; therefore, topping or bottoming out from seismic movements will not occur and does not require further consideration. The as-found spring can ceiling is slightly more than 1/16 inch outside the spring ceiling range. Therefore, the as-found setting had no detrimental effect on the 10 inch High Pressure Coolant Injection steam supply piping or adjacent pipe supports.

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Examination Category and Item Number	Item Description	Evaluation Description
F-A, Item F1.20C	Loose nut on pipe clamp load pin bolt. (2-47B455H0060) [NOI U2RF17-002]	EVALUATED ACCEPTABLE (No Corrective Measures Required). The bolted connection associated with the loose nut identified is on the 6 inch diameter pipe clamp shown on drawing 2-47B455H0060. Given the configuration of the connection, the bolt would be loaded only in shear and its shear capacity is not affected by the loose nut. The primary function of the nuts would be to ensure the bolts do not become dislodged. Therefore, the connection remains capable of performing its design function in the as-found condition. The nut was tightened during the U2R17 outage and re-examined.

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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
3	BFN-0-PMP-023-0091, Residual Heat Removal Service Water (RHRSW) Pump C3	Replace the C3 Emergency Equipment Cooling Water (EECW) pump, BFN-0-PMP-023-0091, column assembly with the rebuilt spare column assembly	6/8/2011	111972393
3	BFN-0-MISC-067, EECW North Header Supply	Install branch connection and blind flange on EECW North Header Supply 18 inch C3 supply line in the RHRSW tunnel.	9/22/2011	112148977
3	BFN-0-MISC-067, EECW South Header Supply	Install branch connection and blind flange on EECW South Header Supply	10/20/2011	112171827
3	BFN-2-PIPE-023-0001/036, 16 inch pipe	Replace piping at a through wall leak in 2B RHRSW inlet piping inside 2B/D RHRSW tunnel.	10/30/2011	112817797
3	BFN-0-CKV-067-0502, South Header Check Valve	Disassemble, inspect, and repair/replace EECW check valve.	3/20/2012	113310490
3	BFN-2-PIPE-023-0001/039, 16 inch pipe	Repair through wall leak in 2C RHRSW inlet piping	4/14/2012	113400655
3	BFN-2-MISC-023, 1-1/2 inch piping	Replace piping located at a through wall leak in RHRSW piping	5/9/2012	113474377
3	BFN-2-PIPE-023-0001/039, 16 inch RHRSW inlet piping	Replace approximately 3 feet of 16 inch piping on 2C RHRSW inlet.	8/13/2012	113775300
3	BFN-2-MISC-023, 1-1/2 inch piping	Replace section of RHRSW 1.5 inch piping drain line (upstream of drain valve 2-DRV-023-0551).	11/13/2012	114111251
3	BFN-2-MISC-023, 16 inch RHRSW piping	Install by welding a 4 inch weld-o-let and cap onto the 16 inch 2A RHRSW supply.	2/28/2013	114432497
2	BFN-2-HEX-074-0900D, RHR Heat Exchanger 2D	Cut out and replace partition plate in RHR Heat Exchanger 2D.	4/17/2013	112074180

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Code Class	Item Description	Description of Work	Date Completed	Repair/Replacement Plan Number
3	BFN-2-SHV-067-0640, North Header Supply Shutoff Valve to Unit 2 Reactor Building Closed Cooling Water	Repair thru wall leak in EECW system piping.	4/26/2013	113946144
3	BFN-2-HEX-074-0900A, RHR Heat Exchanger 2A	Remove the seal weld on the RHR Heat Exchanger 2A floating head and replace with a new floating head.	4/28/2013	08-719409-000
2	BFN-2-PCV-001-0151, Steam Jet Air Ejector (SJAE) A Stage 1	Replace the existing valve body, BFN-2-PCV-001-0151.	5/5/2013	114525652
2	BFN-2-PCV-001-0153, SJAE B Stage 1	Replace the existing valve body, and refurbish internals of BFN-2-PCV-001-0153.	5/5/2013	114527967

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Summary of IWE Indications for U2R17

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, Item E1.30	Moisture Seal Barrier (MSB) MSB-2-1	Mechanical damage. [NOI U2RF17-005]	Seven damaged areas of the MSB were identified for repair. The damage found was the result of mechanical damage from either the U2R16 outage demobilization or mobilization for U2R17 outage work. None of the depressions penetrated the full depth of the seal and seal adhesion was good in all locations. Therefore, moisture could not penetrate or bypass the seal and get between the concrete floor and drywell liner. The indications noted did not affect the ability of the seal to prevent intrusion of moisture against the inaccessible areas of the steel containment vessel below the MSB. A visual examination (VT-1) of the drywell liner was conducted in areas excavated for repair. No indications were noted in these areas. Therefore, no adverse condition exists that may be present in inaccessible areas.	None	None