



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

CNL-15-068

June 9, 2015

10 CFR 2.202
10 CFR 50.4

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

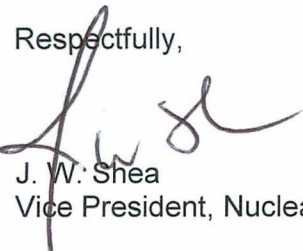
Subject: **Completion of Required Action by NRC Order EA-12-051, Reliable Spent Fuel Pool Instrumentation**

Reference: NRC Order Number EA-12-051, "Issuance of Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation," dated March 12, 2012 (ML12054A679)

On March 12, 2012, the Nuclear Regulatory Commission (NRC) issued Order EA-12-051, Issuance of Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Referenced Letter), to Tennessee Valley Authority (TVA). The requirements of this Order were effective immediately and directed the Browns Ferry Nuclear Plant (BFN), Unit 2, to install reliable spent fuel pool instrumentation as outlined in Attachment 2 of the Referenced Letter. This letter, along with its enclosures, provides the notification required by Section IV.C.3 of the Referenced Letter that full compliance with the requirements described in Attachment 2 of the Referenced Letter has been achieved for BFN, Unit 2.

There are no new regulatory commitments contained in this letter. If you have any questions, please contact Jamie Paul at (256) 729-2636.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 9th day of June 2015.

Respectfully,

J. W. Shea
Vice President, Nuclear Licensing

Enclosures

cc: See Page 2

Enclosures:

1. Compliance with Order EA-12-051
2. Answers to Open Audit Items

cc (Enclosures):

NRR Director - NRC Headquarters
NRO Director - NRC Headquarters
NRR JLD Director - NRC Headquarters
NRC Regional Administrator - Region II
NRC Project Manager - Browns Ferry Nuclear Plant
NRC JLD Project Manager - Browns Ferry Nuclear Plant
NRC Senior Resident Inspector - Browns Ferry Nuclear Plant

ENCLOSURE 1
BROWNS FERRY NUCLEAR PLANT, UNIT 2
COMPLIANCE WITH ORDER EA-12-051
COMPLETION OF REQUIRED ACTION BY NRC ORDER EA-12-051
RELIABLE SPENT FUEL POOL INSTRUMENTATION

BACKGROUND

On March 12, 2012, the Nuclear Regulatory Commission (NRC) issued Order EA-12-051, Issuance of Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Reference 1), to Tennessee Valley Authority (TVA). The requirements of Reference 1 were effective immediately and directed Browns Ferry Nuclear Plant (BFN), Unit 2, to install reliable spent fuel pool instrumentation (SFPI) as outlined in Attachment 2 of Reference 1. Reference 1 required compliance prior to plant startup, from the second refueling outage following submittal of the Overall Integrated Plan (OIP), or by December 31, 2016, whichever comes first. The compliance date for BFN, Unit 2, was April 10, 2015. The NRC staff requested that the compliance report be submitted within 60 days of the compliance date. The information provided herein documents full compliance for BFN, Unit 2, in response to Reference 1.

COMPLIANCE

The BFN has installed two independent full scale level monitors on the Unit 2 Spent Fuel Pool (SFP) in response to Reference 1. The BFN is a three unit site with three SFPs.

The TVA submitted the OIP for BFN, Units 1, 2 and 3, by letter dated February 28, 2013 (Reference 5). By letters to TVA dated June 18, 2013 (Reference 6) and November 14, 2013 (Reference 9), the NRC staff sent a request for additional information (RAI) and provided the interim staff evaluation (ISE) and requested additional information necessary for completion of the review. By letters to the NRC dated October 29, 2012 (Reference 4), July 18, 2013 (Reference 7), August 28, 2013 (Reference 8), February 28, 2014 (Reference 10), August 28, 2014 (Reference 12), and February 27, 2015 (Reference 14), TVA submitted its initial status report, RAI responses, and first four six-month updates to the OIP.

By letter dated March 26, 2014 (Reference 11), the NRC informed TVA of in-office and onsite audits of open and confirmatory items for the mitigation strategies (FLEX) ISE, RAI responses from the SFPI ISE, the licensee's integrated plans, and other audit questions. The NRC conducted the onsite audit per the plan dated November 26, 2014 (Reference 13) at BFN from January 5-9, 2015. By letter dated April 6, 2015 (Reference 15), the NRC provided TVA with a summary of the audit activities and an attachment listing all open items currently under NRC staff review.

Because BFN, Unit 2, is the first of the three BFN units to fully comply with Order EA-12-051, the requested answers to open or pending SFPI items listed in the NRC's FLEX/SFPI audit report (Reference 15) are provided in Enclosure 2 of this letter. The final compliance information requested (answers to all of the SFPI ISE RAIs, answers to open or pending SFPI items listed in the audit report (Reference 15), and the "Design Bridge" document which compared BFN to vendor's assumptions) will be provided by letter following compliance by the final BFN unit.

Compliance with Order EA-12-051 for BFN, Unit 2, was achieved using the guidance in Nuclear Energy Institute (NEI) document NEI 12-02 (Reference 2), which has been endorsed by the NRC (Reference 3).

REFERENCES

1. NRC Order Number EA-12-051, "Issuance of Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation," dated March 12, 2012 (ML12054A679)
2. NEI 12-02, "Industry Guidance for Compliance with NRC Order EA-12-051, 'To Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation,'" Revision 1, dated August 2012 (ML12240A307)
3. NRC Interim Staff Guidance JLD-ISG-2012-03, "Compliance with Order EA-12-051, Reliable Spent Fuel Pool Instrumentation," Revision 0, dated August 29, 2012 (ML12221A339)
4. Letter from TVA to NRC, "Tennessee Valley Authority (TVA) - Initial Status Report in Response to the March 12, 2012, Commission Order Modifying Licenses with Regard to Requirements for Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051)," dated October 29, 2012 (ML12307A105)
5. Letter from TVA to NRC, "Tennessee Valley Authority (TVA) - Overall Integrated Plan in Response to the March 12, 2012, Commission Order Modifying Licenses with Regard to Requirements for Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051) for Browns Ferry Nuclear Plant," dated February 28, 2013 (ML13063A437)
6. Letter from NRC to TVA, "Browns Ferry Nuclear Plant, Units 1, 2, and 3 – Request for Additional Information Regarding Overall Integrated Plan in Response to the Commission Order Modifying Licenses with Regard to Requirements for Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051) (TAC Nos. MF0881, MF0882, and MF0883)," dated June 18, 2013 (ML13157A164)
7. Letter from TVA to NRC, "Response to NRC Request for Additional Information Regarding Overall Integrated Plan in Response to the Commission Order Modifying Licenses with Regard to Requirements for Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051) (TAC Nos. MF0881, MF0882, and MF0883)," dated July 18, 2013 (ML13206A005)
8. Letter from TVA to NRC, "First Six-Month Status Report in Response to the March 12, 2012, Commission Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051) for Browns Ferry Nuclear Plant," dated August 28, 2013 (ML13247A290)
9. Letter from NRC to TVA, "Browns Ferry Nuclear Plant, Units 1, 2, and 3 - Interim Staff Evaluation and Request for Additional Information Regarding the Overall Integrated Plan for Implementation of Order EA-12-051, Reliable Spent Fuel Pool Instrumentation (TAC Nos. MF0881, MF0882, and MF0883)," dated November 14, 2013 (ML13274A657)
10. Letter from TVA to NRC, "Second Six-Month Status Report in Response to the March 12, 2012, Commission Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051) for Browns Ferry Nuclear Plant (TAC Nos. MF0881, MF0882, and MF0883)," dated February 28, 2014 (ML14174A041)
11. Letter from NRC to TVA, "Nuclear Regulatory Commission Audits of Licensee Responses to Reliable Spent Fuel Pool Instrumentation Order EA-12-051," dated March 26, 2014 (ML14083A620)
12. Letter from TVA to NRC, "Third Six-Month Status Report in Response to the March 12, 2012, Commission Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051) for Browns Ferry Nuclear Plant (TAC Nos. MF0881, MF0882, and MF0883)," dated August 28, 2014 (ML14247A430)

13. Letter from NRC to TVA, "Browns Ferry Nuclear Plant, Units 1, 2, and 3 - Plan for the Onsite Audit Regarding Implementation of Mitigating Strategies and Reliable Spent Fuel Instrumentation Related to Orders EA-12-049 and EA-12-051 (TAC Nos. MF0902, MF0903, MF0904, MF0881, MF0882, and MF0883)," dated November 26, 2014 (ML14323A295)
14. Letter from TVA to NRC, "Fourth Six-Month Status Report in Response to the March 12, 2012, Commission Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051) for Browns Ferry Nuclear Plant (TAC Nos. MF0881, MF0882, and MF0883)," dated February 27, 2015 (ML15064A188)
15. Letter from NRC to TVA, "Browns Ferry Nuclear Plant, Units 1, 2, and 3 - Report for the Onsite Audit Regarding Implementation of Mitigating Strategies and Reliable Spent Fuel Instrumentation Related to Orders EA-12-049 and EA-12-051 (TAC Nos. MF0902, MF0903, MF0904, MF0881, MF0882, and MF0883)," dated April 6, 2015 (ML15069A358)

ENCLOSURE 2
ANSWERS TO OPEN AUDIT ITEMS
BROWNS FERRY NUCLEAR PLANT, UNIT 2
COMPLETION OF REQUIRED ACTION BY NRC ORDER EA-12-051
RELIABLE SPENT FUEL POOL INSTRUMENTATION

OPEN AUDIT ITEMS

From the audit report (Reference 1), there was one Request for Additional Information (RAI) open item identified, SFPI RAI#6, which required further review.

SFPI RAI#6: Please provide information indicating what will be the maximum expected ambient temperature in the room in which the associated transmitter (electronics package) will be located under BDB [beyond-design-basis] condition in which there is no AC power available to run Heating Ventilation and Air Conditioning (HVAC) systems..

Audit Open Item Tracking Number 6-D: The NRC Staff requests the licensee make available for audit calculation MDQ0009992014000291, "Temperature Response of the Reactor Building Following an Extended Loss of AC Power."

ANSWER

The transmitters will be located in the Reactor Building on Elevation 639.0 on each unit, which is a separate environmental area than the Spent Fuel Pool. BFN calculation MDQ0009992014000291, Revision 0, Figures 6.50 through 6.64, provides dry bulb temperatures, wet bulb temperatures, and relative humidity profiles for the Reactor Building on Elevation 639.0. Westinghouse report EQLR-342 Revision 0, "Environmental Design Verification Test Report for Spent Fuel Pool Instrumentation System," confirms that this location is an acceptable environment for the transmitter.

These documents were made available to NRC for review on April 1, 2015.

REFERENCES

1. Letter from NRC to TVA, "Browns Ferry Nuclear Plant, Units 1, 2, and 3 - Report for the Onsite Audit Regarding Implementation of Mitigating Strategies and Reliable Spent Fuel Instrumentation Related to Orders EA-12-049 and EA-12-051," dated April 6, 2015 (ML15069A358)
2. Westinghouse Report EQLR-342, Revision 0, "Environmental Design Verification Test Report for Spent Fuel Pool Instrumentation System," dated March 2015
3. TVA BFN Calculation MDQ0009992014000291, Revision 0, "Temperature Response of the Reactor Building Following an Extended Loss of AC Power"