



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
WASHINGTON, D.C. 20555-0001

April 27, 2016

Mr. Joseph W. Shea  
Vice President, Nuclear Licensing  
Tennessee Valley Authority  
1101 Market Street, LP 3R-C  
Chattanooga, TN 37402-2801

**SUBJECT: BROWNS FERRY NUCLEAR PLANT, UNITS 1, 2, AND 3 – REGULATORY  
AUDIT PLAN FOR MAY 10 - 11, 2016, AUDIT AT EXCEL FACILITY IN  
ROCKVILLE, MARYLAND, IN SUPPORT OF EXTENDED POWER UPRATE  
LICENSE AMENDMENT REQUEST (CAC NOS. MF6741, MF6742, AND  
MF6743)**

Dear Mr. Shea:

By letter dated September 21, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15282A152), as supplemented by letters dated November 13, December 15, and December 18, 2015 (ADAMS Accession Nos. ML15317A361, ML15351A113, and ML15355A413, respectively), Tennessee Valley Authority (the licensee) submitted a license amendment request (LAR) for the Browns Ferry Nuclear Plant, Units 1, 2, and 3. The proposed amendment would increase the authorized maximum steady-state reactor core power level for each unit from 3,458 megawatt thermal (MWt) to 3,952 MWt. This LAR represents an increase of approximately 20 percent above the original licensed thermal power level of 3,293 MWt, and an increase of approximately 14.3 percent above the current licensed thermal power level of 3,458 MWt.

In addition, by letters dated January 28 and 29, 2016 (ADAMS Accession Nos. ML16019A283 and ML16020A111, respectively) the U.S. Nuclear Regulatory Commission (NRC) issued requests for additional information (RAIs) to the licensee. The licensee, by letters dated February 16 and March 8, 2016 (ADAMS Accession Nos. ML16049A248 and ML16069A142), responded to the staff's RAIs.

To support its safety evaluations, the NRC staff will conduct an audit with the licensee at the EXCEL Services Corporation facility in Rockville, Maryland, from May 10 to 11, 2016. The audit plan to support the review of the extended power uprate (EPU) LAR regarding spent fuel pool criticality analysis and Boral plates is enclosed.

J. Shea

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If you have any questions, please contact me at (301) 415-1447 or [Farideh.Saba@nrc.gov](mailto:Farideh.Saba@nrc.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Farideh E. Saba".

Farideh E. Saba, Senior Project Manager  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-259, 50-260, and 50-296

Enclosure:  
Audit Plan for EPU LAR

cc w/encl: Distribution via Listserv

REGULATORY AUDIT PLAN FOR MAY 10 to 11, 2016, AUDIT  
AT EXCEL FACILITY IN ROCKVILLE, MARYLAND, TO SUPPORT REVIEW OF  
EXTENDED POWER UPRATE LICENSE AMENDMENT REQUEST  
TENNESSEE VALLEY AUTHORITY  
BROWNS FERRY NUCLEAR PLANT, UNITS 1, 2, AND 3  
DOCKET NOS. 50-259, 50-260, AND 50-296

Background

The U.S. Nuclear Regulatory Commission (NRC) staff is currently engaged in a review of a license amendment request (LAR) for the Browns Ferry Nuclear Plant (BFN), Units 1, 2, and 3. By letter dated September 21, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15282A152), as supplemented by letters dated November 13, December 15, and December 18, 2015 (ADAMS Accession Nos. ML15317A361, ML15351A113, and ML15355A413, respectively), Tennessee Valley Authority (TVA, the licensee) submitted an LAR for the BFN, Units 1, 2, and 3. The proposed amendment would increase the authorized maximum steady-state reactor core power level for each unit from 3,458 megawatt thermal (MWt) to 3,952 MWt. This LAR represents an increase of approximately 20 percent above the original licensed thermal power level of 3,293 MWt, and an increase of approximately 14.3 percent above the current licensed thermal power level of 3,458 MWt.

In addition, by letters dated January 28 and 29, 2016 (ADAMS Accession Nos. ML16019A283 and ML16020A111, respectively) the U.S. Nuclear Regulatory Commission (NRC) issued requests for additional information (RAIs) to the licensee. The licensee, by letters dated February 16 and March 8, 2016 (ADAMS Accession Nos. ML16049A248 and ML16069A142), responded to the staff's RAIs.

The NRC staff has determined that a regulatory audit of the BFN LAR should be conducted in accordance with the Nuclear Reactor Regulation (NRR) Office Instruction LIC-111, "Regulatory Audits," for the NRC staff to gain a better understanding of the licensee's calculations and other aspects of the LAR.

Enclosure

### Regulatory Audit Basis

The basis of this audit is TVA's LAR and NUREG-0800, "Standard Review Plan for the Review of Nuclear Power Plants: Section 9.1.1, "Criticality Safety of Fresh and Spent Fuel Storage and Handling."

This audit will provide information necessary for the evaluation of the spent fuel pool (SFP) being conducted by NRC staff from the Performance and Code Review Branch, Division of Safety Systems; and Steam Generator Tube Integrity and Chemical Engineering Branch (ESGB), Division of Engineering, NRR.

### Regulatory Audit Scope

The scope of this regulatory audit will include documents used to support the technical basis for the SFP criticality analysis and neutron absorber (Boral) monitoring program.

### Information Necessary for the Regulatory Audit

The licensee is requested to have the draft responses available on site for the audit team for the staff request for additional information regarding SFP criticality analysis and Boral monitoring program transmitted to TVA by e-mail on March 22, 2016. The NRC staff requests the licensee to make any analyses or documentation referenced in the draft responses available. The draft responses could be provided electronically or by paper copies. If provided electronically, the licensee is requested to have at least two computers available for the audit team, with a printer connected.

Additional information needs identified during the audit will be communicated to the designated point of contact.

The NRC staff also requests the licensee to make personnel who are familiar with the LAR (including site staff and contractors, if appropriate) accessible upon request (either in person or by phone). The personnel should be able to respond to NRC staff questions.

### Team Assignments / Resource Estimates

<b>Audit Team</b>	<b>Assigned Auditor</b>
Audit Team Lead	Farideh Saba (NRC)
Technical Reviewer	Kent Wood (NRC)
Technical Reviewer	Scott Krepel (NRC)
Technical Reviewer	Matthew Yoder (NRC)

### Logistics

The audit will be conducted with the licensee at the EXCEL Services Corporation facility in Rockville, Maryland, from May 10 to 11, 2016. Entrance and exit briefings will be held at the

beginning and end of this audit. The licensee is requested to arrange for a conference room for use by the audit team.

The audit will start at 9:00 a.m. on Tuesday, May 10, 2016, and conclude on Wednesday, May 11, 2016. Our tentative schedule for the audit is as follows:

May 10, 2016

9:00 a.m.	Check-in at EXCEL Office – meet licensee contact(s), setup for entrance meeting.
9:30 a.m.	Entrance Meeting - introductions, audit activities, goals, and logistics.
10:00 a.m.	NRC Team Breakout/Discussion with the licensee.
12:00 p.m.	Lunch.
1:00 p.m.	NRC Team Breakout/Discussion with the licensee.
4:00 p.m.	Audit Team Caucus.
4:30 p.m.	NRC/Licensee Interim Meeting.
5:00 p.m.	Audit Team Daily Closeout.

May 11, 2016

9:00 a.m.	NRC Team Breakout/ Discussion with the licensee.
12:00 p.m.	Lunch.
1:00 p.m.	NRC Team Breakout/Discussion with the licensee.
3:30 p.m.	Audit Team Caucus.
4:00 p.m.	NRC/Licensee Interim/Exit Meeting.
5:00 p.m.	NRC/Licensee Audit Closeout.

Deliverables

At the conclusion of the audit, the NRC staff will conduct an exit briefing and will provide a summary of audit results in each subject area defined in the audit scope. An audit report/summary will be issued to the licensee within approximately 90 days from the end of the audit. Additionally, the results of the audit will be utilized to focus the scope of any requests for additional information issued in the course of this review.

J. Shea

- 2 -

If you have any questions, please contact me at (301) 415-1447 or [Farideh.Saba@nrc.gov](mailto:Farideh.Saba@nrc.gov).

Sincerely,

**/RA/ Siva P. Lingam for**

Farideh E. Saba, Senior Project Manager  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-259, 50-260, and 50-296

Enclosure:  
Audit Plan for EPU LAR

cc w/encl: Distribution via Listserv

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RidsNrrDssSnpb Resource

KWood, NRR

SKrepel, NRR

SLingam, NRR

**ADAMS Accession No.: ML16105A441**

**\*by email**

OFFICE	DORL/LPLIV-1/PM	DORL/LPLII-2/PM	DORL/LPLII-2/LA	DE/ESGB/BC *
NAME	SLingam (FSaba for)	FSaba	BClayton	GKulesa (MYoder, for)
DATE	04/26/16	04/26/16	04/26/16	04/22/16
OFFICE	DSS/SNPB/BC *	DORL/LPLII-2/BC	DORL/LPLII-2/PM	
NAME	JDean	BBeasley	FSaba (SLingam for)	
DATE	04/25/16	04/27/16	04/27/16	

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