



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

June 17, 2015

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 - REQUEST FOR ADDITIONAL INFORMATION RELATED TO LICENSE AMENDMENT REQUEST FOR ADOPTION OF TECHNICAL SPECIFICATIONS TASK FORCE (TSTF) TRAVELER TSTF-535, REVISION 0, "REVISE SHUTDOWN MARGIN DEFINITION TO ADDRESS ADVANCED FUEL DESIGNS" (TS-502) (TAC NOS. MF5823, MF5824, AND MF5825)

Dear Mr. Shea:

By letter to the U.S. Nuclear Regulatory Commission (NRC) dated March 9, 2015, Tennessee Valley Authority (TVA, the licensee) submitted a license amendment request that revises the Technical Specification definition of Shutdown Margin (SDM) to require calculation of the SDM at a reactor moderator temperature of 68 degrees Fahrenheit or a higher temperature corresponding to the most reactive state throughout the operating cycle. The licensee stated that this change is consistent with the NRC approved Technical Specifications Task Force (TSTF) Standard Technical Specifications Change Traveler TSTF-535, Revision 0, "Revise Shutdown Margin Definition to Address Advanced Fuel Designs"

The NRC staff reviewed the licensee's submittals and determined that additional information is needed. On May 21, 2015, the NRC staff sent, by electronic mail, a draft request for additional information to TVA. This request was discussed with Mr. Gordon Williams of your staff, and it was agreed that TVA would respond by July 10, 2015.

If you have any questions, please contact me at 301-415-1447 or farideh.saba@nrc.gov.

Sincerely,

A handwritten signature in black ink that reads "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:
Request for Additional Information

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REQUEST FOR ADDITIONAL INFORMATION
LICENSE AMENDMENT REQUEST RELATED TO
TECHNICAL SPECIFICATION CHANGES TO REACTOR CORE SAFETY LIMITS
TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT, UNITS 1, 2, AND 3
DOCKET NOS. 50-259, 50-260, AND 50-296

By letter to the U.S. Nuclear Regulatory Commission (NRC) dated March 9, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15068A407), Tennessee Valley Authority (TVA, the licensee) submitted a license amendment request (LAR) that would revise Technical Specification definition of Shutdown Margin (SDM) to require calculation of the SDM at a reactor moderator temperature of 68 degrees Fahrenheit or a higher temperature corresponding to the most reactive state throughout the operating cycle for the Browns Ferry Nuclear Plant, Units 1, 2, and 3 (Browns Ferry). The licensee stated that this change is consistent with the NRC approved Technical Specifications Task Force (TSTF) Standard Technical Specifications Change Traveler TSTF-535, Revision 0, "Revise Shutdown Margin Definition to Address Advanced Fuel Designs"

The NRC staff reviewed the licensee's submittals and determined that this request for additional information (RAI) is needed for the staff to complete its review of the submitted LAR.

RAI-1

Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Appendix A, General Design Criteria (GDC) 26, "Reactivity control system redundancy and capability," and GDC 27, "Combined reactivity control systems capability," respectively, require that reactivity within the core be controllable to ensure subcriticality is achievable and maintainable under cold conditions, with appropriate margin for stuck rods; and that reactivity within the core be controllable to assure that under postulated accident conditions and with appropriate margin for stuck rods the capability to cool the core is maintained.

Plants licensed before the promulgation of the GDC should address their plant-specific licensing basis in the LAR to adopt TSTF-535, as described in the letter from the TSTF dated July 4, 2012 (ADAMS Accession No. ML12187A184).

- a) Provide the Browns Ferry specific information, identified by brackets [], in the following paragraph (Item 2 in the July 4, 2012, letter), which should have been included in the TVA LAR.

The Traveler and model Safety Evaluation discuss the applicable regulatory requirements and guidance, including the 10 CFR 50, Appendix A, General Design Criteria (GDC). Browns Ferry Nuclear Plant, Units 1, 2 and 3 were not licensed to the 10 CFR 50, Appendix A, GDC. Browns Ferry Nuclear Plant,

Enclosure

Units 1, 2 and 3 equivalent of the referenced GDC are [REFERENCE INCLUDING UFSAR [updated final safety analysis report] LOCATION, IF APPLICABLE]. [DISCUSS THE EQUIVALENCE OF THE REFERENCED PLANT-SPECIFIC REQUIREMENTS TO THE APPENDIX A GDC AS RELATED TO THE PROPOSED CHANGE.] This difference does not alter the conclusion that the proposed change is applicable to Browns Ferry Nuclear Plant, Units 1, 2 and 3.

- b) List all the applicable plant-specific design criteria equivalent to GDC 26 and GDC 27 and reference the sections of the UFSAR in which they are discussed.
- c) Describe the equivalence of the referenced plant-specific requirements to GDC 26 and GDC 27 as related to the proposed change.

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If you have any questions, please contact me at 301-415-1447 or farideh.saba@nrc.gov.

Sincerely,

/RA/

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