



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

CNL-15-155

August 19, 2015

10 CFR 50.90

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

Browns Ferry Nuclear Plant, Unit 1  
Renewed Facility Operating License No. DPR-33  
NRC Docket No. 50-259

Subject: **Response to NRC Request for Additional Information for Browns Ferry Unit 1 Request to Adopt TSTF-460 (TAC No. MF5827)**

- References:
1. Letter from TVA to NRC, "License Amendment Request for the Adoption of Technical Specifications Task Force (TSTF) Traveler TSTF-460-A, Revision 0, 'Control Rod Scram Time Testing Frequency' (TS-501)," dated March 9, 2015 (ADAMS Accession No. ML15111A396)
  2. Electronic Mail from NRC to TVA, "Request for Additional Information (RAI) for Browns Ferry Unit 1 Request to Adopt TSTF-460 (TAC No. MF5827)," dated July 27, 2015 (ADAMS Accession No. ML15203A538)

By letter dated March 9, 2015 (Reference 1), Tennessee Valley Authority (TVA) submitted a license amendment request (LAR) for Browns Ferry Nuclear Plant (BFN), Unit 1, to modify the testing frequency in Technical Specification (TS) Surveillance Requirement (SR) 3.1.4.2 in TS 3.1.4, "Control Rod Scram Times."

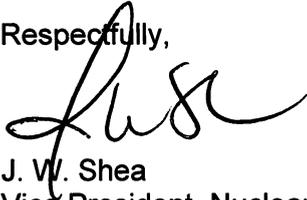
By electronic mail dated July 27, 2015 (Reference 2), the Nuclear Regulatory Commission (NRC) transmitted a request for additional information (RAI). The due date for the response is August 20, 2015. The Enclosure to this letter contains the TVA response to the NRC RAI.

There are no new regulatory commitments contained in this submittal. Please address any questions regarding this submittal to Mr. Edward D. Schrull at (423) 751-3850.

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I declare under penalty of perjury that the foregoing is true and correct. Executed on this 19th day of August 2015.

Respectfully,



J. W. Shea  
Vice President, Nuclear Licensing

Enclosure:

Response to NRC Request for Additional Information for Browns Ferry Unit 1  
Request to Adopt TSTF-460

cc (Enclosures):

NRC Regional Administrator – Region II  
NRC Senior Resident Inspector – Browns Ferry Nuclear Plant  
NRC Project Manager - Browns Ferry Nuclear Plant  
NRC Branch Chief - Region II  
State Health Officer, Alabama State Department of Health

**ENCLOSURE**

**Response to NRC Request for Additional Information for Browns Ferry Unit 1 Request  
to Adopt TSTF-460**

## **NRC RAI-1**

*The LAR provides information regarding test results, but does not provide any information regarding any significant changes in hardware or testing practices that could influence these test results. Provide a description and evaluation of the effects of any changes in hardware or testing practices that impact the test history data provided in the LAR.*

### **TVA Response to NRC RAI-1**

BFN Unit 1 scram time testing results are a combination of data from planned tests and reactor scrams. During planned testing, a Data Acquisition System (DAS) maintained under the Maintenance and Test Equipment Program is connected to the test panel to measure the time from scram initiation to control rod notch positions 46, 36, 26, and 06. Four test connections are made. The first one is for sensing the initiation signal on the control rod being tested. The second connection is for sensing rod position signals on the group the control rod is in. The third provides the electrical neutral reference for the initiation pulse. The fourth connection is a multi connector that sends data to the plant process computer. The data files generated by the DAS are copied to a network storage location so the results can be printed.

The data from reactor scrams is collected by the plant process computer using a vendor-developed application called the Rod Scram Time Recorder (RSTR). The time from scram initiation to control rod positions 46, 36, 26, and 06 that is measured by the plant process computer must be adjusted by adding 0.02 seconds to conservatively account for computer processing delays.

Whether the data is from a planned test or a reactor scram, it is entered into RSTR to become part of the fuel cycle specific scram time database. Personnel run reports from RSTR to compare the data against acceptance criteria.

Over the period of interest (i.e., the recent eight years of operation) two changes have occurred in the collection and processing of the BFN Unit 1 scram time tests relating to the use of RSTR.

The first change regarded the 0.02 second adder. Initially, data was entered into RSTR by plant personnel typing each control rod and its four scram times (times to control rod positions 46, 36, 26, and 06). Personnel had to add the 0.02 seconds needed to account for computer processing delays to the four scram times for each control rod reported by the plant process computer prior to entering it into RSTR. In November 2012, RSTR was updated to automatically add the 0.02 seconds so that the four scram times for each control rod reported by the plant process computer included the computer processing delay.

The second change occurred in November 2012. RSTR was modified to allow it to process scram time data collected by the plant process computer automatically, whether from a planned test or a reactor scram. The new method provided personnel a means to view the available scram time data, confirm the efficacy of the data, and then process it into the fuel cycle specific database to facilitate running the reports to compare the data against acceptance criteria.

The two changes do not adversely affect the test results. The changes automated the actions that were being performed by plant personnel. No other changes in hardware or testing practices have occurred over the recent eight years of operation.