



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

April 26, 2012

10 CFR 50.4  
10 CFR 50.90

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

Sequoyah Nuclear Plant, Units 1 and 2  
Facility Operating License Nos. DPR-77 and DPR-79  
NRC Docket Nos. 50-327 and 50-328

**Subject: Response to NRC Third Request for Additional Information Regarding Application to Modify Technical Specifications for Use of AREVA Advanced W17 HTP Fuel (TS-SQN-2011-07) (TAC Nos. ME6538 and ME6539)**

- References:
1. Letter from TVA to NRC, "Application to Modify Technical Specifications for Use of AREVA Advanced W17 HTP Fuel (TS-SQN-2011-07)," dated June 17, 2011
  2. Letter from TVA to NRC, "Response to NRC Request for Supplemental Information Regarding Application to Modify Technical Specifications for Use of AREVA Advanced W17 HTP Fuel (TS-SQN-2011-07)," dated July 27, 2011
  3. Letter from NRC to TVA, "Sequoyah Nuclear Plant, Units 1 and 2 - Request for Additional Information Regarding the Propopsed [sic] Technical Specification Changes to Allow Use of AREVA Advanced W17 High Thermal Performance Fuel (TAC Nos. ME6538 and ME6539)," dated October 14, 2011
  4. Letter from TVA to NRC, "Response to NRC Request for Additional Information Regarding Application to Modify Technical Specifications for Use of AREVA Advanced W17 HTP Fuel (TS-SQN-2011-07)," dated November 14, 2011

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5. Letter from NRC to TVA, "Sequoyah Nuclear Plant, Units 1 and 2 - Request for Additional Information Regarding the Propopsed [sic] Technical Specification Changes to Allow Use of AREVA Advanced W17 High Thermal Performance Fuel (TAC Nos. ME6538 and ME6539), dated February 8, 2012
6. Letter from TVA to NRC, "Response to NRC Second Request for Additional Information Regarding Application to Modify Technical Specifications for Use of AREVA Advanced W17 HTP Fuel (TS-SQN-2011-07)," dated March 23, 2012
7. Electronic Mail from NRC to TVA, "LAR for TAC ME6538/6539 (Sequoyah 1 & 2 - Use of AREVA Advanced W17 HTP Fuel)," dated April 4, 2012

The purpose of this letter is to provide additional information as agreed in a telephone conference call held on April 9, 2012, between Tennessee Valley Authority (TVA) and Nuclear Regulatory Commission (NRC) representatives.

By letter dated June 17, 2011 (Reference 1), TVA submitted a request for amendment to the Technical Specifications (TSs) for Sequoyah Nuclear Plant (SQN), Units 1 and 2. The amendment request proposed to allow use of AREVA Advanced W17 High Thermal Performance (HTP) fuel at SQN. In a letter dated July 27, 2011 (Reference 2), TVA provided supplemental information requested by the NRC on July 21, 2011, in a telephone call between TVA and NRC representatives. By letter dated October 14, 2011 (Reference 3), the NRC forwarded a request for additional information (RAI) regarding the proposed changes to the TSs. TVA provided the response to the NRC's RAI in a letter dated November 14, 2011 (Reference 4). A second RAI regarding the proposed TS changes was forwarded to TVA in a letter dated February 8, 2012 (Reference 5). TVA provided the response to the second RAI in a letter dated March 23, 2012 (Reference 6).

On April 4, 2012, the NRC transmitted a third RAI by electronic mail (email) (Reference 7) involving the Loss of Coolant Accident (LOCA) analyses supporting the proposed use of AREVA Advanced W17 HTP fuel at SQN. Following a telephone conference call between TVA and NRC representatives held on April 9, 2012, TVA agreed to provide an analysis of the effects of fuel clad swelling, rupture, and relocation, and also provide a discussion of the cause of the apparent negative trend of the post-LOCA reactor vessel downcomer liquid level transient, with confirmation that this trend does not continue.


Enclosure 1 contains TVA's responses to the RAI provided in the Reference 7 email correspondence, an assessment of an error discovered in the S-RELAP5 form of the Sleicher-Rouse correlation, and includes information provided by AREVA NP Inc. (AREVA NP) which they consider to be proprietary in nature, pursuant to 10 CFR 2.390, "Public inspections, exemptions, requests for withholding," paragraph (a)(4). It is requested that this information be withheld from public disclosure. Enclosure 2 provides a redacted version of Enclosure 1, which is suitable for public disclosure.

Enclosure 3 to this letter contains the affidavit supporting the request for withholding the information from public disclosure. No other changes have been made to the previous submittals regarding the proposed TS amendment to allow use of AREVA Advanced W17 HTP fuel at SQN.

There are no regulatory commitments associated with this submittal. Please address any questions regarding this request to Clyde Mackaman at 423-751-2834.

I declare under penalty of perjury that the foregoing is true and correct.  
Executed on the 26<sup>th</sup> day of April, 2012.

Respectfully,



J. W. Shea  
Manager, Corporate Nuclear Licensing

Enclosures:

1. ANP-2970Q1(P), Revision 000, Sequoyah Units 1 and 2 HTP Fuel Realistic Large Break LOCA Analysis, April 2012 (Proprietary Version)
2. ANP-2970Q1(NP), Revision 000, Sequoyah Units 1 and 2 HTP Fuel Realistic Large Break LOCA Analysis, April 2012 (Non-Proprietary Version)
3. AREVA NP Affidavit

cc (Enclosures):

NRC Regional Administrator - Region II  
NRC Senior Resident Inspector - Sequoyah Nuclear Plant  
Director, Division of Radiological Health - Tennessee State Department of  
Environment and Conservation