



Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402-2801

February 8, 2010

10 CFR 50.46

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

Browns Ferry Nuclear Plant, Units 2 and 3  
Facility Operating License Nos. DPR-52 and DPR-68  
NRC Docket Nos. 50-260 and 50-296

**Subject: 30-Day Report of Emergency Core Cooling System (ECCS) Evaluation  
Model Changes**

The Tennessee Valley Authority (TVA) is submitting this report in accordance with 10 CFR 50.46(a)(3)(ii), due to changes in the model used to determine compliance with ECCS requirements.

During the NRC acceptance review of the Browns Ferry Nuclear Plant (BFN) Unit 1 license amendment request supporting the transition to ATRIUM-10 fuel (TS-467), NRC requested that TVA address the single failure of one or all Automatic Depressurization System (ADS) valves in the loss-of-coolant accident (LOCA) analysis.

The current AREVA NP LOCA analysis addresses BFN Units 1, 2, and 3 and is applicable to Units 2 and 3 and in the future for Unit 1 after the transition to AREVA NP fuel. The fuel in Unit 1 is currently provided by Global Nuclear Fuels. In response to the NRC question, AREVA NP has performed a LOCA analyses for TVA assuming a single failure of ADS automatic actuation caused by a station battery failure. This assessment addresses the use of ATRIUM-10 fuel for BFN Units 2 and 3 operations at the current licensed thermal power (CLTP) of 3458 megawatts thermal and the various break types (recirculation line suction and discharge, feedwater, and low pressure core spray line) used in the LOCA analyses. Credit for high pressure coolant injection at its Technical Specification flow was assumed rather than the more conservative value in the analysis of record, and manual opening of 4 ADS valves was assumed at 10 minutes.

For licensing basis peak clad temperature (PCT), the assessment showed that the worst break was found to be a recirculation discharge line break with an area of 0.25 ft<sup>2</sup>. The resulting PCT was 2057 degrees Fahrenheit (°F). This estimated PCT change is 55°F

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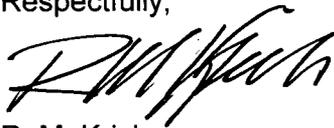
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relative to the current licensing basis PCT of 2002°F. Since the change exceeds 50°F, this is being reported within 30 days as required by 10 CFR 50.46(a)(3)(ii). Other 10 CFR 50.46 requirements (e.g., maximum cladding oxidation, maximum hydrogen generation) are maintained within limits.

TVA will provide an addendum report to the current AREVA NP analysis of record in April 2010. This addendum will contain the evaluation of this single failure. This report will address both extended power uprate and CLTP power levels.

There are no new regulatory commitments contained in this letter. Should you have any questions concerning this submittal, please contact F. R. Godwin, Site Licensing and Industry Affairs Manager, at (256) 729-2636.

Respectfully,



R. M. Krich  
Vice President  
Nuclear Licensing

cc:

NRC Regional Administrator – Region II  
NRC Senior Resident Inspector – Browns Ferry Nuclear Plant