



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

February 12, 2010

10 CFR 50.46

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

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

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 General Electric Hitachi (GEH) LOCA analysis addresses BFN Unit 1 with GE13 and GE14 fuel provided by Global Nuclear Fuels (GNF). In response to the NRC question, GEH has performed a LOCA analyses for TVA assuming a single failure of ADS automatic actuation caused by a station battery failure. This assessment addresses various break types (recirculation line suction and discharge, feedwater, and low pressure core spray line) used in the LOCA analyses, the use of GNF GE13 and GE14 fuel for BFN Unit 1 at the current licensed thermal power (CLTP) of 3458 megawatts thermal when Maximum Fraction Of Limiting Power Density ≤ 0.75 and Maximum Fraction Of Nodal Average Planar Linear Heat Generation Rate ≤ 0.75 , and an assumption of manual opening of 4 ADS valves at 10 minutes.

For the peak clad temperature (PCT), conservatively calculated at Extended Power Uprate (EPU) conditions, the assessment showed that the worst break was found to be a recirculation discharge line break with an area of 0.21 ft². The resulting PCT was 2168 degrees Fahrenheit (°F). This estimated PCT change is 323°F relative to the current licensing basis PCT of 1845°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.

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TVA will provide an addendum report to the current GEH analysis of record in April 2010. This addendum will contain the complete evaluation of this single failure. This report will address both EPU 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,

A handwritten signature in black ink, appearing to read "R. M. Krich".

R. M. Krich
Vice President
Nuclear Licensing

cc:

NRC Regional Administrator - Region II

NRC Senior Resident Inspector - Browns Ferry Nuclear Plant