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March 24, 2010

10 CFR 50.4
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 Evaluation Model Changes

Reference: Letter from TVA to NRC, "30-Day Report of Emergency Core Cooling System (ECCS) Evaluation Model Changes," dated February 12, 2010.

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 assumes manually opening 4 ADS valves in 10 minutes after the transient starts.

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The initial assessment of the single failure produced a limiting Peak Clad Temperature (PCT) of 2168°F when calculated at Extended Power Uprate conditions and was reported to NRC in the Reference. Subsequently, the assessment was re-performed at CLTP conditions and resulted in a limiting PCT equal to 1915°F from a worst break in a recirculation discharge line break with an area of 0.28 ft². The estimated PCT change is 253°F relative to the current licensing basis PCT of 2168°F (Reference). 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 GEH analysis of record in April 2010. This addendum will contain the complete evaluation of this single failure. This report will address CLTP power levels.

There are no new regulatory commitments contained in this letter. If you have any questions, please contact Terry Cribbe at (423) 751-3850.

Respectfully,



R. M. Krich

cc:

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