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Vice President
Nuclear Licensing

June 3, 2011

10 CFR 50.4
10 CFR 50.46

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

Browns Ferry Nuclear Plant, Units 1, 2, and 3
Facility Operating License Nos. DPR-33, DPR-52, and DPR-68
NRC Docket Nos. 50-259, 50-260, and 50-296

Subject: 10 CFR 50.46 Annual Report

- References:
- 1) TVA Letter to NRC, "Final Report of Emergency Core Cooling System Evaluation Model Changes," dated April 30, 2010 (Unit 1)
 - 2) TVA Letter to NRC, "Final Report of Emergency Core Cooling System Evaluation Model Changes," dated April 30, 2010 (Units 2 and 3)

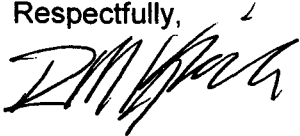
The purpose of this letter is to provide the annual report of changes or errors discovered in the emergency core cooling system (ECCS) evaluation model for Browns Ferry Nuclear Plant, Units 1, 2, and 3. In accordance with 10 CFR 50.46, "Acceptance Criteria for Emergency Core Cooling Systems for Light-Water Nuclear Power Reactors," paragraph (a)(3)(ii), the enclosed report describes the nature and the estimated effect on the limiting ECCS analysis of changes or errors discovered since submittal of the reference letters.

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This report is normally submitted by the end of April each year and is therefore late due to an administrative deficiency. This issue has been documented in our Corrective Action Program. There are no regulatory commitments in this letter. Please direct questions concerning this issue to Tom Matthews at (423) 751-2687.

Respectfully,

A handwritten signature in black ink, appearing to read "R. M. Krich", written in a cursive style.

R. M. Krich

Enclosure: 10 CFR 50.46 Annual Report

cc (Enclosure): NRC Regional Administrator – Region II
NRC Senior Resident Inspector – Browns Ferry Nuclear Plant

ENCLOSURE

**BROWNS FERRY NUCLEAR PLANT
UNITS 1, 2, AND 3**

10 CFR 50.46 ANNUAL REPORT

ENCLOSURE

BROWNS FERRY NUCLEAR PLANT, UNIT 1

10 CFR 50.46 ANNUAL REPORT

Baseline analysis report:

GE Hitachi report 0000-0115-3713-R0, "Browns Ferry Nuclear Plant Unit 1 Supplementary Report of ECCS-LOCA Additional Single Failure Evaluation at Current Licensed Thermal Power (CLTP)," March 2010.

The Unit 1 core currently contains only the GE14 fuel design.

Description of Changes or Errors

There have been no additional changes or errors since the issuance of the baseline analysis in March 2010. The Peak Clad Temperature (PCT) for GE14 fuel remains at the **1920°F** value provided in the baseline analysis report.

ENCLOSURE

BROWNS FERRY NUCLEAR PLANT, UNIT 2

10 CFR 50.46 ANNUAL REPORT

Baseline analysis reports:

ANP-2908(P) Revision 0, Browns Ferry Units 1, 2, and 3 105% OLTP LOCA Break Spectrum Analysis, AREVA NP Inc., March 2010.

ANP-2910(P) Revision 0, Browns Ferry Units 1, 2, and 3 105% OLTP LOCA-ECCS Analysis MAPLHGR Limit for ATRIUM™-10 Fuel, AREVA NP Inc., March 2010.

The Unit 2 core currently contains only the ATRIUM™-10 fuel design. Report ANP-2910, Revision 0, contains the baseline PCT value of 1990°F for this fuel type.

Description of Changes or Errors Relative to the Previous Report

The Unit 2, Cycle 17, licensing analysis results indicated that one of the lattices in the new fuel batch was more limiting from a PCT standpoint compared to the fuel types in the baseline analysis. The more limiting lattice increased the PCT by 2°F.

In September 2010, AREVA notified TVA of a change in the numerical view factors used in the radiative heat transfer model in the HUXY code. This change resulted in a PCT increase of 1°F.

Cumulative Effect of PCT Changes - Unit 2	
Baseline PCT	1990°F
New limiting lattice from unit 2, cycle 17, licensing analysis	2°F
Revised HUXY numerical view factor treatment	1°F
Accumulated changes since baseline analysis	3°F
New licensing PCT	1993°F

ENCLOSURE

BROWNS FERRY NUCLEAR PLANT, UNIT 3

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Baseline analysis reports:

ANP-2908(P) Revision 0, Browns Ferry Units 1, 2, and 3 105% OLTP LOCA Break Spectrum Analysis, AREVA NP Inc., March 2010.

ANP-2910(P) Revision 0, Browns Ferry Units 1, 2, and 3 105% OLTP LOCA-ECCS Analysis MAPLHGR Limit for ATRIUM™-10 Fuel, AREVA NP Inc., March 2010.

The Unit 3 core currently contains only the ATRIUM™-10 fuel design. Report ANP-2910, Revision 0, contains the baseline PCT value of 1990°F for this fuel type.

Description of Changes or Errors Relative to the Previous Report

The Unit 2, Cycle 17, licensing analysis results indicated that one of the lattices in the new fuel batch was more limiting from a PCT standpoint compared to the fuel types in the baseline analysis. The more limiting lattice increased the PCT by 2°F. Since the most limiting lattice in any Browns Ferry unit is used for all the units with AREVA fuel, this change applies to Unit 3 as well.

In September 2010, AREVA notified TVA of a change in the numerical view factors used in the radiative heat transfer model in the HUXY code. This change resulted in a PCT increase of 1°F.

Cumulative Effect of PCT Changes - Unit 3	
Baseline PCT	1990°F
New limiting lattice from unit 2, cycle 17, licensing analysis	2°F
Revised HUXY numerical view factor treatment	1°F
Increased core spray leakage from lower sectional replacement hardware modification (reported in the April 30, 2010 10 CFR 50.46 Annual Report)	19°F
Accumulated changes since baseline analysis	22°F
New licensing PCT	2012°F