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

August 31, 2009

10 CFR 50.90

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: **Technical Specifications (TS) Change TS-431 – Extended Power Uprate (EPU) – Steam Dryer Reports (TAC No. MD5262)**

References:
1. Letter from TVA to NRC, "Browns Ferry Nuclear Plant (BFN) - Unit 1 - Proposed Technical Specifications (TS) Change TS - 431 - Request for License Amendment - Extended Power Uprate (EPU) Operation," dated June 28, 2004

2. Letter from TVA to NRC, "Technical Specifications (TS) Change TS-431 - Extended Power Uprate (EPU) - Response to Round 24 Request for Additional Information (RAI) EMCB.208 Regarding Steam Dryer Analyses," dated August 28, 2009

The Tennessee Valley Authority (TVA) submitted a license amendment application to NRC for the EPU of BFN Unit 1 on June 28, 2004 (Ref. 1). The proposed amendment would modify the operating license to increase the maximum authorized core thermal power level by approximately 14 percent to 3952 megawatts.

In the response to Round 24 Request for Additional Information (RAI) EMCB.208 (Ref. 2), TVA stated that the Unit 1 steam dryer stress analysis at EPU conditions (i.e., 120% of original licensed power) was being revised to not credit low flow noise removal

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and would be provided by August 31, 2009. Enclosure 1 provides the revised steam dryer analysis, CDI Report No. 09-25P, "Stress Assessment of Browns Ferry Nuclear Unit 1 Steam Dryer to 120% OLTP Power Level," and includes the following changes:

- Removed credit for low flow noise removal in determining the steam dryer stress results.
- Incorporated additional planned modifications to the BFN Unit 1 steam dryer to address high stress areas as discussed in Section 3.1 of CDI Report No. 09-25P.
    - Added half-pipe stiffener to top of steam dam
    - Added local stress relief thinning area to center hood location
    - Replaced old tie bar/lock gusset with new gusset
    - Added stress relief cutouts to drain channels and hood stiffeners
    - Added weld extension on interior of drain channel
    - Reinforced corner steam dam gusset welds to eliminate undersize welds
    - Added reinforcement plate at outer hood vane bank
    - Added reinforcement plate to middle hood tie bars
    - Added reinforcement plate/gusset at outer bank discharge at middle hood
    - Reinforced undersize welds in localized high stress areas on support beam
    - Added reinforcement plate to top edge of cover plate/outer hood
- Revised two stress reduction factors (SRF) for application at the hood stiffener and drain channel as described in Section 4.5 of CDI Report No. 09-25P.

The BFN Unit 1 results based on the above changes indicate a minimum alternating stress ratio (SR-a) with frequency shifts and no credit for low flow noise removal of SR-a = 2.77 at current licensed thermal power (CLTP) and SR-a = 2.03 at EPU with bump-up factors applied.

Enclosure 2 provides the associated steam dryer load report, CDI Report No. 09-23P, "Acoustic and Low Frequency Hydrodynamic Loads at CLTP Power Level to 120% OLTP Power Level on Browns Ferry Nuclear Unit 1 Steam Dryer to 250 Hz," and Enclosure 3 provides the associated limit curve report, CDI Technical Note 09-12P, "Limit Curve Analysis with ACM Rev. 4 for Power Ascension to 120% OLTP at Browns Ferry Nuclear Unit 1." The associated submodel calculation for the hood stiffener SRF is provided in Enclosure 4, Structural Integrity Associates, Inc., Calculation Package 0900833.302, "Steam Dryer Hood Stiffener Stress Relief Modification Stress Reduction Factor (SRF) Computation."

Note that Enclosures 1, 2, and 3 contain information that Continuum Dynamics, Inc. (CDI) considers to be proprietary in nature and subsequently, pursuant to 10 CFR 2.390(a)(4), CDI requests that such information be withheld from public disclosure. Enclosure 8 provides an affidavit from CDI supporting this request. Enclosures 5, 6, and 7 contain the redacted versions of the proprietary enclosures with the CDI proprietary material removed, which are suitable for public disclosure.

TVA has determined that the additional information provided by this letter does not affect the no significant hazards considerations associated with the proposed TS change. The proposed TS change still qualifies for a categorical exclusion from environmental review pursuant to the provisions of 10 CFR 51.22(c)(9).

No new regulatory commitments are made in this submittal. Please direct any questions concerning this matter to J. D. Wolcott at (256) 729-2495.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 31st day of August, 2009.

Respectfully,

R. M. Krich
Vice President
Nuclear Licensing

Enclosures:
- Enclosure 1 - CDI Report No. 09-25P, "Stress Assessment of Browns Ferry Nuclear Unit 1 Steam Dryer to 120% OLTP Power Level," Revision 0 (Proprietary Version)
- Enclosure 2 - CDI Report No. 09-23P, "Acoustic and Low Frequency Hydrodynamic Loads at CLTP Power Level to 120% OLTP Power Level on Browns Ferry Nuclear Unit 1 Steam Dryer to 250 Hz," Revision 0 (Proprietary Version)
- Enclosure 3 - CDI Technical Note No. 09-12P, "Limit Curve Analysis with ACM Rev. 4 for Power Ascension to 120% OLTP at Browns Ferry Nuclear Unit 1," Revision 0 (Proprietary Version)
- Enclosure 4 - Structural Integrity Associates, Inc. Calculation Package 0900833.302, Revision 0, "Steam Dryer Hood Stiffener Stress Relief Modification Stress Reduction Factor (SRF) Computation"
- Enclosure 5 - CDI Report No. 09-25NP, "Stress Assessment of Browns Ferry Nuclear Unit 1 Steam Dryer to 120% OLTP Power Level," Revision 0 (Non-proprietary Version)
- Enclosure 6 - CDI Report No. 09-23NP, "Acoustic and Low Frequency Hydrodynamic Loads at CLTP Power Level to 120% OLTP Power Level on Browns Ferry Nuclear Unit 1 Steam Dryer to 250 Hz," Revision 0 (Non-proprietary Version)

Enclosure 7 - CDI Technical Note No. 09-12NP, "Limit Curve Analysis with ACM Rev. 4 for Power Ascension to 120% OLTP at Browns Ferry Nuclear Unit 1," Revision 0 (Non-proprietary Version)
Enclosure 8 - CDI Affidavit

cc: (Enclosures):

Regional Administrator – Region II
NRC Senior Resident Inspector – Browns Ferry Nuclear Plant
State Health Officer – Alabama Department of Public Health