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Vice President
Nuclear Licensing

May 24, 2011

10 CFR 50.90

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

Watts Bar Nuclear Plant, Unit 1
Facility Operating License No. NPF-90
NRC Docket No. 50-390

Subject: **Response to Request for Additional Information Regarding Proposed License Amendment for Carbon Dioxide Fire Suppression System (TAC No. ME2532)**

- References:
1. Letter from TVA to NRC, "License Amendment Request and Response to Request for Additional Information Related to Carbon Dioxide Fire Suppression System (TAC No. ME0876)," dated October 30, 2009
 2. Letter from NRC to TVA, "Watts Bar Nuclear Plant, Unit 1 - Request for Additional Information Regarding License Amendment Request for Carbon Dioxide Fire Suppression System Installed in Auxiliary Instrument Room (TAC No. ME2532)," dated April 22, 2011

By letter dated October 30, 2009 (Reference 1), the Tennessee Valley Authority (TVA) submitted a request to modify the Watts Bar Nuclear Plant, Unit 1 (WBN, Unit 1), Facility Operating License by adding an exception to License Condition 2.F regarding the Fire Protection Program. TVA proposed to revise License Condition 2.F to resolve a discrepancy between WBN's Fire Protection Report and NUREG-0847, Supplement 18, "Safety Evaluation Report Related to Operation of Watts Bar Nuclear Plant, Units 1 and 2, Docket Nos. 50-390 and 50-391," related to the carbon dioxide fire suppression system in the WBN, Unit 1, Auxiliary Instrument Room.

By letter dated April 22, 2011 (Reference 2), the NRC requested that additional information be submitted to support their review of the license amendment request. As discussed in Reference 2, this response is due by May 24, 2011.

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TVA's response to the NRC's Request for Additional Information is provided in the enclosure to this letter.

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

There are no new regulatory commitments associated with this letter.

If you have any questions about this change, please contact Kara Stacy at (423) 751-3489.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on the 24th day of May, 2011.

Respectfully,



R. M. Krich

Enclosure: Response to Request for Additional Information Regarding the Proposed License Amendment Related to Carbon Dioxide Fire Suppression System

cc (Enclosure):

NRC Regional Administrator - Region II
NRC Senior Resident Inspector - Watts Bar Nuclear Plant
Director, Division of Radiological Health - State of Tennessee
Department of Environment and Conservation

ENCLOSURE

WATTS BAR NUCLEAR PLANT, UNIT 1 DOCKET NO. 50-390

Response to Request for Additional Information Regarding the Proposed License Amendment Related to Carbon Dioxide Fire Suppression System

NRC Question 1

The National Fire Protection Association 12, 1973 Edition, Section 2421 (Code of Record) for WBN Unit 1 installation, Table 6, "Flooding Factors for Specific Hazards," specifies flooding factors for specific hazards. Confirm the flooding factor (12 cubic feet per pound (ft³/lb) CO₂ or 0.083 lb CO₂/ft³) used to calculate the quantity of the CO₂ to protect the Auxiliary Instrument Room. Provide the calculated quantity in pounds of CO₂ to be injected into WBN Unit 1 Auxiliary Instrument Room.

TVA Response

The quantity of CO₂ discharged into the Watts Bar Nuclear Plant (WBN), Unit 1 Auxiliary Instrument Room required to meet the criteria of National Fire Protection Association 12, 1973 Edition (NFPA-12) is established in TVA calculation EPM-THJ-102192, "CO₂ Fire Protection System Required Quantity." Revision 2 of EPM-THJ-102192 was issued on September 13, 1995, and was the calculation of record when the WBN, Unit 1, Facility Operating License was issued on February 7, 1996.

Section 5.8 of calculation EPM-THJ-102192, Rev. 2, specifically calculates the volume of CO₂ required to be injected into the WBN, Unit 1, Auxiliary Instrument Room with consideration of leakage from the space. Using a flooding factor of 0.083 lb CO₂/ft³ (from page 31 of NFPA-12, 1973) and a volume for the Auxiliary Instrument Room of 71,900 ft³, the calculation determined that a base amount of 5,968 lbs of CO₂ were required to be injected into the Auxiliary Instrument Room. Therefore, TVA confirms that the flooding factor of 0.083 lb CO₂/ft³ was used to calculate the quantity of the CO₂ to protect the Auxiliary Instrument Room. The calculation further determined that an additional 1,128 lbs were required to make up for known leakage paths. As a result, from Section 5.8 of calculation EPM-THJ-102192, the total calculated quantity of CO₂ to be injected into the WBN, Unit 1, Auxiliary Instrument Room is 7,096 lbs.