January 20, 2010

Mr. Ashok Bhatnagar
Senior Vice President
Nuclear Generation Development
and Construction
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

SUBJECT: WATTS BAR NUCLEAR PLANT, UNIT 2 – SAFETY EVALUATION REGARDING GENERIC LETTERS 2006-02, "GRID RELIABILITY AND THE IMPACT ON PLANT RISK AND THE OPERABILITY OF OFFSITE POWER" (TAC NO. MD6728)

Dear Mr. Bhatnager:

In a letter dated September 7, 2007 (see Agencywide Document Access and Management System Accession No. ML072570676), which references letters dated October 9, 1990 (ML073551056), April 3, 2006 (ML060950306), and January 31, 2007 (ML070330051), the Tennessee Valley Authority (TVA) submitted a response to U.S. Nuclear Regulatory Commission (NRC) Generic Letter 2006-02, "Grid Reliability and the Impact on Plant Risk and the Operability of Offsite Power," for Watts Bar Nuclear Plant, Unit 2.

The NRC staff has reviewed TVA's response. Enclosed is the NRC staff's safety evaluation. This completes the NRC staff's efforts regarding WBN Unit 2 for TAC No. MD6728.

Sincerely,

/RA/

Patrick Milano, Acting Chief
Watts Bar Special Projects Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-391

Enclosure: Safety Evaluation

cc w/encl: Distribution via Listserv

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RidsOgcRp Resource
RidsRgn2mailCenter Resource (R. Haag)
JLamb, NRR

ADAMS ACCESSION NO: ML100080768 *via memo

OFFICE	DORL/LPWB/PM	DORL/LPWB/LA	DE/EEEB/BC	RII/DCP	DORL/LPWB/BC (A)
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DATE	01/ 11 /10	01/ 11 /10	10/24/07	01/ 19 /10	01 / 20 /10

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SAFETY EVALUATION BY THE

OFFICE OF NUCLEAR REACTOR REGULATION RELATED TO

GENERIC LETTER 2006-02, "GRID RELIABILITY AND THE IMPACT ON PLANT RISK AND

THE OPERABILITY OF OFFSITE POWER"

TENNESSEE VALLEY AUTHORITY

WATTS BAR NUCLEAR PLANT, UNIT 2

DOCKET NO. 50-391

1.0 INTRODUCTION

In a letter dated September 7, 2007 (Agencywide Document Access and Management System Accession No. ML072570676), which references letters dated October 9, 1990 (ML073551056), April 3, 2006 (ML060950306), and January 31, 2007 (ML070330051), the Tennessee Valley Authority (TVA) submitted a response to U.S. Nuclear Regulatory Commission (NRC) Generic Letter (GL) 2006-02, "Grid Reliability and the Impact on Plant Risk and the Operability of Offsite Power," for Watts Bar Nuclear Plant (WBN), Unit 2.

2.0 REGULATORY EVALUATION

The general design criteria (GDC) establish the necessary design, fabrication, construction, testing, and performance requirements for structures, systems and components important to safety. The applicable GDC for GL 2006-02 are GDC 17, "Electric Power Systems," and GDC 18, "Inspection and Testing of Electric Power Systems." The final paragraph of GDC 17 requires, in part, provisions to minimize the probability of the loss of power from the transmission network given a loss of the power generated by the nuclear power unit. The loss of power generated by the nuclear power unit trip is an anticipated operational occurrence. The offsite power circuits must, therefore, be designed to be available following a trip of the unit to permit the functioning of systems, structures, and components necessary to respond to the event. GDC 18 requires, in part, that "Electric power systems important to safety shall be designed to permit appropriate periodic inspection and testing of important areas and features, such as wiring, insulation, connections, and switchboards, to assess the continuity of the systems and the condition of their components."

In addition to the GDC requirements, Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.63, "Loss of all alternating current power," and 10 CFR 50.65(a)(4), "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," requirements are

applicable to GL 2006-02. Section 50.65(a)(4) requires that licensees assess and manage the increase in risk that may result from proposed maintenance activities before performing the maintenance activities. These activities include, but are not limited to, surveillances, post-maintenance testing, and corrective and preventive maintenance. Pursuant to 10 CFR 50.63, the NRC requires that each licensee be able to withstand a station black out (SBO) for a specified duration and recover from the SBO.

The requirements of 10 CFR 55.59, in part, are applicable to GL 2006-02. According to 10 CFR 55.59(c)(2), operator requalification programs must include preplanned lectures on a regular basis throughout the license period in areas where operator and senior operator written examinations and facility operating experience indicate that more scope and depth of coverage is needed. Additionally, section 55.59(c)(3)(i) requires operator requalification programs to include on-the-job training on a number of control manipulations and plant evolutions if they are applicable to the plant design; the loss of electrical power (or degraded power sources) is but one of the evolutions to be performed annually by each operator.

3.0 TECHNICAL EVALUATION

The objective of GL 2006-02 is to determine if compliance is being maintained with regulatory requirements governing electric power sources and associated personnel training. TVA's response included the protocol and relationship it shares with the grid operators. TVA referred to a letter (ML070330051) that confirms compliance with GL 2006-02 for WBN Unit 1. TVA stated that the electrical distribution systems are common to both WBN Unit 1 and WBN Unit 2, therefore, the WBN Unit 1 response is applicable to WBN Unit 2.

Also, TVA referred to a letter (ML073551056) that identified specific electrical design calculations that have not been evaluated and documented. TVA provided the following Regulatory Commitments for WBN Unit 1 and WBN Unit 2 in response to this audit:

1.) Baseline existing calculations and prepare a change review checklist for all design changes that involve the electrical discipline to determine if electrical calculations are impacted.

2.) Those calculations necessary to ensure that plant safety and support systems can mitigate the results of a design-basis event will be performed under the 'long-term electrical calculation program' before fuel loading.

3.) Any deficiencies identified by the performance of these calculations will be handled separately and evaluated in accordance with TVA's corrective action program.

4.) A computer-based "Calculation Cross-Reference Information System" will be utilized to provide essential information about TVA's calculation and to provide cross reference capability to other supporting design documents.

Additionally, TVA provided information regarding their operator training program. TVA referred to a letter (ML060950306) that contained the WBN Unit 1 response to GL 2006-02. TVA stated that the operator training programs will be common to both units, therefore, the WBN Unit 1 response is applicable to WBN Unit 2.

The NRC staff has reviewed TVA's response and confirmed that the required response for WBN Unit 2 is identical to WBN Unit 1. Since the WBN Unit 1 response was previously accepted by the NRC staff (ML071080225), the staff also finds the response for WBN Unit 2 acceptable.

4.0 CONCLUSION

In TVA's response to GL 2006-02, TVA provided Regulatory Commitments to enhance the electrical design calculations for WBN Unit 2 prior to fuel load. The NRC staff finds that TVA's response and Regulatory Commitments made for GL 2006-02 are acceptable, however, independent verification that the Regulatory Commitments have been met and a review of the associated electrical design calculations for WBN Unit 2 will be required prior to closing out GL 2006-02. The NRC staff concludes that GL 2006-02 will remain open until this confirmatory action is complete.

Principle Contributor: George Morris

Date: January 20, 2010