

January 26, 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 2007-01, “INACCESSIBLE OR UNDERGROUND POWER
CABLE FAILURES THAT DISABLE ACCIDENT MITIGATION SYSTEMS OR
CAUSE PLANT TRANSIENTS” (TAC NO. MD6730)

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 2007-01, “Inaccessible or Underground Power Cable Failures that Disable Accident Mitigation Systems or Cause Plant Transients,” for Watts Bar Nuclear Plant (WBN), 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. MD6730.

Sincerely,

/RA/

Patrick D. 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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*via memo

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SAFETY EVALUATION BY THE
OFFICE OF NUCLEAR REACTOR REGULATION RELATED TO
GENERIC LETTER 2007-01, "INACCESSIBLE OR UNDERGROUND POWER
CABLE FAILURES THAT DISABLE ACCIDENT MITIGATION SYSTEMS
OR CAUSE PLANT TRANSIENTS"
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) 2007-01, "Inaccessible or Underground Power Cable Failures that Disable Accident Mitigation Systems or Cause Plant Transients," 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 2007-01 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."

Enclosure

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 2007-01. 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 blackout (SBO) for a specified duration and recover from the SBO.

The requirements of 10 CFR 55.59, in part, are applicable to GL 2007-01. 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

In the September 7, 2007, letter (ML071280276), TVA referred to their generic response to GL 2007-01 for all the operating TVA nuclear power plants. The NRC staff review of TVA's responses to this GL for WBN Unit 1 was completed as documented in a letter, dated October 29, 2008 (ML082940265). There were no followup requests for additional information for the TVA plants for this GL. However, TVA identified four additional cables for WBN Unit 2 that were not identified in the GL 2007-01 response for WBN Unit 1. TVA provided a Regulatory Commitment to test these cables prior to the initial fuel load of WBN Unit 2. The NRC staff finds that this Regulatory Commitment provides adequate assurance that inaccessible or underground power cables in the scope of GL 2007-01 at WBN Unit 2 will be tested in accordance with TVA's test program.

4.0 CONCLUSION

In response to GL 2007-01, TVA provided a Regulatory Commitment to test an additional four cables that were identified during their review for WBN Unit 2. The NRC staff finds that this Regulatory Commitment provides adequate assurance that inaccessible or underground power cables in the scope of GL 2007-01 at WBN Unit 2 will be tested in accordance with TVA's test program. The NRC staff concludes that TVA's response to GL 2007-01 is acceptable and considers the GL closed.

Principle Contributor: George Morris

Date: January 26, 2010