Tennessee Valley Authority, Post Office Box 2000, Spring City, Tennessee 37381-2000

October 24, 2011

10 CFR 50.34

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

Watts Bar Nuclear Plant, Unit 2
NRC Docket No. 50-391

Subject: **Watts Bar Nuclear Plant (WBN) Unit 2 - Safety Evaluation Report Supplement 23 (SSER23) - Response to NRC Required Action Item 71**

References:

1. TVA letter dated June 28, 2010, "Watts Bar Nuclear Plant (WBN) Unit 2 – Request for Additional Information (RAI) Regarding Licensee's Final Safety Analysis Report Amendment Related to Section 4.2.2, 'Reactor Vessel Internal Components' (TAC No. ME2731)"

2. TVA letter to NRC dated April 21, 2011, "Watts Bar Nuclear Plant (WBN) Unit 2 - Withdrawal of a Previous Commitment"

3. Westinghouse Electric Company letter dated October 14, 2011, "Watts Bar Unit 2 Reactor Internals Clevis Bolts Information for Response to U. S. NRC," (Letter number LTR-RIDA-11247, Rev. 1)

Open Item 71 from Appendix HH of SSER23 reads as follows:

> "By letter dated April 21, 2011 (ADAMS Accession No. ML111110513, TVA withdrew its commitment to replace the Unit 2 clevis insert bolts. TVA should provide further justification for the decision to not replace the bolts to the NRC staff. (SSER23, Section 3.9.5, PG 3-2/3)"

In Reference 1, TVA committed to replace, prior to Unit 2 operation, the current Unit 2 clevis insert bolts with a design which uses X-750 alloy with a high temperature heat (HTH) treatment, rolled threads, and a larger radius on the undercut of the cap screw head.

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By letter dated April 21, 2011 (Reference 2), TVA withdrew its commitment to replace the Unit 2 clevis insert bolts.

Additional justification for this commitment withdrawal (i.e., to not replace the bolts) is provided in the Enclosure; Westinghouse Electric Company provided this information to TVA via Reference 3.

There are no new commitments in this letter.

If you should have any questions, please call Gordon Arent at (423) 365-2004.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 24th day of October, 2011.

Respectfully,

David Stinson
Watts Bar Unit 2 Vice President

Enclosure: Information Relative to Clevis Insert Bolt Failures

cc (Enclosure):

U. S. Nuclear Regulatory Commission
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Westinghouse Non-Proprietary Class 3

Enclosure

Information Relative to Clevis Insert Bolt Failures

To date, D. C. Cook Unit 1 is the only occurrence of such indications of a bolt failure found during inspection. Within the past five years, Westinghouse has performed inspections, has received positive feedback from, or has reviewed videos from past inspections at the following plants and has found no indications of clevis insert bolt failures:

- Ginna (Spring 2011)
- D.C. Cook Unit 2 (Fall 2010)
- McGuire Unit 1 (Spring 2010)
- Surry Unit 1 (Fall 2010)
- Seabrook Unit 1 (Fall 2009)
- Indian Point Unit 2 (Spring 2006)
- Indian Point Unit 3 (Spring 2009)
- Farley Unit 2 (Spring 2010)

Furthermore, Westinghouse records indicate that the following additional Westinghouse plants in the U.S. would have conducted a 10-year in-service inspection (ISI) in the past 5 years from which there have been no reports on clevis insert bolt failures:

- South Texas Unit 1 (Fall 2009)
- South Texas Unit 2 (Spring 2010)
- North Anna Unit 1 (Spring 2009)
- North Anna Unit 2 (Spring 2010)
- Comanche Peak Unit 2 (Fall 2009)
- Point Beach Unit 1 (Fall 2008)
- Point Beach Unit 2 (Spring 2008)
- Braidwood Unit 1 (Fall 2007)
- Braidwood Unit 2 (Spring 2008)
- Farley Unit 1 (Fall 2007)
- Vogtle Unit 1 (Fall 2006)
- Vogtle Unit 2 (Spring 2007)

It should be pointed out that all Westinghouse plants, with the possible exception of Sizewell B, use a heat treatment of X-750 similar to that used at Cook Unit 1 for the clevis insert bolts, which is a lower temperature heat treatment than the high temperature heat treatment (HTH condition). Also, from a review of pictures, it appears the locking bar was impacted by the bolt head due to some type of movement. It has been hypothesized that the wear of the lock bar is caused by flow-induced vibration of a loose bolt head against a lock bar, which has relatively lower hardness. It is postulated that the head fractured from the bolt shank prior to the start of this wear mechanism.