



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

July 27, 2011

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

SUBJECT: WATTS BAR NUCLEAR PLANT, UNIT 2 – REQUEST FOR ADDITIONAL
INFORMATION REGARDING INCORE INSTRUMENTATION SYSTEM
(TAC NO. ME3091)

Dear Mr. Bhatnagar:

By letters dated May 6, and June 10 and 23, 2011, Tennessee Valley Authority provided additional information related to Section 7.7.1.9, "Incore Instrumentation System," of the Final Safety Analysis Report for Watts Bar Nuclear Plant, Unit 2. In addition, the U.S. Nuclear Regulatory Commission staff conducted an audit on July 14, 2011, at the Westinghouse Electric Corporation Office in Rockville, Maryland, to evaluate information regarding flow-induced vibration effects on the incore instrumentation thimble assemblies.

The NRC staff has reviewed the information provided and determined that further information is required to complete its assessment of your submittals. The specific questions are discussed in the enclosed Request for Additional Information.

A response is required within 30 days of receipt of this letter.

If you should have any questions, please contact me at 301-415-1457.

Sincerely,

A handwritten signature in black ink, appearing to read "Patrick D. Milano".

Patrick D. Milano, Senior Project Manager
Watts Bar Special Projects Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-391

Enclosure:
Request for Additional Information

cc w/encl: Distribution via Listserv

Request for Additional Information (RAI)

Watts Bar Nuclear Plant, Unit 2

Final Safety Analysis Report Section 7.7.1.9

Tennessee Valley Authority

Docket No. 50-391

By letters dated May 6, and June 10 and 23, 2011, Tennessee Valley Authority provided additional information related to Section 7.7.1.9, "Incore Instrumentation System," of the Final Safety Analysis Report for Watts Bar Nuclear Plant (WBN), Unit 2. The Nuclear Regulatory Commission (NRC) staff has reviewed the information provided and has determined that the following information is required to complete its review.

1. EMCB RAI 1

The work performed to demonstrate the acceptable behavior of the WBN Unit 2 incore instrument thimble assemblies (IITAs) against mechanical wear resulting from flow-induced vibration is based on a comparative analysis. With respect to the use of the comparative method for evaluating the vibratory response of a referenced nuclear plant's in-core instrument assemblies and the WBN Unit 2 IITAs, provide a justification that demonstrates that the comparative method is acceptable for use in the analysis of the WBN Unit 2 IITAs. This justification should include, but not be limited to, citation of regulatory precedents involving the use of the comparative method and the results of any benchmarking performed against other methods of analysis involving vibratory excitation resulting from parallel flow across structures similar to the IITAs.

2. EMCB RAI 2

As stated in EMCB RAI 1, the comparative analysis performed for the WBN Unit 2 IITAs to determine whether the IITAs exhibit satisfactory vibration amplitudes resulting from parallel flow between the IITAs and the supporting structures and is based on using the comparative method to contrast the calculated amplitudes for the WBN Unit 2 and the referenced plant in-core instrumentation. During an audit at the Westinghouse offices on July 14, 2011, the NRC staff reviewed the documentation of the vibration analysis performed for the WBN Unit 2 IITAs, which indicated that the acceptance criterion used to justify the satisfactory behavior of the WBN Unit 2 IITAs is based on the vibration amplitudes resulting from the WBN Unit 2 IITA analysis being less than 105 percent of the vibration amplitudes calculated for the referenced plant in-core instrumentation. However, no justification was provided for why the referenced plant vibration amplitudes are acceptable. Therefore, provide a technical justification that demonstrates how the referenced plant calculated vibration amplitudes of the in-core instrumentation provide reasonable assurance that unsatisfactory mechanical wear of these components due to flow-induced vibration will not occur. Additionally, provide justification that shows that the calculated peak vibration amplitude for the WBN Unit 2 IITAs is acceptable from a quantitative standpoint. This justification should compare the calculated value to the dimensional details and structural design of the IITAs to demonstrate that vibratory motion of the IITAs would not result in unacceptable mechanical wear.

Enclosure

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/RA/

Patrick D. Milano, Senior Project Manager
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