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

John A. Scalice
Site Vice President, Watts Bar Nuclear Plant

JUL 3 0 1997

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

Gentlemen:

In the Matter of ) Docket No. 50-390
Tennessee Valley Authority )

WATTS BAR NUCLEAR PLANT (WBN) UNIT 1 - GENERIC LETTER (GL) 89-13 - SERVICE WATER SYSTEM PROBLEMS AFFECTING SAFETY-RELATED EQUIPMENT - REVISED METHODOLOGY AND SCHEDULE

The purpose of this letter is to revise the heat exchanger testing program commitment in TVA's letters dated March 4, 1994 and May 23, 1994. This revision was discussed with the NRC on July 22, 1997.

In the May 23, 1994 letter, TVA stated ". . .a preliminary test on one heat exchanger from each group of heat exchangers would be performed and the results would assist the heat exchanger engineer in development of the test procedures and software Validation and Verification (V&V) Program." "After the initial program validation activity is completed, TVA will conduct a baseline performance test on each heat exchanger under the Generic Letter 89-13 test program, (including those tested during the preliminary test) before restart following the first refueling outage." NRC accepted this position in a letter dated June 13, 1994. These validation tests were completed before WBN Unit 1 fuel load.

The preliminary testing results of the performance monitoring Heat Transfer Method for the component cooling system (CCS) heat exchanger and the emergency diesel generator (EDG) jacket water heat exchanger indicated sufficient differential temperatures and data acquisition accuracy to support representative modeling of

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the heat exchanger's performance. However, the preliminary testing results of the performance monitoring Heat Transfer Method for the engineered safety feature (ESF) room/area coolers provided insufficient and uncertain data to support this testing method for the coolers. The following provides a discussion of the current methodology and schedule being implemented:

Component Cooling Water Heat Exchangers (water-to-water)

For the CCS heat exchanger, the preliminary test data on heat exchanger A was taken on June 3, 1994. On September 30, 1996, WBN tested CCS heat exchanger C. The heat exchanger C results were similar to those obtained on heat exchanger A which indicated insignificant fouling and adequate margin between the projected and maximum allowable CCS temperatures. Due to the similarities of the two heat exchanger test results, WBN has decided to utilize the results from the preliminary test on CCS heat exchanger A as the initial baseline performance test for that heat exchanger. This section of the testing is, therefore, complete.

Diesel Generator Jacket Water Heat Exchanger (water-to-water)

TVA will perform baseline testing utilizing the Heat Transfer Method on the EDG jacket water heat exchangers as previously stated in the May 23, 1994 letter.

Engineered Safety Feature Coolers (water-to-air)

The results obtained for an ESF room/area cooler (safety injection system room cooler 1A-A) indicated that only marginal differential temperatures could be obtained which risk the overall performance accuracy (Reference Electrical Power & Research Institute (EPRI) NP-7552, "Heat Exchanger Performance Monitoring Guidelines"). In addition to measurement uncertainties, the test methodology in NP-7552 requires system configuration changes and the use of temporary electric heaters to provide a heat load in the equipment rooms. The use of these heaters requires constant room temperature monitoring to ensure the design heat load for the equipment environmental qualification limits is not exceeded. Therefore, due to the performance testing uncertainties, potential environmental qualification issues, and impact on system availability (Maintenance Rule) associated with the heat transfer method, TVA is revising the GL 89-13 approach to use the alternative periodic maintenance (PM) method for the 26 ESF water-to-air coolers within the scope of the GL 89-13 testing program. These 26 coolers have been subdivided into 5 basic design groups. TVA plans to perform a baseline inspection of one ESF cooler from each of the design groups during Cycle 1 refueling outage. The

remaining cooler baseline inspections are scheduled to be performed in conjunction with regular maintenance activities that require declaring the affected safe shutdown equipment inoperable during Cycle 2.

TVA considers the above alternative monitoring method and revised schedule to be equally effective because of the following:

1) A raw water chemical treatment program for anti-silting dispersants, microbiologically induced corrosion (MIC), clam and zebra muscle biocides, and copper corrosion inhibitor began in 1992.

2) Eight coolers from 4 of the 5 design groups were visually inspected in 1991 before the chemical treatment program began, with no indication of significant tube fouling due to silting, scaling, or other foreign material.

3) Scaling is unlikely to occur with the existing river water chemistry conditions at WBN. MIC formation in copper tubes and tube fouling is not a concern because of limited usage of the coolers, and MIC is unlikely to form on copper tubing.

4) TVA's Sequoyah Nuclear Plant (SQN) utilizes the PM program as the performance monitoring method for equivalent water-to-air coolers. In three years of inspections, SQN has had no negative findings.

5) WBN and SQN are similar in that both use raw water from Chickamauga Reservoir and both have copper/copper-nickel coils.

The enclosure provides the revised completion schedules identified in this letter. If you should have any questions, please contact P. L. Pace at (423) 365-1824.

Sincerely,

J. A. Scalice

Enclosure
cc: See page 4

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cc (Enclosure):
NRC Resident Inspector
Watts Bar Nuclear Plant
1260 Nuclear Plant Road
Spring City, Tennessee 37381

Mr. Robert E. Martin, Senior Project Manager
U.S. Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Rockville, Maryland 20852

U.S. Nuclear Regulatory Commission
Region II
Atlanta Federal Center
61 Forsyth St., SW, Suite 23T85
Atlanta, Georgia 30303

ENCLOSURE

WATTS BAR NUCLEAR PLANT (WBN) UNIT 1
GENERIC LETTER 89-13
REVISED COMPLETION SCHEDULE

1. TVA plans to perform a baseline inspection of one ESF cooler from each of the 5 design groups during Cycle 1 refueling outage.

2. The remaining cooler inspections are scheduled to be performed in conjunction with regular maintenance activities that require declaring affected safe shutdown equipment inoperable during Cycle 2.