

December 21, 2007

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

Gentlemen:

In the Matter of)
Tennessee Valley Authority)

Docket No. 50-390

WATTS BAR NUCLEAR PLANT (WBN) UNIT 1 - REPORT FOR INOPERABLE POST
ACCIDENT MONITORING (PAM) INSTRUMENTATION

In accordance with Technical Specification (TS) 5.9.8, "PAMS Report," provided in Enclosure 1 is a report required by Condition B of TS Limiting Condition for Operation (LCO) 3.3.3, "PAM Instrumentation." This report informs NRC that Containment High Range Radiation Monitor, 1-RE-90-272, has been inoperable for more than 30 days.

The enclosed report addresses the cause of the problems associated with 1-RE-90-272. Also included is a statement regarding the actions TVA has planned for restoration of the system and a commitment to provide an update on the implementation of the actions. Enclosure 2 lists this commitment.

In addition, this report provides an update on the PAMS Report submitted by TVA on August 4, 2006, that addressed a thermal induced current issue associated with the Containment High Range Radiation Monitors (1-RE-90-271, -272, -273 and -274). This update also addresses Licensee Event Report (LER) 390/2006-007 on the thermal induced current issue which was submitted for WBN on September 18, 2006.

If there are questions regarding this matter, please contact Mike Brandon, Manager, Site Licensing and Industry Affairs, at (423) 365-1824.

Sincerely,

Mike Skaggs

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Enclosures

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Enclosure 1
Watts Bar Nuclear Plant (WBN)
PAMS Report for Containment High Range Radiation Monitor 1-RE-90-272

Background Information and Cause of the Problem Encountered with the Monitor:

The PAM function of the Containment High Range Radiation Monitors is to monitor for the potential of significant radiation releases and to provide release assessment for use by operators in determining the need to invoke site emergency plans. Additional details regarding these monitors may be found in Section 12.3.4.1.2.1, "Area Monitor Detector," of the Updated Final Safety Analysis Report (UFSAR). For WBN, this function is supported by the following four radiation monitors:

- 1-RE-90-271, Reactor Building Upper Compartment PAM Monitor, Train A
- 1-RE-90-272, Reactor Building Upper Compartment PAM Monitor, Train B
- 1-RE-90-273, Reactor Building Lower Compartment PAM Monitor, Train A
- 1-RE-90-274, Reactor Building Lower Compartment PAM Monitor, Train B

Monitor 1-RE-90-272 was removed from service on November 7, 2007 at 12:41 p.m. and currently remains out of service. The monitor includes an analog rate meter and power supply in the main control room, coaxial cables, containment penetration, and an ionization detector. 1-RE-90-272 was removed from service on November 7, 2007, to perform Surveillance Instruction (SI) 1-SI-90-2, "18 Month Channel Calibration (Source Calibration) of the Train B Containment Upper Compartment High Range Post Accident Area Monitor Loop 1-LPR-90-272." The channel did not respond when the calibration source was placed on the radiation detector. The effort to restore operability to the monitor has included bench testing the rate meter, which passed, replacing the detector twice, and reworking connectors at the rate meter and at the detector. A vendor representative was on-site on December 6, 2007 and subsequently determined the problem with the equipment was due to an open circuit at the detector signal cable connector.

As previously indicated, 1-RE-90-272 was discovered to be inoperable when the 18 month calibration was initiated on November 7, 2007. The detector is equipped with a U-234 keep alive source designed to generate a signal equivalent to approximately 1 R/hr. In accordance with Surveillance Requirement (SR) 3.3.3.1, a monthly channel check is performed on the monitor as part of 1-SI-0-4, "Monthly Surveillances." The most recent performance of SR 3.3.3.1 occurred on October 27, 2007 and a reading of 1.5 R/hr was recorded for both 1-RM-90-271 and 1-RM-90-272. Data from WBN's Integrated Computer System (ICS) confirms the data obtained by the October performance of the surveillance and also indicates 1-RE-90-272 was providing normal indication until the computer point was interrupted for the performance of 1-SI-90-2 on November 7, 2007.

Preplanned Alternate Monitoring Method:

1-RE-90-271 is the opposite train (Train A) Upper Containment High Range area radiation monitor. It has the same design as the 1-RE-90-272, is located on the same elevation and is positioned 180 degrees from 1-RE-90-272. An 18 month channel calibration of 1-RE-90-271 was successfully completed on November 8, 2007. There are no alternate monitoring

Enclosure 1
Watts Bar Nuclear Plant (WBN)
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Preplanned Alternate Monitoring Method (continued):

methods that can support the area monitor function in the upper compartment of the containment. Currently, operability of 1-RE-90-271 is confirmed on a monthly basis through the performance of a channel check in accordance with Surveillance Requirement (SR) 3.3.3.1. However, until 1-RE-90-272 can be returned to service, a procedure revision has been made that requires the performance of a channel check on 1-RE-90-271 on a weekly basis to ensure the availability of the monitor.

Restoration Plan and Additional Information:

As indicated previously, a vendor representative discovered there was an open circuit at the signal cable connector for 1-RE-90-272. WBN's engineering staff is working to establish the best method to address the issue which currently includes the following options:

- Repair of the existing cable connector which may include relocation of the detector.
- Replacement of the existing signal cable connector by splicing in a new segment of cable.

An issue with the effect of temperature induced currents on the Containment High Range Radiation Monitors was addressed in TVA's letter dated August 4, 2006 and in Licensee Event Report (LER) 390/2006-007 dated September 18, 2006. In that correspondence, TVA committed to replace the affected cable during an upcoming refueling outage. TVA has analyzed this condition further and intends to provide a revision to the LER by February 15, 2008. Along with this revision, TVA will provide an update on the status of the repair to the signal cable issue that has currently rendered 1-RE-90-272 inoperable.

Enclosure 2
Watts Bar Nuclear Plant (WBN)
PAMS Report for Containment High Range Radiation Monitor 1-RE-90-272

Commitment List

1. TVA has analyzed this condition further and intends to provide a revision to the LER by February 15, 2008. Along with this revision, TVA will provide an update on the status of the repair to the signal cable issue that has currently rendered 1-RE-90-272 inoperable.