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

APR 2 2 2005

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

Gentlemen:

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

WATTS BAR NUCLEAR PLANT (WBN) – OFFSITE DOSE CALCULATION MANUAL (ODCM) SPECIAL REPORT

This letter provides a Special Report in accordance with ODCM Administrative Control 5.4, "Special Reports," due to the exceedance of a limit defined in ODCM Control 1/2.3.1, "Radiological Environmental Monitoring Program (REMP)." The data in this report is the result of a routine Tritium analysis performed by TVA's Western Area Radiological Laboratory during the first calendar quarter of 2005 of groundwater samples from onsite environmental monitoring point D. This groundwater onsite monitoring point is located in a down gradient position between the Yard Holding Pond (YHP) and the Intake Pump Station (IPS) for the facility. The analysis was performed on ODCM required composite four week samples as averaged over a calendar quarter. The analysis found the quarterly average Tritium concentration at the monitoring point to be approximately 397,600 pCi/L which exceeds the 30,000 pCi/L ODCM concentration limit for Tritium in non-drinking water pathway ground water samples. No Tritium was detected in water samples from public drinking supplies. In addition, no other radionuclides were detected by a gamma scan at monitoring point D.

Based on a review of the information associated with this event, the following three potential causes were identified for the increased level of Tritium at monitoring point D:

1. Leakage from a temporary liquid effluent line – This line was inspected and found to be leaking at the connection to the permanent effluent line.

2. Leakage from the Cooling Tower Blowdown (CTBD) line – Data from increased sampling of monitoring point D indicated a possible correlation of Tritium levels and effluent discharges, indicating a potential leak in the CTBD line. Monitoring point D is adjacent to the CTBD line, which is the path for effluent discharges. However, data taken following additional effluent discharges did not confirm this possible correlation. With the exception of one discharge, there was no correlation between discharges and monitoring point D Tritium levels.

A009
IE22

APR 2 2 2005

3. Movement of an underground plume from a previous liquid effluent line leak – The original effluent line was previously found to be leaking in 2003 and the leak was isolated. A temporary hose was installed until the new effluent line is put in place. The resultant plume from this previous leak due to underground water gradient is moving from the previous leak location toward monitoring point D.

The corrective actions initiated to address these potential causes included, respectively:

1. The repair of the leaks found during the inspection of the temporary effluent line.

2. Inspection of the CTBD line during the Cycle 6 refueling outage. The line was found to be in good condition with no leaks. For added assurance, the concrete joints upstream and downstream of monitoring point D were cleaned and sealed.

TVA believes that the most probable cause of the increased groundwater Tritium levels is the movement of the plume from the previous permanent liquid effluent line leak.

The Tritium identified in the groundwater from monitoring location D does not present an increased potential risk for exceeding the limits for annual dose to a member of the public as specified in WBN ODCM Controls 1.2.1.2, 1.2.2.2 and 1.2.2.3. The available data indicates that the Tritium is contained in a groundwater plume on the WBN site. The groundwater hydrology for the WBN site is such that the movement of this plume is toward the Tennessee River and does not present a risk for contamination of offsite groundwater sources. This Tritium was included in the liquid effluent dose calculations for the site which were maintained below the annual limits for dose to a member of the public. TVA continues to monitor groundwater location D and other REMP groundwater locations in the path of the groundwater plume.

There are no regulatory commitments in this letter. Should there be questions regarding this report, please contact me at (423) 365-8767.

Sincerely,

P. L. Pace
Manager, Site Licensing
and Industry Affairs

APR 2 2 2005

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

Mr. D. V. Pickett, Project Manager
U.S. Nuclear Regulatory Commission
MS O8G9
One White Flint North
11555 Rockville Pike
Rockville, Maryland 20852-2738

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