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Vice President
Nuclear Licensing

April 28, 2011

10 CFR 50.4
10 CFR 50.36a(a)(2)

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

Watts Bar Nuclear Plant, Unit 1
Facility Operating License No. NPF-90
NRC Docket No. 50-390

Subject: 2010 Annual Radioactive Effluent Release Report

The purpose of this letter is to provide the 2010 Annual Radioactive Effluent Release Report (ARERR) for Watts Bar Nuclear Plant (WBN). The report (Enclosure 1) fulfills the requirements of WBN Technical Specification 5.9.3 and addresses the period from January 1, 2010 through December 31, 2010. Technical Specification 5.9.3 requires this report to be submitted prior to May 1 of each year. Enclosure 1 is divided into four principal sections. The first section is designated as "Supplemental Information" and provides the required effluent release data. Attachment 1 to Enclosure 1 documents deviations which have occurred from Offsite Dose Calculation Manual (ODCM) requirements. Attachment 2 addresses the radiation monitors which were inoperable for greater than 30 days during the reporting period. Provided in Attachment 3 of Enclosure 1 is Revision 23 of the ODCM. This revision was in effect as of February 12, 2010, and is provided in accordance with Technical Specification 5.7.2.3. Revision 22 of the ODCM was provided with the 2009 ARERR. Therefore, the attached copy of the ODCM has been annotated to indicate the changes to the document that were made by Revision 23.

Enclosure 2 provides an addendum to the 2009 ARERR to update a 2009 abnormal release.

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Enclosure 3 addresses requirements of the Process Control Program which are reported in conjunction with the ARERR in accordance with Section 2.4.D.2 of the PCP.

There are no regulatory commitments in this letter. Please direct any questions concerning this matter to Kara Stacy at (423) 751-3489.

Respectfully,



R. M. Krich

Enclosures:

1. 2010 Annual Radioactive Effluent Release Report
2. Addendum to 2009 Annual Radioactive Effluent Release Report
3. Process Control Program Reporting Requirements

cc (Enclosures):

NRC Regional Administrator - Region II
NRC Senior Resident Inspector - Watts Bar Nuclear Plant