

Attachments 1 and 4 are to be withheld from public disclosure under 10 CFR 2.390.  
When separated from these attachments, this letter is decontrolled.



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

March 16, 2011

10 CFR 50.4

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

Watts Bar Nuclear Plant, Unit 2  
NRC Docket No. 50-391

**Subject: WATTS BAR NUCLEAR PLANT (WBN) UNIT 2 – INSTRUMENTATION AND CONTROLS STAFF INFORMATION REQUESTS**

Reference: 1. Licensee Open Items to be Resolved for SER Approval List

The purpose of this letter is to provide TVA's responses to NRC's information requests on the "Licensee Open Items to be Resolved for SER Approval List." Enclosure 1 to this letter provides TVA's responses to the information requested by NRC.

Enclosure 2 contains the supporting documents for TVA's responses to NRC's requests/questions provided in Enclosure 1. Enclosure 3 provides the new regulatory commitment contained in this letter.

Attachments 1 and 4 contain information proprietary to Westinghouse Electric Corporation (WEC). TVA requests that the WEC proprietary information be withheld from public disclosure in accordance with 10 CFR § 2.390. Attachments 2 and 5 contain the corresponding non-proprietary versions of the documents. Attachments 3 and 6 contain the corresponding affidavits for withholding proprietary information from public disclosure.

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NRC

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I declare under penalty of perjury that the foregoing is true and correct. Executed on the 16<sup>th</sup> day of March, 2011.

If you have any questions, please contact William Crouch at (423) 365-2004.

Sincerely,

A handwritten signature in black ink, appearing to read 'David Stinson', with a stylized flourish at the end.

David Stinson  
Watts Bar Unit 2 Vice President

Enclosures:

1. Responses to Licensee Open Items To Be Resolved For SER Approval
2. List of Attachments
3. New Regulatory Commitment

cc (Enclosures):

U. S. Nuclear Regulatory Commission  
Region II  
Marquis One Tower  
245 Peachtree Center Ave., NE Suite 1200  
Atlanta, Georgia 30303-1257

NRC Resident Inspector Unit 2  
Watts Bar Nuclear Plant  
1260 Nuclear Plant Road  
Spring City, Tennessee 37381

**Enclosure 1**  
**TVA Letter Dated March 16, 2011**  
**Responses to Licensee Open Items to be Resolved for SER Approval**

For some NRC RAI requests, this letter provides TVA's initial response. For the other NRC RAI requests in this letter, a response has been provided in previous TVA letters to the NRC and the NRC has subsequently requested additional information. For these requests, the initial TVA response is not repeated below. The additional NRC information requests are identified in this letter as "**Follow-up NRC Requests.**" TVA responses to these items are identified as "**TVA Response to Follow-up NRC Request.**"

The following acronyms/abbreviations are used in this letter:

FAT	Factory Acceptance Test
FSAR	Final Safety Analysis Report
IV&V	Independent Verification and Validation
LTR	Licensing Technical Report
MTTR	Mean Time To Repair
NRC	Nuclear Regulatory Commission
PAMS	Post Accident Monitoring System
TVA	Tennessee Valley Authority
WBN2	Watts Bar Nuclear Unit 2
IEEE	Institute of Electrical and Electronics Engineers Inc.

**1. NRC Request (Item Number 074)**

*By letter dated March 12, 2010 TVA stated that the target submittal date for the Post FAT IV&V Phase Summary Report was November 30, 2010.*

**TVA Response to NRC Request:**

Attachment 1 contains WNA-VR-00283-WBT-P, "IV&V Summary Report for the Post Accident Monitoring System," Revision 4, dated March 2011 (proprietary). Attachment 2 contains WNA-VR-00283-WBT-NP, "IV&V Summary Report for the Post Accident Monitoring System," Revision 4, dated March 2011 (non-proprietary). Attachment 3 contains CWA-11-3121, Application for Withholding Proprietary Information from Public Disclosure, WNA-VR-00283-WBT-P, Revision 4 "Nuclear Automation IV&V Summary Report for the Post Accident Monitoring System" (Proprietary)," dated March 3, 2011.

**2. NRC Request (Item Number 212)**

*By letter dated June 18, 2010 (ML101940236) TVA stated (Enclosure 1, Attachment 3, Item No. 3) that the PAMS system design specification and software requirements specification contain information to address the "Design Report on Computer Integrity, Test and Calibration..." The staff has reviewed these documents, and it is not clear how this is the case.*

*(1) Please describe how the information provided demonstrates compliance with IEEE 603-1991 Clauses 5.5, 5.7, 5.10, & 6.5.*

*(2) Please describe how the information provided demonstrates conformance with IEEE 7-4.3.2-2003 Clauses 5.5 & 57.*

**Enclosure 1**  
**TVA Letter Dated March 16, 2011**  
**Responses to Licensee Open Items to be Resolved for SER Approval**

**NRC Follow up Request:**

- (a) *IEEE 603 Clause 5.5 basically states that conditions identified in IEEE 603 Clauses 4.7 & 4.8 must be addressed in the design. Energy supply conditions have not been identified, or explicitly addressed.*
- (b) *WNA-AR-00189-WBT Rev. 0 Table 5-2 shows a MTTR of 7.2 hours. It is not clear how this satisfies the contractual item No. 179.*

**TVA Response to Follow-up NRC Request:**

- (a) Energy Supply conditions are specified in WNA-DS-01617-WBT-P, System Requirements Specification Rev. 4, Requirement 4.1-1 which requires 120Vac  $\pm 10\%$  and 60 $\pm 3$ Hz. Power to the Common Q PAMS is provided from the 120Vac vital power system. Per WBN Unit 2 FSAR section 8.3.1.1 the vital 120 volt ac system specifications are 120Vac  $\pm 2\%$  and 60 $\pm 0.5$ Hz. Based on this, the power provided meets the system requirements.

Electromagnetic compatibility, seismic and environmental qualification of the equipment to meet the design basis requirements is documented in EQ-QR-68-WBT-P, Revision 0 "Qualification Summary Report for Post-Accident Monitoring System (PAMS)" (Proprietary) (Attachment 4). Attachment 5 contains EQ-QR-68-WBT-NP, Revision 0 "Qualification Summary Report for Post-Accident Monitoring System (PAMS)" (non-proprietary). Attachment 6 contains CWA-11-3118, Application for Withholding Proprietary Information from Public Disclosure, EQ-QR-68-WBT-P, Revision 0 "Qualification Summary Report for Post-Accident Monitoring System (PAMS)," (Proprietary), dated February 28, 2011.

- (b) The Contract Compliance Matrix Item 179 in Revision 3 of the Licensing Technical Report will be revised to show this item as a deviation and to reflect TVA's acceptance of the 7.2 hour MTTR value. WNA-LI-00058-WBT-P, "Post-Accident Monitoring System (PAMS) Licensing Technical Report," Revision 3, (proprietary) dated March 2011, will be submitted no later than March 29, 2011.

**Enclosure 2**  
**TVA Letter Dated March 16, 2011**  
**Responses to Licensee Open Items to be Resolved for SER Approval**

**List of Attachments**

1. Westinghouse Electric Company WNA-VR-00283-WBT-P, Revision 4 "Nuclear Automation IV & V Summary Report for the Post Accident Monitoring System" (Proprietary), dated March 2011
2. Westinghouse Electric Company WNA-VR-00283-WBT-NP, Revision 4 "Nuclear Automation IV&V Summary Report for the Post Accident Monitoring System," dated March 2011 (non-proprietary)
3. Westinghouse Electric Company CWA-11-3121, Application for Withholding Proprietary Information from Public Disclosure, WNA-VR-00283-WBT-P, Revision 4 "Nuclear Automation IV&V Summary Report for the Post Accident Monitoring System" (Proprietary)," dated March 3, 2011
4. Westinghouse Electric Company EQ-QR-68-WBT-P, Revision 0 "Qualification Summary Report for Post-Accident Monitoring System (PAMS)" (Proprietary), dated February 2011
5. Westinghouse Electric Company EQ-QR-68-WBT-NP, Revision 0 "Qualification Summary Report for Post-Accident Monitoring System (PAMS)" (non-proprietary), dated February 2011
6. Westinghouse Electric Company CWA-11-3118, Application for Withholding Proprietary Information from Public Disclosure, EQ-QR-68-WBT-P, Revision 0 "Qualification Summary Report for Post-Accident Monitoring System (PAMS)," (Proprietary), dated February 28, 2011

**Enclosure 3**  
**TVA Letter Dated March 16, 2011**  
**Responses to Licensee Open Items to be Resolved for SER Approval**

**New Regulatory Commitment**

WNA-LI-00058-WBT-P, "Post-Accident Monitoring System (PAMS) Licensing Technical Report," Revision 3, (proprietary) dated March 2011, will be submitted no later than March 29, 2011.