WBN2Public Resource

From: Hamill, Carol L [clhamill@tva.gov]
Sent: Monday, November 14, 2011 2:44 PM
To: Epperson, Dan; Poole, Justin; Raghavan, Rags; Milano, Patrick; Campbell, Stephen
Cc: Arent, Gordon; Boyd, Desiree L
Subject: 11-14-11_I&C RAI Response--Vendor Doc Transmittal Ltr
Attachments: image001.jpg; 11-14-11_I&C RAI Response--Vendor Doc Transmittal Ltr Final.pdf

Please see attached TVA letter that was sent to the NRC today.

The attachments are too large to send by e-mail. For those of you who receive a cc in the mail, the attachments will be included with your letter on a disk.

Carol L. Hamill

TVA

Licensing/Quality Assurance
WBN Unit 2 Project, EQB 1B- WBN
423-365-3177
423-365-3833 clhamill@tva.gov

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Subject: 11-14-11_I&C RAI Response--Vendor Doc Transmittal Ltr
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From: Hamill, Carol L

Created By: clhamill@tva.gov

Recipients:
"Arent, Gordon" <garent@tva.gov>
Tracking Status: None
"Boyd, Desiree L" <dlboyd@tva.gov>
Tracking Status: None
"Epperson, Dan" <Dan.Epperson@nrc.gov>
Tracking Status: None
"Poole, Justin" <Justin.Poole@nrc.gov>
Tracking Status: None
"Raghavan, Rags" <Rags.Raghavan@nrc.gov>
Tracking Status: None
"Milano, Patrick" <Patrick.Milano@nrc.gov>
Tracking Status: None
"Campbell, Stephen" <Stephen.Campbell@nrc.gov>
Tracking Status: None

Post Office: TVACOCXVS2.main.tva.gov

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Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:


TVA

Attachments 2, 6, 9, 12, 15, 18 and 21 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

November 14, 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. Supplemental Safety Evaluation Report (SSER) 22, 23 and 24 Appendix HH Watts Bar Unit 2 Action Items Table

The purpose of this letter is to provide TVA's responses to NRC's information requests on:

- SSER 22, 23 and 24 Appendix HH "Watts Bar Unit 2 Action Items Table," Items 38, 77, 121, 125, 126 and 127
- E-Mail from NRC (J. Poole) to TVA Licensing (G. Arent), "DRAFT Request for Additional Information Regarding Open Item #127," sent October 31, 2011
- Various commitments

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 contains a list of references on which TVA's responses are based. Enclosure 4 contains a list of new regulatory commitments.

Attachments 2, 6, 9, 12, 15, 18 and 21 contain information proprietary to Westinghouse Electric Company LLC (WEC). TVA requests that the WEC proprietary information be withheld from public disclosure in accordance with 10 CFR § 2.390.

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

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 14th day of November 2011.

Respectfully,

David Stinson
Watts Bar Unit 2 Vice President

Enclosures:

1. TVA Responses to Instrumentation and Controls Staff Information Requests
2. List of Attachments
3. List of References
4. List of New Regulatory Commitments

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

bcc (Enclosures):

Stephen Campbell
U.S. Nuclear Regulatory Commission
MS 08H4A
One White Flint North
11555 Rockville Pike
Rockville, Maryland 20852-2738

Patricia Holahan, Acting Deputy Regional Administrator for Construction
U. S. Nuclear Regulatory Commission
Region II
Marquis One Tower
245 Peachtree Center Ave., NE Suite 1200
Atlanta, Georgia 30303-1257

David Rahn
U.S. Nuclear Regulatory Commission
MS 09D2
One White Flint North
11555 Rockville Pike
Rockville, Maryland 20852-2738

George A. Wilson, Jr.
U.S. Nuclear Regulatory Commission
MS 09E3
One White Flint North
11555 Rockville Pike
Rockville, Maryland 20852-2738

Enclosure 1
TVA Letter Dated November 14, 2011
TVA Responses to Instrumentation and Controls Staff Information Requests

The following acronyms/abbreviations are used in this letter:

CET	Core Exit Thermocouple
[1]DMIMS-DX™	Digital Metal Impact Monitoring System
DPL	Data Point Library
EMC	Electro-Magnetic Compatibility
EMI	Electro-Magnetic Interference
EQ	Environmental Qualification
ERDS	Emergency Response Data System
GA	General Atomics
GA-ESI	General Atomics-Electronic Systems, Inc.
HRCAR	High Range Containment Accident Radiation
I&C	Instrument and Controls
IIS	Incore Instrument System
IITA	Incore Instrument Thimble Assembly
MI	Mineral Insulated
NRC	Nuclear Regulatory Commission
NRR	Nuclear Reactor Regulation
NSSS	Nuclear Steam Supply System
PAMS	Post Accident Monitoring System
PER	Problem Evaluation Report
RAI	Request for Additional Information
RFI	Radio Frequency Interference
RRAS	Repair, Replacement & Automation Services
SPD	Self Powered Detector
SPND	Self Powered Neutron Detector
TVA	Tennessee Valley Authority
V&V	Verification and Validation
VDC	Volts Direct Current
WBN	Watts Bar Nuclear Plant
WEC	Westinghouse Electric Corporation
[2]WINCISE™	Westinghouse In-Core Information Surveillance & Engineering

Notes:

1. In some instances, the term Self Powered Neutron Detector (SPND) is used. In other instances the term Self Powered Detector (SPD) is used. The terms SPD and SPND are interchangeable and refer to the vanadium neutron detectors contained in the Incore Instrument Thimble Assemblies (IITA).

2. In some instances, the abbreviation GA is used to refer to General Atomics. In some instances, the abbreviation GA-ESI is used to refer to General Atomics-Electronic Systems Inc. GA and GA-ESI are the same company and the abbreviations can be used interchangeably.

[1] DMIMS-DX is a registered trademark of the Westinghouse Electric Corporation LLC
[2] WINCISE is a registered trademark of the Westinghouse Electric Corporation LLC

Notes (continued):

3. For some NRC requests for additional information (RAIs), this letter provides TVA's initial response. For the other NRC RAIs 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.**"

Responses:

1. NRC Request (SSER 23 Appendix HH Item Number 38)

The NRC staff will confirm the availability and operability of the ERDS for Unit 2 prior to issuance of the Unit 2 OL. (SSER 22, Section 13.3.2.6, pg 13-14).

TVA Partial Response to NRC Request

In order to confirm the availability and operability of the WBN Unit 2 ERDS, Engineering is required to develop and issue the WBN 2 Emergency Response Data System (ERDS) Data Point Library (DPL) and provide the DPL to the TVA Computer Engineering Group for addition to the ERDS software. In addition, TVA is required to provide the DPL to the NRC. Engineering has issued the DPL Revision 0 to the TVA Computer Engineering Group for incorporation. TVA Computer Engineering is in the process of incorporating the DPL into the ERDS software. Attachment 1 contains the "Watts Bar Nuclear Plant (WBN) Unit 2 Emergency Response Data System (ERDS) Data Point Library (DPL)," Revision 0.

Problem Evaluation Report (PER) 450041 was written to document a problem during the last NRC graded exercise where actual data was sent to the NRC instead of the drill simulated data. This PER has the potential to require a revision to the WBN 2 DPL. If changes to the DPL are required by the PER, then TVA will submit a revised DPL to the NRC no later than June 15, 2012.

2. NRC Request (SSER 23 Appendix HH Item Number 77)

It is unclear to the NRC staff which software V&V documents are applicable to the HRCAR monitors. TVA should clarify which software V&V documents are applicable, in order for the staff to complete its evaluation. (SSER 23, Section 7.5.2.3, pg 7-109)

Follow up NRC Request

TVA needs to obtain V&V documents from vendor and provide to NRR. NRR tech staff will review and document in SER.

TVA Response to Follow up NRC Request

TVA to NRC letter dated September 1, 2011 (Reference 5), identified the following Verification and Validation (V&V) documents as applicable to the High Range Containment Accident Radiation (HRCAR) monitors:

a) Software Version 1.0: (initial issue) General Atomics Electronic Systems, Inc. (GA-ESI) document 04507007-1TR, "RM-1000 System Verification Test Results Engineering Report Sequoyah Nuclear Plant Units 1 and 2," Original Release: July, 1999.

b) Software Version 1.1: GA-ESI document 04508005, "RM-1000 Version 1.1 Software Verification Report," January 2002

c) Software Version 1.2: GA-ESI document 04508006, "RM-1000 Version 1.2 Software Verification Report," Revision A, April 2008.

The engineering approved proprietary versions of these documents were submitted in TVA to NRC letter dated October 13, 2011 (Reference 1). The non proprietary versions and affidavit for withholding were submitted in TVA to NRC letter dated July 15, 2010 (Reference 2).

3. NRC Request (SSER 24 Appendix HH Item Number 121)

TVA should submit the results to the NRC staff of a dielectric strength test performed on the IITA assembly. (SSER 24, Section 7.7.1.9.5)

TVA Partial Response to NRC Request

By agreement between Westinghouse Electric Corp. (WEC) and NRC staff, testing of the non-safety-related Incore Instrument Thimble Assembly (IITA) Self Powered Neutron Detector (SPND) Mineral Insulated (MI) cables is not required. The agreement is that testing of the safety-related Core Exit Thermocouple (CET) MI cables would be performed and documentation of the test results provided. The results of the testing are documented in WEC document WBT-D-3548 P-Enclosure, "Closure of WNA-CN-00157-WBT Open Items," dated October 2011.

Attachment 2 contains proprietary WEC document WBT-D-3548 P-Enclosure, "Closure of WNA-CN-00157-WBT Open Items," dated October 2011. Attachment 3 contains non-proprietary WEC document WBT-D-3548 NP-Enclosure, "Closure of WNA-CN-00157-WBT Open Items," dated October 2011. Attachment 4 contains WEC document CWA-11-3272, "Application for Withholding Proprietary Information from Public Disclosure WBT-D-3548 P-Enclosure, "Closure of WNA-CN-00157-WBT Open Items," (Proprietary)" dated October 17, 2011.

Not all documents requested/necessary to support the response to this question are releasable to TVA or the NRC. As identified in WEC to TVA letters dated October 12, 2011, "NRC Access to WINCISE Documents at the Westinghouse Rockville Office" (Reference 3) and WEC to TVA letter dated October 27, 2011, "NRC Access to WINCISE

Document at the Westinghouse Rockville Office" (Reference 4), copies of the documents listed below have been placed in the WEC Rockville office and are available for NRC audit

Document Title	Document #	Revision
Quality Release & Certificate of Conformance	QR-121284-01	01
Westinghouse Certificate of Qualification Report	CQ-121284-01	01
Packing List	N/A	N/A
Quality Release & Certificate of Conformance	QR-QR-IO-192	00
Quality Release & Certificate of Conformance	QR-10-351	00
Quality Release & Certificate of Conformance	QR-4500298582-001	00
Class IE Qualification of the Incore Instrument (Core Exit Thermocouple Portion) and Mineral Insulated Cable Assembly	CE-NPSD-240-P	0

4. NRC Request (SSER 24 Appendix HH Item Number 125)

TVA should provide clarification to the NRC staff of the type of connector used with the MI cable in Unit 2, and which EQ test is applicable. (SSER 24, Section 7.7.1.9.5)

TVA Expanded Response

A response to this item was provided in TVA to NRC letter dated September 30, 2011 (Reference 5). Subsequently, WEC provided additional information on the voltage breakdown testing of the connectors.

The IITA electrical connectors were ordered per WEC Design Specification 00000-FEA-6101, which is a requirement of the IITA Design Specification (418A28). Per the connector specification, a voltage breakdown test was performed on each unit per MIL-STD-202, Method 301, "Dielectric Withstand Voltage." Testing was performed by the electrical connector manufacturer, Meggitt Safety Systems. The acceptance criterion for the test was that each electrical connector indicates no voltage breakdown when a potential of 1000 VDC is applied between the individual conductors and between the conductors and the backshell. Documentation was provided by Meggitt Safety Systems via Document Submittal Forms 4500278579-2, 4500278579-3, and 4500307957-6, which show passing results for the connectors provided to WEC for use in the WBN IITAs.

Additionally, note that a dielectric withstanding voltage test will be performed on a sample of completed IITAs to show no voltage breakdown. Documentation of the completion of this test will be provided to WEC. A test summary will be added to WNA-CN-00157-WBT which is scheduled to be delivered to TVA by November 18, 2011, and will be provided to the NRC no later than November 30, 2011.

Note that WNA-CN-00157-WBT will be revised to show no open items, and a non-proprietary version of the calculation note will be made available. Both the proprietary and the non-proprietary versions will be provided to TVA by November 18, 2011. WEC Design Specification 00000-FEA-6101, and IITA Design Specification 418A28 will be made available to the NRC to review at the WEC Office in Rockville, Maryland, no later than November 30, 2011.

5. Not Used

6. **NRC Request (SSER 24 Appendix HH Item Number 127)**

TVA should provide a summary to the NRC staff of the electro-magnetic interference/radio-frequency interference (EMI/RFI) testing for the MI cable electro-magnetic compatibility (EMC) qualification test results. (SSER 24, Section 7.7.1.9.5)

Follow up NRC Request

Action Item No. 127 identified in the NRC NUREG-0847 Supplement 24 (ADAMS Accession No. ML1277A148), SSER Section 7.7.1.9, "In-Core Instrumentation System," [IIS] requires TVA to "provide a summary to the NRC staff of the electro-magnetic interference/radio-frequency interference (EMI/RFI) testing for the MI cable electro-magnetic compatibility (EMC) qualification test results."

In TVA's September 30, 2011 letter (ADAMS Accession No. ML11287A254), TVA provided a response for this item. To complete our review on this item, the NRC requires TVA to confirm the NRC staff's understanding regarding the validity of the following descriptions about the EMI, RFI and EMC protection:

(1) Within the Incore Instrumentation Thimble Assembly (IITA), the Core Exit Thermocouple (CET) is insulated with crushed Alumina (Al2O3) contained in an overall stainless steel tubular sheath. Each individual Self-powered Neutron Detector (SPND) consists of a Vanadium emitter wire, surrounded by crushed Alumina, which is surrounded by a grounded stainless steel tubular sheath. The thermocouple sheath, the SPND sheaths, and the overall IITA sheath are all electrically grounded at the reactor vessel.

(2) The Mineral Insulated (MI) cable assembly consists of aluminum oxide (AL2O3) insulation, enclosing the SPNDs and core exit thermocouples, each one surrounded by a separate grounded stainless steel tubular sheath. The combination of the stainless steel sheath material joined to the stainless steel connectors provides for 100 percent shielding coverage. The exterior surfaces of the IIS MI Cable Assemblies are post accident qualified, and as such, are required to be 100 percent hermetic. This hermeticity of the MI Cable Assembly design and construction also demonstrates the absence of any apertures or seams that would compromise the shielding effectiveness of the assemblies, and thus providing the necessary protection against EMI/RFI interferences. To provide the necessary grounding of the MI cable, the cable assemblies are to be directly secured to seismically qualified in-containment cable supports at regular intervals along the length of the cable run. The frequency of this support arrangement provides multiple low impedance paths to ground for the cable assemblies to effectively divert EMI/RFI.

(3) Westinghouse explained that the maximum current from a Vanadium detector is sufficiently low which, in the event of a short circuit from emitter to sheath within the cable, restricts the energy available to an amount that will preclude melting or other damage to the protective sheath. In case of breakage to the sheath, the detector leakage current will be shunted to common (plant ground) via the detector sheath.

Further, the design maximum emitter current is sufficiently low that any short within the IITA will so restrict the energy available that further damage is precluded. Thus, the dual barrier design combined with the low detector current provides inherent EMI/RFI protection.

TVA Response to Follow Up Request

(1) TVA and WEC concur with the NRC staff's understanding.

(2) TVA and WEC concur with the NRC staff's understanding with the corrections shown below:

(3) TVA and WEC concur with the NRC staff's understanding.

7. TVA Commitment

The non-proprietary version of Westinghouse document "WBT DMIMS-DX™ Seismic Evaluation of the Digital Metal Impact Monitoring System (DMIMS-DX™) for Watts Bar Unit 2," EQ-QR-33-WBT, Revision 0 and affidavit for withholding will be submitted within two weeks of receipt from Westinghouse.

Commitment Closure

As committed to in Enclosure 4 of TVA letter to NRC dated May 6, 2011, (Reference 6), Attachment 6 contains proprietary WEC document "WBT DMIMS-DX™ Seismic Evaluation of the Digital Metal Impact Monitoring System (DMIMS-DX™) for Watts Bar Unit 2," EQ-QR-33-WBT, Revision 0 (proprietary). Attachment 7 contains non-proprietary WEC document "WBT DMIMS-DX™ Seismic Evaluation of the Digital Metal Impact Monitoring System (DMIMS-DX™) for Watts Bar Unit 2," EQ-QR-33-WBT, Revision 0 (non-proprietary). Attachment 8 contains WEC document CAW-11-3291, Application For Withholding Proprietary Information From Public Disclosure EQ-QR-33-WBT-P, Revision 0, "WBT DMIMS-DX™ Seismic Evaluation of the Digital Metal Impact Monitoring System (DMIMS-DX™) for Watts Bar Unit 2, EQ-QR-33-WBT, Revision 0 (proprietary)."

8. TVA Commitment

TVA will submit the nonproprietary version of Westinghouse document 00000-ICE-30156, Revision 7, System Requirements Specification for the Common Q Post Accident Monitoring System (Proprietary), dated April 2010 to NRC within two weeks of receiving it from the vendor.

Commitment Closure

In order to meet this commitment, WEC created WCAP-17529, "System Requirements Specification for the Common Q Post Accident Monitoring System."

As committed to in Enclosure 4 of TVA letter to NRC dated September 2, 2010, (Reference 7), Attachment 9 contains proprietary WEC document "System Requirements

Specification for the Common Q Post Accident Monitoring System," WCAP-17529-P, Revision 0 (proprietary). Attachment 10 contains non-proprietary WEC document "System Requirements Specification for the Common Q Post Accident Monitoring System," WCAP-17529-NP, Revision 0 (non-proprietary). Attachment 11 contains WEC document CAW-11-3292, Application For Withholding Proprietary Information From Public Disclosure WCAP-17529-P, Revision 0, "System Requirements Specification for the Common Q Post Accident Monitoring System, (proprietary)."

9. TVA Commitment

TVA will submit the nonproprietary version of Westinghouse document WNA-SD-00248-WBT, RRAS Watts Bar 2 NSSS Completion Program I&C Projects, Software Design Description for the Post Accident Monitoring System Flat Panel Display (Proprietary), dated April 20, 2010, to NRC within two weeks of receiving it from the vendor.

Commitment Closure

As committed to in Enclosure 4 of TVA letter to NRC dated September 2, 2010, (Reference 7), Attachment 12 contains proprietary WEC document WNA-SD-00248-WBT-P, Revision 3, "RRAS Watts Bar 2 NSSS Completion Program I&C Projects, Software Design Description for the Post Accident Monitoring System Flat Panel Display (Proprietary)." Attachment 13 contains non-proprietary WEC document WNA-SD-00248-WBT-NP, Revision 3, "RRAS Watts Bar 2 NSSS Completion Program I&C Projects, Software Design Description for the Post Accident Monitoring System Flat Panel Display (Non-Proprietary)." Attachment 14 contains WEC document CAW-11-3285, "Application for Withholding Proprietary Information for Public Disclosure, WNA-SD-00248-WBT-P, RRAS Watts Bar 2 NSSS Completion Program I&C Projects, Software Design Description for the Post Accident Monitoring System Flat Panel Display (Proprietary)."

10. TVA Commitment

TVA will submit the nonproprietary versions of WNA-SD-00250-WBT Revision 0, WNA-VR-00283-WBT, Revision 0 and WNA-VR-00279-WBT, Revision 0, to NRC within two weeks of receiving them from the vendor.

Commitment Closure

As committed to in Enclosure 4 of TVA letter to NRC dated August 20, 2010 (Reference 8), Attachment 15 contains proprietary WEC document WNA-SD-00250-WBT-P, Revision 3, "Software Design Description for the Post Accident Monitoring System AC160 Software (Proprietary)." Attachment 16 contains non-proprietary WEC document WNA-SD-00250-WBT-NP, Revision 3, "Software Design Description for the Post Accident Monitoring System AC160 Software (Non-Proprietary)." Attachment 17 contains WEC document CAW-11-3286, Application for Withholding Proprietary Information for Public Disclosure, WNA-SD-00250-WBT-P, Revision 0, "Software Design Description for the Post Accident Monitoring System AC160 Software (proprietary)."

11. TVA Commitment

The nonproprietary versions of Westinghouse documents Post Accident Monitoring System (PAMS) Test Plan (Attachment 9), PAMS Channel Integration Test/Factory Acceptance Test (Attachment 12), IV&V Summary Reports for PAMS (Attachments 14 and 16), and PAMS Licensing Technical Report (Attachment 19) will be provided upon issuance of the final proprietary documents.

Commitment Closure

As committed to in Enclosure 4 of TVA letter to NRC dated December 3, 2010 (Reference 9), Attachment 18 contains proprietary WEC document WNA-TP-02988-WBT-P, Revision 0, "Nuclear Automation Watts Bar Unit 2 NSSS Completion Program I&C Projects, Post Accident Monitoring System Channel Integration Test/Factory Acceptance Test, (Proprietary)." Attachment 19 contains non-proprietary WEC document WNA-TP-02988-WBT-NP, Revision 0, "Nuclear Automation Watts Bar Unit 2 NSSS Completion Program I&C Projects, Post Accident Monitoring System Channel Integration Test/Factory Acceptance Test, (Non-Proprietary)." Attachment 20 contains WEC document CAW-11-3287, "Application For Withholding Proprietary Information From Public Disclosure WNA-TP-02988-WBT-P, Revision 0, "Nuclear Automation Watts Bar Unit 2 NSSS Completion Program I&C Projects, Post Accident Monitoring System Channel Integration Test/Factory Acceptance Test (Proprietary)."

12. TVA Commitment

TVA will submit the nonproprietary versions of WNA-SD-00250-WBT Revision 0, WNA-VR-00283-WBT, Revision 0 and WNA-VR-00279-WBT, Revision 0, to NRC within two weeks of receiving them from the vendor.

Commitment Closure

As committed to in Enclosure 4 of TVA letter to NRC dated August 20, 2010 (Reference 8), Attachment 21 contains proprietary WEC document WNA-VR-0279-WBT-P, Revision 5, "Requirements Traceability Matrix for the Post-Accident Monitoring System (Proprietary)." Attachment 22 contains non-proprietary WEC document WNA-VR-0279-WBT-P, Revision 5, "Requirements Traceability Matrix for the Post-Accident Monitoring System (Non-Proprietary)." Attachment 23 contains WEC document CAW-11-3287, Application For Withholding Proprietary Information From Public Disclosure WNA-VR-0279-WBT-P, Revision 5, "Requirements Traceability Matrix for the Post-Accident Monitoring System (Proprietary)."

13. TVA Commitment

A corrected proprietary version of, a non-proprietary version of, and an affidavit for withholding for Thermo Fisher Scientific Qualification Report No. 864, Rev. 0 will be submitted to the NRC by November 15, 2010.

Partial Commitment Closure

As committed to in Enclosure 4 of TVA letter to NRC dated July 31, 2010, (Reference 10) Attachment 24 contains “Thermo Fisher Affidavit for Withholding Qualification Report No. 864, REV.1 - Class 1E Qualification of Source Range, Intermediate Range and Wide Range Channels,” dated March 11, 2011. This completes the response to this commitment.

Enclosure 2
TVA Letter Dated November 14, 2011
List of Attachments

Note: While project coversheets have not been included, all attachments have been reviewed and approved by Engineering prior to submittal.

1. Watts Bar Nuclear Plant (WBN) Unit 2 Emergency Response Data System (ERDS) Data Point Library (DPL), Revision 0 (Letter Item 1, SSER 23 Appendix HH Item Number 38)

2. Proprietary Westinghouse Electric Company document WBT-D-3548 P-Enclosure, "Closure of WNA-CN-00157-WBT Open Items" dated October 2011 (Letter Item 3, SSER 23 Appendix HH Item Number 121)

3. Non-proprietary Westinghouse Electric Company document WBT-D-3548 NP-Enclosure, "Closure of WNA-CN-00157-WBT Open Items" dated October 2011 (Letter Item 3, SSER 23 Appendix HH Item Number 121)

4. Westinghouse Electric Company document CWA-11-3272, Application for Withholding Proprietary Information from Public Disclosure WBT-D-3548 P-Enclosure, "Closure of WNA-CN-00157-WBT Open Items (Proprietary)" dated October 17, 2011 (Letter Item 3, SSER 23 Appendix HH Item Number 121)

5. Not Used

6. Proprietary Westinghouse Electric Company document EQ-QR-33-WBT-P, Revision 0, "WBT DMIMS-DX™ Seismic Evaluation of the Digital Metal Impact Monitoring System (DMIMS-DX™) for Watts Bar Unit 2," (proprietary) dated October 2011 (Letter Item 7)

7. Non-proprietary Westinghouse Electric Company document EQ-QR-33-WBT-NP, Revision 0, "WBT DMIMS-DX™ Seismic Evaluation of the Digital Metal Impact Monitoring System (DMIMS-DX™) for Watts Bar Unit 2," (non-proprietary) dated October 2011 (Letter Item 7)

8. Westinghouse Electric Company document CAW-11-3291, Application For Withholding Proprietary Information From Public Disclosure EQ-QR-33-WBT-P, Revision 0, "WBT DMIMS-DX™ Seismic Evaluation of the Digital Metal Impact Monitoring System (DMIMS-DX™) for Watts Bar Unit 2, EQ-QR-33-WBT, Revision 0 (proprietary)" dated October 31, 2011 (Letter Item 7)

9. Proprietary Westinghouse Electric Company document WCAP-17529-P, Revision 0, "System Requirements Specification for the Common Q Post Accident Monitoring System," (proprietary) dated November 2011 (Letter Item 8)

10. Non-proprietary Westinghouse Electric Company document WCAP-17529-NP, Revision 0, "System Requirements Specification for the Common Q Post Accident Monitoring System," (non-proprietary) dated November 2011 (Letter Item 8)

11. Westinghouse Electric Company document CAW-11-3292, Application For Withholding Proprietary Information From Public Disclosure WCAP-17529-P, Revision 0, "System Requirements Specification for the Common Q Post Accident Monitoring System, (proprietary)" dated October 31, 2011 (Letter Item 8)

Enclosure 2
TVA Letter Dated November 14, 2011
List of Attachments

12. Proprietary Westinghouse Electric Company document WNA-SD-00248-WBT-P, Revision 3, “RRAS Watts Bar 2 NSSS Completion Program I&C Projects, Software Design Description for the Post Accident Monitoring System Flat Panel Display (Proprietary)” dated October 2011 (Letter Item 9)

13. Non-proprietary Westinghouse Electric Company document WNA-SD-00248-WBT-NP, Revision 3, “RRAS Watts Bar 2 NSSS Completion Program I&C Projects, Software Design Description for the Post Accident Monitoring System Flat Panel Display (Non-Proprietary)” dated October 2011 (Letter Item 9)

14. Westinghouse Electric Company document CAW-11-3285, “Application for Withholding Proprietary Information for Public Disclosure, WNA-SD-00248-WBT-P, RRAS Watts Bar 2 NSSS Completion Program I&C Projects, Software Design Description for the Post Accident Monitoring System Flat Panel Display (Proprietary)” dated October 26, 2011 (Letter Item 9)

15. Proprietary Westinghouse Electric Company document WNA-SD-00250-WBT-P, Revision 3, “Software Design Description for the Post Accident Monitoring System AC160 Software (Proprietary)” dated October 2011 (Letter Item 10)

16. Non-proprietary Westinghouse Electric Company document WNA-SD-00250-WBT-NP, Revision 3, “Software Design Description for the Post Accident Monitoring System AC160 Software (Non-Proprietary)” dated October 2011 (Letter Item 10)

17. Westinghouse Electric Company document CAW-11-3286, Application for Withholding Proprietary Information for Public Disclosure, WNA-SD-00250-WBT-P, Revision 0, “Software Design Description for the Post Accident Monitoring System AC160 Software (proprietary)” dated October 26, 2011 (Letter Item 10)

18. Proprietary Westinghouse Electric Company document WNA-TP-02988-WBT-P, Revision 0, “Nuclear Automation Watts Bar Unit 2 NSSS Completion Program I&C Projects, Post Accident Monitoring System Channel Integration Test/Factory Acceptance Test, (Proprietary)” dated October 2011 (Letter Item 11)

19. Non-proprietary Westinghouse Electric Company document WNA-TP-02988-WBT-NP, Revision 0, “Nuclear Automation Watts Bar Unit 2 NSSS Completion Program I&C Projects, Post Accident Monitoring System Channel Integration Test/Factory Acceptance Test, (Non-Proprietary)” dated October 2011 (Letter Item 11)

20. Westinghouse Electric Company document CAW-11-3287, Application For Withholding Proprietary Information From Public Disclosure WNA-TP-02988-WBT-P, Revision 0, “Nuclear Automation Watts Bar Unit 2 NSSS Completion Program I&C Projects, Post Accident Monitoring System Channel Integration Test/Factory Acceptance Test (Proprietary)” dated October 26, 2011 (Letter Item 11)

21. Proprietary Westinghouse Electric Company document WNA-VR-0279-WBT-P, Revision 5, “Requirements Traceability Matrix for the Post-Accident Monitoring System (Proprietary)” dated October 2011 (Letter Item 12)

Enclosure 2
TVA Letter Dated November 14, 2011
List of Attachments

22. Non-proprietary Westinghouse Electric Company document WNA-VR-0279-WBT-P, Revision 5, “Requirements Traceability Matrix for the Post-Accident Monitoring System (Non-Proprietary)” dated October 2011 (Letter Item 12)

23. Westinghouse Electric Company document CAW-11-3287, Application For Withholding Proprietary Information From Public Disclosure WNA-VR-0279-WBT-P, Revision 5, “Requirements Traceability Matrix for the Post-Accident Monitoring System (Proprietary)” dated October 18, 2011 (Letter Item 12)

24. “Thermo Fisher Affidavit for Withholding Qualification Report NO. 864, REV.1 - Class 1E Qualification of Source Range, Intermediate Range and Wide Range Channels,” dated March 11, 2011 (Letter Item 13)

Enclosure 3
TVA Letter Dated November 14, 2011
List of References

1. TVA to NRC letter dated October 13, 2011 “Watts Bar Nuclear Plant (WBN) Unit 2 – Instrumentation and Controls Staff Information Requests” (Letter Item 2, SSER 23 Appendix HH Item Number 77)

2. TVA to NRC letter dated July 15, 2010, “Watts Bar Nuclear Plant (WBN) Unit 2 – Instrumentation and Controls Staff Information Requests” (Letter Item 2, SSER 23 Appendix HH Item Number 77)

3. Westinghouse to TVA letter dated October 12, 2011, “NRC Access to WINCISE Documents at the Westinghouse Rockville Office” (Letter Item 3, SSER 23 Appendix HH Item Number 121)

4. Westinghouse to TVA letter dated October 27, 2011, “NRC Access to WINCISE Document at the Westinghouse Rockville Office” (Letter Item 3, SSER 23 Appendix HH Item Number 121)

5. Not Used

6. TVA to NRC letter dated May 6, 2011, “Watts Bar Nuclear Plant (WBN) Unit 2 – Instrumentation and Controls Staff Information Requests” (Letter Item 7)

7. TVA to NRC letter dated September 2, 2010, “Watts Bar Nuclear Plant (WBN) Unit 2 – Instrumentation and Controls Staff Information Requests” (Letter Items 8 and 9)

8. TVA to NRC letter dated August 20, 2010, “Watts Bar Nuclear Plant (WBN) Unit 2 – Instrumentation and Controls Staff Information Requests” (Letter Items 10 and 12)

9. TVA to NRC letter dated December 3, 2010, “Watts Bar Nuclear Plant (WBN) Unit 2 – Instrumentation and Controls Staff Information Requests” (Letter Item 11)

10. TVA to NRC letter dated July 31, 2010, “Watts Bar Nuclear Plant (WBN) Unit 2 – Final Safety Analysis Report (FSAR) – Response to Preliminary Requests for Additional Information and Requests For Additional Information” (Letter Item 13)

Enclosure 4
TVA Letter Dated November 14, 2011
List of New Regulatory Commitments

1. Problem Evaluation Report (PER) 450041 was written to document a problem during the last NRC graded exercise where actual data was sent to the NRC instead of the drill simulated data. This PER has the potential to require a revision to the WBN 2 DPL. If changes to the DPL are required by the PER, then TVA will submit a revised DPL to the NRC no later than June 15, 2012. (Letter Item 1, SSER 23 Appendix HH Item Number 38)

2. Revision 1 of WNA-CN-00157-WBT will be provided to the NRC no later than November 30, 2011. (Letter Item 4, SSER 23 Appendix HH Item Number 125)

3. WEC Design Specification 00000-FEA-6101, and IITA Design Specification 418A28 will be made available to the NRC to review at the WEC Office in Rockville, Maryland, no later than November 30, 2011. (Letter Item 4, SSER 23 Appendix HH Item Number 125)