

WBN2Public Resource

From: Boyd, Desiree L [dlboyd@tva.gov]
Sent: Thursday, January 19, 2012 3:52 PM
To: Epperson, Dan; Poole, Justin; Raghavan, Rags; Milano, Patrick
Cc: Arent, Gordon; Hamill, Carol L; Boyd, Desiree L
Subject: TVA letter to NRC_01-19-2012_I&C RAI Response
Attachments: 01-19-2012_I&C RAI Response_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.

Thank You,

~*~*~*~*~*~*~*~*~*

Desiree L. Boyd

WBN Unit 2 Licensing

dlboyd@tva.gov

423-365-8764

Hearing Identifier: Watts_Bar_2_Operating_LA_Public
Email Number: 632

Mail Envelope Properties (7AB41F650F76BD44B5BCAB7C0CCABFAF27C5B93E)

Subject: TVA letter to NRC_01-19-2012_I&C RAI Response
Sent Date: 1/19/2012 3:52:28 PM
Received Date: 1/19/2012 3:52:36 PM
From: Boyd, Desiree L

Created By: dlboyd@tva.gov

Recipients:

"Arent, Gordon" <garent@tva.gov>
Tracking Status: None
"Hamill, Carol L" <clhamill@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

Post Office: TVANUCXVS2.main.tva.gov

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MESSAGE	430	1/19/2012 3:52:36 PM
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Options

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

Attachments 1, 4, 6, 8 and 15 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

January 19, 2012

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

10 CFR 50.4

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

Reference: 1. Supplemental Safety Evaluation Report (SSER) 22, 23, 24 and 25 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 regarding:

- SSER Appendix HH "Watts Bar Unit 2 Action Items Table," Item TVA21
- NRC to TVA letter dated November 18, 2011, "Watts Bar Nuclear Plant, Unit 2 - Request for Additional Information Regarding Supplemental Safety Evaluation Report Open Items 80, 81, 94, 105, and 108 (TAC NO. ME0853)" (ML113130218)
- Various TVA 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 provided in Enclosure 1. Enclosure 3 contains the list of references associated with TVA's commitments and responses. There are no new regulatory commitments contained in this letter.

Attachments 4, 6, 8 and 15 contain information proprietary to General Atomics Electronic Systems, Inc. (GA-ESI). Attachment 10 contains the necessary information supporting the request for withholding such information. TVA requests that the GA-ESI proprietary information be withheld from public disclosure in accordance with 10 CFR § 2.390(a)(4).

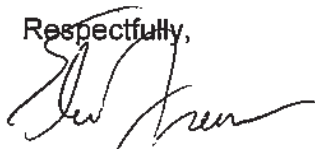
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Attachment 1 contains information proprietary to Westinghouse Electric Company LLC (WEC). Attachment 3 contains the necessary information supporting the request for withholding such information. TVA requests that the WEC proprietary information be withheld from public disclosure in accordance with 10 CFR § 2.390(a)(4).

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 19th day of January 2012.

Respectfully,



Edwin E. Freeman
Watts Bar Unit 2 Completions Manager

Enclosures:

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

cc (Enclosures):

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245 Peachtree Center Ave., NE Suite 1200
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NRC Resident Inspector Unit 2
Watts Bar Nuclear Plant
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Spring City, Tennessee 37381

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bcc (Enclosures):

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Enclosure 1
TVA Letter Dated January 19, 2012
TVA Responses to Instrumentation and Controls Staff Information Requests

Acronyms and Abbreviations

The following acronyms/abbreviations are used in this letter:

Common Q	Common Qualified Platform
EDMS	Enterprise Document Management System
EL.	Elevation
GA	General Atomics
GA-ESI	General Atomics-Electronic Systems, Inc.
HVAC	Heating Ventilating and Air Conditioning
IITA	In-Core Instrument Thimble Assembly
MI	Mineral Insulated
NRC	Nuclear Regulatory Commission
PAMS	Post Accident Monitoring System
RAI	Request for Additional Information
RG	Regulatory Guide
RRS	Required Response Spectra
SDOE	Secure Development and Operating Environment
SPS	Signal Processing System
SSER	Supplemental Safety Evaluation Report
TRS	Test Response Spectra
TVA	Tennessee Valley Authority
WBN	Watts Bar Nuclear Plant
WEC	Westinghouse Electric Company LLC
¹ WINCISE™	Westinghouse In-Core Information Surveillance & Engineering

Notes

1. 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.
2. 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 latter 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.**"

¹ WINCISE is a registered trademark of the Westinghouse Electric Company LLC

Enclosure 1
TVA Letter Dated January 19, 2012
TVA Responses to Instrumentation and Controls Staff Information Requests

Responses

1. NRC Request (SSER 23 Appendix HH Item Number 108)

TVA should demonstrate to the NRC staff that there are no synergistic effects between temperature and humidity for the Common Q PAMS equipment. (SSER 23, Section 7.5.2.2.3.5.2, pg 7-75).

Follow-up NRC Request

Upon review of the response to Action Item Number 94, it was noticed that TVA's response to these two action items provided different environmental conditions in each response (see Action Item Number 94 Clauses 4.5.3 and 4.7). It is no longer clear, in what environment the Common Q PAMS is required to operate or how qualification to this environment is demonstrated.

- a. Please provide EPM-MCP-071689, "Cooling/Heating Load & Equipment/Component Performance Analysis for the Control Building Electrical Board Room Areas (EL. 692.0 and 708.0)," Revision 19.*
- b. Please provide EPM-LCP-072489, "Cooling and Heating Load Analysis, Main Control Room HVAC [Heating, Ventilating, and Air Conditioning]," Revision 13.*
- c. Please provide the maximum temperature and the associated maximum relative humidity in which the Common Q PAMS is required to be operable.*
- d. Please provide the minimum temperature and the associated minimum relative humidity in which the Common Q PAMS is required to be operable.*
- e. Please explain why the relative humidity during a loss of coolant accident event is lower than the humidity during summer or winter.*
- f. Please describe how it is demonstrated that the Common Q PAMS equipment is qualified to the environments in which that equipment is required to operate. Please pay particular attention to the potential synergistic effects of temperature and humidity.*

TVA Partial Response to Follow-up NRC Request

Responses to "Draft Request for Additional Information Regarding Open Item 108," items a through e were provided in TVA to NRC letter dated December 22, 2011 (Reference 1). Item f is addressed as follows:

- f. It is not possible to state whether or not there are any synergistic effects between temperature and humidity on the Common Q PAMS equipment. The NRC-approved qualification methods in WCAP-16097-P-A, "Common Qualified Platform Topical Report," Revision 0, do not perform or require such testing. What can be shown is that the WBN Unit 2 operating conditions are bounded by the Common Q PAMS hardware qualification testing.*

Enclosure 1
TVA Letter Dated January 19, 2012
TVA Responses to Instrumentation and Controls Staff Information Requests

Attachment 1 describes how the Common Q PAMS equipment is qualified for the environments in which it is required to operate.

Attachment 1 contains WEC proprietary document WBT-D-3711 P-Enclosure, "Westinghouse's Revised Response to Follow up NRC Request (SSER 24 Appendix HH Item Number 108)," dated January 2012. Attachment 2 contains WEC non-proprietary document WBT-D-3711 NP-Enclosure, "Westinghouse's Revised Response to Follow up NRC Request (SSER 24 Appendix HH Item Number 108)," dated January 2012. Attachment 3 contains WEC non-proprietary document CWA-12-3349, "Application for Withholding Information From Public Disclosure WBT-D-3711 P-Enclosure, 'Westinghouse's Revised Response to Follow up NRC Request (SSER 24 Appendix HH Item Number 108),' (Proprietary)," dated January 5, 2011.

2. NRC Request (SSER Appendix HH Item Number TVA21)

Provide proprietary, non-proprietary versions and affidavits for withholding for the following documents:

- (a) General Atomics Electronic Systems 04038903-1SP, Qualification Basis for 04031101-001 (2-RE-90-130 &131).*
- (b) General Atomics Electronic Systems 04038903-2SP, Qualification Basis for 04031301-001 (2-RE-90-106).*
- (c) General Atomics Electronic Systems 04038903-4SP, Qualification Basis for 04031501-001 (2-RE-90-112).*

TVA Response to NRC Request

- (a) Attachment 4 contains demarcated proprietary GA-ESI document 04038903-1SP, "Qualification Basis for 04031101-001 (2-RE-90-130 &131)," Revision D. Attachment 5 contains redacted non-proprietary GA-ESI document 04038903-1SP, "Qualification Basis for 04031101-001 (2-RE-90-130 &131)," Revision D.
- (b) Attachment 6 contains demarcated proprietary GA-ESI document 04038903-2SP, "Qualification Basis for 04031301-001 (2-RE-90-106)," Revision B. Attachment 7 contains redacted non-proprietary GA-ESI document 04038903-2SP, "Qualification Basis for 04031301-001 (2-RE-90-106)," Revision B.
- (c) Attachment 8 contains demarcated proprietary GA-ESI document 04038903-4SP, "Qualification Basis for 04031501-001 (2-RE-90-112)," Revision B. Attachment 9 contains redacted non-proprietary GA-ESI document 04038903-4SP, "Qualification Basis for 04031501-001 (2-RE-90-112)," Revision B.
- (d) Attachment 10 contains GA-ESI letter GA-ESI 4505, "Request by General Atomics Electronic Systems, Inc. to Withhold Certain Information from Public Disclosure under 10CFR2.390," dated January 4, 2012.

Enclosure 1
TVA Letter Dated January 19, 2012
TVA Responses to Instrumentation and Controls Staff Information Requests

Review of the GA-ESI qualification reports found that the seismic Test Response Spectra (TRS) did not bound the WBN Required Response Spectra (RRS). Engineering performed an analysis of the differences and determined that the GA-ESI qualification testing was acceptable. The analysis is documented in TVA calculation WCGACQ0766. Attachment 11 contains TVA calculation WCGACQ0766, "Required Response Spectra for Evaluation of Radiation Monitoring Equipment," Revision 1.

3. TVA Commitment

TVA and Westinghouse committed to make available WINCISE documents for testing of the IITA assemblies at the Westinghouse Rockville office that were not releasable to the NRC.

Commitment Closure

The following documents are available for NRC audit at the WEC Rockville office.

Document Title	Document #	Revision
Incore Instrument Thimble Assembly (IITA) Insulation Resistance	LTR-NO-11-109	October 11, 2011
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-10-192	00
Quality Release & Certificate of Conformance	QR-10-351	00
Quality Release & Certificate of Conformance	QR-4500298582-001	00
Class 1E Qualification of the Incore Instrument (Core Exit Thermocouple Portion) and Mineral Insulated Cable Assembly	CE-NPSD-240-P	0
Design And Fabrication Specification For Electrical Connectors Supplied By Whittaker With And Without Integral Reference Junctions (Proprietary)	00000-FEA-6101	5
Engineering Specification for In-core Instrumentation Thimble Assembly (IITA) (Proprietary)	418A28	2
WBT-TVA-1060, Response to WINCISE SPS Cabinet Power Requirements, dated March 15, 2010 (Letter)	WBT-TVA-1060	NA
WINCISE Watts Bar IITA Dielectric Report (Mirion Proprietary)	021-8559	00
Watts Bar 2 Incore Instrumentation System Dielectric Characteristics of Completed MI Cable Assemblies	LTR-ME-10-3	0
Equipment Qualification Summary Report for WINCISE Signal Processing System (Proprietary)	EQ-QR-39-WBT-P	1

Enclosure 1
TVA Letter Dated January 19, 2012
TVA Responses to Instrumentation and Controls Staff Information Requests

4. TVA Commitment

As committed to in TVA to NRC letter dated December 22, 2011 (Reference 1), a non-proprietary version of the GA-ESI letter 010-01038-001, Attachment: "04502050-001 Receipt Inspection" and affidavit for withholding will be submitted within two weeks of receipt from GA-ESI.

Commitment Closure

Attachment 15 contains demarcated proprietary "GA-ESI letter 010-01038-001, Attachment 1, 04502050-001 Receipt Inspection." Attachment 16 contains redacted non-proprietary "GA-ESI letter 010-01038-001, Attachment 1, 04502050-001 Receipt Inspection." Attachment 10 contains GA-ESI letter GA-ESI 4505, "Request by General Atomics Electronic Systems, Inc. to Withhold Certain Information from Public Disclosure under 10CFR2.390," dated January 4, 2012.

5. TVA Commitment

As committed to in TVA to NRC letter dated July 31, 2010, (Reference 2) submit non-proprietary version and affidavit for withholding for TR-1136 for Ametek containment sump level pressure transmitter.

Partial Commitment Closure

Attachment 17 contains non-proprietary Ametek Report No. TR-1136, "Qualification Documentation Review Package for Ametek Aerospace Gulton-Statham Products Nuclear Qualified Pressure Transmitter Series Enveloping --- Gage Pressure Transmitter Series PG 3200, Differential Pressure Transmitter Series PO 3200 Differential High Pressure Transmitter Series PDH 3200, Draft Range Pressure Transmitter Series DR 3200, Remote Diaphragm Seal Differential Pressure Transmitter Series PO 3218, Remote Diaphragm Seal Differential High Pressure Transmitter Series PDH 3218," Revision C.

Attachment 18 contains non-proprietary Ametek letter "Affidavit of Withholding from Public Disclosure for TR-1136 Environmental Qualifications Document," dated January 13, 2012

Enclosure 2
TVA Letter Dated January 19, 2012
List of Attachments

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

1. WEC proprietary document WBT-D-3711 P-Enclosure, "Westinghouse's Revised Response to Follow up NRC Request (SSER 24 Appendix HH Item Number 108)," dated January 2012 (Letter Item 1, SSER 23 Appendix HH Item Number 108)
2. WEC non-proprietary document WBT-D-3711 NP-Enclosure, "Westinghouse's Revised Response to Follow up NRC Request (SSER 24 Appendix HH Item Number 108)," dated January 2012 (Letter Item 1, SSER 23 Appendix HH Item Number 108)
3. WEC non-proprietary document CWA-12-3349, Application for Withholding Information From Public Disclosure "WBT-D-3711 P-Enclosure, 'Westinghouse's Revised Response to Follow up NRC Request (SSER 24 Appendix HH Item Number 108),' (Proprietary)" dated January 5, 2011 (Letter Item 1, SSER 23 Appendix HH Item Number 108)
4. Demarcated proprietary GA-ESI document 04038903-1SP, "Qualification Basis for 04031101-001 (2-RE-90-130 &131)," Revision D (Letter Item 2, SSER Appendix HH Item Number TVA21)
5. Redacted non-proprietary GA-ESI document 04038903-1SP, "Qualification Basis for 04031101-001 (2-RE-90-130 &131)," Revision D (Letter Item 2, SSER Appendix HH Item Number TVA21)
6. Demarcated proprietary GA-ESI document 04038903-2SP, "Qualification Basis for 04031301-001 (2-RE-90-106)," Revision B (Letter Item 2, SSER Appendix HH Item Number TVA21)
7. Redacted non-proprietary GA-ESI document 04038903-2SP, "Qualification Basis for 04031301-001 (2-RE-90-106)," Revision B (Letter Item 2, SSER Appendix HH Item Number TVA21)
8. Demarcated proprietary GA-ESI document 04038903-4SP, "Qualification Basis for 04031501-001 (2-RE-90-112)," Revision B (Letter Item 2, SSER Appendix HH Item Number TVA21)
9. Redacted non-proprietary GA-ESI document 04038903-4SP, "Qualification Basis for 04031501-001 (2-RE-90-112)," Revision B (Letter Item 2, SSER Appendix HH Item Number TVA21)
10. GA-ESI letter GA-ESI 4505, "Request by General Atomics Electronic Systems, Inc. to Withhold Certain Information from Public Disclosure under 10CFR2.390," dated January 4, 2012 (Letter Item 2, SSER Appendix HH Item Number TVA21 and Letter Item 4)
11. TVA calculation WCGACQ0766, "Required Response Spectra for Evaluation of Radiation Monitoring Equipment," Revision 1 (Letter Item 2, SSER Appendix HH Item Number TVA21)
12. Not Used

Enclosure 2
TVA Letter Dated January 19, 2012
List of Attachments

13. Not Used
14. Not Used
15. Demarcated proprietary "GA-ESI letter 010-01038-001, Attachment 1, 04502050-001 Receipt Inspection" (Letter Item 4)
16. Redacted non-proprietary "GA-ESI letter 010-01038-001, Attachment 1, 04502050-001 Receipt Inspection" (Letter Item 4)
17. Non-proprietary Ametek Report No. TR-1136, "Qualification Documentation Review Package for Ametek Aerospace Gulton-Statham Products Nuclear Qualified Pressure Transmitter Series Enveloping --- Gage Pressure Transmitter Series PG 3200, Differential Pressure Transmitter Series PO 3200 Differential High Pressure Transmitter Series PDH 3200, Draft Range Pressure Transmitter Series DR 3200, Remote Diaphragm Seal Differential Pressure Transmitter Series PO 3218, Remote Diaphragm Seal Differential High Pressure Transmitter Series PDH 3218," Revision C (Letter Item 5)
18. Non-proprietary Ametek letter "Affidavit of Withholding from Public Disclosure for TR-1136 Environmental Qualifications Document," dated January 13, 2012 (Letter Item 5)

Enclosure 3
TVA Letter Dated January 19, 2012
List of References

1. TVA to NRC letter dated December 22, 2011, "Watts Bar Nuclear Plant (WBN) Unit 2 – Instrumentation and Controls Staff Information Requests" (Letter Item 1, SSER 23 Appendix HH Item Number 108 and Letter Item 4)
2. 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 5)