

## WBN2Public Resource

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**From:** Poole, Justin  
**Sent:** Friday, January 27, 2012 4:02 PM  
**To:** Arent, Gordon; Bryan, Robert H Jr  
**Cc:** WBN2HearingFile Resource  
**Subject:** Updated Appendix HH Open Item status list  
**Attachments:** WATTS BAR 2 APPENDIX HH Status 1-27-12.docx

I have updated the table as shown.

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**From:** Poole, Justin

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**Recipients:**

"WBN2HearingFile Resource" <WBN2HearingFile.Resource@nrc.gov>  
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**APPENDIX HH STATUS – (12/3027/20142)**

**WATTS BAR UNIT 2 ACTION ITEMS TABLE**

This table provides a status of required action items associated of all open items, confirmatory issues, and proposed license conditions that the staff has identified.

CI – Confirmatory Issue

<u>Item</u>	<u>Type</u>	<u>Action Required</u>	<u>NRC Lead</u>	<u>TVA Response Required/ TVA Lead</u>	<u>TVA Action Required to Close</u>	<u>NRC Action Required to Close</u>	<u>Due Date</u>	<u>SSER</u>
(1)	CI	Review evaluations and corrective actions associated with a power assisted cable pull. (NRC safety evaluation dated August 31, 2009, ADAMS Accession No. ML092151155)	EEEE	Yes/ ELE	EC:5/1/12 FC: TVA to provide letter to NRR documenting any power assisted cable pulls if performed. NRR and/or RII to review calculations on any power assisted cable pulls. Results documented in inspection report. Letter from TVA if no power assisted cable pulls were done. NRR Calculation Review Addressed by Maximo Commitment Closure package 10181059	TVA to provide letter to NRR documenting any power assisted cable pulls if performed. NRR and/or RII to review calculations on any power assisted cable pulls. Results documented in inspection report. Letter from TVA if no power assisted cable pulls were done.		26
(2)	CI	Conduct appropriate inspection activities to verify cable lengths used in calculations and analysis match as-installed configuration. (NRC safety evaluation dated August 31, 2009, ADAMS Accession No. ML092151155)	RII	No/ Elec	EC: 02/29/2012 FC: For NRC Inspection / Review Provide NRC Residents access to as-constructed ICRDS database and associated calcs.  Note: Pending completion of the cable pull effort and updating ICRDS for as-installed cable lengths by construction.	Include in inspection planning and conduct inspection. Reference closure in IR and SER.  Pending TVA's completion of cable installation and update of ICRDS for as-installed cable lengths		26

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(4)	CI	Conduct appropriate inspection activities to verify that TVA's maximum SWBP criteria for signal level and coaxial cables do not exceed the cable manufacturers maximum SWBP criteria. (NRC safety evaluation dated August 31, 2009, ADAMS Accession No. ML092151155)	RII	No	EC: Complete FC: N/A Closed by IR 2010604	Include in inspection planning and conduct inspection. Reference closure in IR and SER.  See IR 2010-604		26
(5)	CI	Verify timely submittal of pre-startup core map and perform technical review. (TVA letter dated September 7, 2007, ADAMS Accession No. ML072570676)	SRXB	Yes	EC: Complete FC: N/A Response provided in TVA to NRC letter dated April 6, 2011.	NRR review and evaluate pre-startup core map. Document in SER.  See Att 1 to 4/6/11 Ltr provides.		26
(6)	CI	Verify implementation of TSTF-449. (TVA letter dated September 7, 2007, ADAMS Accession No. ML072570676)	ITSB/ EICB	Yes	EC: Complete FC: N/A Response provided in TVA to NRC letter dated April 6, 2011.	NRR confirm TSs for proper implementation.  See current TSs Rev. B		26
(7)	CI	Verify commitment completion and review electrical design calculations. (TVA letter dated October 9, 1990, ADAMS Accession No. ML073551056)	RII	No/ Elec	EC: Ongoing FC: N/A For NRC Inspection / Review See commitments in TVA Letter. Provide Guillermo Crespo a copy of related electrical calculation procedures and provide NRC access to calculations	Include in inspection planning and conduct inspection. Reference closure in IR and SER. Specific actions need to be clarified with EEEB.		26
(8)	CI	TVA should provide a pre-startup map to the NRC staff indicating the rodded fuel assemblies and a projected end of cycle burnup of each rodded assembly for the initial fuel cycle 6-months prior to fuel load. (NRC safety evaluation dated May 3, 2010, ADAMS Accession No.	SRXB	Yes	EC: Complete FC: N/A Response provided in TVA to NRC letter dated April 6, 2011.	NRR review and evaluate pre-startup core map. Document in SER. Conduct with item (5) above.  NRR to verify that Att 1 to 4/6/11 letter is acceptable.		26

**APPENDIX HH STATUS – (12/30~~27~~/2014~~2~~)**

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		ML101200035)						
(9)	CI	Confirm that education and experience of management and principal supervisory positions down through the shift supervisory level conform to Regulatory Guide 1.8. (SSER 22, Section 13.1.3., pg 13-2)	RII	No/ LIC	EC: Complete FC: N/A For NRC Inspection / Review Education and experience information has been provided to NRC Residents on 9/21/11.	RII include in inspection planning and conduct inspection. Reference closure in IR and update status in Appendix HH.  TVA to provide education and experience info to RII staff.		26
(10)	CI	Confirm that TVA has an adequate number of licensed and non-licensed operators in the training pipeline to support the preoperational test program, fuel loading, and dual unit operation. (SSER 22, Section 13.1.3, pg 13-2)	RII	No/ OPS	EC: Complete FC: N/A For NRC Inspection/ Review Information for closure provided to RI on 9/28/11.	RII include in inspection planning and conduct inspection. Reference closure in IR and update status in Appendix HH.		26
(12)		TVA's implementation of NGDC PP-20 and EDCR Appendix J is subject to future NRC audit and inspection. (SSER 22, Section 25.9, pg 25-3)	DORL	Yes	EC: 2/10/12 FC: N/A For NRC Inspection / Review  Licensing to perform self assessment in January, 2012.	TVA provided letter on 6/17/11 summarizing QA audits of licensing basis program. NRR conduct review/audit of the program. Document in audit report and update status in Appendix HH.		26
(13)		TVA is expected to submit an IST program and specific relief requests for WBN Unit 2 nine months before the projected date of OL issuance. (SSER 22, Section 3.9.6, pg 3-11)	CPTB	Yes/ ISO	EC: 3/15/12 FC: N/A Provide submittal addressing IST program and relief requests.	NRR tech staff review of ISI/IST programs upon receipt from TVA. Document in letter and staff evaluation.		27
(16)		Based on the uniqueness of EQ, the NRC staff must perform a detailed inspection and evaluation prior to fuel load to determine how the WBN Unit 2 EQ program complies with the requirements of 10 CFR 50.49.	RII/ EEEB	No/ ELE	EC: Ongoing Inspection FC: N/A  For NRC Inspection / Review Provide NRC Lisa Castelli copies of EQ documents as requested	Conduct EQ inspection. Document in IR and update status in Appendix HH.		26

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		(SSER 22, Section 3.11.2, pg 3-12/13)			for the onsite inspections.			
(17)		The NRC staff should verify the accuracy of the WBN Unit 2 EQ list prior to fuel load. (SSER 22, Section 3.11.2.1, pg 3-13)	RII/ EEEB	No/ ELE	EC: Ongoing Inspection FC: N/A  For NRC Inspection/Review: provide NRC Lisa Castelle copies of EQ documents as requested for the onsite inspections.	Conduct EQ inspection. Document in IR and update status in Appendix HH.		26
(23)		Resolve whether or not TVA's reasoning for not upgrading the MSIV solenoid valves to Category I is a sound reason to the contrary, as specified in 10 CFR 50.49(l). (SSER 22, Section 3.11.2.2.1, pg 3-15)	EEEB	Yes/ ELE	EC: Complete FC: N/A Response provided in TVA to NRC letter dated April 6, 2011.	NRR reviewing the April 6, 2011 response. TVA stated that the MSIV solenoids would be upgraded to Cat I.		26
(25)		Prior to the issuance of an operating license, TVA is required to provide satisfactory documentation that it has obtained the maximum secondary liability insurance coverage pursuant to 10 CFR 140.11(a)(4), and not less than the amount required by 10 CFR 50.54(w) with respect to property insurance, and the NRC staff has reviewed and approved the documentation. (SSER 22, Section 22.3, pg 22-1)	PFAIB	Yes LIC	EC: 7/1/12 FC: N/A TVA to sign indemnity letter and provide to NRC.	TVA to provide indemnity letter for tech staff review and update status in Appendix HH. Include indemnity agreement with operating license.		28
(26)		For the scenario with an accident in one unit and concurrent shutdown of the second unit without offsite power, TVA stated that Unit 2 pre-operational testing will validate the	EEEB	Yes	EC: Open FC: N/A Response provided in TVA to NRC letter dated April 6, 2011.	TVA provided information in April 6, 2011 letter. Additional RAs were sent to TVA on 11/18/2011. NRR tech staff review and document in SER. This item was also partially		26

**APPENDIX HH STATUS – (12/30~~27~~/2014~~2~~)**

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		diesel response to sequencing of loads on the Unit 2 emergency diesel generators (EDGs). The NRC staff will evaluate the status of this issue and will update the status of the EDG load response in a future SSER. (SSER 22, Section 8.1)				reviewed during EDSFI. EEEB to review results of IDVP and EDSFI reports for impact in this area.		
(30)		TVA should confirm that all other safety-related equipment (in addition to the Class 1E motors) will have adequate starting and running voltage at the most limiting safety related components (such as motor operated valves, contactors, solenoid valves or relays) at the degraded voltage relay setpoint dropout setting. TVA should also confirm that the final Technical Specifications are properly derived from these analytical values for the degraded voltage settings. (SSER 22, Section 8.3.1.2, , pg 8-10)	RII/ EEEB	NO/ ELE	EC: Complete FC: N/A Submitted letter 8/12/11.	TVA submitted letter dated August 12, 2011. NRR tech staff review and document in SER.  Will review during Unit 1 CDBI, January 2012.		26
(32)		TVA should provide to the NRC staff the details of the administrative limits of EDG voltage and speed range, and the basis for its conclusion that the impact is negligible, and describe how it accounts for the administrative limits in the Technical Specification surveillance requirements for EDG voltage and frequency. (SSER 22, Section 8.3.1.14, pg 8-14)	EEEB	Yes/ ELE	Due date: TBD (Hilmes) FC: N/A  Tech Spec review is with Corporate Licensing (Joe Shea). Provide response for submittal to NRR.  Note – NRC RII may have an issue with the actual DG loading	TVA to provide information on EDG admin limits. NRR tech staff review and document in SER. TVA to submit amendment to TSs for Unit 2. (FYI we decided to submit on U2 first)		26

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(33)	CI	TVA stated in Attachment 9 of its letter dated July 31, 2010, that certain design change notices (DCNs) are required or anticipated for completion of WBN Unit 2, and that these DCNs were unverified assumptions used in its analysis of the 125 V dc vital battery system. Verification of completion of these DCNs to the NRC staff is necessary prior to issuance of the operating license. (SSER 22, Section 8.3.2.3, pg 8-16)	RII/ EEEB	Yes/	EC: Complete FC: Response provided in TVA to NRC letter dated April 6, 2011.	TVA provided information in April 6, 2011 letter. TVA to notify RII when work completed. RII to verify completion of DCNs and include in IR. Update status in Appendix HH.		26
(35)		TVA should provide information to the NRC staff that the CCS will produce feedwater purity in accordance with BTP MTEB 5-3 or, alternatively, provide justification for producing feedwater purity to another acceptable standard. (SSER 22, Section 10.4.6, pg 10-9)	CSGB/ DORL	Yes/ LIC	EC: Complete FC: N/A Response provided in TVA to NRC letter dated June 7, 2011.	TVA provided information on water purity in 6/7/11 letter. NRR tech staff review and document in SER.		26
(37)	CI	The NRC staff will review the combined WBN Unit 1 and 2 Appendix C prior to issuance of the Unit 2 OL to confirm (1) that the proposed Unit 2 changes were incorporated into Appendix C, and (2) that changes made to Appendix C for Unit 1 since Revision 92 and the changes made to the NP-REP since Revision 92 do not affect the bases of the staff's findings in this SER supplement. (SSER 22, Section 13.3.2, pg 13-8)	NSIR	Yes/ REP	EC: 06/1/12 FC: N/A Submit final Unit 1/2 REP to NRC (Appx C and NP-REP are ready for LIC review)	TVA to provide Appendix C within 6 months of fuel load. NSIR to review and document in SER.		26



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(38)	CI	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)	RII/ NSIR	Yes/ REP	EC: 11/14/11 FC: 6/15/12 For NRC Inspection / Review The Emergency Response Data System software has previously been modified and tested for the Watts Bar Unit 2 addition. This unit can be selected from the ERDS menu to send data to the NRC at this time. In addition, the software has been developed and tested to send data from the WBN PEDS to the CECC. The final WBN 2 list of ERDS data points has been provided to the TVA Computer Engineering Group for addition to the ERDS software. As a partial response to this item, the WBN 2 list of ERDS data points will be provided to the NRC on I&C response letter scheduled for 11/14/11. A commitment to update the data point list (if required) based on the results of PER 450041 will be included in the letter with a 6/15/12 due date. The due date is based on the Corporate Computer Engineering PER action completion date of 4/27/12. Once this list has been received by the NRC, it would require one month to add the list to the NRC data systems, write the test, schedule	TVA states that ERDS software previously modified and tested for Unit 2 addition and to send data from the WBN PEDS to the CECC. Official list of points for WBN 2 has not been provided to TVA Computer Engineering Group for addition to the ERDS software; official testing of software cannot be completed with NRC to declare the WBN 2 ERDS operational. NRC needs list to add to the NRC data systems, write the test, schedule the test with TVA/NRC, run the test, and TVA submit the results.  RII to review and document in IR. NSIR to update status in Appendix HH.		27

**APPENDIX HH STATUS – (12/30~~27~~/2011~~12~~)**

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					the test with TVA/NRC, run the test, and TVA submit the results. (Detchemendy)			
(39)	CI	The NRC staff will confirm the adequacy of the communications capability to support dual unit operations prior to issuance of the Unit 2 OL. (SSER 22, Section 13.3.2.6, pg 13-14)	RII/ NSIR	Yes/ REP	EC: Complete FC: N/A NRC completed inspection wk of 10/17/11 and stated intent to close item. Provide NRC Residents copies of related documents as requested for the onsite inspection.  Detchemendy	Closed by IR 05000391/2011609, dated 12/16/2011. ADAMS Accession No. ML11350A229.  NSIR staff does not believe that, based on what is currently present in the "TVA Action Required to Close" column, that the response to OI 38 would cover OI 39. OI 39 deals with all other communications, not specifically ERDS.		26
(40)	CI	The NRC staff will confirm the adequacy of the emergency facilities and equipment to support dual unit operations prior to issuance of the Unit 2 OL. (SSER 22, Section 13.3.2.8, pg 13-15)	RII/ NSIR	Yes/ REP	EC: Complete FC: N/A For NRC Inspection / Review Perform self assessment to verify processes and materials in main control room, TSC, OSC, EOF and local recovery facility. Provide NRC Residents copies of self assessment documents for the onsite inspection. SA WBN-F-11-007 provided to residents on 9/21/11.  (Detchemendy)	TVA to perform self assessment to verify processes and materials in MCR, TSC, OSC, EOF and local recovery facility. Provide RI staff copies of self assessment documents. RII to review and document in IR. NSIR to update status in Appendix HH.		26
(41)	CI	TVA committed to (1) update plant data displays as necessary to include Unit 2, and (2) to update dose assessment models to provide capabilities for assessing releases	RII/ NSIR	Yes/ PSE	EC: 11/14/11 (Detchemendy)  Will submit during OCT24 NRR audit.	TVA to provide demonstration of capability of SPDS, ICS and PEDS data system displays by 7/1/12; and to submit EPIP-13. (describe RED, FRED and BRED data systems) by		27

**APPENDIX HH STATUS – (12/30~~27~~/201~~12~~)**

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		from both WBN units. The NRC staff will confirm the adequacy of these items prior to issuance of the Unit 2 OL. (SSER 22, Section 13.3.2.9, pg 13-16)			<p>1) Submit EPIP-13 (Describe RED, FRED and BRED data systems).</p> <ul style="list-style-type: none"> <li>• Confirm calcs OK for U2 EC: Done</li> <li>• Revise EPIP-13 EC: TBD</li> <li>• CEG revise dose assessment code EC: TBD</li> </ul> <p>PSE: 7/1/12 (Olson)</p> <p>2) For NRC Inspection / Review. Provide demonstration of capability of SPDS, ICS and PEDS data system displays for Unit 2 at WBN and Corporate.</p>	10/1/11. RII to review and document in IR. NSIR to update status in Appendix HH.		
(42)	CI	The NRC staff will confirm the adequacy of the accident assessment capabilities to support dual unit operations prior to issuance of the Unit 2 OL. (SSER 22, Section 13.3.2.9, pg 13-16)	RII/ NSIR	Yes/ PSE	<p>EC: 11/14/11 (Detchemendy)</p> <p>Will submit during OCT24 NRR audit.</p> <p>1) Submit EPIP-13 (Describe RED, FRED and BRED data systems).</p> <ul style="list-style-type: none"> <li>• Confirm calcs OK for U2 EC: Done</li> <li>• Revise EPIP-13 EC: TBD</li> </ul>	<p>Closed by IR 05000391/2011609, dated 12/16/2011. ADAMS Accession No. ML11350A229.</p> <p>RII to review and document in IR. NSIR to update status in Appendix HH.</p>		27

**APPENDIX HH STATUS – (12/30/2012)**

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					<ul style="list-style-type: none"> <li>CEG revise dose assessment code EC: TBD</li> </ul> FC: 7/1/12 (Olson) 2) For NRC Inspection / Review. Provide demonstration of capability of SPDS, ICS and PEDS data system displays for Unit 2 at WBN and Corporate.			
(43)	CI	Section V of Appendix E to 10 CFR Part 50 requires TVA to submit its detailed implementing procedures for its emergency plan no less than 180 days before the scheduled issuance of an operating license. Completion of this requirement will be confirmed by the NRC staff prior to the issuance of an operating license. (SSER 22, Section 13.3.2.18, pg 13-23)	NSIR	Yes/ REP	EC: 5/1/12 FC: N/A TVA to answer later. Submit Unit 1/2 REP implementing procedures (EPIP-1 thru EPIP-17) to NRC.(Detchemendy)	TVA to submit EIPs 6 months before OL. NSIR to update status in Appendix HH.		27
(47)	<u>CI</u>	The NRC staff noted that TVA's changes to Section 6.2.6 in FSAR Amendment 97, regarding the implementation of Option B of Appendix J, were incomplete, because several statements remained regarding performing water-sealed valve leakage tests "as specified in 10 CFR [Part] 50, Appendix J." With the adoption of Option B, the specified testing requirements are no longer applicable; Option A to Appendix J	SCVB	Yes	EC: Complete FC: N/A Response provided in TVA to NRC letter dated June 7, 2011. However, one FSAR Note was missed. A105 corrected FSAR (8/12/11).	TVA <del>to provide</del> correction in <del>future</del> amendment (A105) to FSAR. See also info in letter of 6/7/11. <del>NRR tech staff review and document in SER.</del>  <u>NRR tech staff reviewing provided information and will close in SSER 26</u>		26

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		retains these requirements. The NRC discussed this discrepancy with TVA in a telephone conference on September 28, 2010. TVA stated that it would remove the inaccurate reference to Appendix J for specific water testing requirements in a future FSAR amendment. (SSER 22, Section 6.2.6, pg 6-12)						
(48)	CI	The NRC staff should verify that its conclusions in the review of FSAR Section 15.4.1 do not affect the conclusions of the staff regarding the acceptability of Section 6.5.3. (SSER 22, Section 6.5.3, pg 6-15)	DORL/AADB	Yes	EC: Complete FC: N/A Response provided in TVA to NRC letter dated June 7, 2011.	Upon NRR completion of SER Chapter 15 review, tech staff review and document in SER update to section 6.5.3. See also info in TVA letter of 6/7/11.  <a href="#">NRR tech staff reviewing provided information and will close in SSER 26</a>		26
(49)	CI	The NRC staff was unable to determine how TVA linked the training qualification requirements of ANSI N45.2-1971 to TVA Procedure TI-119. Therefore, the implementation of training and qualification for inspectors will be the subject of future NRC staff inspections. (NRC letter dated July 2, 2010, ADAMS Accession No. ML101720050)	RII	No	EC: Complete FC: N/A For NRC Inspection / Review Provided NRC Residents how the refurb training requirements are linked to the ANSI standard. Provided the training records for refurb inspectors.	TVA provided RI staff with how the refurb training requirements are linked to the ANSI standard. Provided training records for refurb inspectors. RII to review and document in IR and update status in Appendix HH.		26
(50)	CI	TVA stated that about 5 percent of the anchor bolts for safety-related pipe supports do not have quality control documentation, because the pull tests have not yet been performed. Since the	RII	No/ Plant Design	EC: Ongoing Inspection FC: For NRC Inspection / Review Notify NRC Residents of anchor bolt pull tests.	TVA to notify RI staff of anchor bolt pull tests. RII to review and document in IR and update status in Appendix HH.		26

**APPENDIX HH STATUS – (12/30~~27~~/201~~42~~)**

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		documentation is still under development, the NRC staff will conduct inspections to follow-up on the adequate implementation of this construction refurbishment program requirement. (NRC letter dated July 2, 2010, ADAMS Accession No. ML101720050)			Inspection of pull tests ongoing (Gilley)			
(51)	CI	The implementation of TVA Procedure TI-119 will be the subject of NRC follow-up inspection to determine if the construction refurbishment program requirements are being adequately implemented. (NRC letter dated July 2, 2010, ADAMS Accession No. ML101720050)	RII	No/ Moll	EC: Ongoing inspection FC: For NRC Inspection / Review Provide NRC Residents the results of the refurb program.  (Moll)	RII to review and document in IR and update status in Appendix HH.		26
(59)		The staff's evaluation of the compatibility of the ESF system materials with containment sprays and core cooling water in the event of a LOCA is incomplete pending resolution of GSI-191 for WBN Unit 2. (SSER 23, Section 6.1.1.4, pg 6-2)	CVIB	Yes	EC: Open FC: N/A Response provided in TVA to NRC letter dated June 7, 2011.	Tech staff review and document in SER.		26
(60)	CI	TVA should amend the FSAR description of the design and operation of the spent fuel pool cooling and cleanup system in FSAR Section 9.1.3 as proposed in its December 21, 2010, letter to the NRC. (SSER 23, Section 9.1.3, pg 9-3 )	SBPB	Yes	EC: Complete FC: N/A Response provided in TVA to NRC letter dated June 7, 2011.	TVA provided information in A103. NRR tech staff review and update status in Appendix HH.  <a href="#">NRR tech staff reviewing provided information and will close in SSER 26</a>		26

**APPENDIX HH STATUS – (12/3027/20142)**

<u>Item</u>	<u>Type</u>	<u>Action Required</u>	<u>NRC Lead</u>	<u>TVA Response Required/ TVA Lead</u>	<u>TVA Action Required to Close</u>	<u>NRC Action Required to Close</u>	<u>Due Date</u>	<u>SSER</u>
(61)		TVA should provide information to the NRC staff to demonstrate that PAD 4.0 can conservatively calculate the fuel temperature and other impacted variables, such as stored energy, given the lack of a fuel thermal conductivity degradation model. (SSER 23, Section 4.2.2, pg 4-5)	SNPB	Yes	Will result in a License Condition.  Is an Additional Submittal Required?	NRR tech staff review and document in SER. May require license condition.		26
(63)	CI	TVA should confirm to the NRC staff that testing prior to Unit 2 fuel load has demonstrated that two-way communications is impossible with the Eagle 21 communications interface. (SSER 23, Section 7.2.1.1, pg 7-7)	RII	No/ PSE	EC: 7/1/12 FC: 7/1/12 Hot functional testing. I&C Matrix Item None This will be addressed by a License Condition (Duplicate of SSER 23 Item 93)	RII to inspect testing and document in IR. Update status in Appendix HH. From I&C matrix 171		27
(64)	CI	TVA stated that, "Post modification testing will be performed to verify that the design change corrects the Eagle 21, Rack 2 RTD accuracy issue prior to WBN Unit 2 fuel load." This issue is open pending NRC staff review of the testing results. (SSER 23, Section 7.2.1.1, pg 7-8)	RII	No/ PSE	EC: 12/9/11 FC: 1/31/12 FCN issued 10/14/11; to be incorporated into an EDCR, to issue Mod is 12/9/11; and to implement Mod and Test 1/31/12  For NRC Inspection / Review I&C Matrix Item None Provide requested info	RII to inspect testing and document in IR. Update status in Appendix HH. From I&C matrix 127		26
(65)		TVA should provide justification to the staff regarding why different revisions of WCAP-13869 are referenced in WBN Unit 1 and Unit 2. (SSER 23, Section 7.2.1.1, pg 7-3/4, 7-10)	EICB	Yes/ I&C	EC: Complete FC: N/A Response provided in TVA to NRC letter dated June 7, 2011. I&C Matrix Item 323 Changes are reflected in FSAR Amendment 104.	NRR tech staff reviewing provided information and will document in SSER 26  Changes in FSAR A104  I&C matrix 323		26

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<u>Item</u>	<u>Type</u>	<u>Action Required</u>	<u>NRC Lead</u>	<u>TVA Response Required/ TVA Lead</u>	<u>TVA Action Required to Close</u>	<u>NRC Action Required to Close</u>	<u>Due Date</u>	<u>SSER</u>
(66)	CI	TVA should clarify FSAR Section 9.2.5 to add the capability of the UHS to bring the non-accident unit to cold shutdown within 72 hours. (SSER 23, Section 9.2.5, pg 9-8)	SBPB	Yes/ Mech	EC: Complete FC: N/A A105 update of the FSAR.	TVA to provide information in future amendment. NRR tech staff review and update status in Appendix HH.		26
(67)	CI	TVA should confirm, and the NRC staff should verify, that the component cooling booster pumps for Unit 2 are above PMF level. (SSER 23, Section 9.2.2, pg 9-6)	RII	No/ Civil	EC: Complete FC: 7/1/12 For NRC Inspection / Review Provide EDCR closure documentation for installation of CCS thermal barrier booster pump dike. AA FCR issued. Inspect after field complete	TVA provided EDCR closure document to RI staff on installation of CCS thermal barrier booster pump dike. RII to review, inspect installation, and document in IR and update status in Appendix HH.		27
(69)	CI	The WBN Unit 2 RCS vent system is acceptable, pending verification that the RCS vent system is installed. (SSER 23, Section 5.4.5, pg 5-5)	RII	No Mech	EC: N/A FC: 7/1/12 For NRC Inspection / Review Provide EDCR closure documentation for installation of vents.	TVA to provide EDCR closure document for installation of RCS vents to RI staff. RII to review, inspect, and document in IR and update status in Appendix HH.		27
(70)		TVA should provide the revised WBN Unit 2 PSI program ASME Class 1, 2, and 3 Supports "Summary Tables," to include numbers of components so that the NRC staff can verify that the numbers meet the reference ASME Code. (Section 3.2.3 of Appendix Z of SSER 23, pg z-11, z-13)	CVIB	Yes/ ISO	EC: 3/1/12 (Tinley) FC: N/A Provide requested info	TVA needs to provide PSI program information to NRR. NRR tech staff review and document in SER.		26
(71)		By letter dated April 21, 2011 (ADAMS Accession No. ML111110513), TVA withdrew its commitment to replace the Unit 2 clevis insert bolts. TVA should provide further justification for the decision to not replace the bolts to	CVIB	Yes/ Mech	EC: Complete FC: N/A Initial response provided in TVA to NRC letter dated June 7, 2011.  TVA to NRC letter dated 10/24/2011, provided additional	TVA requested to withdraw commitment to replace X-750 bolts by letter dated April 21, 2011. NRR tech staff reviewing request. TVA needs to justify use on low-temp heat treated bolts. TVA provided additional information in the		26



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<u>Item</u>	<u>Type</u>	<u>Action Required</u>	<u>NRC Lead</u>	<u>TVA Response Required/ TVA Lead</u>	<u>TVA Action Required to Close</u>	<u>NRC Action Required to Close</u>	<u>Due Date</u>	<u>SSER</u>
		the NRC staff. (SSER 23, Section 3.9.5, pg 3-2/3)			justification (from WEC) for this commitment withdrawal (i.e., to not replace the bolts).	10/24/11 letter.  NRR staff reviewing provided information and will document in SSER 26.		
(73)	CI	The NRC staff will inspect to confirm that TVA has completed the WBN Unit 2 EOPs prior to fuel load. (SSER 23, Section 7.5.3, pg 7-119)	RII	No/ OPS	EC: 2/1/12 FC: N/A For NRC Inspection / Review Provide copies of EOPs for inspection.	TVA to provide EOPs to RI staff. RII to review and document in IR and update status in Appendix HH.		26
(74)	CI	The NRC staff will verify installation of the acoustic-monitoring system for the power-operated relief valve (PORV) position indication in WBN Unit 2 before fuel load. (SSER 23, Section 7.8.1, pg 7-167)	RII	No/ I&C	EC: 5/1/12 FC: For NRC Inspection / Review Provide EDCR closure documentation for installation of acoustic monitors.  Panels installed 5/18/11 Probes not installed	TVA to provide EDCR closure documentation for acoustic monitors to RI staff. RII to review and document in IR and update status in Appendix HH.		27
(75)	CI	The NRC staff will verify that the test procedures and qualification testing for auxiliary feedwater initiation and control and flow indication are completed in WBN Unit 2 before fuel load. (SSER 23, Section 7.8.2, pg 7-167)	RII	No/ PSE	EC: N/A PSE: 7/1/12 FC: N/A For NRC Inspection / Review Provide copies of test procedures for inspection.	RII to review and document in IR and update status in Appendix HH.		26
(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)	EICB	Yes/ I&C	EC: Complete FC: N/A Response provided in TVA to NRC letter dated Sept. 1, 2011. Proprietary information provided in TVA to NRC letter dated 10/13/11 and non-proprietary versions provided in TVA to NRC letter dated 7/15/10. This older	NRR tech staff reviewing September 1 and November 14, 2011 letters. Staff still has a question on procedure used for system verification tests. See TVA 5.  TVA needs to obtain V&V documents from vendor and provide		26

**APPENDIX HH STATUS – (12/3027/20142)**

<u>Item</u>	<u>Type</u>	<u>Action Required</u>	<u>NRC Lead</u>	<u>TVA Response Required/ TVA Lead</u>	<u>TVA Action Required to Close</u>	<u>NRC Action Required to Close</u>	<u>Due Date</u>	<u>SSER</u>
					submittal discussed in 11/14/11 TVA to NRC letter.	to NRR. NRR tech staff review and document in SER.		
(79)	CI	TVA should perform a radiated susceptibility survey, after the installation of the hardware but prior to the RM-1000 being placed in service, to establish the need for exclusion distance for the HRCAR monitors while using handheld portable devices (e.g., walkie-talkie) in the control room, as documented in Attachment 23 to TVA's letter dated February 25, 2011, and item number 355 of TVA's letter dated April 15, 2011. (SSER 23, Section 7.5.2.3, pg 7-110)	EICB	Yes/ Hilmes, Brehm	EC: 7/1/12 FC:  For NRC Inspection / Review I&C Matrix Item 355 (closed to commitment)  TVA made a commitment to perform the survey and provide results to NRC  Owner: R. Brehm	TVA to provide confirmation of satisfactory completion of rad survey/testing. NRR tech staff review and document in SER. I&C matrix item 355		27
(80)		TVA should provide clarification to the staff on how TVA Standard Specification SS-E18-14.1 meets the guidance of RG 1.180, and should address any deviations from the guidance of the RG. (SSER 23, Section 7.5.2.3, pg 7-115)	EICB	Yes/ I&C	EC: Open FC: N/A  Responses to items 1 and 2.i in letter dated 10/13/11. TVA 9/30/11 letter to NRC addressed 2ii thru ix; the same letter committed to responding to 1 & 2i within two weeks of response from vendor (GA-ESI). Response provided in TVA to NRC letter dated May 6, 2011, has been reviewed. I&C Matrix Item 340 – submitted Additional response submitted in TVA letter to NRC dated 12/22/11	NRR tech staff reviewed May 6, 2011 letter and determined that additional information is required. RAI letter dated 9/21/11. Staff reviewing RAI response dated 9/30/11. Additional RAI on 11/18/11.  I&C matrix item 340		26
(81)		The extent to which TVA's supplier, General Atomics (GA), complies with EPRI TR-106439 and the	EICB	Yes/ I&C	EC: Open FC: N/A Revised procedure submitted	TVA to provide revised procedure on GA commercial dedication process based on NRC letter of		26

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<u>Item</u>	<u>Type</u>	<u>Action Required</u>	<u>NRC Lead</u>	<u>TVA Response Required/ TVA Lead</u>	<u>TVA Action Required to Close</u>	<u>NRC Action Required to Close</u>	<u>Due Date</u>	<u>SSER</u>
		methods that GA used for its commercial dedication process should be provided by TVA to the NRC staff for review. (SSER 23, Section 7.5.2.3, pg 7-117)			9/30/11. White paper and attachment submitted 10/13/11.  NRC comments on GA procedure received 7/11/11 sent to GA for resolution. 11/18/11 RAI response provided in TVA letter to NRC dated 12/22/11.	7/11/11. Staff reviewing RAI response dated 9/30/11. NRR tech staff review and document in SER. Additional RAI on 11/18/11.  I&C matrix item 353		
(83)	CI	TVA should confirm to the NRC staff the completion of the data storm test on the DCS. (SSER 23, Section 7.7.1.4, pg 7-159)	EICB	Yes/ PSE	EC: Open PSE: 07/01/12 FC: For NRC Inspection / Review I&C Matrix Item None Provide requested info	TVA to provide confirmation of satisfactory completion of testing. NRR tech staff review and document in SER.		27
(90)	CI	The NRC staff should verify that the ERCW dual unit flow balance confirms that the ERCW pumps meet all specified performance requirements and have sufficient capability to supply all required ERCW normal and accident flows for dual unit operation and accident response, in order to verify that the ERCW pumps meet GDC 5 requirements for two-unit operation. (SSER 23, Section 9.2.1, pg 9-4)	RII/ SBPB	No/ Mech	EC: N/A FC: 7/1/12 Complete ERCW Flow Balance.	RII to inspect the satisfactory completion of ERCW testing. RII to review and document in IR and update status in Appendix HH.		27
(91)		TVA should update the FSAR with information describing how WBN Unit 2 meets GDC 5, assuming the worst case single failure and a LOOP, as provided in TVA's letter dated April 13, 2011. (SSER 23, Section 9.2.1, pg 9-5)	SBPB	Yes/ MECH	EC: Complete FC: N/A  Response provided TVA letter to NRC, dated 11/17/11, Amendment 107.	TVA provided updated information in A106 to section 9.2.2. Staff is looking for TVA to provide similar information in Section 9.2.1 in future FSAR amendment. TVA provided update in A107. NRR tech staff to confirm and update status in Appendix HH.		26

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<u>Item</u>	<u>Type</u>	<u>Action Required</u>	<u>NRC Lead</u>	<u>TVA Response Required/ TVA Lead</u>	<u>TVA Action Required to Close</u>	<u>NRC Action Required to Close</u>	<u>Due Date</u>	<u>SSER</u>
(93)	CI	TVA should confirm to the staff that testing of the Eagle 21 system has sufficiently demonstrated that two-way communication to the ICS is precluded with the described configurations. (SSER 23, Section 7.9.3.2, pg 7-175)	CI	Yes/ PSE	EC: PSE: 7/1/12 FC: TVA to answer later. I&C Matrix Item None Complete - This will be addressed by a License Condition (Duplicate of SSER 23 Item 63(F))	RII to inspect testing and document in IR. Update status in Appendix HH.		27
(94)		TVA should provide to the staff either information that demonstrates that the WBN Unit 2 Common Q PAMS meets the applicable requirements in IEEE Std. 603-1991, or justification for why the Common Q PAMS should not meet those requirements. (SSER 23, Section 7.5.2.2.3, pg 7-50, 7-87)	EICB	Yes/ I&C	EC: Open. FC: N/A Response provided in TVA to NRC letter dated Sept. 1, 2011. Response provided in TVA to NRC Letter 5/6/11 I&C Matrix Item 364 item 1, 367, 372	NRR tech staff reviewing September 1, 2011, letter. Additional RAI in 11/18/11 letter.  NRR tech staff review and document in SSER.		26
(98)		TVA should demonstrate that the WBN Unit 2 Common Q PAMS is in conformance with RG 1.152, Revision 2, or provide justification for not conforming. (SSER 23, Section 7.5.2.2.3, pg 7-53, 7-60, 7-102)	EICB	Yes/ I&C	EC: Complete FC: N/A Response provided in TVA to NRC letter dated May 6, 2011 I&C Matrix Item 368 Needs to be in Table 7.1-1 Response provided in TVA to NRC letter dated August 4, 2011	TVA to provide additional information. Additional RAI in 11/18/11 letter.  NRR tech staff review and document in SSER.		26
(101)		TVA should demonstrate that the WBN Unit 2 Common Q PAMS application software is in conformance with RG 1.168, Revision 1, or provide justification for not conforming. (SSER 23, Section 7.5.2.2.3, pg 7-54, 7-60, 7-65)	EICB	Yes/ I&C	EC: Open FC: N/A  Analysis to demonstrate compliance provided in letter dated 10/13/11. Initial response was not accepted by staff. WEC to provide analysis similar to the one for IEEE 603 demonstrating	NRR staff reviewing information provided by TVA on 10/13/11. NRR tech staff review and document in SSER.		26

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					compliance. Response provided in TVA to NRC letter dated February 25, 2011. Additional information provided in TVA to NRC letter dated 12/22/11.  Additional response scheduled for 2/24/12  I&C Matrix Item 081			
(105)		TVA should produce an acceptable description of how the WBN Unit 2 Common Q PAMS SysRS and SRS implement the design basis requirements of IEEE Std. 603-1991 Clause 4. (SSER 23, Section 7.5.2.2.3.4.3.1, pg 7-71)	EICB	Yes/ I&C	EC: Open. FC: N/A Response provided in TVA to NRC letter dated Sept. 1, 2011.  Response scheduled for 2/24/12  I&C Matrix Item 213 & 372	TVA to provide additional information. Additional RAI in 11/18/11 letter.  NRR tech staff review and document in SSER.		26
(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)	EICB	Yes/ I&C	EC: Open. FC: N/A Response provided in TVA to NRC letter dated Sept. 1, 2011.  Response provided in TVA to NRC letter dated 12/22/11. Additional response in TVA to NRC letter dated 1/19/12. I&C Matrix Item None	Additional RAI in 11/18/11 letter.  NRR tech staff reviewing provided information.		26
(110)		TVA should provide information to the NRC staff describing how the WBN Unit 2 Common Q PAMS design supports periodic testing of the RVLIS function. (SSER 23,	EICB	Yes/ I&C	EC: Complete. FC: N/A Response provided in TVA to NRC letter dated Sept. 1, 2011. I&C Matrix Item None	TVA to provide additional information. NRR tech staff review and document in SSER.		26

**APPENDIX HH STATUS – (12/30~~27~~/201~~42~~)**

<u>Item</u>	<u>Type</u>	<u>Action Required</u>	<u>NRC Lead</u>	<u>TVA Response Required/ TVA Lead</u>	<u>TVA Action Required to Close</u>	<u>NRC Action Required to Close</u>	<u>Due Date</u>	<u>SSER</u>
		Section 7.5.2.2.3.9.2.6, pg 7-93)						
(111)		TVA should confirm to the staff that there are no changes required to the technical specifications as a result of the modification installing the Common Q PAMS. If any changes to the technical specifications are required, TVA should provide the changes to the NRC staff for review. (SSER 23, Section 7.5.2.2.3.11, pg 7-102)	EICB	Yes/ I&C	EC: Complete FC: N/A Response provided in TVA to NRC letter dated May 6, 2011 I&C Matrix Item 374	TVA to provide additional information. NRR tech staff review and document in SSER.		26
(112)	CI	TVA should provide an update to the FSAR reflecting the radiation protection design features descriptive information provided in its letter dated October 4, 2010. (SSER 24, Section 12.4)	IHPB	Yes/ LIC	EC: Complete. FC: N/A Addressed in A105 - change package 2-105-04	NRR tech staff review A105 and document in SSER.		26
(113)	CI	TVA should provide an update to the FSAR reflecting the justification for the periodicity of the COT frequency for WBN non-safety related area radiation monitors. (SSER 24, Section 12.4)	IHPB	Yes/ I&C	EC: Complete. FC: N/A A105 update of the FSAR - change package 2-105-07	NRR tech staff review A015 and document in SSER.		26
(114)	CI	TVA should update the FSAR to reflect that WBN meets the radiation monitoring requirements of 10 CFR 50.68. (SSER 24, Section 12.4)	IHPB	Yes/ LIC	EC: Complete. FC: N/A Addressed in A105. - change package 2-105-01	NRR tech staff review A105 and document in SSER.		26
(115)	CI	TVA should update the FSAR to reflect the information regarding design changes to be implemented to lower radiation levels as provided in its letter the NRC dated June 3, 2010. (SSER 24, Section 12.5)	IHPB	Yes/ LIC	EC: Complete FC: N/A  FSAR updated in A105 (Section 4.3.2.7)	TVA to provide additional information. NRR tech staff review and document in SSER.		26

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<u>Item</u>	<u>Type</u>	<u>Action Required</u>	<u>NRC Lead</u>	<u>TVA Response Required/ TVA Lead</u>	<u>TVA Action Required to Close</u>	<u>NRC Action Required to Close</u>	<u>Due Date</u>	<u>SSER</u>
(116)	CI	TVA should update the FSAR to reflect the qualification standards of the RPM as provided in its letter to the NRC dated October 4, 2010. (SSER 24, Section 12.6)	IHPB	Yes/ LIC	EC: Complete. FC: N/A Addressed in A105. - change package 2-105-06.	NRR tech staff review A105 and document in SSER.		26
(117)	CI	TVA should update the FSAR to reflect the calculational basis for access to vital areas as provided in its letter dated February 25, 2011. (SSER 24, Section 12.7.1)	IHPB	Yes/ LIC	EC: 1/27/12 FC: N/A  Update FSAR.	TVA to provide additional information. NRR tech staff review and document in SSER.		26
(118)		TVA should provide to the NRC staff a description of how the other vanadium detectors within the IITA would be operable following the failure of an SPND. (SSER 24, Section 7.7.1.9.2)	EICB	Yes/ I&C	EC: Complete FC: N/A  Additional information provided in letter dated 10/13/11. Response provided in TVA to NRC letter dated Sept. 30, 2011.	TVA provided additional information on 9/30/11 and 10/13/11. NRR tech staff review and document in SSER.		26
(120)		TVA should confirm to the NRC staff that the maximum over-voltage or surge voltage that could affect the system is 264 VAC, assuming that the power supply cable to the SPS cabinet is not routed with other cables greater than 264 VAC. (SSER 24, Section 7.7.1.9.5)	EICB	Yes/ I&C	EC: Closed FC: N/A Provide a revised response Response provided in TVA to NRC letter dated Sept. 1, 2011. Note that the non-prop/affidavits to be provided by 12/1/11  Open items completed by TVA to NRC letter dated 12/22/11	NRR tech staff has reviewed September 1, 2011, letter and determined that additional information is required. NRR staff needs conformation that the power supply cable to the SPS is not routed with other cables greater than 264 VAC.		26
(121)		TVA should submit the results to the NRC staff of a 600 VDC dielectric strength test performed on the IITA assembly. (SSER 24, Section 7.7.1.9.5)	EICB	Yes/ I&C	EC: Open FC: N/A  Response provided TVA letter to NRC, dated 11/30/11.  Further response provided in TVA to NRC letter dated 1/19/12.	TVA to provide additional information. NRR tech staff review and document in SSER.		26



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<u>Item</u>	<u>Type</u>	<u>Action Required</u>	<u>NRC Lead</u>	<u>TVA Response Required/ TVA Lead</u>	<u>TVA Action Required to Close</u>	<u>NRC Action Required to Close</u>	<u>Due Date</u>	<u>SSER</u>
(123)		TVA should provide an explanation to the NRC staff of how the system will assign a data quality value to notify the power distribution calculation software to disregard data from a failed SPND. (SSER 24, Section 7.7.1.9.5)	EICB	Yes/ I&C	EC: Complete FC: N/A  Response provided in TVA to NRC letter dated Sept. 30, 2011	TVA provided additional information on 9/30/11. NRR tech staff review and document in SSER.		26
(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)	EICB	Yes/ I&C	EC: Complete FC: N/A  Response provided in TVA to NRC letter dated Sept. 30, 2011	TVA provided additional information on 9/30/11. NRR tech staff review and document in SSER.		26
(126)		To enable the NRC staff to evaluate and review the IITA environmental qualification, TVA should provide the summary report of the environmental qualification for the IITA. (SSER 24, Section 7.7.1.9.5)	EICB	Yes/ I&C	EC: Complete FC: N/A  Response provided TVA letter to NRC, dated 11/30/11.	TVA provided additional information on 9/30/11 <u>and 11/30/11</u> . Staff to review documents in Westinghouse Rockville office. NRR tech staff review and document in SSER.		26
(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)	EICB	Yes/ I&C	EC: Complete FC: N/A  Response provided in TVA to NRC letter dated November 14, 2011	TVA provided additional information on 9/30/11 <u>and 11/14/11</u> . NRR tech staff review and document in SSER.		26
(129)		TVA should verify to the NRC staff resolution of the open item in WNA-CN-00157-WBT for the power supply (to be installed in the SPS cabinet) to undergo EMC testing of 4 kV to validate the assumptions made in the Westinghouse analysis. (SSER 24, Section 7.7.1.9.5)	EICB	Yes/ ELE, I&C	EC: Complete FC: N/A  Response provided TVA letter to NRC, dated 11/30/11.	TVA provided additional information on 9/30/11 <u>and 11/30/11</u> . NRR tech staff review and document in SSER.		26



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<u>Item</u>	<u>Type</u>	<u>Action Required</u>	<u>NRC Lead</u>	<u>TVA Response Required/ TVA Lead</u>	<u>TVA Action Required to Close</u>	<u>NRC Action Required to Close</u>	<u>Due Date</u>	<u>SSER</u>
(131)		TVA should review the EOP action level setpoint to account for the difference between core exit temperature readings for Unit 1 and Unit 2 and confirm the EOP action level setpoint to the NRC staff. (SSER 24, Section 7.7.1.9.5)	EICB	Yes/ Koontz	EC: Complete  Response provided in letter dated 10/13/11.	TVA provided additional information on 10/13/11. NRR tech staff review and document in SSER.		26
(132)		TVA must provide the NRC staff with analyses of the boron dilution event that meet the criteria of SRP Section 15.4.6, including a description of the methods and procedures used by the operators to identify the dilution path(s) and terminate the dilution, in order for the staff to determine that the analyses comply with GDC 10. (SSER 24, Section 15.2.4.4)	SRXB	Yes/ Mech	EC: 12/15/11 FC: N/A  Provide analysis results to NRC  Response provided by TVA to NRC letter dated 1/12/12.	TVA <del>to</del> provided additional information <a href="#">in letter dated 1/12/12</a> . NRR tech staff review and document in SSER.		26
(133)		In order to confirm the stability analysis of the sand baskets used by TVA in the WBN Unit 2 licensing basis, TVA will perform either a hydrology analysis without crediting the use of the sand baskets at the Fort Loudoun dam for the seismic dam failure and flood combination, or TVA will perform a seismic test of the sand baskets, as stated in TVA's letter dated April 20, 2011. TVA will report the results of this analysis or test to the NRC by October 31, 2011. (SSER 24, Section 2.4.10)	EMCB	Yes/ Licensing	EC: Complete FC: N/A  10/31/2011 TVA letter provided analysis.  Letter committed to revising FSAR. (A107) [Commitment 112870791]  Information was incorporated in FSAR A107.	TVA to provide additional information. NRR tech staff review and document in SSER.		26
(134)		TVA should provide to the NRC staff supporting technical justification for	EMCB	Yes/ CORP	EC: 08/31/2012 FC: N/A	TVA to provide additional information. NRR tech staff review		26

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		the statements in Amendment 104 of FSAR Section 2.4.4.1, "Dam Failure Permutations," page 2.4-32 (in the section "Multiple Failures") that, "Fort Loudoun, Tellico, and Watts Bar have previously been judged not to fail for the OBE (0.09 g). Postulation of Tellico failure in this combination has not been evaluated but is bounded by the SSE failure of Norris, Cherokee, Douglas and Tellico." (SSER 24, Section 2.4.10)		CIVIL	Provide analysis to NRC.	and document in SSER.		
(136)	CI	TVA should provide an update to the WBN Unit 2 FSAR that includes the JFD summary for the 1991 through 2010 data period provided by e-mail dated July 20, 2011, and a discussion of the long term representativeness of these data. NRC staff should confirm that these updates have been made, upon receipt of the updated FSAR. (SSER 25, Section 2.3.3)	AADB	Yes	FSAR A107 11/18/11	TVA <del>to provide</del> updated FSAR. NRR tech staff to confirm and document in SSER.		26
(137)	CI	TVA should incorporate, and the NRC staff should confirm upon receipt, that the updated CR $\chi/Q$ values from TVA's September 15, 2011, letter have been integrated into a future amendment of the FSAR. (SSER 25, Section 2.3.4)	AADB	Yes	FSAR A107 11/18/11	<del>TVA provided</del> TVA to provide updated FSAR. NRR tech staff to confirm and document in SSER.		26
(138)	CI	Upon receipt of the updated ODCM, the NRC staff should confirm that corresponding revisions related to the updated annual average $\chi/Q$ and	AADB	Yes		TVA to provide updated FSAR. NRR tech staff to confirm and document in SSER.		26

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		D/Q values have been made to the ODCM. (SSER 25, Section 2.3.5)						
(139)	CI	TVA should update the FSAR to reflect the results of the cost-benefit analysis required by 10 CFR Part 50, Appendix I, subsection II.D. (SSER 25, Section 11.3)	IHPB	Yes		TVA to provide updated FSAR. NRR tech staff to confirm and document in SSER.		26
<b>Proposed Open Items</b>								
<b>Outstanding I&amp;C Matrix Items</b>								
TVA 8		Ol#199 requested TVA to provide information concerning how TVA plans to meet regulatory criteria for Quality (10 CFR 50.55a(a)(1)) associated with the Technical Support Center and Nuclear Data Link. TVA responded in Letter Dated October 5, 2010, Item 63; however, TVA's response does not address the quality aspects of these system features. A similar question had been asked for Quality Criteria adherence for the SPDS and the BISI functions of the Integrated Computer System. In response to that request (same letter) TVA provided a description of TVA procedures, BISI software development procedures, and various management measures that will be taken to assure high quality in the design, operation, and maintenance of the SPDS and BISI functions of the ICS. Since the TSC and Nuclear Data Link information originates in the SPDS	EICB	I&C	EC: Complete FC: N/A  Response submitted in letter dated 5/16/11  I&C Matrix Item 363  NRC Review pending  Additional information provided in TVA to NRC letter dated 1/19/12.			

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		<p>function of the ICS, are there any aspects of the quality measures that apply to the TSC and NDL features developed as part of quality processes for the ICS that are applicable to the data communications features?</p> <p>Specifically, what is the scope of TVA Procedure SPP-2.6 "Computer Software Control"? How does it apply to the ICS functions of a) SPDS, b) BISI, and c) TSC and NDL functions? Wouldn't there be aspects of the quality procedures that apply to the development, maintenance, and operations of the software needed to support the data communications features. Also, what quality measures will be applied to develop, maintain, and operate the hardware that accomplishes the TSC and NDL functions to ensure that these features will be reliable and available when needed?</p>						
TVA 21		<p>Provide proprietary, non-proprietary versions and affidavits for withholding for the following documents:</p> <ul style="list-style-type: none"> <li>General Atomics Electronic Systems 04038903-1SP, Qualification Basis for 04031101-001 (2-RE-90-130 &amp;131). 10/5/11</li> <li>General Atomics Electron Systems 04038903-2SP, Qualification Basis for 04031301-001 (2_RE-90-106). 10/7/11</li> <li>General Atomics Electronic</li> </ul>	EICB	I&C	<p>EC: 11/14/11 FC: N/A</p> <p>Provide response to NRC.</p> <p>Documents provided by letter dated 1/19/12. I&amp;C Matrix Item 396</p>			

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		Systems 04038903-4SP, Qualification Basis for 04031501-001 (2-RE-90-112). 10/21/11						
<b>Closed</b>								
(3)	CI	Confirm TVA submitted update to FSAR section 8.3.1.4.1. (NRC safety evaluation dated August 31, 2009, ADAMS Accession No. ML092151155)	EEEEB	Yes	Response provided in TVA to NRC letter dated April 6, 2011. Complete	Closed in SSER 24, Section 8.1. TVA to include in amendment to FSAR and highlight in transmittal letter. NRR staff review of FSAR update.  In 4/6/11 letter, TVA states it was in AMD 95.		24
(11)	CI	The plant administrative procedures should clearly state that, when the Assistant Shift Engineer assumes his duties as Fire Brigade Leader, his control room duties are temporarily assumed by the Shift Supervisor (Shift Engineer), or by another SRO, if one is available. The plant administrative procedures should clearly describe this transfer of control room duties. (SSER 22, Section 13.1.3, pg 13-2)	IOLB	No/ OPS	EC: Complete FC: N/A TVA Letter dated 9/1/11	Closed in SSER 25, Section 13.1.3  NRR tech staff reviewing provided information and will document in SSER 25.		25
(14)		TVA stated that the Unit 2 PTLR is included in the Unit 2 System Description for the Reactor Coolant System (WBN2-68-4001), which will	CVIB	Yes	EC: Complete FC: N/A Response provided in TVA to NRC letter dated April 6, 2011.	Closed in SSER 25, Section 5.3.1  NRR tech staff reviewing provided information and will document in		25

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		be revised to reflect required revisions to the PTLR by September 17, 2010. (SSER 22, Section 5.3.1, pg 5-8)			R. Bryan's 10/11 e-mail provided necessary portion of WBN2-68-4001 to NRR.	SSER 25.		
(15)		TVA should confirm to the NRC staff the completion of Primary Stress Corrosion Cracking (PWSCC) mitigation activities on the Alloy 600 dissimilar metal butt welds (DMBW) in the primary loop piping. (Section 3.6.3)	CPNB	Yes	Response provided in TVA to NRC letter dated April 6, 2011. Complete	Closed in SSER 24, Section 3.6.3.  TVA submitted information in A103. NRR tech staff review and document in SER.		24
(18)		Based on the extensive layup period of equipment within WBN Unit 2, the NRC staff must review, prior to fuel load, the assumptions used by TVA to re-establish a baseline for the qualified life of equipment. The purpose of the staff's review is to ensure that TVA has addressed the effects of environmental conditions on equipment during the layup period. (Section 3.11.2.2)	RII/ EEEB	No	Response provided in TVA to NRC letter dated April 6, 2011. Complete	Closed in Inspection Report 0500391/2011604, dated June 29, 2011, ADAMS Accession No. ML111810890.  Conduct EQ inspection. Document in IR and update status in Appendix HH.  See TVA response (RAI 3.11-EQ-1) in letter dated 12/17/10.		24
(19)		The NRC staff should complete its review of TVA's EQ Program procedures for WBN Unit 2 prior to fuel load. (Section 3.11.2.2.1)	RII/ EEEB	No	For NRC Inspection / Review Provide NRC Residents copies of EQ documents as requested for the onsite inspection  Complete - Expect NRC to close in next inspection report	Closed in Inspection Report 0500391/2011604, dated June 29, 2011, ADAMS Accession No. ML111810890.  TVA to provide RI staff with copies of EQ documents. Conduct EQ inspection. Document in IR and update status in Appendix HH.		24
(20)		Resolve whether or not routine maintenance activities should result in increasing the EQ of the 6.9 kV motors to Category I status in	RII/ EEEB	Yes	Response provided in TVA to NRC letter dated April 6, 2011. Complete	Closed in Inspection Report 0500391/2011605, dated August 5, 2011, ADAMS Accession No. ML112201418.		24

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		accordance with 10 CFR 50.49. (SSER 22, Section 3.11.2.2.1).				TVA submitted letter dated April 6, 2011. NRR tech staff review and document in SER.		
(21)		The NRC staff should confirm that the Electrical Penetration Assemblies (EPAs) are installed in the tested configuration, and that the feedthrough module is manufactured by the same company and is consistent with the EQ test report for the EPA. (SSER 22, Section 3.11.2.2.1, pg 3-14)	RII/ EEEB	No	EC: Complete FC: N/A  Closed in IR 2011-607 (issued 9/30/11)	Closed in Inspection Report 05000391/2011607, dated September 30, 2011, ADAMS Accession No. ML112730197.		25
(22)		TVA must clarify its use of the term “equivalent” (e.g., identical, similar) regarding the replacement terminal blocks to the NRC staff. If the blocks are similar, then a similarity analysis should be completed and presented to the NRC for review. (Section 3.11.2.2.1)	EEEB	Yes	Response provided in TVA to NRC letter dated April 6, 2011. Complete	Closed in SSER 24, Section 8.1.  NRR in receipt of information to address this item in TVA letter of 4/6/11. NRR tech staff review and document in SER.		24
(24)		The NRC staff requires supporting documentation from TVA to justify its establishment of a mild environment threshold for total integrated dose of less than $1 \times 10^3$ rads for electronic components such as semiconductors or electronic components containing organic material. (Section 3.11.2.2.1)	EEEB	Yes	Response provided in TVA to NRC letter dated April 6, 2011. Complete	Closed in SSER 24, Section 8.1.  TVA provided information in April 6, 2011 letter. NRR tech staff review and document in SER.		24
(27)		TVA should provide a summary of margin studies based on scenarios described in Section 8.1 for CSSTs A, B, C, and D. (SSER 22, Section 8.2.2)	EEEB	Yes	Response provided in TVA to NRC letter dated April 6, 2011. Complete	Closed in SSER 24, Section 8.1.  TVA provided information in April 6, 2011 letter. NRR tech staff review and document in SER.		24

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(28)		TVA should provide to the NRC staff a detailed discussion showing that the load tap changer is able to maintain the 6.9 kV bus voltage control band given the normal and post-contingency transmission operating voltage band, bounding voltage drop on the grid, and plant conditions. (SSER 22, Section 8.2.2)	EEEE	Yes	Response provided in TVA to NRC letter dated April 6, 2011. Complete	Closed in SSER 24, Section 8.1.  TVA provided information in April 6, 2011 letter. NRR tech staff review and document in SER.		24
(29)		TVA should provide information about the operating characteristics of the offsite power supply at the Watts Bar Hydro Plant (for dual-unit operation), including the operating voltage range, postcontingency voltage drops (including bounding values and post-unit trip values), and operating frequency range. (SSER 22, Section 8.2.2) (corrected version of Open Item 29 from previous SSER Appendix HH)	EEEE	Yes	Response provided in TVA to NRC letter dated June 7, 2011. Complete	Closed in SSER 24, Section 8.1.  TVA to provide updated grid stability analysis. TVA provided information in letter of 6/7/11. NRR tech staff review and document in SER.		24
(31)		TVA should clarify the loading sequence as explained in its letter dated December 6, 2010 to the staff. TVA should clarify whether the existing statements in FSAR regarding automatic sequencing logic are correct. If the FSAR description is correct, TVA should explain how the EDG and logic sequencing circuitry will respond to a LOCA followed by a LOOP scenario. (SSER 22, Section 8.3.1.11) (corrected version of Open Item 31 from SSER 22 Appendix	EEEE	Yes	Response provided in TVA to NRC letter dated April 6, 2011. Complete.	Closed in SSER 24, Section 8.1.  TVA provided information in April 6, 2011 letter. NRR tech staff review and document in SER.		24



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		HH)						
(34)	CI	TVA stated that the method of compliance with Phase I guidelines would be substantially similar to the current Unit 1 program and that a new Section 3.12 will be added to the Unit 2 FSAR that will be materially equivalent to Section 3.12 of the current Unit 1 FSAR. (SSER 22, Section 9.1.4)	SBPB	Yes	Response provided in TVA to NRC letter dated April 6, 2011. Complete.	Closed in SSER 24, Section 9.1.4.  TVA submitted information in 4/6/11 letter and A103. NRR tech staff review and document in SER.		24
(36)		TVA should provide information to the NRC staff to enable verification that the SGBS meets the requirements and guidance specified in the SER or provide justification that the SGBS meets other standards that demonstrate conformance to GDC 1 and GDC 14. (SSER 22, Section 10.4.8)	CSGB/DORL	Yes	Response provided in TVA to NRC letter dated April 6, 2011. Complete.	Closed in SSER 24, Section 10.4.8.  TVA provided information in April 6, 2011 letter. NRR tech staff review and document in SER.		24
(44)		TVA should provide additional information to clarify how the initial and irradiated RT <sub>NDT</sub> was determined. (SSER 22, Section 5.3.1, pg 5-9, 5-11, 5-13, 5-17, 5-28, 5-29, 5-31, 5-32)	CVIB	Yes	EC: Complete. FC: N/A Response provided in TVA to NRC letter dated April 6, 2011.	Closed in SSER 25, Section 5.3.1.  NRR tech staff reviewing provided information and will document in SSER 25.		25
(45)	CI	TVA stated in its response to RAI 5.3.2-2, dated July 31, 2010, that the PTLR would be revised to incorporate the COMS arming temperature. (SSER 22, Section 5.3.2, pg 5-28/29, 5-32)	CVIB	Yes	EC: Complete FC: N/A Response provided in TVA to NRC letter dated April 6, 2011.  R. Bryan's 10/11 e-mail provided necessary portion of WBN2-68-4001 to NRR.	Closed in SSER 25, Section 5.3.2.  NRR tech staff reviewing provided information and will document in SSER 25.		25

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(46)	CI	The LTOP lift settings were not included in the PTLR, but were provided in TVA's response to RAI 5.3.2-2 in its letter dated July 31, 2010. TVA stated in its RAI response that the PTLR would be revised to incorporate the LTOP lift settings into the PTLR. (SSER 22, Section 5.3.2, pg 5-28/29, 5-32) )	CVIB	Yes	EC: Complete FC: N/A Response provided in TVA to NRC letter dated April 6, 2011.  R. Bryan's 10/11 e-mail provided necessary portion of WBN2-68-4001 to NRR.	Closed in SSER 25, Section 5.3.2.  NRR tech staff reviewing provided information and will document in SSER 25.		25
(52)		TVA should provide an update to the FSAR replacing Table 12.2-3 with the expected source strength values of the freshly irradiated IITAs. (Section 12.3)	IHPB		Response provided in TVA to NRC letter dated June 7, 2011. Complete.	Never issued in SSER, issued as RAI questions. TVA provided information in February 25, 2011 letter. See also letter of 6/7/11.		
(53)		TVA should provide an update to the FSAR reflecting the information provided in its letter dated October 4, 2010, regarding the WBN radiation protection design features, including controlled access areas, decontamination areas, and onsite laboratories and counting rooms. (Section 12.4)	IHPB			Never issued in SSER, issued as RAI questions. TVA provided information in February 25, 2011 letter.		
(54)		TVA should provide adequate technical justification to the staff to relax the frequency of the radiation monitor channel quarterly operability tests. TVA should provide sufficient information to the staff to determine that the portable airborne radiation monitors comply with the requirements of 10 CFR 20.1501. TVA should provide sufficient information to the staff to determine that the licensing or TVA program	IHPB		On bucket list. Calculation has been issued and is ready to submit.  Meeting with NRC next week	Never issued in SSER, issued as RAI questions. TVA to provide revised wording in FSAR to discuss statistically sound justification to justify relaxation of channel check frequency.		

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		requirements for the calibration and operability testing of area radiation monitors are sufficient to meet the regulatory requirements of 10 CFR 20.1501. (Section 12.4)						
(55)		TVA should provide sufficient information to the staff to demonstrate that the two area radiation monitors for the Spent Fuel Pit comply with the requirements of 10 CFR 70.24 and 10 CFR 50.68 for radiation monitoring in areas where fuel is handled or stored. (Section 12.4)	IHPB		TVA to NRC letter submitted July 14, 2011. A 105 Change package prepared	Never issued in SSER, issued as RAI questions. TVA clarify previous RAI response from letter 2/25/11 in new letter of 6/14/11.		
(56)	CI	TVA should update the FSAR to reflect the information regarding the dose assessment program provided in its letter the NRC dated June 3, 2010. (Section 12.5)	IHPB			Never issued in SSER, issued as RAI questions.		
(57)	CI	TVA should update the FSAR to reflect the qualification standards of the RPM as provided in its letter to the NRC dated October 4, 2010. (Section 12.6)	IHPB			Never issued in SSER, issued as RAI questions.		
(58)	CI	The staff has insufficient information to conclude that TVA has taken appropriate actions to reduce radiation levels and increase the capability of operators to control and mitigate the consequences of an accident at WBN Unit 2, in accordance with the guidance of NUREG-0737, Item II.B.2, or can maintain occupational doses to plant operators within the requirements of	IHPB		(I&C Matrix Item 349) WBNAPS3-126, "EQ Dose in the U1/U2 Auxiliary Instrument Rooms and the Computer Room in the Control Building"  WBNAPS3-127 "EQ Dose in the Control Building"  TVA to review	Never issued in SSER, issued as RAI questions. TVA provided information in February 25, 2011 letter. TVA to provide calculation or summary of calculation when complete.		

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		GDC 19. Therefore, the staff cannot conclude that the plant shielding for WBN Unit 2 is acceptable. (Section 12.7.4)						
(62)	CI	Confirm TVA's change to FSAR Section 10.4.9 to reflect its intention to operate with each CST isolated from the other. (SSER 23, Section 10.4.9)	SBPB	Yes	Response provided in TVA to NRC letter dated June 7, 2011. Complete	Closed in SSER 24, Section 10.4.9.  TVA provided information in letter of 6/7/11 and A103. NRR tech staff review and update status in Appendix HH.		24
(68)		TVA should clarify to the NRC staff how the CSS complies with GDC 5. (Section 9.2.2)	SBPB			Never issued in SSER		
(72)		The NRC staff should complete its review and evaluation of the additional information provided by TVA regarding the ICC instrumentation. (SSER 23, Section 4.4.8, pg 4-22)	EICB	No/ I&C	EC: Complete FC: N/A Open pending NRC review Responses provided in multiple TVA to NRC letters. I&C Matrix Item 041, , 244, 245, 246, 250, 251, 252, 367, 368, 372, 373, and 374	Closed in SSER 25, Section 7.5.2.2.  NRR tech staff reviewing provided information and will document in SSER 25. I&C Matrix Items 041, 043, 067, 068, 069, 074, 081, 086, 101, 138, 142, 143, 144, 145, 183, 185, 202, 212, 244, 245, 246, 250, 251, 252, 367, 368, 372, 373, and 374		25
(76)	CI	The NRC staff will verify that the derivative time constant is set to zero in WBN Unit 2 before fuel load. (SSER 23, Section 7.8.3, pg 7-167)	RII	No/ PSE	EC: PSE: 07/01/12 FC: For NRC Inspection / Review Provide copies of test procedures for inspection.	Closed in Inspection Report 05000391/2011607, dated September 30, 2011, ADAMS Accession No. ML112730197.		25
(78)		TVA intends to issue a revised calculation reflecting that the TID in the control room is less than $1 \times 10^3$ rads, which will be evaluated by the NRC staff. (SSER 23, Section 7.5.2.3, pg 7-110, 7-116)	EICB	Yes/ I&C	EC: Complete. FC: N/A Provide requested calculation I&C Matrix Item 349 – Calculation WBNAPS3-127 "EQ Dose in the Control Building" is	Closed in SSER 25, Section 7.5.2.3.  NRR tech staff reviewing provided information and will document in SSER 25.		25

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					ready to submit Calculation submitted in TVA to NRC letter dated August 4, 2011	TVA to provide revised calculation WBNAPS3-127 "EQ Dose in the Control Building." NRR tech staff review and document in SER. I&C matrix item 349		
(82)		The staff concluded that the information provided by TVA pertaining to the in-containment LPMS equipment qualification for vibration was incomplete. TVA should provide (item number 362 of ADAMS Accession No. ML111050009), documentation that demonstrates the LPMS in-containment equipment has been qualified to remain functional in its normal operating vibration environment, per RG 1.133, Revision 1. (SSER 23, Section 7.6.1)	EICB	Yes	Response provided in TVA to NRC letter dated June 10, 2011 I&C Matrix Item 362  Complete - Staff accepted the response and closed the I&C Matrix Item as of 7/11/11.	Closed in SSER 24, Section 7.6.1.4.5.  TVA provided LPMS equipment vibration qualification in letter of 6/10/11. NRR tech staff review and document in SER.  I&C matrix item 362		24
(84)		TVA should provide additional information for the NRC staff to complete its review of post LOCA long term cooling boric acid precipitation. (Section 15.3.1)	NRR		Response provided in TVA to NRC Letter dated July 18, 2011. complete	Never issued in SSER		
(85)		The 95/95 peak local oxidation was calculated to be 1.04 percent, while core wide oxidation was calculated to be much less than 0.1 percent. TVA should provide to the NRC staff the value of the decay heat multiplier used for this limiting large break, in order for the staff to complete its evaluation. (Section 15.3.1)	NRR		Response provided in TVA to NRC Letter dated July 18, 2011. complete	Never issued in SSER		

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(86)		TVA should demonstrate to the staff, in the WCOBRA/TRAC analysis of the limiting break, that the core remains covered with a two-phase mixture and can be cooled for an indefinite period of time. (Section 15.3.1)	NRR		Response provided in TVA to NRC Letter dated July 18, 2011. complete	Never issued in SSER		
(87)		In order for the staff to complete its evaluation, TVA should provide (1) a time step sensitivity study for the limiting break displaying downcomer boiling, (2) a list of ten key parameter plots for the worst case downcomer boiling transient, (3) values for the lateral k factors used in the evaluation, and (4) the manner in which condensation was modeled in the downcomer. (Section 15.3.1)	NRR		Response provided in TVA to NRC Letter dated July 18, 2011. complete	Never issued in SSER		
(88)		It is also unclear to the staff that the entrainment correlation information has been incorporated into the EOP, to ensure that operators do not initiate hot and cold side injection during the period of time that entrainment could preclude injection into the hot legs. TVA should provide the EOP guidance/instructions for the operators to the staff for review. (Section 15.3.1)	NRR		Response provided in TVA to NRC Letter dated July 18, 2011. complete	Never issued in SSER		
(89)		TVA should demonstrate, quantitatively, the applicability of the generic analysis to WBN Unit 2, to demonstrate that the EOP	NRR		Response provided in TVA to NRC Letter dated July 18, 2011. complete	Never issued in SSER		

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<u>Item</u>	<u>Type</u>	<u>Action Required</u>	<u>NRC Lead</u>	<u>TVA Response Required/ TVA Lead</u>	<u>TVA Action Required to Close</u>	<u>NRC Action Required to Close</u>	<u>Due Date</u>	<u>SSER</u>
		instructions to the operators can effectively deal with the failure of a bottom mounted instrument tube in the lower head. (Section 15.3.4)						
(92)		The NRC staff should perform an inspection in accordance with NRC Temporary Instruction 2515/087, "Inspection of Licensee's Implementation of Multi-Plant Action A-17: Instrumentation for Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident (Regulatory Guide 1.97)." (Section 7.5.2.1.4)	RH			Never issued in SSER		
(95)		TVA should update FSAR Table 7.1-1, "Watts Bar Nuclear Plant NRC Regulatory Guide Conformance," to reference IEEE Std. 603-1991 for the WBN Unit 2 Common Q PAMS. (SSER 23, Section 7.5.2.2.3, pg 7-50)	EICB	Yes/ I&C	EC: Complete FC: N/A Response provided in TVA to NRC letter dated May 6, 2011 I&C Matrix Item: 364 Item 2  Addressed in Amendment 105 (change package 1-105-13) Response provided in TVA to NRC letter dated August 4, 2011	Closed in SSER 25, Section 7.5.2.2.  NRR tech staff reviewing provided information and will document in SSER 25.		25
(96)		TVA should (1) update FSAR Table 7.1-1 to include RG 1.100, Revision 3, for the Common Q PAMS, or (2) demonstrate that the Common Q PAMS is in conformance with RG 1.100, Revision 1, or provide justification for not conforming. (SSER 23, Section 7.5.2.2.3, pg 7-52, 7-76)	EICB	Yes/ I&C	EC: Complete FC: N/A Response provided in TVA to NRC letter dated May 6, 2011 I&C Matrix Item 366  Addressed in Amendment 105 (change package 1-105-13) Response provided in TVA to NRC letter dated August 4, 2011	Closed in SSER 25, Section 7.5.2.2.  NRR tech staff reviewing provided information and will document in SSER 25.		25

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<u>Item</u>	<u>Type</u>	<u>Action Required</u>	<u>NRC Lead</u>	<u>TVA Response Required/ TVA Lead</u>	<u>TVA Action Required to Close</u>	<u>NRC Action Required to Close</u>	<u>Due Date</u>	<u>SSER</u>
(97)		TVA should demonstrate that the WBN Unit 2 Common Q PAMS is in conformance with RG 1.153, Revision 1, or provide justification for not conforming. (SSER 23, Section 7.5.2.2.3, pg 7-53)	EICB	Yes/ I&C	EC: Complete FC: N/A Response provided in TVA to NRC letter dated May 6, 2011 I&C Matrix Item 367 Needs to be in Table 7.1-1 Response provided in TVA to NRC letter dated August 4, 2011	Closed in SSER 25, Section 7.5.2.2.  NRR tech staff reviewing provided information and will document in SSER 25.		25
(99)		TVA should update FSAR Table 7.1-1 to reference IEEE 7-4.3.2-2003 as being applicable to the WBN Unit 2 Common Q PAMS. (SSER 23, Section 7.5.2.2.3, pg 7-53)	EICB	Yes/ I&C	EC: Complete FC: N/A Provide response that Common Q PAMS meets these requirements and update FSAR in A105 I&C Matrix Item 369 Addressed in Amendment 105 (change package 1-105-13) Response provided in TVA to NRC letter dated August 4, 2011	Closed in SSER 25, Section 7.5.2.2.  NRR tech staff reviewing provided information and will document in SSER 25.		25
(100)		TVA should update FSAR Table 7.1-1 to reference RG 1.168, Revision 1; IEEE 1012-1998; and IEEE 1028-1997 as being applicable to the WBN Unit 2 Common Q PAMS. (SSER 23, Section 7.5.2.2.3, pg 7-54)	EICB	Yes/ I&C	EC: Complete FC: N/A Response provided in TVA to NRC letter dated May 6, 2011 I&C Matrix Item 370 Addressed in Amendment 105 (change package 1-105-13) Response provided in TVA to NRC letter dated August 4, 2011	Closed in SSER 25, Section 7.5.2.2.  NRR tech staff reviewing provided information and will document in SSER 25.		25
(102)		TVA should update FSAR Table 7.1-1 to reference RG 1.209 and IEEE Std. 323-2003 as being applicable to the WBN Unit 2 Common Q PAMS. (SSER 23, Section 7.5.2.2.3, pg 7-54, 7-75)	EICB	Yes/ I&C	EC: Complete FC: N/A  Provide response that Common Q PAMS meets these requirements and update FSAR in A105	Closed in SSER 25, Section 7.5.2.2.  NRR tech staff reviewing provided information and will document in SSER 25.		25



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<u>Item</u>	<u>Type</u>	<u>Action Required</u>	<u>NRC Lead</u>	<u>TVA Response Required/ TVA Lead</u>	<u>TVA Action Required to Close</u>	<u>NRC Action Required to Close</u>	<u>Due Date</u>	<u>SSER</u>
					I&C Matrix Item 371 Item 1  Addressed in Amendment 105 (change package 1-105-13) Response provided in TVA to NRC letter dated August 4, 2011			
(103)		TVA should demonstrate that the WBN Unit 2 Common Q PAMS conforms to RG 1.209 and IEEE Std. 323-2003, or provide justification for not conforming. (SSER 23, Section 7.5.2.2.3, pg 7-55)	EICB	Yes/ I&C	EC: Complete FC: N/A I&C Matrix Item 371 Item 2 Response provided in TVA to NRC letter dated August 4, 2011	Closed in SSER 25, Section 7.5.2.2.  NRR tech staff reviewing provided information and will document in SSER 25.		25
(104)	CI	The NRC staff will review the WEC self assessment to verify that it the WBN Unit 2 PAMS is compliant to the V&V requirements in the SPM or that deviations from the requirements are adequately justified. (SSER 23, Section 7.5.2.2.3.4.2, pg 7-62, 7-63, 7-65, 7-70)	EICB	Yes/ I&C	EC: Complete FC: N/A Response provided in TVA to NRC letter dated June 10, 2011 I&C Matrix Item 041  Self Assessment is available for NRC review at the WEC Rockville Office  For NRC Inspection / Review	Closed in SSER 25, Section 7.5.2.2.  NRR tech staff reviewing provided information and will document in SSER 25.		25
(106)		TVA should produce a final WBN Unit 2 Common Q PAMS SRS that is independently reviewed. (SSER 23, Section 7.5.2.2.3.4.3.1, pg 7-71)	EICB	Yes/ I&C	EC: Complete FC: N/A Response provided in TVA to NRC letter dated June 10, 2011 I&C Matrix Item 372 item 2  NRC review pending	Closed in SSER 25, Section 7.5.2.2.  NRR tech staff reviewing provided information and will document in SSER 25.		25
(107)	CI	TVA should provide to the NRC staff documentation to confirm that the final WBN Unit 2 Common Q PAMS SDDs that are independently	EICB	Yes/ I&C	EC: Complete FC: N/A Response provided in TVA to NRC letter dated June 10, 2011	Closed in SSER 25, Section 7.5.2.2.  NRR tech staff reviewing provided information and will document in		25

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<u>Item</u>	<u>Type</u>	<u>Action Required</u>	<u>NRC Lead</u>	<u>TVA Response Required/ TVA Lead</u>	<u>TVA Action Required to Close</u>	<u>NRC Action Required to Close</u>	<u>Due Date</u>	<u>SSER</u>
		reviewed. (SSER 23, Section 7.5.2.2.3.4.3.2, pg 7-71)			I&C Matrix Item 373 NRC review pending	SSER 25.		
(109)		TVA should demonstrate to the NRC staff acceptable data storm testing of the Common Q PAMS. (SSER 23, Section 7.5.2.2.3.7.1.8, pg 7-78, 7-81)	EICB	Yes/ I&C	EC: Complete FC: N/A Response provided in TVA to NRC letter dated June 10, 2011 I&C Matrix Item None NRC review pending	Closed in SSER 25, Section 7.5.2.2.  NRR tech staff reviewing provided information and will document in SSER 25.		25
(119)		TVA should submit WNA-CN-00157-WBT, Revision 0, to the NRC by letter. The NRC staff should confirm by review of WNA-CN-00157-WBT, Revision 0, that no credible source of faulting can negatively impact the CETs or PAMS train. (SSER 24, Section 7.7.1.9.5)	EICB	Yes/ I&C	EC: Complete. FC: N/A  Response provided in TVA to NRC letter dated Sept. 1, 2011.	Closed in SSER 25, Section 7.7.1.9.  NRR tech staff reviewing provided information and will document in SSER 25.		25
(122)		TVA should confirm to the NRC staff that different divisions of safety power are supplied to the IIS SPS cabinets, with the power cables routed in separate shielded conduits. (SSER 24, Section 7.7.1.9.5)	EICB	Yes/ I&C	EC: Complete. FC: N/A Response provided in TVA to NRC letter dated Sept. 30, 2011	Closed in SSER 25, Section 7.7.1.9.  NRR tech staff reviewing provided information and will document in SSER 25.		25
(124)		While the BEACON datalink on the Application server can connect to either BEACON machine, only BEACON A is used for communication. TVA should clarify to the NRC staff whether automatic switchover to the other server is not permitted. (SSER 24, Section 7.7.1.9.5)	EICB	Yes/ I&C	EC: Complete. FC: N/A  Response provided in TVA to NRC letter dated Sept. 1, 2011.	Closed in SSER 25, Section 7.7.1.9.  NRR tech staff reviewing provided information and will document in SSER 25.		25
(128)		TVA should submit the seismic qualification test report procedures	EICB	Yes/ ELE, I&C	EC: Complete. FC: N/A	Closed in SSER 25, Section 7.7.1.9.		25

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		and results for the SPS cabinets to the NRC staff for review. (SSER 24, Section 7.7.1.9.5)			Response provided in TVA to NRC letter dated Sept. 1, 2011. Note that the non-prop/affidavits to be provided by 12/1/11	NRR tech staff reviewing provided information and will document in SSER 25.		
(130)		TVA should provide a summary to the NRC staff of the EMC qualification test results of the SPS cabinets. (SSER 24, Section 7.7.1.9.5)	EICB	Yes/ ELE, I&C	EC:11/14/11 FC: N/A  WEC Complete; WBT-D-3453 engineering review complete: to be documented in 11/14/11 letter to NRC.  Response provided in TVA to NRC letter dated Sept. 1, 2011. Note that the non-prop/affidavits to be provided by 12/1/11	Closed in SSER 25, Section 7.7.1.9.  NRR tech staff reviewing provided information and will document in SSER 25.		25
(135)		TVA has not provided the analysis required by 10 CFR Part 50, Appendix I, subsection II.D. TVA must demonstrate with a cost-benefit analysis that a sufficient reduction in the collective dose to the public within a 50-mile radius would not be achieved by reasonable changes to the design of the WBN gaseous effluent processing systems. (SSER 24, Section 11.3)	IHPB	Yes/ LIC	EC: Complete. FC: N/A  TVA 07/28/11 letter to NRC (T02 110728 004)	Closed in SSER 25, Section 11.3.  NRR tech staff reviewing provided information and will document in SSER 25.		25
TVA 1		The audit mentioned on 2/2/22 above, was performed 2/28-3/4/2011 (ML110980761). This audit report documents WBN2 specific and generic actions required to address the conditions identified	EICB		I&C Matrix Item 043 Item is verified to be duplicate of activity already documented in matrix	Closing to OI 72		

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		during the audit.						
TVA 2		TVA to respond to open items in CQ PAMS SE. See ML111150287 Section 7.5.2.2.3.4.2.5 on page 24 and Section 7.5.2.2.3.4.3.1 on page 26.	EICB		I&C Matrix Item 142, 143, 144, 145, 183, 185 Item is verified to be duplicate of activity already documented in matrix	Closing to OI 72		
TVA 3		NRC to confirm receipt of the following: The non-proprietary versions of the following RM-1000, Containment High Range Post Accident Radiation Monitor documents will be provided by June 30, 2010. 1. V&V Report 04508006A 2. System Description 04508100-1TM 3. Qualification Reports 04508905-QR, 04508905-1 SP, 04508905-2SP, 04508905-3SP 4. Functional Testing Report 04507007-1TR			Documents submitted on TVA letter to NRC dated July 15, 2010.  I&C Matrix Item 101  NRC action pending	Item is closed. This is already be tracked on bucket list. Waiting for document control processing.		
TVA 4		Attachment 36 contains Foxboro proprietary drawings 08F802403-SC-2001 sheets 1 through 6. An affidavit for withholding and non-proprietary versions of the drawings will be submitted by January 31, 2011.			Response in letter dated 11/24/10  I&C Matrix Item 327 NRC Review Pending	Item is closed. 11/24/10 letter reviewed and drawings were included.		
TVA 5		All safety related work must be quality controlled per 10CFR50, App. B. TVA to confirm that the procedure used for the RM-1000 system verification tests (04507007) was actually a procedure that was	EICB	I&C	EC: Complete FC: N/A  Response provided in letter dated 10/13/11.	Closed per internal memo dated 10/31/11.  See OI 77		

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		prepared per 10CFR50, App. B. 7.5.2.3			I&C Matrix Item 346			
TVA 6		Was the CERPI system developed under a 10 CFR 50 Appendix B compliant program?	EICB	I&C	EC: Complete FC: N/A Response in letter dated 4/15/11 I&C Matrix Item 359 NRC Review Pending	NRR staff has reviewed the information provided by the staff and based on this information, is closing this item.		
TVA 7		Was the Foxboro IA system developed under a 10 CFR 50 Appendix B compliant program?	EICB	I&C	EC: Complete FC: N/A Response in letter dated 4/15/11 I&C Matrix Item 361 NRC Review Pending	Closed per internal memo dated 12/7/11.		
TVA 9		<p>On <b>5/6/2010</b> (See Open Item No. 81) the NRC Staff requested an evaluation of the Common Q PAMS against the current staff position.</p> <p>By letter dated <b>2/25/11</b> (ML110620219), TVA docketed a response: "that WBN2 is not committed in complying with Reg. Guide 1.75...Since WBN2 is not committed to RG 1.75 or IEEE-384, no comparison is required..."</p> <p>However, WBN2 is committed to RG 1.75 Rev. 2, "Physical Independence of Electric Systems." RG 1.75 Rev. 3 and IEEE Std. 384-1992 are used, in part, to address IEEE Std 603-1991 Clause 5.6.1. The current NRC staff position for RG 1.75 is documented in Rev. 3. Based upon the review of this item, the staff finds the following open item:</p> <p>1 TVA to updated FSAR (Amendment 103) Table 7.1-1 to include RG 1.75 Rev. 3 for WBN2 Common Q PAMS and the Sorrento Containment High Radiation monitor.</p>	EICB		<p>Item is verified to be duplicate of activity already documented in matrix.</p> <p>Response submitted in letter dated 5/16/11</p> <p>I&amp;C Matrix Item 365</p>	Closing to OI 98		

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		<p>The Common Q PAMS was designed to meet the requirements of RG 1.75 Rev. 2. WBN2 did not perform an analysis to RG 1.75 Rev. 3. Based upon the review of this item, the staff finds the following open item:</p> <p>2 TVA to evaluate Common Q PAMS and the Sorrento Containment High Radiation monitor for conformance with RG 1.75 Rev. 3.</p> <p>Submit FSAR amendment to reflect changes</p>						
TVA 10		<p>Reference—EDCR # 52321, Revision A—EDCR Unit Difference Form --- Bechtel Document</p> <p>Page 2 –Maintenance Difference—</p> <p>The proposed In-Core Instrument Thimble Assemblies (IITAs) which will replace Movable In-Core Detectable Systems (MIDs) have the following features:</p> <p>(1) IITAs are not fully extracted and they are held in a movable frame assembly.</p> <p>(2) IITAs exert lower vibration amplitude and therefore, aging degradation due to wear does not occur.</p> <p>(3) Loss of reactor coolant system pressure boundary</p>	EICB		<p>Response submitted 6/13/11 I&amp;C Matrix Item 376</p> <p>NRC Review pending</p>	Closed. SE received from the staff with no open item in this area.		

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		<p>due to breach of IITA outer sheath does not occur.</p> <p><b>Question:</b> The staff believes that the licensee should provide an inspection program to confirm that the aforementioned attributes associated with IITAs are valid and this inspection program can be a part of a routine maintenance program.</p> <p>Replacement of 58 CETs for the current 65 CETs –to be addressed by the fuels division.</p>						
TVA 11		Non-Proprietary description of the qualification of the MI cable assemblies with references to any EQ report (if applicable) – <b>June 10th</b>	EICB		Response submitted 6/13/11 I&C Matrix Item 381 NRC Review pending	Closing to OI 127		
TVA 12		<p>Non-Proprietary description of the qualification of the IITA with references to EQ report(s)</p> <p>NRC Update (Alvarado) – need the proprietary versions of reports, such as EQ tests, EMI/RFI tests, calculations, and other documents to make a safety determination, not non-proprietary reports that reference these reports and calculations.</p> <p>NRC update (RA) 6/16: The report</p>	EICB		I&C Matrix Item 383	Closing to OI 126		

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		will be available after June 30. This is still an open item						
TVA 13		<p>Provide the following documents, which describe operation of the WINCISE Application Server.</p> <ul style="list-style-type: none"> <li>Sections 1 and 2 of the WNA-GO-00075-WBT, WINCISE Signal Processing System Cabinet Operation &amp; Maintenance Manual. Revision 0.</li> <li>WNA-DS-01811-WBT, WINCISE Signal Processing System Design Requirements. Revision 0, May 2010</li> <li>420A90, WINCISE Functional Specification for Watts Bar Unit 2. Revision 2.</li> </ul>	EICB		I&C Matrix Item 388	Closed. Staff has finished its review and issued its safety evaluation and no longer requires these documents.		
TVA 14		Provide the proprietary version of the calculation described in “WNA-CN-00157-WBT, Watts Bar 2 IIS Signal Processing System Isolation Requirements”. Revision 0.	EICB		I&C Matrix Item 389	Closing to OI 119		
TVA 15		Westinghouse has indicated that the WINCISE Application Servers, as well as the BEACON are redundant. However, the WINCISE Application Server communicates only with Beacon A. Westinghouse also explained that to switch from Beacon A to Beacon B, the operator must perform this manually. After reviewing Westinghouse documents,	EICB		I&C Matrix Item 390	Closing to OI 124		



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Item	Type	Action Required	NRC Lead	TVA Response Required/ TVA Lead	TVA Action Required to Close	NRC Action Required to Close	Due Date	SSER
		we couldn't find explanation that automatic switchover to the other server is not permitted.						
TVA 16		Clarify the type of connector used with the MI cable in Unit 2. During this review, we identified the following connectors, but we could not establish which one will be used in unit 2. Also explain if the qualification performed is still valid or if it is going to be revised. <ul style="list-style-type: none"> <li>Whittaker connectors</li> <li>Litton connectors</li> <li>Electronic Resources Division (ERD) connectors</li> </ul>	EICB		I&C Matrix Item 391	Closing to OI 125		
TVA 17		Clarify the logic to subtract failed detectors from the algorithm used to calculate core power. During the May 12 meeting with Westinghouse and TVA, Westinghouse explained that the WINCISE Application Server includes an algorithm to subtract failed detectors. However, during our review in Westinghouse office, we could not find description on how this algorithm is accomplished. Furthermore, the document <b>BEACON Data Processing Application Program Software Requirements Specification</b> includes the following assumption: "BEACON will perform the subtraction between various length	EICB		I&C Matrix Item 392	Closing to OI 118 and OI 123		

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		elements for the vanadium detector design. This is appropriate, as BEACON is more equipped to support the replacement value algorithm should an element fail. BEACON has knowledge of the flux shape which is critical to this process.”						
TVA 18		Clarify if the IITA assembly and the 6-to-1 transition cable have been subjected to the 600VDC dielectric strength test. Document <b>Watts Bar 2 IIS Signal Processing System Isolation Requirements</b> states that the MI and IITA assemblies need to be subjected to a 600VDC dielectric strength test. Letter LTR-ME-10-3 summarizes the result for the MI cable. However, similar documentation was not available for the IITA assembly.	EICB		I&C Matrix Item 393	Closing to OI 121		
TVA 19		Confirm that power supply cables to the WINCISE SPS cabinet are not routed with cables that are greater than 264V.	EICB		I&C Matrix Item 394	Closing to OI 120		
TVA 20		Confirm that power supply to the WINCISE SPS cabinet are from isolated 1E sources, such that power supply routed to PAMS train A is the same routed to SPS cabinet 1, and power supply routed to PAMS train B is the same routed to SPS cabinet 2.	EICB		I&C Matrix Item 395	Closing to OI 122		

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