

WBN2Public Resource

From: Boyd, Desiree L [dlboyd@tva.gov]
Sent: Wednesday, September 01, 2010 9:47 AM
To: Wiebe, Joel; Raghavan, Rags; Milano, Patrick; Campbell, Stephen
Cc: Hamill, Carol L; Boyd, Desiree L; Stockton, Rickey A; Knuettel, Edward Terry
Subject: TVA letter to NRC - WBN U2 FSAR A100
Attachments: 9-01-10_WBN U2 FSAR A100_NRC copy.pdf

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

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

Desirée L. Boyd

WBN 2 Licensing Support

Sun Technical Services

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423-365-8764

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

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September 1, 2010

10 CFR 50.4(b)(6)
10 CFR 50.34(b)
10 CFR 2.390(d)(1)

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Stop: OWFN P1-35
Washington, D.C. 20555-0001

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

Subject: **WATTS BAR NUCLEAR PLANT (WBN) – UNIT 2 – FINAL SAFETY ANALYSIS REPORT (FSAR), AMENDMENT 100**

- References:
1. TVA letter to the NRC dated May 27, 2010, "Watts Bar Nuclear Plant (WBN) - Unit 2 - Final Safety Analysis Report Amendment 99"
 2. TVA letter to the NRC dated May 24, 2010, "Watts Bar Nuclear Plant (WBN) Unit 2 Final Safety Analysis Report (FSAR) - Regulatory Commitment Regarding Instrumentation Setpoint Methodology"
 3. TVA letter to the NRC dated February 8, 2008, "Watts Bar Nuclear Plant (WBN) - Unit 2 – Final Safety Analysis Report (FSAR) Red-Line for Unit 2"

This letter transmits WBN Unit 2 FSAR Amendment 100 (A100), which reflects changes made since the issuance of Amendment 99 on May 27, 2010 (Reference 1).

Enclosure 1 contains a "Summary Listing" of FSAR sections and corresponding Unit 2 change package numbers associated with the A100 FSAR changes. Most of these changes were the result of resolutions to Requests for Additional Information. A portion of the changes provided in A100 satisfies a commitment made in letter dated May 24, 2010 (Reference 2) to incorporate "Instrumentation Setpoint Methodology," which is provided in FSAR Chapter 7.0, "Instrumentation and Controls." A revision to the WBN Unit 2 Technical Specifications will be provided via separate letter to provide consistency with the setpoint methodology changes provided in A100 and Technical Specification Tracking Form 493.

With this letter, TVA modifies a commitment previously made in TVA letter dated February 8, 2008 (Reference 3). Modify the previous commitment from, "Prior to Unit 2 fuel load, TVA will submit a combined Unit 1 and Unit 2 UFSARs," to state "TVA will submit a combined Unit 1 and Unit 2 FSAR with the first update of the Unit 1 UFSAR after Unit 2 is licensed."

FSAR A100 is contained on the enclosed Optical Storage Media (OSM #1) (Attachment 1). The FSAR contains security-related information identified by the designation "Security-Related Information - Withhold Under 10 CFR 2.390." TVA hereby requests this information be withheld from public disclosure in accordance with the provisions of 10 CFR 2.390. A redacted version of the FSAR is contained on OSM #2 (Attachment 2), which is suitable for public disclosure. Enclosure 2 contains a listing of the FSAR pages that have been redacted. Enclosure 3 lists the files and file sizes on the security-related OSM (OSM #1), and Enclosure 4 lists the files and file sizes on the publicly available OSM (OSM #2). Enclosure 5 provides a list of commitments made in this submittal.

This letter does not close any "Generic Communications." If you have any questions, please contact Bill Crouch at (423) 365-2004.

I declare under the penalty of perjury that the foregoing is true and correct. Executed on September 1, 2010.

Sincerely,



Masoud Bajestani
Watts Bar Unit 2 Vice President

Enclosures:

1. WBN Unit 2 FSAR A100, "Summary Listing of A100 FSAR Changes"
2. WBN Unit 2 FSAR A100, "Summary of Redacted Pages"
3. WBN Unit 2 FSAR A100, "List of files and file sizes on the security-related OSM (OSM #1)"
4. WBN Unit 2 FSAR A100, "List of files and file sizes on the publicly available OSM (OSM #2)"
5. WBN Unit 2 FSAR A100, "List of Commitments"

Attachments:

1. OSM #1: WBN Unit 2 FSAR Amendment 100 - Security-Related Information - Withhold Under 10 CFR 2.390
2. OSM #2: WBN Unit 2 FSAR Amendment 100 - Publicly Available Version

cc: See Page 3

U.S. Nuclear Regulatory Commission
Page 3
September 1, 2010

cc (Enclosures):

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

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

ENCLOSURE 1

WBN Unit 2 FSAR A100

“Summary Listing of A100 FSAR Changes”

Item No.	Change Area	Change Description	Change Package Number
1.	Section 5.5.11	Revise Unit-2 FSAR Section 5.5.11, Sub-Section 5.5.11.3 second paragraph, first sentence to read: "The two rupture discs on the relief tank have a total relief capacity equal to or greater than the combined capacity of the three pressurizer safety valves."	2-100-01
2.	Table 6.2.4-1	Revise Table 6.2.4-1 as Follows: 1. In Table 6.2.4-1, X-13B, change the valve type of 1-517 from a gate valve ("GA") to a relief valve ("RV"). 2. In Table 6.2.4-1, X-13C, change the valve type of 1-512 from a gate valve ("GA") to a relief valve ("RV"). 3. In Table 6.2.4-1, X-64, change "31C-306" to "31-306." Also for X-65, change "31C-308" to "31-308." 4. In Table 6.2.4-1, X-66, change "31C-327" to "31-327." Also for X-67, change "31C-329" to "31-329."	2-100-02
3.	Section 6.2.6	1. In Section 6.2.6.2(1)(3), change "Testing is performed in accordance with ASME XI." to "Water testing for piping integrity is performed in accordance with ASME XI." 2. In Section 6.2.6.2(11)(1), change two occurrences of "Pac" to "Pa". 3. In Section 6.2.6.2, pg 6.2.6-5, change "Either air, nitrogen or water is used as the pressurizing medium... " to "Either air or nitrogen is used as the pressurizing medium..." 4. In Table 6.2.6-2, penetration X-52, delete "1-" from "1-70-100" and "1-70-790." 5. In Table 6.2.6-2, penetration X-56, delete "1-" from "1-67-113" and "1-67-1054D." 6. In Table 6.2.6-3, penetration X-19A, change "FCV 63-072" and "FCV 72-044" to "FCV 63-72" and "FCV 72-44." 7. In Table 6.2.6-3, penetration X-19B, change "FCV 63-073" and "FCV 72-045" to "FCV 63-73" and "FCV 72-45."	2-100-03
4.	Table 14.2-1	Sheet 66, Delete Item 4 under Test Method	2-100-04
5.	Table 14.2-1	Revise FSAR Table 14.2-1, sheets 48 and 49 to reflect testing methods to demonstrate that each common station service transformer has the capability to carry the load required to supply ESF loads of one unit under LOCA conditions, in addition to power required for shutting down the non-accident unit.	2-100-05

ENCLOSURE 1

WBN Unit 2 FSAR A100

“Summary Listing of A100 FSAR Changes”

Item No.	Change Area	Change Description	Change Package Number
6.	Table 6.2.4-1, Figure 6.2.4-16, Table 6.2.6-1, Table 6.2.6-2,	<ol style="list-style-type: none"> 1. Revise FSAR Figure 6.2.4-16 to remove the reference to UFSAR Amendment 1. 2. On FSAR Table 6.2.4-1, revise the total page numbers on the first 64 pages from 64 to 69; change Page _ of 64 to Page _ of 69). 3. Revise FSAR Table 6.2.6-2 to remove spare penetrations X-23, X-28, X-85A, X-86A, X-86B, X-86C, X-92A, X-92B and X-92C and the containment isolation valves listed for these penetrations. 4. Revise FSAR Table 6.2.4-1 to identify the following test connection valves as being Type A tested during the ILRT: 30-42B/2 (X-60B), 30-43B/2 (X-26C), 30-310B/2 (X-26C), 30-44B/2 (X-57B), 30-311B/2 (X-57B), 30-30CB/2 (X-98) and 30-45B/2 (X-102). 5. Revise FSAR Table 6.2.4-1 to move the 'A' from the Essential/Non-Essential column to the Appendix J Test column for penetrations X-38, X-39C and X-58B. Also, for penetration X-58B, identify the instrument line through the penetration as “E” (Essential) in the Essential/Non-Essential column. 6. On FSAR Table 6.2.4-1, remove the valve and dP sensor information for penetration X-86D and identify the penetration as spare and Appendix J, Type A tested. Also, change the drawing number for penetration X-86D to 47W331-2 and the drawing number for X-102 to 2-47W600-89. 7. On FSAR Table 6.2.4-1, revise the drawing number for penetrations X-25B, X-25C, X-85A and X-85C to 47W331-2. 8. On FSAR Table 6.2.4-1, remove the “E” in the Shield Building Penetration column for penetration X-26C. 9. On FSAR Table 6.2.4-1, revise the relief valve number shown in the sketch for penetration for X-41 from 1-77-2874 to 77-2875. Also, change the valve number 2874 in the listing of valves for this penetration to 2875. 	2-100-06

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WBN Unit 2 FSAR A100

"Summary Listing of A100 FSAR Changes"

Item No.	Change Area	Change Description	Change Package Number
		<p>10. On FSAR Table 6.2.4-1, remove the "Unit 1" from the sketches for penetrations X-76, X-90 and X-91. Also remove the "Unit 2" from the notes for penetrations X-92A and X-92B.</p> <p>11. On FSAR Table 6.2.4-1, revise the penetration descriptions for penetrations X-96A and X96B to remove the typographical error; change ILRTZ to ILRT.</p> <p>12. On UFSAR Table 6.2.4-1, change the ILRT valve position for valve 2 in the listing for penetration X-107 from closed to open.</p> <p>13. On FSAR Table 6.2.4-1, revise the listing for penetration X-107 to indicate valves 74-2, 74-8 and 63-185 are not Appendix J, Type A tested.</p>	
7.	Table 6.2.4-1	<p>1. On FSAR Table 6.2.4-1, Sheet 20 of 69, identify the normal and shutdown positions of check valve 26-1296 in penetration X-31 as 'C (Closed)."</p> <p>2. On FSAR Table 6.2.4-1, Sheet 43 of 69, identify the normal and shutdown positions of check valve 26-1260 in penetration X-78 as "C (Closed)."</p>	2-100-07

ENCLOSURE 1

WBN Unit 2 FSAR A100

"Summary Listing of A100 FSAR Changes"

Item No.	Change Area	Change Description	Change Package Number
8.	Section 1.6 Section 4.2.3.2.1 Section 11A Section 12.2.1.3	<ol style="list-style-type: none">1. In Chapter 1, page 1.6-5, delete Report "Hybrid B4C Absorber Control Rod Evaluation Report, "WCAP-8846, September 1976 ANN.2. In Section 4.2.3.2.1, page 4.2-34, change the first sentence in the third paragraph to read, "The absorber materials used in the control rods are silver-indium-cadmium alloy slugs which are essentially 'black' to thermal neutrons."3. In Section 4.2.3.2.1, page 4.2-34, change the third sentence to read, "The extruded Ag-In-Cd slugs are sealed in stainless steel tubes to prevent them from coming in direct contact with the coolant."4. In Section 4.2.3.2.1, page 4.2-34, change the fifth sentence to read, "In construction, the silver indium-cadmium slugs are inserted into cold-worked stainless steel tubing which is then sealed at the bottom and the top by welded end plugs as shown in Figure 4.2-16."5. In Section 11A, Tritium Control, change the sentence to read, "This section discusses the reduced tritium production in the plant as a result of employing Zircaloy clad fuel and silver-indium-cadmium (Ag-In-Cd) control rods."6. In Section 11A.2, Control Rod Source, change the first sentences to read, "The full length control rods for this plant are silver-indium-cadmium (Ag-In-Cd)." Delete the second sentence.7. In Section 12.2.1.3, Sources During Refueling, change the first sentence in the fourth paragraph to read, "The absorber material used in the control rods is silver-indium-cadmium (Ag-In-Cd)." Delete the last sentence.	2-100-08

ENCLOSURE 1

WBN Unit 2 FSAR A100

“Summary Listing of A100 FSAR Changes”

Item No.	Change Area	Change Description	Change Package Number
9.	Section 6.2.5.2 Section 6.8	<ol style="list-style-type: none"> 1. In Section 6.2.5.2, second paragraph - first sentence, change "... must remain intact following a LOCA to assure..." to "... must remain intact following a beyond-design-basis accident to assure..." 2. In Section 6.2.5.2, third paragraph - first sentence, change "... buildup of pressure during a LOCA." to "... buildup of pressure during a beyond-design-basis accident." 3. In Section 6.2.5.2, third paragraph - second sentence, change "Ductwork not protected by embedment is designed to withstand the LOCA environment." to "Ductwork not protected by embedment is also designed to withstand the beyond-design-basis accident environment." 4. In Section 6.8.1, second sentence, change "... following a design basis accident, which includes a LOCA." to "... following a beyond-design-basis accident." 5. In Section 6.8.2, first paragraph -last sentence, change "... initial stages of a LOCA." to "... initial stages of beyond-design-basis accident." 6. In Section 6.8.2, fourth paragraph - first sentence, change "... to operate continuously during accident conditions." to "... to operate continuously during degraded core conditions." 7. In Section 6.8.2, fifth paragraph - first sentence, change "... to the lower compartment, post LOCA hydrogen mixing..." to "... to the lower compartment, post severe accident hydrogen mixing...." 8. In Section 6.8.3, first paragraph - first sentence, change "... after blowdown from a LOCA or a non local pipe break, prevent..." to "... after blowdown from a severe accident pipe break, prevent. ..." 9. In Section 6.8.3, first paragraph last sentence, change "... assumed to be produced as a result of the accident." to "... assumed to be produced as a result of the severe accident." 	2-100-09

ENCLOSURE 1

WBN Unit 2 FSAR A100

"Summary Listing of A100 FSAR Changes"

Item No.	Change Area	Change Description	Change Package Number
		<p>10. In Section 6.8.3, second paragraph - last sentence, change "... reverse flow during the initial loss-of coolant blowdown." to "... reverse flow during the initial severe accident blowdown."</p> <p>11. In Section 6.8.3, fourth paragraph - first sentence, change "... to withstand the post-accident containment environment." to "... to withstand the beyond-design-basis accident containment environment."</p> <p>12. In Section 6.8.5, first paragraph - first sentence, change "... at the appropriate time after LOCA and that. .. " to "... at the appropriate time after a beyond-design-basis accident and that..."</p>	
10.	Table 6.2.4-1	<p>1. Revise FSAR Table 6.2.4-1 to remove the blind flange listed as being in the containment building for penetration X-118.</p> <p>2. Revise FSAR Table 6.2.4-1 to change the drawing listed for penetration X-118 from 72-4333-318 to 72-4334-318.</p> <p>3. Revise FSAR Table 6.2.4-1 to remove drawing 47W862-1 from the listing for penetration X-118.</p>	2-100-10

ENCLOSURE 1

WBN Unit 2 FSAR A100

"Summary Listing of A100 FSAR Changes"

Item No.	Change Area	Change Description	Change Package Number
11.	Table 6.2.4-1 Table 6.2.6-3	<ol style="list-style-type: none">1. Revise FSAR Table 6.2.4-1 to remove test connection valves from the listings for containment penetrations X-26C, X-57B, X-60B, X-97, X-98 and X-102.2. Revise FSAR Table 6.2.4-1 to remove the test connection valve numbering from the sketches for containment penetrations X-26C, X-57B, X-60B, X-97, X-98 and X-102.3. Revise FSAR Table 6.2.4-1 to remove 30-43A and 30-310A from the listing for containment penetration X-26C, 30-44A and 30-311A from the listing for containment penetration X-57B, 30-42A from the listing for containment penetration X-60B, 30-133A from the listing for containment penetration X-97, and 30-45A from the listing for containment penetration X-102.4. Revise FSAR Table 6.2.4-1 to remove 30-43A and 30-310A from the sketch for containment penetration X-26C, 30-44A and 30-311A from the sketch for containment penetration X-57B, 3042A from the sketch for containment penetration X-60B, 30-133A from the sketch for containment penetration X-97, and 30-45A from the sketch for containment penetration X-102.5. Revise FSAR Table 6.2.4-1 to add normally open manual isolation valve 30-30C/A to the sketch for X-98. (Do not add the valve number to the sketch).6. Revise FSAR Table 6.2.6-3 to remove containment penetrations X-26C, X-57B, X-60B, X-97, X-98 and X-102 and the associated valves. Also delete Note 11 from the table.7. Revise FSAR Table 6.2.6-3 to change the total page numbers on the first 4 pages from "4" to "6"; change "Page _ of 4" to "Page _ of 6)". Also add page numbers to the notes for the table.8. Revise Note 4 on FSAR Table 6.2.6-3 to change the word "an" to "and."	2-100-11

ENCLOSURE 1

WBN Unit 2 FSAR A100

"Summary Listing of A100 FSAR Changes"

Item No.	Change Area	Change Description	Change Package Number
12.	Table 6.2.4-1	<ol style="list-style-type: none">1. Revise FSAR Table 6.2.4-1 to remove the blind flange listed-as being in the Auxiliary Building for penetration X-54.2. Revise FSAR Table 6.2.4-1 to align the data for the blind flange in the Shield Building for penetration X-54.3. Delete the first sentence of FSAR Table 6.2.4-1 Note 16.	2-100-12
13.	Table 3.2-1	For Primary Water Make-up System, Tank Unit 1, change G(22) to G(25) in the TVA/ANS Safety Class Column	2-100-13
14.	Table 6.2.4-1	<ol style="list-style-type: none">1. On FSAR Table 6.2.4-1, Sheet 28 of 69, change the Appendix J Test column for valves 61-192, 61-191 and 61-533 in penetration X-47A to indicate the valves are not Appendix J Type A tested.2. On FSAR Table 6.2.4-1, Sheet 29 of 69, change the Appendix J Test column for valves 61-194, 61-193 and 61-680 in penetration X-478 to indicate the valves are not Appendix J Type A tested.3. On FSAR Table 6.2.4-1, Sheet 29 of 69, add Note 8 to the listing for penetration X-478.4. On FSAR Table 6.2.4-1, Sheet 62 of 69, change the position shown for valve 61-110 during the ILRT in penetration X-114 from "closed (C)" to "open (O)".5. On FSAR Table 6.2.4-1, Sheet 62 of 69, change the Appendix J Test column for valves 61-122, 61-110 and 61-745 in penetration X-114 to indicate the valves are not Appendix J Type A tested.6. On FSAR Table 6.2.4-1, Sheet 62 of 69, change the position shown for valve 61-96 during the ILRT in penetration X-115 from "closed (C)" to "open (O)".7. On FSAR Table 6.2.4-1, Sheet 62 of 69, change the Appendix J Test column for valves 61-97, 61-96 and 61-692 in penetration X-115 to indicate the valves are not Appendix J Type A tested.	2-100-14

ENCLOSURE 1

WBN Unit 2 FSAR A100

"Summary Listing of A100 FSAR Changes"

Item No.	Change Area	Change Description	Change Package Number
15.	Section 3.10	<ol style="list-style-type: none">1. Correct Spelling of "Instrumentation" and "Intermediate"2. Insert missing space between Multiple and Contract3. Replaced generic title of Thermo Fisher Scientific report with actual report title.4. Replaced placeholder information for Westinghouse seismic qualification of the NIS cabinet with Gamma Metrics equipment installed with the actual report number and title.5. Replaced placeholder information for the Ametek seismic qualification report for the containment sump level transmitters with the actual report number and title.6. Replaced placeholder information for Weed seismic qualification report for the diverse pressure transmitter with the actual report number and title.7. Deleted "(Unit 2 Only)"8. Deleted "Post Accident Monitoring Recorders" and Westinghouse and Westronics recorder qualification references9. Add text to include Reference 26 for qualification of the Nuclear Instrumentation System cabinet.	2-100-15

ENCLOSURE 1

WBN Unit 2 FSAR A100

“Summary Listing of A100 FSAR Changes”

Item No.	Change Area	Change Description	Change Package Number
16.	Section 2.4 Section 3.5.1.6 Section 3.9 Section 4.4 Table 7.1-1 Section 7.6 Table 11.2-7 Table 14.2-1 Section 15.4	<ol style="list-style-type: none"> 1. On pages 2.4-16 and -17 change "the March 21,400 - square-mile storm with" to "the 21,400-square-mile storm in March with" 2. Correct alignment issues in Tables 2.4-5 and 2.4-14. 3. In Section 3.5.1.6, Change footnote from 17 to 16 to reflect deletion of reference 13 which resulted due to Unit 2 to Unit 1 difference in main turbine. 4. On page 3.9-37, Replace “1.1.S” with “1.1S” 5. On page 3.9-69, in note 3 replace “othe” with “other” 6. On page 4.4-1, under the heading of Discussion, change “DBN” to “DNB”. 7. On page 4.4-15, replace “4.4.15” with “4.4-15” 8. Table 7.1-1 - Correct type from “pe” to “per” on Sheet 9 of 9 9. Section 7.6.7 - Revise reference at the end of the first paragraph from “7.1-7” to “7.1-1”. 10 On page 11.2-39, Revise value for Adult, “Lung” from 0.352 to 0.136 in Table 11.2-7. 11. Section 14.2, Sheet 73 of 89 – Correct “EF” to “°F” in the objective section. 12. Section 14.2, Sheet 84 of 89 – In item 3 under acceptance criteria, correct # in two places to less than or equal symbol 13. On page 15.4-46, Correct “Deplartment” typo in Item 43, 	2-100-16
17.	Section 5.2	Change FSAR Section 5.2.2.4.2.1 to "At-Power Overpressure Transients." Renumber "Evaluation of Low Temperature Overpressure Transients" and "Operating Basis Earthquake Evaluation" to 5.2.2.4.2.2 and 5.2.2.4.3.	2-100-17

ENCLOSURE 1

WBN Unit 2 FSAR A100

“Summary Listing of A100 FSAR Changes”

Item No.	Change Area	Change Description	Change Package Number
18.	Table 14.2	<p>This FSAR Change Request is being processed to add item 2, "Power supply to safety related loads will automatically and manually transfer to the onsite (standby) diesel units from the normal or alternate supply or manually from the diesel generator units back to the normal or alternate supply as described by FSAR Section 8.3.1" back to FSAR table 14.2-1, Sheet 49.</p> <p>This test will be performed by 2-PTI-262-01 (Unit 2 Integrated Safeguards Test, Train 2A) and 2-PTI-262-02 (Unit 2 Integrated Safeguards Test, Train 28).</p> <p>The marked up FSAR Table 14.2-1, Sheet 49 of 90, incorporates this change.</p>	2-100-18
19.	Section 3.9.6 Section 6.3.4.2 Section 9.3.6.4	<p>Sections 3.9.6 and 6.3.4.2 - Updated Code of Record reference. Since the issue date of the Unit 2 OL is unknown at present, the CFR requirement until the date of the OL is known.</p> <p>Section 9.3.6.4 - Changed the Code of Record reference to match the words in the U1 UFSAR. The reference will be changed to reference the Augmented Inservice Test Program for pumps and valves.</p>	2-100-19
20.	Table 14.2	Table 14.2, Sheet 44 of 89, Add as Item 3 the following: "Demonstrate the WBN U2 Diesel generators automatic trip are bypassed on automatic or emergency start signal except for engine over speed and generator differential current."	2-100-20
21.	Table 3.9-5	Change FSAR Unit 2 Table 3.9-5 to match FSAR Unit 1 Table 3.9-5. In replacing this table, the value of the no loss-of-function limit for the upper package axial deflection should be changes to "1.5 inches."	2-100-21
22.	Section 8.1 Section 8.2	<ol style="list-style-type: none"> 1. Add the words "Capability is also provided to supply the Class IE circuits through the 161 kV system via CSST A or B in the event CSST D or C, respectively, is unavailable." on Page 8.1-1 as the fourth paragraph. 2. In Section 8.2.1.8, Page 8.2-17 Delete the word "the supplying", insert the words "C or D", and insert the words "and transformers A or B within its FA rating" in the second paragraph on Page 8.2-17. 	2-100-22
23.	Table 11.4-2	<ol style="list-style-type: none"> 1. In Table 11.4-2, Page 2 of 3 under Nuclide for TVA Instrument No. 2-RE-90-255 replace "CI-36"with "Xe-133" & "Kr-85". 2. In Table 11.4-2, Page 2 of 3 under Nuclide for TVA Instrument No. 2-RE-90-256 replace "Cs-137" with "Xe-133" & "Kr-85". 	2-100-23

ENCLOSURE 1

WBN Unit 2 FSAR A100

"Summary Listing of A100 FSAR Changes"

Item No.	Change Area	Change Description	Change Package Number
24.	9.2	<ol style="list-style-type: none">1. The safety function of valve 0-FCV-70-206 has been removed. This valve is now labeled as a Unit 1/2 interface point and is shown as "Locked Closed." Valve 0-FCV-70-206 is locked to ensure the isolation of the previously abandoned CDWE as shown on 1-47W859.2. With the change above, valve 0-CKV-70-753 no longer provides a safety function due to valve 0-FCV-70-206 being locked closed and having a full face gasket and silicone casting installed. This results in the deletion of item D-4. Justification is provided in Calculation EPMSGP-022892 Table 7.1.3. Editorial Changes: The Component Cooling System (CCS) designator (70) was added to the UNIDs listed in the Effects on Plant column of items C-4, C-5, C-6, 2C-6A, and 2C-7 in Table 9.2-9.4. Delete Note 3 and replace to read "Not Used" to correctly reflect Appendix A of calculation EPMSGP02892.5. Title of Table 9.2-9 is mislabeled as "Essential Raw Cooling Water System" the entire Table 9.29 should be titled "Component Cooling System Failure Modes and Effects Analysis"	2-100-24

ENCLOSURE 1

WBN Unit 2 FSAR A100

“Summary Listing of A100 FSAR Changes”

Item No.	Change Area	Change Description	Change Package Number
25.	<p>Table 1.3-3 Section 1.9.2.7 Table 4.3-1 Section 6.2.1 Section 6.2.5 Section 7.1.1.2 Section 7.1.2.1.8 Table 7.1-1 Section 7.3.2.2.5 Section 7.4.1.3 Table 9.3-3 Section 11.2.4</p>	<ol style="list-style-type: none"> 1. Correct spelling, page numbering and punctuation noted during the FSAR review 2. Replace the terms “service water” “emergency raw cooling water” and “essential service water” with “essential raw cooling water” 3. Correct, add and update cross reference information 4. Deleted the additional source range monitor and replaced it with the seismically qualified source and intermediate range monitor system. 5. Deleted the entry for the gross failed fuel detector system 6. Added a note to the elbow-tab flow measurement discussion. 7. Added the ERFDS computer to the line item concerning the P2500 replacement by ICS. 8. Added additional cross reference information and expanded the discussion of the Foxboro IA changes to more accurately reflect the changes being made. 9. Added additional cross reference information, added Post Accident Monitoring to the description and Core Exit Thermocouples to the Common Q PAMS line item. 10. Added a description of the changes associated with the containment atmosphere combustible gas control permitted by 10CFR50.44 rulemaking. 11. Added the replacement of the safety related Bailey and Robert Shaw ESFAS instrumentation with Foxboro Spec 200 hardware. 12. Added replacement of the majority of the Westinghouse supplied Foxboro and Barton (Cameron) transmitters with Rosemount Transmitters. 13. Added replacement of the rod position indication system with the CERPI system 14. Added replacement of the Loose Part Monitoring System with a Westinghouse DIMMS-DX System 	2-100-25

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WBN Unit 2 FSAR A100

“Summary Listing of A100 FSAR Changes”

Item No.	Change Area	Change Description	Change Package Number
		<p>15. Added replacement of the Reactor Coolant Pump and Turbine Generator vibration monitoring system with a Bentley Nevada 3500 System</p> <p>16. Added replacement of the containment high range radiation monitors with RM-1000 monitors</p> <p>17. Added relocation of the core exit thermocouples and reduction in number from 65 to 58 as part of the WINCISE installation</p> <p>18. Added replacement of the annunciator system with a Ronan server based system.</p> <p>19. Added upgrade of the generator voltage regulator</p> <p>20. Added elimination of turbine trips</p> <p>21. Added missing I.D. and O.D. designators</p> <p>22. Added “The non-safety related plant computer system provides the Safety Parameter Display System and the Bypassed and Inoperable Status Indication System.”</p> <p>23. Added “Table 7.5-2 provides a complete listing of Reg. Guide 1.97 variables that includes both safety related and non safety-related indications/equipment.”</p> <p>24. Reworded the second paragraph of the note to clarify that the Loose Part Detection System has been relocated to the Technical Requirements Manual.</p>	
26.	Table 5.5-15a Table 5.5-15b	Flow Indicating Switches 2-FIS-74-12 and -24 were replaced with a single flow indicator (2-FI-74-12, -24) and two flow switches for each component. (2-ES-74-12A, -12B, -24A, -24B).	2-100-26
27.	Table 6.3-8 Table 6.3-9	Flow Indicating Switches 2-FIS-74-12 and -24 were replaced with a single flow indicator (2-FI-74-12, -24) and two flow switches for each component (2-FS-74-12A, -12B, -24A, -24B). With this replacement of the flow indicating switches, FSAR incorrectly shown. See attached markups to FSAR for changes.	2-100-27
28.	Figure 5.5-11	Change the wording of a note to remove the reference to design packages EDCR 54297-A	2-100-28
29.	Section 9.1.3.3.3	In paragraph 9.1.3.3.3 change the 12 day decay time value, the maximum heat load for a full core discharge to read 39.06E+06 Btu/hr. In the same paragraph change the value for the full core discharge following a normal refueling outage case to read 25.62E+06 Btu/hr. refer to mark-up for details.	2-100-29

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"Summary Listing of A100 FSAR Changes"

Item No.	Change Area	Change Description	Change Package Number
30.	Table 8.3-13	Add Table 8.3-13	2-100-30
31.	Section 4.2.3.4.1 Section 4.2.3.4.2	<p>Section 4.2.3.4.1 - Change 2nd paragraph under Item 4 just prior to Section 4.2.3.4.2 to read,</p> <p>"The rod cluster control assemblies will be functionally tested, following initial core loading but prior to criticality to demonstrate reliable operation of the assemblies. Each assembly will be operated four times, once at cold no flow, once at cold full flow, once at hot not flow and hot full flow conditions. Those assemblies whose trip times fall outside a certain tolerance will be tested an additional 3 times at each failed test condition. Thus each assembly will be adequately tested to verify that the assemblies are properly functioning."</p> <p>Section 4.2.3.4.2 - Revised the first paragraph on page 4.2-53 to read as follows:</p> <p>"These tests include verification that the trip time achieved by the control rod drive mechanisms meets the design requirement from the time the Reactor Trip Breakers change status until dashpot entry occurs. This trip time requirement was confirmed for each control rod drive mechanism prior to initial reactor operation, as required by Technical Specifications."</p>	2-100-31

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WBN Unit 2 FSAR A100

“Summary Listing of A100 FSAR Changes”

Item No.	Change Area	Change Description	Change Package Number
32.	Section 5.2 Section 15.2	<p>1. Change Unit 2 FSAR Section 5.2 reference (page 5.2-67) from:</p> <p>“(4) Conoper, L., Miselis, V., and Starek, R.M., Overpressure Protection for Westinghouse Pressurized Water Reactors, WCAP-7769, Revision 1, June 1972.”</p> <p>to:</p> <p>(4) Smith, M., et al., Overpressure Protection Report for Watts Bar Nuclear Power Plant Unit 2, March 2010.”</p> <p>2. Change Unit 2 FSAR Section 15.2 reference (page 15.2-43) from:</p> <p>“(9) Cooper, K., et al., "Topical Report, Overpressure Protection for Westinghouse Pressurized Water Reactors," WCAP-7769, Revision 1, June 1972.</p> <p>to:</p> <p>(9) Smith, M., et al., Overpressure Protection Report for Watts Bar Nuclear Power Plant Unit 2, March 2010.”</p>	2-100-32
33.	Section 4.3.2.2.5	<p>Revise Unit 2 FSAR Section 4.3.2.2.5 (Limiting Power Distribution), nineteenth paragraph, after the first sentence, insert the following: "The average linear power density, or heating rate (ALHR), is determined by:</p> $ALHR = [(Total\ thermal\ power\ (kw)) / (Total\ fuel\ length\ of\ all\ rods\ (ft))] \times HGIF$ <p>HGIF is the fraction of the thermal heat generated in the fuel (0.974). Density is accounted for by use of the densified active fuel length of 143.7 inches or 11.975 ft.</p> <p>Using WBNP Unit 2 values:</p> $ALHR = [(3411000\ kw) / (193\ assemblies \times 2-64\ fuel\ rods \times 11.975\ ft)] \times 0.974$ <p>ALHR = 5.45 kw/ft."</p>	2-100-33
34.	Section 4.2.3.1.4	<p>Revise Unit-2 FSAR Section 4.2.3.1.4, third paragraph, third sentence to read:</p> <p>"The part-length CRDMs are physically and electrically disabled."</p>	2-100-34

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WBN Unit 2 FSAR A100

"Summary Listing of A100 FSAR Changes"

Item No.	Change Area	Change Description	Change Package Number
35.	Section 4.3.2.3.2	Revise Unit-2 FSAR Section 4.3.2.3.2, fifth paragraph, first sentence to read: "The moderator coefficient is calculated for the various plant conditions discussed above by performing two group two or three dimensional calculations, varying the moderator temperature by plus or minus 5°F (+/- 5°F) about each of the mean temperatures, and the density changes consistent with the temperature."	2-100-35
36.	Section 4.2.3	B4C (Boron Carbide) removed as this RCCA (Rod Cluster Control Assembly) design will not be used in WBN Unit 2. Since Unit 2 does not use borosilicate glass burnable absorber material, any reference associated with the borosilicate glass burnable absorber material in FSAR section 4.2.3, "Reactivity Control System," is removed. This includes removing a figure which depicts the burnable absorber assembly that consists of borosilicate, and also changing figures to delete borosilicate glass tube, (Pyrex absorber), and B4C pellets.	2-100-36
37.	Section 1.2 Section 4.1.2 Section 4.2 Section 4.3 Section 4.4 Section 15.4	Add a statement in FSAR section 4.2.3.3.1, "Reactivity Control Components," on page 4.2-44 to clarify on the extension of ZIRLO® corrosion resistance to ZIRLO® guide thimbles. Revise "Zircaloy" and "Zircaloy-4" to ZIRLO® in affected sections.	2-100-37
38.	Table 4.1-1 Table 4.3-1 Section 4.3.2.7 Section 4.3.3.2	The density of fuel pellets is changed from 94.5% to 95% in Table 4.1-1, "Reactor Design Comparison Table," and Table 4.3-1, "Reactor Core Description (First Cycle) (Page 2 of 2)." The Rod Cluster Control Assemblies (RCCA) section of Table 4.3-1, "Reactor Core Description (First Cycle) (Page 2 of 2)," has information which is no longer used in the Watts Bar Unit 2 such as the Boron Carbide (B4C) control rods. The RCCA design using B4C was for WBN Unit 1 only and will not be used in WBN Unit 2. In addition, parameters in the Burnable-Poison Rods section of Table 4.3-1 are also changed to reflect the WABA (Wet Annular Burnable Absorber) rods used in Unit 2. The administrative change removes the word "discrete" from Section 4.2.3.2.1, page 4.2-35, Section 4.3.2.7, page 4.3-27, and Section 4.3.3.2, page 4.3-34.	2-100-38

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"Summary Listing of A100 FSAR Changes"

Item No.	Change Area	Change Description	Change Package Number
39.	Table 4.1-1 Section 4.4.3.2.1	<ol style="list-style-type: none">1. The Amendment 99 contains three typographical errors at Table 4.1-1. The typos are between Table 4.1-1 and Table 4.4-1 for the same parameters.<ul style="list-style-type: none">• The exponent on Table 4.1-1 item 8 should be "6" and not "5"• There should be a less than sign before value of 3290 on item 24 of Table 4.1-1• The greater than sign on item 6 of Table 4.1-1 should be deleted2. At Section 4.4.3.2.1, just below "where:" Replace $F_{\Delta H}^N$ with $F_{\Delta H}^{RTP}$	2-100-39
40.	Table 11.3-8	Revise Land Use Data	2-100-40
41.	Section 7.1.2 Section 7.2.1	Modified Section 7.1.2.1.9. Added cross reference in Section 7.2.1.1.10 to Section 7.1.2.1.9	2-100-41

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"Summary Listing of A100 FSAR Changes"

Item No.	Change Area	Change Description	Change Package Number
42.	Section 7.1.2 Section 7.5.2	<p>Correct spelling, page numbering and punctuation noted during the FSAR review</p> <p>For Table 1.3-3, added a note to the elbow-tab flow measurement discussion.</p> <p>In Section 7.1.1.2, revised text to read: "Other safety-related, along with non safety-related, display instrumentation is discussed in Section 7.5."</p> <p>In Section 7.1.1.2, relocated the discussion of the BIS1 to section 7.5.2.2.</p> <p>For Table 7.1-1, note 12, clarified that the TRM calibration interval is determined by the requirements of Reg. Guide 1.133 Rev. 1</p> <p>Added new section 7.5.1.8 to describe the Post Accident Monitoring System.</p> <p>For Section 7.5.2, added text to clarify that the Plant Computer System is non safety-related and is also referred to as the ICS and plant process computer.</p> <p>For Section 7.5.2, removed "and/or touch screen"</p> <p>Clarified Sections 7.5.2.1 through 7.5.2.3.2 to describe some of the key functions performed by the Plant Computer System."</p> <p>For Section 7.5.2.2, changed "computer based system" to read "function of the Plant Computer System"</p> <p>For Section 7.5.2.3, changed "Nuclear Data Links" to read "Communication Data Links"</p> <p>For Section 7.5.2.3(1), Added "For Watts Bar the Central Emergency Control Center (CECC) is the EOF. "</p> <p>For Section 7.5.2.3(1), Added "Nuclear Data Link"</p> <p>For Section 7.1.2.1.9, Added information to incorporate the requirements of TSTF-493</p>	2-100-42
43.	Section 7.1.2 Section 7.5.2	Further revisions to 7.1.2 and 7.5.2	2-100-43

ENCLOSURE 2

WBN Unit 2 FSAR A100 “Summary of Redacted Pages”

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1	1.2-15	1.2	1.2-1	Security Related, 10CFR2.390(d)(1)
1	1.2-16	1.2	1.2-2	Security Related, 10CFR2.390(d)(1)
1	1.2-17	1.2	1.2-3	Security Related, 10CFR2.390(d)(1)
1	1.2-18	1.2	1.2-4	Security Related, 10CFR2.390(d)(1)
1	1.2-19	1.2	1.2-5	Security Related, 10CFR2.390(d)(1)
1	1.2-20	1.2	1.2-6	Security Related, 10CFR2.390(d)(1)
1	1.2-21	1.2	1.2-7	Security Related, 10CFR2.390(d)(1)
1	1.2-22	1.2	1.2-8	Security Related, 10CFR2.390(d)(1)
1	1.2-23	1.2	1.2-9	Security Related, 10CFR2.390(d)(1)
1	1.2-24	1.2	1.2-10	Security Related, 10CFR2.390(d)(1)
1	1.2-25	1.2	1.2-11	Security Related, 10CFR2.390(d)(1)
1	1.2-26	1.2	1.2-12	Security Related, 10CFR2.390(d)(1)
1	1.2-27	1.2	1.2-13	Security Related, 10CFR2.390(d)(1)
1	1.2-28	1.2	1.2-14	Security Related, 10CFR2.390(d)(1)
1	1.2-29	1.2	1.2-15	Security Related, 10CFR2.390(d)(1)
2	2.2-7	2.2	2.2-1	Security Related, 10CFR2.390(d)(1)
2	2.2-8	2.2	2.2-2	Security Related, 10CFR2.390(d)(1)
2	2.4-89	2.4	2.4-2	Security Related, 10CFR2.390(d)(1)
2	2.4-159	2.4	2.4-24	Security Related, 10CFR2.390(d)(1)
2	2.4-162	2.4	2.4-27	Security Related, 10CFR2.390(d)(1)
2	2.4-163	2.4	2.4-28	Security Related, 10CFR2.390(d)(1)
2	2.4-168	2.4	2.4-40a Sheet 1	Security Related, 10CFR2.390(d)(1)
2	2.4-169	2.4	2.4-40a Sheet 2	Security Related, 10CFR2.390(d)(1)
2	2.4-171	2.4	2.4-40b	Security Related, 10CFR2.390(d)(1)
2	2.4-172	2.4	2.4-40c	Security Related, 10CFR2.390(d)(1)
2	2.4-173	2.4	2.4-40d Sheet 1	Security Related, 10CFR2.390(d)(1)
2	2.4-178	2.4	2.4-40f Sheet 1	Security Related, 10CFR2.390(d)(1)
2	2.4-181	2.4	2.4-40g Sheet 1	Security Related, 10CFR2.390(d)(1)
2	2.4-206	2.4	2.4-76	Security Related, 10CFR2.390(d)(1)
2	2.4-209	2.4	2.4-79	Security Related, 10CFR2.390(d)(1)
2	2.4-212	2.4	2.4-82	Security Related, 10CFR2.390(d)(1)
2	2.4-213	2.4	2.4-83	Security Related, 10CFR2.390(d)(1)
2	2.4-218	2.4	2.4-88	Security Related, 10CFR2.390(d)(1)
2	2.4-219	2.4	2.4-89	Security Related, 10CFR2.390(d)(1)
2	2.4-220	2.4	2.4-90	Security Related, 10CFR2.390(d)(1)
2	2.5-471	2.5	2.5-185	Security Related, 10CFR2.390(d)(1)
2	2.5-472	2.5	2.5-185a	Security Related, 10CFR2.390(d)(1)
2	2.5-513	2.5	2.5-225	Security Related, 10CFR2.390(d)(1)
2	2.5-514	2.5	2.5-226	Security Related, 10CFR2.390(d)(1)
2	2.5-515	2.5	2.5-226a	Security Related, 10CFR2.390(d)(1)
2	2.5-575	2.5	2.5-273	Security Related, 10CFR2.390(d)(1)

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2	2.5-690	2.5	2.5-358	Security Related, 10CFR2.390(d)(1)
2	2.5-934	2.5	2.5-592	Security Related, 10CFR2.390(d)(1)
3	3.5-53	3.5	3.5-3	Security Related, 10CFR2.390(d)(1)
3	3.5-54	3.5	3.5-4	Security Related, 10CFR2.390(d)(1)
3	3.6-73	3.6	3.6-21	Security Related, 10CFR2.390(d)(1)
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3	3.6-75	3.6	3.6-23	Security Related, 10CFR2.390(d)(1)
3	3.6-76	3.6	3.6-24	Security Related, 10CFR2.390(d)(1)
3	3.7-217	3.7	3.7-39	Security Related, 10CFR2.390(d)(1)
3	3.7-218	3.7	3.7-40	Security Related, 10CFR2.390(d)(1)
3	3.7-219	3.7	3.7-41	Security Related, 10CFR2.390(d)(1)
3	3.7-222	3.7	3.7-44	Security Related, 10CFR2.390(d)(1)
3	3.8.3-60	3.8.3	3.8.3-6	Security Related, 10CFR2.390(d)(1)
3	3.8.3-61	3.8.3	3.8.3-7	Security Related, 10CFR2.390(d)(1)
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8	8.1-21	8.1	8.1-1	Security Related, 10CFR2.390(d)(1)
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8	8.2-44	8.2	8.2-11	Security Related, 10CFR2.390(d)(1)
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9	9.4-280	9.4	9.4-22c	Security Related, 10CFR2.390(d)(1)
9	9.4-281	9.4	9.4-23	Security Related, 10CFR2.390(d)(1)
9	9.4-282	9.4	9.4-24	Security Related, 10CFR2.390(d)(1)
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12	12.3-40	12.3	12.3-2	Security Related, 10CFR2.390(d)(1)
12	12.3-41	12.3	12.3-3	Security Related, 10CFR2.390(d)(1)
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12	12.3-43	12.3	12.3-5	Security Related, 10CFR2.390(d)(1)
12	12.3-44	12.3	12.3-6	Security Related, 10CFR2.390(d)(1)
12	12.3-45	12.3	12.3-7	Security Related, 10CFR2.390(d)(1)
12	12.3-46	12.3	12.3-8	Security Related, 10CFR2.390(d)(1)
12	12.3-47	12.3	12.3-9	Security Related, 10CFR2.390(d)(1)
12	12.3-48	12.3	12.3-10	Security Related, 10CFR2.390(d)(1)
12	12.3-49	12.3	12.3-11	Security Related, 10CFR2.390(d)(1)
12	12.3-50	12.3	12.3-12	Security Related, 10CFR2.390(d)(1)
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12	12.3-54	12.3	12.3-16	Security Related, 10CFR2.390(d)(1)
12	12.3-55	12.3	12.3-17	Security Related, 10CFR2.390(d)(1)
12	12.4-5	12.4	12.4-1	Security Related, 10CFR2.390(d)(1)

ENCLOSURE 3

**WBN Unit 2 FSAR A100
“List Of Files And File Sizes
On The Security-Related OSM (OSM #1)”**

ENCLOSURE 4

**WBN Unit 2 FSAR A100
“List Of Files And File Sizes
On The Publicly Available OSM (OSM #2)”**

ENCLOSURE 5

WBN Unit 2 FSAR A100 “List of Commitments”

1. A revision to the WBN Unit 2 Technical Specifications will be provided via separate letter to provide consistency with the setpoint methodology changes provided in A100 and Technical Specification Tracking Form 493.
2. TVA will submit a combined Unit 1 and Unit 2 FSAR with the first update of the Unit 1 UFSAR after Unit 2 is licensed.