UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
245 PEACHTREE CENTER AVENUE N.E., SUITE 1200
ATLANTA, GEORGIA 30303-1200

October 1, 2019

Mr. Joseph W. Shea
Vice President, Nuclear Regulatory
Affairs and Support Services
Tennessee Valley Authority
1101 Market Street, LP 4A
Chattanooga, TN 37402-2801

SUBJECT: WATTS BAR NUCLEAR PLANT, UNITS 1 AND 2 – DESIGN BASIS ASSURANCE INSPECTION (TEAMS) INSPECTION REPORT 05000390/2019011 AND 05000391/2019011

Dear Mr. Shea:

On August 29, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Watts Bar, Units 1 and 2 and discussed the results of this inspection with Mr. Tom Marshall and other members of your staff. The results of this inspection are documented in the enclosed report.

The NRC inspectors did not identify any finding or violation of more than minor significance.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at http://www.nrc.gov/reading-rm/adams.html and at the NRC Public Document Room in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

James B. Baptist, Chief
Engineering Branch 1
Division of Reactor Safety

Docket Nos. 05000390 and 05000391
License Nos. NPF-90 and NPF-96

Enclosure:
As stated

cc w/ encl: Distribution via LISTSERV

SUBJECT: WATTS BAR NUCLEAR PLANT, UNITS 1 AND 2 – DESIGN BASIS ASSURANCE INSPECTION (TEAMS) INSPECTION REPORT 05000390/2019011 AND 05000391/2019011

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U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Numbers:	05000390 and 05000391
License Numbers:	NPF-90 and NPF-96
Report Numbers:	05000390/2019011 and 05000391/2019011
Enterprise Identifier:	I-2019-011-0006
Licensee:	Tennessee Valley Authority
Facility:	Watts Bar, Units 1 and 2
Location:	Spring City, TN
Inspection Dates:	August 12, 2019 to August 29, 2019
Inspectors:	P. Braxton, Reactor Inspector A. Della Greca, Contractor N. Morgan, Resident Inspector R. Patterson, Senior Reactor Inspector M. Schwieg, Reactor Inspector W. Sherbin, Contractor
Approved By:	Brian R. Bonser, Chief Engineering Branch 3 Division of Reactor Safety

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting a design basis assurance inspection (teams) inspection at Watts Bar, Units 1 and 2 in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to https://www.nrc.gov/reactors/operating/oversight.html for more information.

List of Findings and Violations

No findings or violations of more than minor significance were identified.

Additional Tracking Items

None.

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

REACTOR SAFETY

71111.21M - Design Bases Assurance Inspection (Teams)

The inspectors evaluated the following components and listed applicable attributes, permanent modifications, and operating experience:

Design Review - Risk-Significant/Low Design Margin Components (IP Section 02.02) (4 Samples)

(1) Division II 125VDC Power Bus
- Material condition and configuration (i.e. visual inspection during walkdown)
- Component modification
- Component health reports, corrective action history
- Maximum available fault current
- DC voltage analysis
- Breaker coordination

(2) Auxiliary Feedwater Motor-Driven Pump Level Control Valve 2-LCV-3-171 & Auxiliary Feedwater Turbine-Driven Pump Level Control Valve 2-LCV-3-175
- Material condition and configuration (i.e., visual inspection during walkdown)
- Maintenance effectiveness
- Component health reports, corrective maintenance records, and corrective action history
- Component modifications
- Surveillance and Inservice testing results
- Procurement and Design Specifications

(3) Unit 2 6.9 KV Shutdown Board 2A-A [2-BD-211-A-A]
- Compliance with UFSAR, TS, and TS Bases
- Conformance with manufacturer instructions for installation, maintenance, and operation
- Adequacy of corrective action activities
- Material condition and configuration
- System Health Reports accurately reflect current system conditions

- Design requirements (Voltage drop calculations, degraded grid and loss of voltage relays setting, load flow analysis and short circuit calculation, etc.)
- Setting and coordination of protective relays for selected supply and load breakers
- Verification that selected relays calibrations meet intended design requirements
- Design verification of bounding design basis events, including fast bus transfer between offsite power sources and transfer to standby source
- Verification that TS system surveillance requirements demonstrate performance requirements of system and components
- Design basis and adequacy of recent modifications
- Adequacy of instrumentation and operating procedures for system and components performance/operation during normal, abnormal, and accident conditions

(4) Unit 2 Centrifugal Charging Pump CCP-2A

- Material condition and configuration (e.g., visual inspection during a walkdown)
- Consistency between station documentation (e.g. procedures) and vendor specifications
- Operating procedures and Emergency Procedures
- Training Manual and System Description
- Maintenance effectiveness
- Component health reports, corrective maintenance records, and corrective action history
- Consistency between design bases calculations and test procedure acceptance criteria
- Surveillance and calibration testing and recent test results
- Pump room cooler capability versus cooling load
- Pump horsepower requirements compared to driver motor capability
- Seismic qualification of pump skid and piping attachments (nozzle loads)

<u>Design Review - Large Early Release Frequency (LERFs) (IP Section 02.02) (2 Samples)</u>

(1) Unit 2 Hydrogen Igniters

- Verification of equipment necessary to provide backup power to the hydrogen igniters is available
- Rating of the power supply is adequate to continuously power to the hydrogen igniters and operating time is consistent with commitments
- Verify procedures are established to govern the provision of backup power to the igniters
- Maintenance and testing schedules for the backup power supply is consistent with the vendor recommendation.
- Procedure address the decision to provide backup power to the igniters and the steps required to provide the backup power to the hydrogen igniters

(2) Unit 2 6.9 KV to 480 V Transformer 2A1-A Including Supply and Load Breakers
- Compliance with UFSAR, TS, and TS Bases
- Conformance with manufacturer instructions for installation, maintenance, and operation
- Adequacy of corrective action activities
- Material condition and configuration
- Verification that System Health Reports accurately reflect current system conditions
- Design requirements (Rating, normal and accident loading, tap setting, etc.)
- Adequacy of supply and load cables
- Seismic qualification of transformer and supply and load shutdown boards
- Setting of upstream protective relays and coordination with downstream breaker
- Verification that protective relays calibrations and breakers maintenance and testing meet intended design requirements

Modification Review - Permanent Mods (IP Section 02.03) (6 Samples)

(1) DCN 58314, Replace Unit 1 Turbine Driven Auxiliary Feed-water (TDAFW) Governor Valve Controller with Digital Controller
(2) DCN 59007, Replace 1-PCV-003-0122 & -0132 with a Cavitating Venturi
(3) DCN 60696, Replace Pressurizer Power Operated Relief Valves (PORVs) Due to Current Valves Being Obsolete
(4) DCN 66471, Modify Solid-state Protection System (SSPS) Turbine Trip on Low Fluid Oil Pressure
(5) DCN 66592, Raise TDAFW DC Exhaust Fan Set-points
(6) DCN 553785, Swapping Power Sources to Eliminate Loss of Power to Two Pumps When One EDG is Not Available

Review of Operating Experience Issues (IP Section 02.06) (3 Samples)

(1) GL 90-06, Resolution of Generic Issues 70, "PORV and Block Valve Reliability," and 94, "Additional LTOP Protection for PWRs"
(2) IN 2010-10, Implementation of a Digital Control System Under 10 CFR 50.59
(3) NRC IN 86-14, PORV and Block Valve Reliability

INSPECTION RESULTS

No findings were identified.

EXIT MEETINGS AND DEBRIEFS

The inspectors verified no proprietary information was retained or documented in this report.

- On August 29, 2019, the inspectors presented the design basis assurance inspection (teams) inspection results to Mr. Tom Marshall and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.21M	Calculations	CEBCAS228	Nozzle Load Qualification for the CCPs	Rev. 3
		E31920409300	Shutdown Boards Degraded Voltage Relay Settings	Rev. 1
		EDQ00099920070002	AC Auxiliary Power System Analysis	Rev. 067
		EDQ00099920080014	Diesel Generator Loading Analysis	Rev. 35
		EDQ00299920080016	6.9 KV Protection and Coordination Calculation	Rev. 12
		EPMDLB061193	Adequacy of ERCW Flow to Centrifugal Charging Pumps 1A-A and 2A-A Oil Coolers	Rev. 5
		EPMHV0701889	Maximum Brake Horsepower for Centrifugal Charging Pumps	Rev. 5
		EPMPKB012191	HVAC Cooling Load and Room Temperature Calc: TDAFW Pump Room	Rev. 11
		EPMSHC102789	Main Steam Over Pressure Protection Design	Rev. 0
		EPMSNM043092	Failure Modes and Effects Analysis for the SI System	Rev. 0
		EPMTEC081689	Cooling Load for CCP Room Aux Building Elevation 692-A9 and A10 Under LOCA Conditions	Rev. 5
		N36232A	Summary of Piping Analysis	Rev. 9
		R03521E31920108300	Shutdown Board 1A-A Feeders to 6900/480V Transformers 1A1-A, 1A2-A, and 1A-A	Rev.0
		TDRSYS.211-DS1	Demonstrated Accuracy Calculation	Rev. 6
		WBNEEBEDQ1999010001	AC Auxiliary Power System Analysis	Rev. 96
		WBNEEBMST1060029	Degraded Voltage Analysis	Rev.38
		WBNEEBMST1080008	480V 1E Coordination/Protection	Rev. 174
		WBNOSG4071	RWST and Containment Sump Safety Limits	Rev. 27
		WBPE2119202001	6.9KV Shutdown & Logic Boards Undervoltage Relays Requirement/ Demonstrated Accuracy Calculation	Rev. 12
	Calibration		Certificate of Calibration for NWS-T-139 & NWS-R-	04/13/19

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Records		73	
	Corrective Action Documents	1158981		
		1177342		
		1177660		
		1181488		
		1197406		
		1198767		
		1201099		
		1201726		
		1206585		
		1209629		
		1212101		
		1284810		
		1296987		
		1359596		
		1370572		
		1380308		
		1381120		
		1398457		
		1414582		
		1419624		
		1426714		
		1436407		
		1447534		
		1447766		
		1456434		
		1464817		
		1472485		
		1483042		
		1498200		
		1522586		
		1522957		
		1525931		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		480993		
		934675		
		940480		
	Corrective Action Documents Resulting from Inspection	1540525	2A CCP Oil Leak	
		1540541	Calculation References Not Updated	
		1540660	Multiple Fluorescent Lights in Need Repair	
		1540819	Missed 50.59 Evaluation on Scaffold Installed Greater Than 90 Days	
		1542830	2019 Revised Heat loads Missing From Calculation	
		1542844	0-TI-79.000 Requires Update for frequency	
		1544436	Revise Calculation WBNEEBMST1060029	
	Drawings	0-15E500-1	Key Diagram, Aux. Power Station	Rev. 8
		0-15E500-2	Key Diagram, Aux. Power Station	Rev. 0
		0-15E500-2	Key Diagram Station Aux Power System	Rev. 0
		0-15E500-3	Transformer Taps & Voltage Limits, Aux Power System	Rev. 3
		0-45W760211-4	Wiring Diagram, 6900V Shutdown Power Schematic Diagram,	Rev.0
		0-47W866-8	Heating Cooling and Ventilating Air Flow Flow Diagram	Rev. 1
		1-45W600-47-1	Wiring Diagram Turbo- Generator Auxiliaries Schematic Diagrams	Rev. 13
		1-47W610-47-1	Electrical Control Diagram Turbo Generator Cont Sys	Rev. 40
		1-47W611-99-6	Electrical Logic Diagram Reactor Protection System	Rev. 4
		2-45W724-3	Wiring Diagrams, 6900V Shutdown Board 2A-A Single Line	Rev. 18
		2-45W724-4	Wiring Diagrams, 6900V Shutdown Board 2B-B Single Line	Rev. 19
		2-45W749-1	Wiring Diagrams, 480V Shutdown Board 2A1-A Single Line	Rev. 17
		2-45W749-2	Wiring Diagrams, 480V Shutdown Board 2A2-A Single Line	Rev. 14

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		2-45W749-3	Wiring Diagrams, 480V Shutdown Board 2B1-B Single Line	Rev. 15
		2-45W749-4	Wiring Diagrams, 480V Shutdown Board 2B2-B Single Line	Rev. 24
		2-45W760-211-1	, Wiring Diagram, 6900V Shutdown Power Schematic Diagram	Rev. 3
		2-45W760-211-12	Wiring Diagram, 6900 V Shutdown Power 2A-A Schematic Diagrams	Rev. 2
		2-45W760-211-13	Wiring Diagram, 6900 V Shutdown Power 2A-A Schematic Diagrams	Rev. 3
		2-45W760-211-16	Wiring Diagram, 6900 V Shutdown Power Diesel Loading Logic	Rev. 1
		2-45W760-211-17	Wiring Diagram, 6900 V Shutdown Power -Train A And B Schematic Diagram,	Rev. 3
		2-45W760-211-18	Wiring Diagram, 6900 V Shutdown Power Schematic Diagram	Rev. 4
		2-45W760-211-2	Wiring Diagram, 6900V Shutdown Power Schematic Diagram	Rev. 1
		2-45W760-211-3	Wiring Diagram, 6900V Shutdown Power Schematic Diagram	Rev. 2
		2-45W760-211-5	Wiring Diagram, 6900 V Shutdown Power Schematic Diagram	Rev. 1
		2-45W760-211-6	Wiring Diagram, 6900V Shutdown Power Train A Schematic Diagram	Rev. 1
		2-45W760-212-1	Wiring Diagram, 480V Shutdown Power Schematic Diagrams	Rev. 1
		2-45W760-212-2	Wiring Diagram, 480V Shutdown Power Schematic Diagrams	Rev. 1
		2-45W760-268-1	Unit 2 Wiring Diagram Permanent Hydrogen Mitigation System Schematic Diagrams	Rev. 4
		2-45W760-63-1	Wiring Diagram, Safety Injection System Schematic Diagram	Rev. 9
		2-47W809-1	Flow Diagram CVCS	Rev. 46

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		2-47W810-1	Flow Diagram, RHR System	Rev. 26
		2-47W811-1	Flow Diagram, Safety Injection System	Rev. 54
		45N1612-2	Turbine Instrumentation & Auxiliaries Connection Diagrams Wiring Diagram -Sheet 2	Rev. 8
		8002577-1-1	Unit 1 Schematic Diagram Turbine Driven AFW Governor	Rev. 0
		82UU-001-12BB		Rev. J
		CNL-15-088	TVA Letter to NRC, Watts Bar Nuclear Plant Unit 1 – Application to Revise Technical Specification for Component Cooling Water and Essential Raw Cooling Water to Support Dual Unit Operation (TS-WBN-15-13)	06/17/15
		WBN 1190E37	Safety Injection System Process Flow Diagram	Rev. 6
	Engineering Changes	53785	Swap Power and Control Cables for ERCW Pumps “B-A” and “C-A” (Train A) and “F-B” & “G-B” (Train B), Rev. A	02/25/16
		64063	Install Open Phase Protection Relays	Rev.A
		66471	Modify SSPS Turbine Trip on Low Fluid Oil Pressure Function To a Trip on Lox Electrohydraulic Control (EHC) Oil Pressure	Rev. 1
		M-08672-A	Polychlorinated Byphenyls Risk Reduction for Transformers	03/37/92
	Engineering Evaluations	1-SI-3-923-S	Auxiliary Feedwater Pump 1A-S Comprehensive Pump Test	Rev. 18
		EDQ00023620070003	126V DC VITAL BATTERY SYSTEM ANALYSIS	Rev. 42
		EDQ0010462016000789	Demonstrated Accuracy for TDAFW Time Delay Relays	Rev. 2
		EL-20916	EGSCS MARSH Qualification Report	Rev. A
		EPMJAF112091	Failure Modes and Effects Analysis for the Auxiliary Feedwater System	Rev. 12
	Miscellaneous		LTOP White Paper Response	08/29/19
			Watts Bar Letter that Revises A Commitment in	10/26/95

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			TVA's response to GL 90-06	
			Watts Bar Generic Letter 90-06 Clarification of Commitment Letter for Testing Pressurizer Power Operated Relief Valves	12/22/98
			Watts Bar Changes to Power Operated Relief Valve Surveillance Testing Commitment	03/01/99
			480V Quarterly System Walkdown Results, 1/15/15-06/27/19	01/15/15
			CCP-2A Oil Sample Trending Analysis, 09/20/2011 to 04/22/2019	
			Letter from R. Gridley, TVA to USNRC, Subject: TVAs Response to NRC Bulletin 88-04, Potential Safety Related Pump Loss	02/27/1989
			Westinghouse Letter number LTR-SEE-IV-10-25, ECCS Analysis Report	04/28/2016
			CVCS System Health Report, April 2019	
			Site Engineering Setpoint And Scaling Document Loop Number1-T-1-17A, AFW Turbine Pump Room Temperature Detector	Rev. 2
			Minimum Flows for Safety Related Pumps in Nuclear Service	09/23/88
			Watts Bar Response Letter to GL 90-06	12/21/90
		0-TI-100.011	In-service Testing Program	Rev. 1
		0-TI-79.000	Program for Implementing NRC Generic Letter 89-13	Rev. 5
		02010	Magnetic Pickups (MPUs)	Rev. C
		1-47A630-46-1	TDAFW Governor Configuration	Rev. 1
		2-SI-211-1-A	18 Month 6.9 KV Shutdown Board 2A-A Automatic and Manual Transfer Tests	04/21/19
		2-SI-211-3-A	18 Month System Functional Rest on 6900V SD BD 2A-A Degraded Voltage and Undervoltage Relays	06/24/17
		2-SI-211-3-A	18 Month System Functional Rest on 6900V SD BD 2A-A Degraded Voltage and Undervoltage Relays	04/21/19

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		2-SI-211-4-A	92 Day Trip Actuating Device Operational Test of UV Relays for 2A-A 6,9 KV Shutdown Board	03/20/19
		2-SI-211-4-A	92 Day Trip Actuating Device Operational Test of UV Relays for 2A-A 6,9 KV Shutdown Board	06/18/19
		2-SI-211-4-A	92 Day Trip Actuating Device Operational Test of UV Relays for 2A-A 6,9 KV Shutdown Board	06/18/19
		2-SI-211-5-A	Channel Calibration Test on Degraded Voltage Relays for 6.9KV Shutdown Board 2A-A	09/07/18
		2-SI-211-5-A	Channel Calibration Test on Degraded Voltage Relays for 6.9KV Shutdown Board 2A-A	03/20/19
		2-SI-211-6-A	Channel Calibration Test on Loss of Voltage Relays for 6.9KV Shutdown Board 2A-A	03/19/18
		2-SI-211-6-A	Channel Calibration Test on Loss of Voltage Relays for 6.9KV Shutdown Board 2A-A	09/07/19
		2-SI-211-7-A	Channel Calibration Test on Load Shed and Diesel Start Undervoltage Relays for 6.9KV Shutdown Board 2A-A	09/07/18
		2-SI-211-7-A	Channel Calibration Test on Load Shed and Diesel Start Undervoltage Relays for 6.9KV Shutdown Board 2A-A	03/20/19
		2-SI-211-8-A	Channel Calibration Test on Degraded Voltage and Loss of Voltage Timing Relays for 6.9KV Shutdown Board 2A-A	06/24/17

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		2-SI-211-8-A	Channel Calibration Test on Degraded Voltage and Loss of Voltage Timing Relays for 6.9KV Shutdown Board 2A-A	04/21/19
		2-SI-262-1A	Unit 2 Train A Auto Start Lockout Test	11/18/17
		2-SI-262-1A	Unit 2 Train A Auto Start Lockout Test	04/24/19
		280-RLCU00079-01	Bechtel Power Corporation Test Report, 2.5 RLIJ 11 Stages Pump Serial No. 48592	02/18/11
		8002577-01	Qualification Report For Electronic Governor Speed Control System (EGSCS)	Rev. 0
		8002577-PTR-1	Panel Temperature Rise Test Procedure	Rev. 3
		8002577-TR-1	Test Report For Turbine Control System	Rev. 0
		CNL-15-147	TVA Letter to NRC, Responses to NRC Acceptance Review Questions for Watts Bar Nuclear Plant Unit 1 Essential Raw Cooling Water and Component Cooling System License Amendment Request (TAC No. MF 6376)	07/14/15
		CNL-15-153	TVA Letter to NRC, Watts Bar Nuclear Plant Unit 1 – Response to Request for Additional Information Relate to Application to Revise Technical Specifications for Component Cooling Water and Essential Raw Cooling Water to Support Dual Unit Operation (TAC No. MF6376)	08/03/15
		CNL-15-170	TVA Letter to NRC, Watts Bar Nuclear Plant Unit 1 – Responses to NRC Questions for Watts Bae Nuclear Plant Unit 1Request for Essential Raw Cooling Water and Component Cooling Water System License Amendment Request	08/28/15
		CNL-15-181	TVA Letter to NRC, Revisions to Watts Bar Nuclear	09’/03/15

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Plant Unit 1 Essential Raw Cooling Water and Component Cooling System License Amendment Request, Including Proposed Changes to Auxiliary Feedwater Pump Suction Transfer Instrumentation and Reactor Coolant System Loops – Mode 4	
		EL-21049	Commercial Grade Dedication Report For The INTROL Positioner PIN 890265-010	Rev. 0
		LTR-SCS-15-31	Watts Bar Unit 1 PORV Replacement - Cold Overpressure Mitigation System (COMS) Setpoint Analysis	01/04/17
		PER 265331	Testing Program for Small Oil Filled Transformers	2010
		Report No. 9390	PORV Flow Data Analysis Model 82UU-001-12BB	Rev. A
		SDD-N3-30AB-4001	Auxiliary Building Heating, Ventilation, Air Conditioning System (30, 31, 44) Unit 1/Unit 2 QA Record	Rev. 45
		SDD-N3-32-4002	Compressed Air System	Rev. 15
		SDD-N3-3B-4002	AUXILIARY FEEDWATER SYSTEM	Rev. 28
		SDD-N3-62-4001	Chemical and Volume Control System System Description	Rev. 39
		SDD-N3-68-4001	Reactor Coolant System	Rev. 41
		SECL-94-066	Main Steam Safety Valve and Pressurizer Safety Valve Setpoint Tolerance Increase form +/- 1% to +/- 3% Safety Evaluation	12/27/94
		System Health Report Summary	6.9 KV Medium Voltage Switchgear	10/11/18
		System Health Report Summary	6.9 KV Medium Voltage Switchgear	05/29/19
		System Health Report Summary	480V Load Centers	10/20/17
		System Health Report Summary	480V Load Centers	09/18/18
		System Health Report	480V Load Centers	04/01/19

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		Summary		
		TAC No.MF6376	NRC Letter to TVA, Watts Bar Nuclear Plant Unit 1 – Issuance of Amendment Regarding Application to Revise Technical Specifications for Component Cooling Water and Essential Raw Cooling Water to Support Dual Unit Operation	10/20/15
		WB-DC-30-28	Low and Medium Voltage Power Systems, Unit 1/Unit 2	Rev. 22
		WBN EEB-MS-T109-0041	Appendix D, Summary of Heat Generated in Each Room	02/25/10
		WBN PM 1-PIPE-067-C	Flushing of ERCW Emergency Makeup Supply To CCP 1A Oil Coolers	Rev. 8
		WBN-VTD-GE27-0010	Vendor Manual GE Digital Energy Multilin 735 / 737 Feeder Protection Relay Instruction Manual	
		WBN-VTD-MT02-0040	Vendor Manual: MTU Onsite Energy Model # 3250-XC6DT2 SERIAL NUMBERS: 350800-1-1-0113 & 350800-1-2-0113	
		WBN-VTD-P025-0040	Pacific Pumps IJ Operating and Maintenance Instructions	Rev. 7
		WBN-VTD-T020-0550	Target Rock Technical Manual for PORV Model 82UU-001-12BB	Rev. D
		WBN-VTD-W120-2352	Instructions for Westinghouse Rectangular Core and Coil Assembly Type “SL” Transformers	Rev.0
		WBN-VTD-W120-2358	Instructions for Westinghouse Self-Cooled Transformers	Rev.0
		WBN-VTD-W120-2624	Technical Bulletin for Pacific Centrifugal Charging/Safety Injection Pumps	Rev.0
		WBNEE8SWW0011	Turbine Driven Auxiliary Feedwater Dedication, Qualification, and Software Verification & Validation	Rev. 1

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Documentation	
		WBNP-DS-1830-5402-R005	Certification Design Specification for 1,2-PCV-068-0334-B & -0340A-A	09/16/14
		WBT-D-5655	Westinghouse, Watts Bar Nuclear Plant, Unit 2, Updated ECCS Analysis Report for Flow Test Data	Rev. 4
		WCG-ACQ-0419	Seismic Qualification of 6.9 KV SD BD	Rev. 2
		WCG-ACQ-0421	Seismic Qualification of 6900 V Shutdown Boards for Added Components and Attached Conduits	Rev. 8
		WCG-ACQ-0424	Seismic Qualification of 6900 V Shutdown Boards Logic Panels	Rev. 6
		WCG-ACQ-0460	Equipment Seismic Evaluation of 480V Shutdown Board Transformers	Rev. 0
	Operability Evaluations	CR1372641	Prompt determination of operability documentation	Rev. 0
	Procedures	0-FSI-5.01	Initial Assessment and FLEX Equipment Staging	Rev. 8
		0-FSI-5.02	6900V FLEX DG Startup and Alignment	Rev. 2
		0-FSI-5.03	6.9kV & 480V Shutdown Board Initial FLEX Alignment	Rev.0
		0-FSI-5.04	6900V FLEX DG Plant Equipment Loading	Rev. 05
		0-FSI-7	Loss of Vital Instrumentation or Control Power	Rev. 3
		0-MI-57.027	Initial Testing of Molded Case Circuit Breakers	Rev.0
		0-MI-57.200	480 Volt Switchgear Inspection	Rev. 2
		0-SI-82-3	18 Month Loss of Offsite Power With Safety Injection – DG 1A-A	Rev. 68
		0-SI-82-5	18 Month Loss of Offsite Power With Safety Injection – DG 2A-A	Rev.43
		0-SI-82-5	18 Month Loss of Offsite Power With Safety Injection – DG 2A-A	Rev.47
		0-SOI-211.03	System Operating Instructions, 6.9KV Shutdown Board 2A-A,	Rev.5
		0-SOI-212.05	System Operating Instructions, 480V Shutdown	Rev. 0

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Board 2A1-A	
		1-AOI-16	Loss of Normal Feedwater	Rev. 8
		1-AOI-25.03	Loss of 120V AC Vital Instrument Power Boards 1-III or 2-III	Rev. 5
		1-ARI-57-63	Feedwater & Main Steam	Rev. 3
		1-SI--68-904-A	Reactor Coolant System Valve Position Indication Verification	10/10/18
		2-ARI-8-14	Unit 2 Annunciator Response Instructions, Aux Power	Rev. 1
		2-E-0	Reactor Trip Or Safety Injection	Rev. 8
		2-ECA-0.0	Loss of Shutdown Power	Rev. 02
		2-ES-1.3	Transfer To Containment Sump	Rev. 4
		2-SI-211-1-A	18 Month 6.9 KV Shutdown Board 2A-A Automatic and Manual Transfer Tests	Rev. 2
		2-SI-3-19	18 Month Channel Calibration of Steam Generator 4 Turbine Driven AFW Level Control Loop 2-LPL-3-175	Rev. 8
		2-SI-3-63	18 Month Channel Calibration of Steam Generator 4 Auxiliary Feedwater Level Control Loop 2-LPL-3-171	Rev. 9
		2-SI-3-903-B	Valve Full Stroke Exercising During Plant Operation Auxiliary Feedwater (Train B)	Rev. 9
		2-SI-3-908	Valve Full Stroke Exercising During Plant Operation Turbine Driven Auxiliary Feedwater	Rev. 5
		2-SI-3-920	Valve Position Indication Verification Auxiliary Feedwater System Turbine Driven AFW Train	Rev. 8
		2-SI-62-901-A	Pump CCP 2A-A, Quarterly Performance Test	Rev. 1
		2-SI-62-916-A	Pump CCP2A-A Pre-service Test During Refueling Outages	Rev. 4
		2-SOI-268.01	Permanent Hydrogen Mitigation System	Rev.1
		2-SOI-62.01	CVCS Charging and Letdown	Rev. 20
		600112315	Preventive Maintenance Work Instructions, 480V Shutdown Board 2A1-A Relay Calibration Tests	Rev.3
		600114255-A	Preventive Maintenance Preplanned Text, Protective	Rev.3A

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Relay Operability	
		BTI-EEB-TI-28	Setpoint Calculations	Rev.11
		NPG-SPP-09.3	Plant Modification and Engineering Chane Control	Rev.30
		NPG-SPP-12.8	Nuclear Cyber Security Program	Rev. 4
		NWS-T-139	NWS Technologies Test Procedure for TVA - Watts Bar Nuclear Plant, Target Rock Power Operated Relief Valves (PORV)	Rev. 1
	Self-Assessments		2019 DBAI Self-Assessment Report	Rev.1
	Work Orders	113197994		
		114522319		
		114522416		
		114559272		
		115972327		
		115972382		
		117199468		
		117351335		
		117761841		
		117761842		
		117823686		
		1178236913693		
		117828086645		
		118086653		
		118134438		
		118152988		
		118191476		
		118439102		
		118526808		
		118681437		
		118801173		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		118801174		
		118968515		
		119001477		
		119001486		
		119064791		
		119065107		
		119065109		
		119065476		
		119080284		
		119174352		
		119205642		
		119281674		
		119297603		
		119297605		
		119301437		
		119307555		
		119347104		
		119347106		
		119381172		
		119381222		
		119430432		
		119440457		
		119440469		
		119518459		
		119526793		
		119526805		
		119526810		
		119527434		
		119570164		
		119570240		
		119582577		
		119719602		
		119837841		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		119837862		
		119837865		
		119837866		
		119896530		
		119897039		
		119897107		
		119903710		
		119903859		
		120055311		
		120355623		
		19347105		