



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION IV
1600 EAST LAMAR BOULEVARD
ARLINGTON, TEXAS 76011-4511

January 9, 2020

Mr. Brad Sawatzke
Chief Executive Officer
Energy Northwest
MD 1023
P.O. Box 968
Richland, WA 99352-0968

SUBJECT: COLUMBIA GENERATING STATION – REVISED INTEGRATED INSPECTION
REPORT 05000397/2019003

Dear Mr. Sawatzke:

On September 30, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Columbia Generating Station. The results of this inspection were originally issued in a report, dated October 30, 2019 (Agencywide Document Access and Management System (ADAMS) Accession No. ML19303C894).

The NRC staff subsequently determined that due to an administrative oversight, the inspection activity associated with Inspection Procedure 71111.11Q "Licensed Operator Requalification Program and Licensed Operator Performance," was documented as completing two samples associated with control room observations, when in fact, it should have been documented only as one sample for these activities. The revised inspection report correcting this error is enclosed. This change had no impact on the findings documented in this report, but consistent with NRC processes, this report is being reissued in whole.

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/

Jeffrey E. Josey, Chief
Reactor Projects Branch A
Division of Reactor Projects

Docket No. 05000397
License No. NPF-21

Enclosure:
As stated

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COLUMBIA GENERATING STATION – REVISED INTEGRATED INSPECTION
REPORT 05000397/2019003 – January 9, 2020

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U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Number: 05000397

License Number: NPF-21

Report Number: 05000397/2019003

Enterprise Identifier: I-2019-003-0010

Licensee: Energy Northwest

Facility: Columbia Generating Station

Location: Richland, WA

Inspection Dates: July 1, 2019 to September 30, 2019

Inspectors: G. Kolcum, Senior Resident Inspector
L. Merker, Resident Inspector
R. Alexander, Senior Project Engineer

Approved By: Jeffrey E. Josey, Chief
Reactor Projects Branch A
Division of Reactor Projects

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting an integrated inspection at Columbia Generating Station 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

Failure to Follow Procedure Results in Open Current Transformer			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Initiating Events	Green FIN 05000397/2019003-01 Open/Closed	None (NPP)	71111.18
The inspectors reviewed a self-revealed, Green finding for the licensee's failure to follow plant Procedure 10.25.19, "Termination and Splicing Instruction," that ensures wire and cable terminations, splices, and insulation are properly controlled. Specifically, on February 16, 2015, the licensee did not re-terminate the current transformer wires for the low voltage winding temperature circuit in main transformer 3 per the panel wiring termination instructions. This resulted in the current transformer operating in an open circuit, arcing, overheating the terminals, and damaging the feed through, which allowed transformer oil to leak outside the transformer.			

Announcement of an NRC Inspector's Presence by Station Personnel			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Not Applicable	NCV 05000397/2019003-02 Open/Closed	Not Applicable	71152
The inspectors identified a Severity Level IV, non-cited violation (NCV) of 10 CFR 50.70(b)(4), associated with the licensee's failure to ensure the arrival and presence of an NRC inspector, who had been properly authorized facility access, was not announced or otherwise communicated by its employees or contractors to other persons at the facility unless specifically requested by the NRC inspector. Specifically, a licensee employee entered the protected area search train ahead of the NRC resident inspector and informed the nearby security officers that the NRC resident inspector was about to enter the area without being requested to do so by the inspector; this impacted the NRC's ability to perform its regulatory oversight function to perform unannounced inspections.			

Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
LER	05000397/2017007-00	Valve Closure Results in Momentary Increase in Secondary Containment Pressure	71153	Closed

PLANT STATUS

The reactor unit began the inspection period at rated thermal power. On July 7, 2019, plant power was reduced to 72 percent due to high level trip of feedwater heater 1C with subsequent trips of feedwater heaters 2A, 2B, 2C, and 3C. On July 9, 2019, the reactor was returned to 100 percent power. On September 13, 2019, plant power was reduced to 95 percent and then returned to 100 percent due to condensate pump minimum flow maintenance. On September 21, 2019, plant power was reduced to 73 percent to perform control rod sequence exchange and bypass valve testing. Reactor power returned to 100 percent rated power on the same day and stayed there for the remainder of the inspection period.

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 performed plant status activities described in IMC 2515, Appendix D, "Plant Status," and conducted routine reviews using IP 71152, "Problem Identification and Resolution." 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

71111.01 - Adverse Weather Protection

Seasonal Extreme Weather Sample (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated readiness for seasonal extreme weather conditions prior to the onset of seasonal high temperatures for the following systems on August 2, 2019:
 - Standby service water A
 - Standby service water B
 - Division 1 switchgear
 - Division 2 switchgear

71111.04Q - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (4 Samples)

The inspectors evaluated system configurations during partial walkdowns of the following systems/trains:

- (1) high pressure core spray system standby lineup following system maintenance on July 26, 2019
- (2) ac power panel 7AF lineup on August 7, 2019
- (3) ac power panel 7A lineup on August 7, 2019

- (4) high pressure core spray system standby lineup during planned reactor core isolation cooling maintenance on September 10, 2019

71111.04S - Equipment Alignment

Complete Walkdown Sample (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated system configurations during a complete walkdown of the standby service water system A on August 16, 2019.

71111.05Q - Fire Protection

Quarterly Inspection (IP Section 03.01) (5 Samples)

The inspectors evaluated fire protection program implementation in the following selected areas:

- (1) Fire Area DG-4/1, diesel generator 1 diesel fuel oil storage tank access room, on July 17, 2019
- (2) Fire Area DG-5/2, diesel generator 2 diesel fuel oil storage tank access room, on July 17, 2019
- (3) Fire Area DG-6/#, high pressure core spray diesel fuel oil storage tank access room, on July 17, 2019
- (4) Fire Area SW-1/1, standby service water pump house 1A, on July 18, 2019
- (5) Fire Area SW-2/2, standby service water pump house 1B, on July 18, 2019

71111.06 - Flood Protection Measures

Inspection Activities - Internal Flooding (IP Section 02.02a.) (1 Sample)

The inspectors evaluated internal flooding mitigation protections in the:

- (1) emergency core cooling system pump rooms on August 16, 2019

71111.07A - Heat Sink Performance

Annual Review (IP Section 02.01) (1 Sample)

The inspectors evaluated readiness and performance of:

- (1) reactor building closed cooling water system heat exchangers, RCC-HX-1A and RCC-HX-1B, on August 23, 2019

71111.11Q - Licensed Operator Regualification Program and Licensed Operator Performance

Licensed Operator Performance in the Actual Plant/Main Control Room (IP Section 03.01) (1 Sample)

- (1) The inspectors observed and evaluated licensed operator performance in the control room during main turbine vibration changes on August 14, 2019.

The inspectors also observed and evaluated licensed operator performance in the control room during the opening of the turbine miscellaneous drain valves on high differential temperature on August 30, 2019.

Licensed Operator Regualification Training/Examinations (IP Section 03.02) (1 Sample)

- (1) The inspectors observed and evaluated the licensed operator regualification evaluated scenario (Crew B) on August 5, 2019.

71111.12 - Maintenance Effectiveness

Routine Maintenance Effectiveness Inspection (IP Section 02.01) (1 Sample)

The inspectors evaluated the effectiveness of routine maintenance activities associated with the following equipment and/or safety significant functions:

- (1) high pressure core spray system on August 9, 2019

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (4 Samples)

The inspectors evaluated the risk assessments for the following planned and emergent work activities:

- (1) yellow risk for high pressure core spray system maintenance on July 25, 2019
- (2) yellow risk for diesel generator 1 barover on August 7, 2019
- (3) yellow risk for reactor core isolation cooling system maintenance on September 10, 2019
- (4) yellow risk for standby service water system B maintenance on September 17, 2019

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 02.02) (3 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

- (1) electrical power panel E-PP-7AF low voltage on A phase on August 26, 2019
- (2) diesel generator 3 mixed air fan failure on August 28, 2019
- (3) diesel generator 3 starting air on September 25, 2019

71111.18 - Plant Modifications

Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (2 Samples)

The inspectors evaluated the following temporary or permanent modifications:

- (1) main condenser air removal suction valve permanently left in the open position on August 1, 2019

- (2) jumper installation across main transformer 3 low voltage winding temperature circuit on August 29, 2019

71111.19 - Post-Maintenance Testing

Post Maintenance Test Sample (IP Section 03.01) (5 Samples)

The inspectors evaluated the following post maintenance tests:

- (1) standby liquid control regulator on July 4, 2019
- (2) diesel generator 3 standby service water pump on July 23, 2019
- (3) high pressure core spray system on July 26, 2019
- (4) diesel generator 4 annual and biannual preventative maintenance on August 14, 2019
- (5) electrical power panel E-PP-7AF following transformer replacement on August 27, 2019

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Surveillance Tests (other) (IP Section 03.01) (5 Samples)

- (1) ISP-HPCS-X302, high pressure core spray minimum flow instrument calibration, on July 30, 2019
- (2) OSP-ELEC-W102, electrical distribution subsystem breaker alignment and power, on August 2, 2019
- (3) OSP-SW/IST-Q701, standby service water loop A operability, on August 6, 2019
- (4) OSP-LPCS-M101, low pressure core spray fill verification, on August 7, 2019
- (5) TSP-DG2-B502, diesel generator 2 load testing, on August 26, 2019

Inservice Testing (IP Section 03.01) (1 Sample)

- (1) OSP-LPCS/IST-Q702, low pressure core spray system quarterly operability, on August 7, 2019

FLEX Testing (IP Section 03.02) (1 Sample)

- (1) OSP-FLEX-Q705, diesel generator 5 quarterly operability, on July 10, 2019

71114.06 - Drill Evaluation

Drill/Training Evolution Observation (IP Section 03.02) (2 Samples)

The inspectors evaluated:

- (1) Team B Emergency Response Organization (ERO) drill on July 16, 2019. Specifically, the inspectors evaluated the ERO's drill performance in the control room simulator, emergency operations facility, alternate emergency operations facility, and joint information center and assessed the overall drill critique results.

- (2) Team A Emergency Response Organization (ERO) drill on September 10, 2019. Specifically, the inspectors evaluated the ERO's drill performance in the control room simulator and emergency operations facility and assessed the overall drill critique results.

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

MS06: Emergency AC Power Systems (IP Section 02.05) (1 Sample)

- (1) (07/01/2018 - 06/30/2019)

MS07: High Pressure Injection Systems (IP Section 02.06) (1 Sample)

- (1) (07/01/2018 - 06/30/2019)

MS08: Heat Removal Systems (IP Section 02.07) (1 Sample)

- (1) (07/01/2018 - 06/30/2019)

MS09: Residual Heat Removal Systems (IP Section 02.08) (1 Sample)

- (1) (07/01/2018 - 06/30/2019)

MS10: Cooling Water Support Systems (IP Section 02.09) (1 Sample)

- (1) (07/01/2018 - 06/30/2019)

71152 - Problem Identification and Resolution

Annual Follow-up of Selected Issues (IP Section 02.03) (2 Samples)

The inspectors reviewed the licensee's implementation of its corrective action program related to the following issues:

- (1) announcement of an NRC inspector's presence by station personnel on August 28, 2019
- (2) evaluation of the March 22, 2019, standby service water system B pump discharge valve failure to open, on September 6, 2019

71153 - Followup of Events and Notices of Enforcement Discretion

Event Report (IP Section 03.02) (1 Sample)

The inspectors evaluated the following licensee event reports (LERs):

- (1) LER 05000397/2017-007-00, Valve Closure Results in Momentary Increase in Secondary Containment Pressure (ADAMS accession: ML17334B440)

The inspectors determined that the cause of the condition described in the LER was not reasonably within the licensee's ability to foresee and correct. No performance deficiency or violation of NRC requirements was identified.

Personnel Performance (IP Section 03.03) (1 Sample)

- (1) The inspectors evaluated the high level trip of feedwater heater 1C with subsequent trips of feedwater heaters 2A, 2B, 2C, and 3C; resultant reactor downpower to 72 percent; and the licensee's response on July 7, 2019.

INSPECTION RESULTS

Failure to Follow Procedure Results in Open Current Transformer			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Initiating Events	Green FIN 05000397/2019003-01 Open/Closed	None (NPP)	71111.18
<p>The inspectors reviewed a self-revealed, Green finding for the licensee's failure to follow plant Procedure 10.25.19, "Termination and Splicing Instruction," that ensures wire and cable terminations, splices, and insulation are properly controlled. Specifically, on February 16, 2015, the licensee did not re-terminate the current transformer wires for the low voltage winding temperature circuit in main transformer 3 per the panel wiring termination instructions. This resulted in the current transformer operating in an open circuit, arcing, overheating the terminals, and damaging the feed through, which allowed transformer oil to leak outside the transformer.</p>			
<p><u>Description:</u> On May 14, 2019, during a transformer inspection, the licensee discovered evidence of arcing inside the current transformer well of main transformer 3 and oil leaking to the ground. Upon further inspection, the licensee discovered the low voltage winding temperature current transformer wires were not connected to the current transformer terminal block, resulting in an open current transformer. The current transformer provides an input signal to the control logic for starting the main transformer 3 cooling fans to reduce the temperature of the transformer during normal operation.</p> <p>Plant Procedure 10.25.19, "Termination and Splicing Instruction," ensures that wire and cable terminations, splices, and insulation are properly controlled. Step 7.11.2 states, in part, to ensure all determ/re-term(s) [sic], splice installations, panel wiring terminations, and cable terminations are properly completed. Attachment 9.10, "Determ/Reterm Data Sheet," of</p>			

Procedure 10.25.19 provides further guidance regarding determination and re-termination data sheets. Steps 2.6 and 2.6.1 of Attachment 9.10 state, in part, that the performer lands all required leads using Determ/Reterm Data Sheet, and after leads are landed, the verifier checks the leads.

The licensee last determined the current transformer wires on February 10, 2015. Work Order 02051297 provided instructions to terminate the wires to reassemble main transformer 3. Step 4.4 of Work Order 02051297 states, in part, to terminate cables per attached panel wiring termination instructions. This step was completed on February 18, 2015; however, contrary to Step 7.11.2 of Procedure 10.25.19, not all determ/reterm(s) were properly completed. Specifically, on February 16, 2015, the licensee did not re-terminate the current transformer wires for the low voltage winding temperature circuit in main transformer 3 per the panel wiring termination instructions. This resulted in the current transformer operating in an open circuit, arcing, overheating the terminals, and damaging the feed through, which allowed transformer oil to leak outside the transformer.

Corrective Actions: The licensee performed an extent of condition evaluation and verified all other terminations on main transformers 1, 2, and 3 were configured as expected. The licensee reconfigured the low voltage winding temperature circuit to put the transformer in a safe condition, modified the winding temperature alarm, and put the transformer cooling in manual until the low voltage winding temperature circuit can be repaired in the next Refueling Outage R25.

Corrective Action References: Action Request 393438

Performance Assessment:

Performance Deficiency: The failure to follow plant Procedure 10.25.19, "Termination and Splicing Instruction," that ensures wire and cable terminations, splices, and insulation are properly controlled, was a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the configuration control attribute of the Initiating Events Cornerstone and adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, on February 16, 2015, the licensee did not re-terminate the current transformer wires for the low voltage winding temperature circuit in main transformer 3 per the panel wiring termination instructions. This resulted in the current transformer operating in an open circuit, arcing, overheating the terminals, and damaging the feed through, which allowed transformer oil to leak outside the transformer.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." Using the questions in Exhibit 1, "Initiating Events Screening Questions," the inspectors determined the finding was of very low safety significance (Green) because the finding did not cause a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition.

Cross-Cutting Aspect: Not Present Performance. No cross cutting aspect was assigned to this finding because the inspectors determined the finding did not reflect present licensee performance.

Enforcement: Inspectors did not identify a violation of regulatory requirements associated with this finding.

Announcement of an NRC Inspector's Presence by Station Personnel

Cornerstone	Severity	Cross-Cutting Aspect	Report Section
Not Applicable	Severity Level IV NCV 05000397/2019003-02 Open/Closed	Not Applicable	71152

The inspectors identified a Severity Level IV, non-cited violation (NCV) of 10 CFR 50.70(b)(4), associated with the licensee's failure to ensure the arrival and presence of an NRC inspector, who had been properly authorized facility access, was not announced or otherwise communicated by its employees or contractors to other persons at the facility unless specifically requested by the NRC inspector. Specifically, a licensee employee entered the protected area search train ahead of the NRC resident inspector and informed the nearby security officers that the NRC resident inspector was about to enter the area without being requested to do so by the inspector; this impacted the NRC's ability to perform its regulatory oversight function to perform unannounced inspections.

Description: On July 30, 2019, the resident inspector was walking towards the protected area search train when the inspector was passed by a licensee employee. The resident inspector observed the individual enter the search train and overheard the individual inform the nearby security officers that the NRC resident inspector was on the way and about to enter the area. The resident inspector had not asked the individual to announce their presence to the security officers.

Procedure SWP-SEC-04, "Access of NRC Personnel," describes the methods used by the licensee to control access of NRC personnel. Step 2.1.6 of Procedure SWP-SEC-04 states that a licensee shall ensure that the arrival and presence of an NRC inspector, who has been properly granted authorized facility access, is not announced or otherwise communicated by its employees or contractors to other persons at the facility unless specifically requested by an NRC inspector. The inspector noted that this encounter was in violation of Procedure SWP-SEC-04 and constituted a minor performance deficiency.

Corrective Actions: The licensee entered this issue into the corrective action program and provided coaching to the employee. The licensee also issued a site announcement regarding the incident explaining that announcing the presence of an NRC inspector is highly inappropriate and contrary to the requirements of 10 CFR 50.70.

Corrective Action References: Action Request 397451

Performance Assessment: The inspectors determined this violation was associated with a minor performance deficiency.

Enforcement: The ROP's significance determination process does not specifically consider the regulatory process impact in its assessment of licensee performance. Therefore, it is necessary to address this violation which impedes the NRC's ability to regulate using traditional enforcement to adequately deter non-compliance.

Severity: The inspectors evaluated the finding and determined the violation was of very low safety significance, was not repetitive or willful, and was entered into the corrective action program. Therefore, this violation is being treated as a Severity Level IV NCV, consistent with the NRC Enforcement Policy.

Violation: Title 10 CFR 50.70(b)(4), requires, in part, that the licensee shall ensure that the arrival and presence of an NRC inspector, who has been properly authorized facility access, is not announced or otherwise communicated by its employees or contractors to other persons at the facility unless specifically requested by the NRC inspector.

Contrary to the above, on July 30, 2019, the licensee failed to ensure that the arrival and presence of an NRC inspector, who had been properly authorized facility access, was not announced or otherwise communicated by its employees or contractors to other persons at the facility unless specifically requested by the NRC inspector. Specifically, a licensee employee entered the protected area search train ahead of the NRC resident inspector and informed the nearby security officers that the NRC resident inspector was about to enter the area without being requested to do so by the inspector; this impacted the NRC's ability to perform its regulatory oversight function to perform unannounced inspections.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

EXIT MEETINGS AND DEBRIEFS

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

- On October 10, 2019, the inspectors presented the integrated inspection results to Mr. David Brown, Plant General Manager, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.01	Calculations	ME-02-92-41	Calculation for Ultimate Heat Sink Analysis	007
71111.01	Calculations	ME-02-92-43	Room Temperature Calculation for DG Building, Reactor Building, Radwaste Building and Service Water	013
71111.01	Corrective Action Documents	Action Requests (ARs)	381176, 382754, 385692, 391357, 392706, 393813, 397509, 397579, 397587, 397588	
71111.01	Procedures	SOP-HOTWEATHER-OPS	Hot Weather Operations	006
71111.01	Procedures	SOP-SW-SPRAY	Standby Service Water Spray Header Operations	000
71111.01	Procedures	SOP-WARMWEATHER-OPS	Warm Weather Operations	016
71111.01	Work Orders		02114379, 02109629/02109631	
71111.04Q	Drawings	M520	HPCS and LPCS Systems Reactor Building Flow Diagram	105
71111.04Q	Procedures	ISP-HPCS-X302	HPCS Flow Rate Low (Minimum Flow) - CC	008
71111.04Q	Procedures	OSP-ELEC-W102	Electrical Distribution Subsystem Breaker Alignment and Power Availability Verification	031
71111.04Q	Procedures	OSP-HPCS-M102	HPCS Valve Lineup	005
71111.04Q	Procedures	SOP-ELEC-AC-LU	AC Electrical Distribution System Breaker Lineup	074
71111.04Q	Procedures	SOP-HPCS-LU	HPCS Valve and Breaker Lineup	004
71111.04Q	Procedures	SOP-HPCS-STBY	Placing HPCS in Standby Status	004
71111.04S	Miscellaneous	FSAR Chapter 9.2		
71111.04S	Procedures	SOP-HOTWEATHER-OPS	Hot Weather Operations	006
71111.04S	Procedures	SOP-SW-DRAIN	Standby Service Water Drain	008
71111.04S	Procedures	SOP-SW-FILL	Standby Service Water System Fill	002, 007
71111.04S	Procedures	SOP-SW-LU	Standby Service Water System Valve & Breaker Lineup	010
71111.04S	Procedures	SOP-SW-OPS	Standby Service Water Operations	002, 009
71111.04S	Procedures	SOP-SW-SHUTDOWN	Standby Service Water System Shutdown	002
71111.04S	Procedures	SOP-SW-SPRAY	Standby Service Water Spray Header Operations	000, 003

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.04S	Procedures	SOP-SW-START	Standby Service Water System Start	008
71111.04S	Procedures	SOP-SW-STBY	Placing Standby Service Water in Standby Status	002, 003
71111.04S	Procedures	SOP-SWCF-LU	Service Water Chemical Addition System Valve Line-up	000
71111.05Q	Corrective Action Documents Resulting from Inspection	Action Requests (ARs)	397011, 397014, 397016	
71111.05Q	Fire Plans	PFP-DG-BUILDING	Power Block Pre-Fire Plan: Diesel Generator Building	004
71111.05Q	Fire Plans	PFP-MN-XFMR-YD-MISC	Pre-Fire Plan: Standby Service Water Pumphouses 1A & 1B	006
71111.05Q	Procedures	PPM 15.1.2	Fire Door Operability Surveillance	027
71111.05Q	Procedures	PPM 15.3.17	Fire Door Operability - Semiannual, Annual, Biennial	010
71111.06	Procedures	10.2.251	Installation of Temporary Flood Barriers	000, 001
71111.06	Procedures	15.4.6	Essential Fire Rated Penetration Seal and Essential Fire and Flood Barrier Operability Inspection	010
71111.06	Procedures	ABN-FLOODING	Flooding	002, 020
71111.06	Procedures	ISP-FDR-X301	ECCS Pump Room Flood Level - Calibration	003
71111.07A	Corrective Action Documents	Action Requests (ARs)	338360, 364270, 364288	
71111.07A	Drawings	M508-1	Plant Service Water System All Buildings Flow Diagram	129
71111.07A	Miscellaneous	10.07.70	Calculation for TSW and RCC Heat Exchanger Steady Flow	000
71111.07A	Miscellaneous	ME-02-18-09	Tube Plugging Limits for RCC Heat Exchangers	000
71111.07A	Miscellaneous	ME-02-91-28	Calculation for Heat Exchanger Effectiveness Evaluation	000
71111.07A	Miscellaneous	SD000196	Reactor Closed Cooling Water	011
71111.07A	Miscellaneous	SPC 350	Plant Service Water (TSW) System Design Basis Document	006
71111.07A	Procedures	ABN-RCC	Loss of RCC	006
71111.07A	Procedures	SOP-RCC-OPS	RCC System Operations	007
71111.07A	Procedures	SYS-4-22	Maintenance Rule Program	014
71111.07A	Work Orders		02074046, 02019119, 02031264, 01165204	
71111.11Q	Corrective Action Documents	Action Requests (ARs)	397827, 398564, 398613, 398624, 398786	
71111.11Q	Engineering	17964	Temporary Modification to Keep MD-V-87 Open and	000, 001

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Changes		Jumper Relay TG-RLY-TR/SMT Closed	
71111.11Q	Miscellaneous	Crew B Evaluated Scenario Cycle 19-3	4.0 Critique Summary	000
71111.11Q	Miscellaneous	LR002465	Cycle 19-3 Evaluated Scenario	000
71111.11Q	Procedures	1.19.3A	Vibration Monitoring	003
71111.11Q	Procedures	13.1.1	Classifying the Emergency	049
71111.11Q	Procedures	13.1.1A	Classifying the Emergency Technical Bases	034
71111.11Q	Procedures	5.1.1	RPV Control	022
71111.11Q	Procedures	5.1.2	RPV Control - ATWS	026
71111.11Q	Procedures	5.1.3	Emergency RPV Depressurization	022
71111.11Q	Procedures	5.2.1	Primary Containment Control	028
71111.11Q	Procedures	5.5.1	Overriding ECCS Valve Logic to Allow Throttling RPV Injection	006
71111.11Q	Procedures	5.5.25	Alternate Injection Using the SLC System	006
71111.11Q	Procedures	ABN-EARTHQUAKE	Earthquake	015
71111.11Q	Procedures	ABN-FLOODING	Flooding	020
71111.11Q	Procedures	ABN-LEAKAGE	Reactor Coolant Leakage	007
71111.11Q	Procedures	OI-69	Time Critical Operator Actions	013
71111.11Q	Procedures	SOP-MT-START	Main Turbine Start	029
71111.11Q	Work Orders		02149788	
71111.12	Corrective Action Documents	Action Requests (ARs)	249204, 374239, 368837, 376172, 389755, 397093, 397124, 397167, 397179, 397181, 397223, 397279	
71111.12	Work Orders		02116085, 02116951, 02116991, 02118186, 02118456, 02131311, 02136227	
71111.13	Corrective Action Documents	Action Requests (ARs)	397227, 397294	
71111.13	Miscellaneous	19-0020	Fire Prevention Evaluation for RB 471 SW General Floor Area	07/22/2019
71111.13	Miscellaneous	19-0021	Fire Prevention Evaluation for RB 522 General Floor Area; RMS 410-412; E-IR-P027	07/22/2019
71111.13	Miscellaneous	19-0022	Fire Prevention Evaluation for R548; RM 512; RM 516	07/22/2019

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71111.13	Miscellaneous	19-0023	Fire Prevention Evaluation for RW437 C106; Behind SHLD Wall; C130/131	07/22/2019
71111.13	Miscellaneous	19-0024	Fire Prevention Evaluation for Division 2 RM C213; Division 2 RM C224	07/22/2019
71111.13	Miscellaneous	19-0025	Fire Prevention Evaluation for RW 525 RM 502; RM C503, RM C510	07/22/2019
71111.13	Miscellaneous	19-0026	Fire Prevention Evaluation for SM-7 SWGR RM C208	07/22/2019
71111.13	Procedures	1.3.10	Plant Fire Protection Program Implementation	034
71111.13	Procedures	1.3.76	Integrated Risk Management	055, 056
71111.13	Procedures	1.3.83	Protected Equipment Program	030
71111.13	Procedures	1.3.85	On-line Fire Risk Management	005
71111.13	Procedures	ABN-SW	Service Water Trouble	015
71111.13	Procedures	SOP-RCIC-STANDBY	Placing RCIC in Standby Status	012
71111.13	Work Orders		02147259, 02111466, 02118499	
71111.15	Corrective Action Documents	Action Requests (ARs)	397437, 397507, 397548, 397608, 395246, 398540, 393270, 360595, 399533, 399463, 369316, 369318	
71111.15	Drawings	EWD-46E-240	AC Electrical Distribution System Power Panel E-PP-7AF Electrical Wiring Diagram	019
71111.15	Procedures	OSP-ELEC-W102	Electrical Distribution Subsystem Breaker Alignment and Power Availability Verification	031
71111.15	Procedures	SOP-ELEC-AC-LU	AC Electrical Distribution System Breaker Lineup	074
71111.15	Work Orders		02136940, 02137174, 02137381, 02137558, 02147724	
71111.18	Corrective Action Documents	Action Requests (ARs)	370326, 371242, 397439, 397553, 397557, 393438, 395744	
71111.18	Drawings	CVI 215-09, 7	Wafer Valve 24 in General Arrangement with Cylinder	002
71111.18	Drawings	D-ARV1GAG-488	Mechanical Gag for AR-V-1	000
71111.18	Drawings	EWD-46E-283	AC Electrical Distribution System Main Transformer E-TR-M3 Power Supply and Auxiliary CKTS	015
71111.18	Drawings	M511	Gas & Air Removal System Flow Diagram	058
71111.18	Engineering Changes	16670	Bypass AR-SPV-1/1 to Open AR-V-1 and Keep It Open	002
71111.18	Engineering Changes	17007	AR-V-1 Permanent Gag Open	001

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71111.18	Engineering Changes	17761	Install Jumper Across M3 LV Temperature CT	000
71111.18	Procedures	10.25.19	Termination and Splicing Instruction	026
71111.18	Procedures	3.1.6C	Instrument Rack Valve Lineup Turbine Generator Building 441' Elevation	010
71111.18	Work Orders		02118726, 02125129, 02051297, 02115677, 02115678, 02115679, 02144461	
71111.19	Corrective Action Documents	Action Requests (ARs)	397093, 397165, 397279, 381813, 397437	
71111.19	Drawings	EWD-46E-240	AC Electrical Distribution System Power Panel E-PP-7AF Electrical Wiring Diagram	019
71111.19	Procedures	OSP-ELEC-W102	Electrical Distribution Subsystem Breaker Alignment and Power Availability Verification	031
71111.19	Procedures	OSP-FLEX-M704		
71111.19	Procedures	OSP-HPCS/IST-Q701	HPCS System Operability Test	058
71111.19	Procedures	OSP-INST-M101		
71111.19	Procedures	OSP-SW/IST-Q703		
71111.19	Procedures	SOP-ELEC-AC-LU	AC Electrical Distribution System Breaker Lineup	074
71111.19	Work Orders		02116085, 02116951, 02118186, 02118456, 02136227, 02138600, 02117111, 02117108, 02117109, 02126089, 02115248, 02147724	
71111.22	Corrective Action Documents	Action Requests (ARs)	322512, 325768, 368884, 388014, 391335, 398380, 398388, 398402, 398403, 398405, 398408, 398410	
71111.22	Drawings	M520	HPCS and LPCS Systems Flow Diagram	105
71111.22	Miscellaneous	18-0428	E-IR-P024 Barrier Impairment Permit	07/22/2019
71111.22	Miscellaneous	E/I-02-91-1060	Calculation for Setpoint Range and Allowable Value Determination for Instrument Loop HPCS Flow Indicating Switch 6	001
71111.22	Miscellaneous	E/I-02-92-04	Calculation for Flow Calibration Curve Verification for HPCS Flow Element 7 and Flow Transmitter 5 and Flow Indicating Switch 6	000
71111.22	Miscellaneous	EC QMR 13763	HELB Barrier Impairment for P001, P005, P018, P021,	004

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			P026, and P027	
71111.22	Miscellaneous	HPCS-FIS-6	Instrument Master Data Sheet	012
71111.22	Procedures	1.5.1	Surveillance Testing Program	040
71111.22	Procedures	1.5.19	Surveillance Frequency Control Program	000
71111.22	Procedures	ISP-HPCS-X302	HPCS Flow Rate Low (Minimum Flow) -- CC	008
71111.22	Procedures	OSP-ELEC-W102	Electrical Distribution Subsystem Breaker Alignment and Power Availability Verification	031
71111.22	Procedures	OSP-FLEX-Q705	Diesel Generator 5 Quarterly Surveillance	000
71111.22	Procedures	OSP-LPCS-M101	LPCS Fill Verification	015
71111.22	Procedures	OSP-LPCS/IST-Q702	LPCS System Operability Test	044
71111.22	Procedures	OSP-SW/IST-Q701	Standby Service Water Loop A Operability	032
71111.22	Procedures	SOP-LPCS-STBY	Placing LPCS in Standby Status	002
71111.22	Procedures	TSP-DG2-B502	Standby Diesel Generator DG2 Load Testing	024
71111.22	Work Orders		02136320, 02106811, 02118313, 02113216, 021137715, 0213659901	
71114.06	Corrective Action Documents	Action Requests (ARs)	395491, 396909, 396911, 397283	
71114.06	Miscellaneous		Columbia Generating Station Classification Notification Forms for July 2019 ERO Drill	07/16/2019
71114.06	Miscellaneous		Team B - ERO Drill July 2019: Drill Scenario Timeline	07/16/2019
71114.06	Miscellaneous	After Action Report / Improvement Plan	Columbia Generating Station ERO Team "B" Drill Report (July 16, 2019)	08/06/2019
71114.06	Procedures	PPM 13.1.1	Classifying the Emergency	049
71151	Miscellaneous		MSPI Indicator Margin Remaining In Green Report	07/18/2019
71151	Miscellaneous		MSPI Derivation Report: Emergency AC Power System	07/18/2019
71151	Miscellaneous		MSPI Derivation Report: High Pressure Injection System	07/18/2019
71151	Miscellaneous		MSPI Derivation Report: Heat Removal System	07/18/2019
71151	Miscellaneous		MSPI Derivation Report: Residual Heat Removal System	07/18/2019
71151	Miscellaneous		MSPI Derivation Report: Cooling Water System	07/18/2019
71151	Miscellaneous	MSPI-01-BD-0001	Mitigating System Performance Index (MSPI) Basis	021

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			Document	
71151	Procedures	1.10.10	Consolidated Data Entry Process Description	008
71151	Procedures	SYS-4-34	PSA Configuration Control	007
71152	Corrective Action Documents	Action Requests (ARs)	391347, 391334, 391352, 397451, 391337, 391347, 391352, 398152	
71152	Miscellaneous		ACEMAN Thumbs Down Submission	08/01/2019
71152	Procedures	10.25.105	Motor Control Center and Switchgear Maintenance	036
71152	Procedures	10.25.13A	4.16KV Vacuum Breaker Maintenance with Stored Energy Mechanism	020
71152	Procedures	ABN-BKR-FAULT	Failure of MOC Switch Activation for Safety Related Breakers	002
71152	Procedures	ABN-SW	Service Water Trouble	015
71152	Procedures	GBP-LIC-08	Preparation and Conduct of NRC Inspections	004
71152	Procedures	SWP-SEC-04	Access of NRC Personnel	006
71152	Work Orders		02140678	
71153	Corrective Action Documents	Action Requests (ARs)	372103, 372134, 396522	
71153	Miscellaneous		Operations Log: July 6 - July 7, 2019	07/07/2019
71153	Procedures	ABN-FWH-HILEVEL/TRIP	Feedwater Heater High Level Trip	007
71153	Procedures	ABN-POWER	Unplanned Reactor Power Change	016
71153	Procedures	OSP-ELEC-W102	Electrical Distribution Subsystem Breaker Alignment and Power Availability Verification	031
71153	Work Orders		02119476, 02010762, 29150355	