



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV  
1600 EAST LAMAR BOULEVARD  
ARLINGTON, TEXAS 76011-4511

April 23, 2020

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

SUBJECT: COLUMBIA GENERATING STATION – INTEGRATED INSPECTION REPORT  
05000397/2020001

Dear Mr. Sawatzke:

On March 31, 2020, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Columbia Generating Station. On April 9, 2020, the NRC inspectors discussed the results of this inspection with Mr. W. Grover Hettel, Chief Nuclear Officer/Vice President Nuclear Generation, and other members of your staff. The results of this inspection are documented in the enclosed report.

One finding of very low safety significance (Green) is documented in this report. This finding involved a violation of NRC requirements. We are treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violation or the significance or severity of the violation documented in this inspection report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region IV; the Director, Office of Enforcement; and the NRC Resident Inspector at Columbia Generating Station.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region IV; and the NRC Resident Inspector at Columbia Generating Station.

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 Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

A handwritten signature in black ink, appearing to read "Jeffrey E. Josey". The signature is stylized with a large, sweeping initial "J" and a long horizontal stroke extending to the right.

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 – INTEGRATED INSPECTION  
 REPORT 05000397/2020001 – April 23, 2020

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**U.S. NUCLEAR REGULATORY COMMISSION  
Inspection Report**

Docket Number: 05000397

License Number: NPF-21

Report Number: 05000397/2020001

Enterprise Identifier: I-2020-001-0011

Licensee: Energy Northwest

Facility: Columbia Generating Station

Location: Richland, WA

Inspection Dates: January 1 to March 31, 2020

Inspectors: G. Kolcum, Senior Resident Inspector  
L. Merker, Resident Inspector  
R. Alexander, Senior Emergency Preparedness Inspector

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

| Standby Service Water Low Flow for Room Cooler  |   |                                      |                |
|---|---|--------------------------------------|----------------|
| Cornerstone   | Significance                                    | Cross-Cutting Aspect                 | Report Section |
| Mitigating Systems  | Green<br>NCV 05000397/2020001-01<br>Open/Closed | [H.11] -<br>Challenge the<br>Unknown | 71111.15       |
| The inspectors reviewed a self-revealed, Green, non-cited violation of Technical Specification 5.4.1.a, for the licensee's failure to perform maintenance in accordance with documented procedures. Specifically, on January 8, 2020, during the performance of required flushing and flow restoration following maintenance under Work Order 0213980 for a safety-related room cooler for a 480 V motor control center, the standby service water valve was positioned incorrectly, contrary to Procedure OSP-SW-M101, "Standby Service Water Loop A Valve Position Verification," Revision 41, which states to not exceed seven turns closed. When standby service water pump A was started on January 12, 2020, a low flow alarm was received for the room cooler. |   |                                      |                |

### Additional Tracking Items

None.

## PLANT STATUS

The reactor unit began the inspection period at rated thermal power. On January 14, 2020, plant power was reduced to 93 percent due to a failure on an adjustable speed drive. On January 16, 2020, plant power was reduced to 73 percent to recover the adjustable speed drive before returning to 100 percent.

On February 14, 2020, plant power was reduced to 39 percent due to a trip of reactor recirculation pump 1A. On February 15, 2020, the plant was stabilized at 48 percent power before reducing to 28 percent to attempt a restart of reactor recirculation pump 1A. On February 16, 2020, the plant was stabilized at 48 percent before reducing to 28 percent to attempt a second restart of reactor recirculation pump 1A. On February 17, 2020, the plant was stabilized at 48 percent. On February 18, 2020, the plant was reduced to 28 percent for a third attempt to restart reactor recirculation pump 1A before returning to 48 percent. On February 19, 2020, the plant was reduced to 29 percent to restart reactor recirculation pump 1A with modified control software settings before returning to 100 percent. On February 24, 2020, plant power was reduced to 98 percent due to a high level trip of feedwater heaters 4A and 4C. On February 25, 2020, plant power was lowered to 81 percent to recover feedwater heaters. Feedwater heaters 4A and C were recovered on February 26, 2020, and the unit returned to 100 percent power.

On March 6, 2020, plant power was reduced to 80 percent due to a high level trip of feedwater heater 1C with subsequent trips of feedwater heaters 2A, 2B, 2C, and 3C. On March 7, 2020, plant power was reduced to 75 percent for restoration of the feedwater heaters. On March 8, 2020, the reactor was returned to 100 percent power. On March 14, 2020, plant power was reduced to 78 percent to perform a control rod sequence exchange and bypass valve testing. Reactor power returned to 100 percent rated power on the same day where it remained at full power through 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.

Starting on March 20, 2020, in response to the National Emergency declared by the President of the United States on the public health risks of the coronavirus (COVID-19), resident inspectors were directed to begin telework and to remotely access licensee information using available technology. During this time the resident inspectors performed periodic site visits each week and during that time conducted plant status activities as described in IMC 2515, Appendix D; and observed risk significant activities when warranted. In addition, resident and regional baseline inspections were evaluated to determine if all or portions of the objectives and requirements stated in the IP could be performed remotely. If the inspections could be

performed remotely, they were conducted per the applicable IP. In the cases where it was determined the objectives and requirements could not be performed remotely, management elected to postpone and reschedule the inspection to a later date.

## **REACTOR SAFETY**

### 71111.01 - Adverse Weather Protection

#### Seasonal Extreme Weather Sample (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated the adequacy of the overall preparations to protect risk-significant systems from severe cold weather, snow, and wind advisory; week of January 13, 2020.

#### Impending Severe Weather Sample (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated the adequacy of the overall preparations to protect risk-significant systems from impending afternoon high wind warning on February 23, 2020.

### 71111.04 - Equipment Alignment

#### Partial Walkdown Sample (IP Section 03.01) (5 Samples)

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

- (1) standby service water system A on January 6, 2020
- (2) diesel generator 3 following annual and 12-year system maintenance on February 6, 2020
- (3) recirculation pump 1A startup on February 19, 2020
- (4) reactor core isolation cooling system on March 11, 2020
- (5) diesel generator 2 following maintenance on March 17, 2020

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

- (1) The inspectors evaluated system configurations during a complete walkdown of the hardened containment vent system installed in accordance with NRC Order EA-13-109 on March 9, 2020. [Completion of this sample was in accordance with the guidance in Temporary Instruction 2515/193, with credit taken in IP 71111.04 - further details are documented in Inspection Report 05000397/2020010, ADAMS Accession No. ML20085F489.]

### 71111.05 - Fire Protection

#### Fire Area Walkdown and Inspection Sample (IP Section 03.01) (5 Samples)

The inspectors evaluated the implementation of the fire protection program by conducting a walkdown and performing a review to verify program compliance, equipment functionality, material condition, and operational readiness of the following fire areas:

- (1) Fire Area R-7/1, residual heat removal pump 2C room, on January 23, 2020
- (2) Fire Area RC-13/2, chiller room, on February 26, 2020
- (3) Fire Area RC-11/1, heating, ventilation, and air conditioning equipment room A, on February 26, 2020
- (4) Fire Area RC-12/2, heating, ventilation, and air conditioning equipment room B, on February 26, 2020
- (5) Fire Area R-6/2, reactor core isolation cooling pump room, on March 11, 2020

#### 71111.06 - Flood Protection Measures

##### Cable Degradation (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated cable submergence protection in the protected area, manholes E-MH-E10 and E-MH-E11, on March 26, 2020.

#### 71111.11Q - Licensed Operator Requalification 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 yellow risk for the standby service water system A pump run on January 8, 2020.

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

- (1) The inspectors observed and evaluated a licensed operator requalification training drill (Crew D) on February 27, 2020.

#### 71111.12 - Maintenance Effectiveness

##### Maintenance Effectiveness (IP Section 03.01) (2 Samples)

The inspectors evaluated the effectiveness of maintenance to ensure the following structures, systems, and components (SSCs) remain capable of performing their intended function:

- (1) diesel generator 3 maintenance on January 31, 2020
- (2) adjustable speed drive system following trip of reactor recirculation pump 1A on February 19, 2020

##### Quality Control (IP Section 03.02) (1 Sample)

The inspectors evaluated the effectiveness of maintenance and quality control activities to ensure the following SSC remains capable of performing its intended function:

- (1) diesel generator 3 maintenance on January 31, 2020



### 71111.13 - Maintenance Risk Assessments and Emergent Work Control

#### Risk Assessment and Management Sample (IP Section 03.01) (5 Samples)

The inspectors evaluated the accuracy and completeness of risk assessments for the following planned and emergent work activities to ensure configuration changes and appropriate work controls were addressed:

- (1) yellow risk for standby service water system A maintenance, week of January 6, 2020
- (2) yellow risk for diesel generator 3 maintenance on January 30, 2020
- (3) yellow risk for a feedwater pump in idle during loss of recirculation pump 1A on February 19, 2020
- (4) yellow risk for reactor core isolation cooling system maintenance on March 9, 2020
- (5) yellow risk during diesel generator 2 pre-start checks (bar over) on March 19, 2020

### 71111.15 - Operability Determinations and Functionality Assessments

#### Operability Determination or Functionality Assessment (IP Section 03.01) (4 Samples)

The inspectors evaluated the licensee's justifications and actions associated with the following operability determinations and functionality assessments:

- (1) valve issue in standby service water system A on January 8, 2020
- (2) low standby service water system A flow on January 12, 2020
- (3) main steam line D high flow switch found out of tolerance on February 21, 2020
- (4) residual heat removal system B and C keepfill pump discovery of metal flakes in oil on March 18, 2020

### 71111.18 - Plant Modifications

#### Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (3 Samples)

The inspectors evaluated the following temporary or permanent modifications:

- (1) revision to correct Procedure SOP-DG-DSA, Diesel Starting Air Operations, to open diesel starting air cross connect valve during maintenance on February 26, 2020
- (2) hardened containment vent system installed in accordance with NRC Order EA-13-109 on March 10, 2020. [Completion of this permanent modification sample was in accordance with the guidance in Temporary Instruction 2515/193, with credit taken in IP 71111.18 - further details are documented in Inspection Report 05000397/2020010, ADAMS Accession No. ML20085F489.]
- (3) replacement of obsolete pressure regulating assemblies in the diesel generator 3 starting air system on March 23, 2020

### 71111.19 - Post-Maintenance Testing

#### Post-Maintenance Test Sample (IP Section 03.01) (6 Samples)

The inspectors evaluated the following post-maintenance test activities to verify system operability and functionality:

- (1) standby service water system A pump on January 8, 2020
- (2) control room emergency chiller A on January 22, 2020
- (3) diesel generator 3 annual and 12-year preventive maintenance on February 6, 2020
- (4) standby liquid control system flow controller on February 18, 2020
- (5) seismic circuit diagnostics on February 27, 2020
- (6) main control room cooler 52A on March 13, 2020

#### 71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

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

- (1) OSP-ELEC-M701, diesel generator 1 monthly operability, on January 8, 2020
- (2) ISP-MS-B608, response time testing of reactor protection system channel B1 trip on main steam isolation valve closure signal, on February 5, 2020
- (3) OSP-LPCS/IST-Q702, low pressure core spray system operability, on February 11, 2020
- (4) SOP-APRM/LPRM-OPS, average power range monitoring and local power range monitoring system operability, on February 19, 2020
- (5) OSP-ELEC-M702, diesel generator 2 monthly operability, on March 19, 2020

#### Inservice Testing (IP Section 03.01) (1 Sample)

- (1) OSP-RHR/IST-Q702, residual heat removal system A operability, on February 14, 2020

#### FLEX Testing (IP Section 03.02) (1 Sample)

- (1) OSP-FLEX-A102, B5B pumper truck functionality, on February 27, 2020

#### 71114.04 - Emergency Action Level and Emergency Plan Changes

#### Inspection Review (IP Section 02.01-02.03) (1 Sample)

- (1) The inspectors evaluated the Columbia Generating Station Emergency Plan, Revision 67, on March 22, 2020. The licensee implemented Revision 67 on March 12, 2020, and submitted the revised emergency plan to the NRC on the same date. This evaluation does not constitute NRC approval.

#### 71114.06 - Drill Evaluation

#### Drill/Training Evolution Observation (IP Section 03.02) (1 Sample)

The inspectors evaluated:

- (1) general emergency preparedness drill, Team D, on February 25, 2020

## 71114.08 - Exercise Evaluation Scenario Review

### Inspection Review (IP Section 02.01 - 02.04) (1 Sample)

- (1) The inspectors reviewed the licensee's preliminary exercise scenario, which was submitted to the NRC on January 21, 2020, for the exercise which was scheduled to occur at the end of March 2020. The inspectors discussed the preliminary scenario with Mr. S.M. Sullivan, Manager, Emergency Preparedness, and other members of the EP staff on February 19, 2020. The inspectors' review does not constitute NRC approval of the scenario. [Subsequent to the scenario discussion, due to events surrounding the COVID-19 public health crisis, the licensee and offsite response organizations postponed the scheduled biennial exercise to a date later in 2020. However, the scenario has been retained and securely controlled, such that it may be utilized when the exercise is conducted later in 2020.]

## **OTHER ACTIVITIES – BASELINE**

### 71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

#### IE01: Unplanned Scrams per 7000 Critical Hours Sample (IP Section 02.01) (1 Sample)

- (1) (01/01/2019–12/31/2019)

#### IE03: Unplanned Power Changes per 7000 Critical Hours Sample (IP Section 02.02) (1 Sample)

- (1) (01/01/2019–12/31/2019)

#### IE04: Unplanned Scrams with Complications (USwC) Sample (IP Section 02.03) (1 Sample)

- (1) (01/01/2019–12/31/2019)

### 71152 - Problem Identification and Resolution

#### Annual Follow-up of Selected Issues (IP Section 02.03) (1 Sample)

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

- (1) classification of safety-related components coded as run to maintenance per the maintenance rule on March 24, 2020

### 71153 – Follow-up of Events and Notices of Enforcement Discretion

#### Personnel Performance (IP Section 03.03) (2 Samples)

- (1) The inspectors evaluated a failure on an adjustable speed drive, resultant reactor downpower to 93 percent, and the licensee's response on January 16, 2020.
- (2) The inspectors evaluated a trip of reactor recirculation pump 1A, resultant reactor downpower to 39 percent, and the licensee's response on February 15, 2020.

## INSPECTION RESULTS

| Standby Service Water Low Flow for Room Cooler   |   |                                      |                |
|--|---|--------------------------------------|----------------|
| Cornerstone  | Significance                                    | Cross-Cutting Aspect                 | Report Section |
| Mitigating Systems   | Green<br>NCV 05000397/2020001-01<br>Open/Closed | [H.11] -<br>Challenge the<br>Unknown | 71111.15       |
| <p>The inspectors reviewed a self-revealed, Green, non-cited violation of Technical Specification 5.4.1.a, for the licensee's failure to perform maintenance in accordance with documented procedures. Specifically, on January 8, 2020, during the performance of required flushing and flow restoration following maintenance under Work Order (WO) 0213980 for a safety-related room cooler for a 480 V motor control center, the standby service water valve was positioned incorrectly, contrary to Procedure OSP-SW-M101, "Standby Service Water Loop A Valve Position Verification," Revision 41, which states to not exceed seven turns closed. When standby service water pump A was started on January 12, 2020, a low flow alarm was received for the room cooler.</p>  |   |                                      |                |
| <p><u>Description:</u> On January 8, 2020, during the performance of required flushing and flow restoration following maintenance under WO 0213980 for a safety-related room cooler for a 480 V motor control center, standby service water valve SW-V-115 was positioned incorrectly. Procedure OSP-SW-M101, "Standby Service Water Loop A Valve Position Verification, Revision 41, requires in step 7.2.21.c to "not to exceed 7 TURNS CLOSED." Operators contacted the control room and the shift manager gave permission to throttle the valve beyond seven turns, without reviewing the notes in OSP-SW-M101. The procedure was not annotated by the crew to document the deviation from step 7.2.21.c, and an action request was not initiated for engineering to evaluate the new condition. On January 12, 2020, service water pump A was started and a low flow alarm was received at 4 gpm. Procedure OSP-SW-M101 required 12-15 gpm. Procedure OSP-SW-M101 required a minimum operability flow of 10 gpm. Engineering conducted a review of calculation ME-02-92-43, "Room Temperature Calculation for DG Building, Reactor Building, Radwaste Building and Service Water," Revision 13, and the basis for the 10 gpm. Engineering re-performed the analysis and determined that the value of 4 gpm provided sufficient margin for operability. Operations reviewed the procedure and determined the 'operability limits' stated in the procedure are 'administrative limits' and should be changed.</p> |   |                                      |                |
| <p><u>Corrective Actions:</u> The licensee's corrective actions included immediately declaring the 480 V motor control center room inoperable in accordance with Technical Specification 3.8.7.A when the 480 V motor control center room cooler low flow alarm was received. The licensee entered Procedure OSP-SW-C101, "Service Water Loop A Heat Exchanger Flushing," Revision 0, to adjust flow. In approximately one and a half hours, the adjusted flow was re-tested and the 480 V motor control center was declared operable.</p>   |   |                                      |                |
| <p><u>Corrective Action References:</u> Action Request 403084</p>  |   |                                      |                |
| <p><u>Performance Assessment:</u></p>  |   |                                      |                |
| <p><u>Performance Deficiency:</u> The licensee's failure to perform maintenance in accordance with documented procedures was a performance deficiency.</p>   |   |                                      |                |

**Screening:** The inspectors determined the performance deficiency was more than minor because it was associated with the configuration control attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, on January 8, 2020, during the performance of required flushing and flow restoration following maintenance under WO 0213980 for a safety-related room cooler for a 480 V motor control center, the standby service water valve was positioned incorrectly, contrary to Procedure OSP-SW-M101, "Standby Service Water Loop A Valve Position Verification," Revision 41, which states to not exceed seven turns closed. When standby service water pump A was started on January 12, 2020, a low flow alarm was received for the room cooler.

**Significance:** The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." The inspectors determined the finding was of very low safety significance (Green) because all of the screening questions were answered in the negative.

**Cross-Cutting Aspect:** H.11 - Challenge the Unknown: Individuals stop when faced with uncertain conditions. Risks are evaluated and managed before proceeding. This finding had a cross-cutting aspect in the area of human performance, challenge the unknown, in that the licensee did not stop when faced with uncertain conditions and evaluate and manage risks before proceeding. Specifically, the licensee did not challenge the fact that the procedure did not allow them to close the valve more than seven turns.

**Enforcement:**

**Violation:** Technical Specification 5.4.1.a requires, in part, that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2. Section 9.a of Appendix A of Regulatory Guide 1.33, Revision 2, requires, in part, that maintenance that can affect the performance of safety-related equipment should be performed in accordance with documented instructions appropriate to the circumstances. The licensee established WO 0213980016 to implement Procedure OSP-SW-M101, "Standby Service Water Loop A Valve Position Verification," Revision 41, to meet the Regulatory Guide 1.33 requirement. The notes preceding step 7.2.21.c of Procedure OSP-SW-M101 state, "The recommended throttled position for SW-V-115 is 6.5 to 6.75 turns closed. The expected flow indication on SW-FI-60 will remain off scale high after performing the next step." Further, step 7.2.21.c states, in part, "Slowly throttle closed SW-V-115...not to exceed 7 TURNS CLOSED."

Contrary to the above, on January 8, 2020, the licensee failed to perform maintenance in accordance with documented instructions appropriate to the circumstances. Specifically, on January 8, 2020, during the performance of required flushing and flow restoration following maintenance under WO 0213980 for a safety-related room cooler for a 480 V motor control center, standby service water valve SW-V-115 was positioned incorrectly in that it exceeded greater than seven turns closed, contrary to Procedure OSP-SW-M101, "Standby Service Water Loop A Valve Position Verification," Revision 41. When standby service water pump A was started on January 12, 2020, a low flow alarm was received for the room cooler.

**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 February 19, 2020, the inspectors presented the Emergency Preparedness exit briefing for Emergency Plan revision in-office inspection results to Mr. S. M. Sullivan, Manager, Emergency Preparedness, and other members of the licensee staff.
- On April 9, 2020, the inspectors presented the integrated inspection results to Mr. W Grover Hettel, Chief Nuclear Officer/Vice President Nuclear Generation, and other members of the licensee staff.

**DOCUMENTS REVIEWED**

| Inspection Procedure | Type                                    | Designation           | Description or Title   | Revision or Date |
|----------------------|---|-----------------------|--|------------------|
| 71111.01             | Procedures                              | ABN-WIND              | Tornado/High Winds   | 032              |
|                      |   | SOP-COLDWEATHER-OPS   | Cold Weather Operations  | 034              |
| 71111.04             | Drawings                                | M512-1                | Flow Diagram: Diesel Oil and Miscellaneous Systems Diesel Generator Building | 047              |
|                      |   | M587                  | General Arrangement Plan & Section Diesel Generator Building                 | 040              |
|                      |   | M778                  | Composite Piping Sections & Details Diesel Generator Bldg                    | 040              |
|                      | Procedures                              | OSP-SW/IST-Q701       | Standby Service Water Loop A Operability                                     | 032              |
|                      |   | SOP-DG-DCW            | Emergency Diesel Generator Jacket Water Cooling                              | 014              |
|                      |   | SOP-DG-DSA            | Diesel Starting Air Operations   | 016              |
|                      |   | SOP-DG2-LU            | Emergency Diesel Generator (DIV 2) Valve and Power Supply Lineup             | 007              |
|                      |   | SOP-DG2-START         | Emergency Diesel Generator (DIV 2) Start                                     | 032              |
|                      |   | SOP-DG2-STBY          | High Pressure Core Spray Diesel Generator Standby Lineup                     | 019              |
|                      |   | SOP-DG3-LU            | High Pressure Core Spray Diesel Generator Valve and Power Supply Lineup      | 009              |
|                      |   | SOP-DG3-START         | High Pressure Core Spray Diesel Generator Start                              | 029              |
|                      |   | SOP-DG3-STBY          | High Pressure Core Spray Diesel Generator Standby Lineup                     | 019              |
|                      |   | SOP-RCC-START         | RCC System Startup   | 003              |
|                      |   | SOP-RCIC-DRAIN        | RCIC Drain   | 004              |
|                      |   | SOP-RCIC-FILL         | RCIC Fill and Vent   | 019              |
|                      |   | SOP-RCIC-INJECTION    | RCIC RPV Injection   | 010              |
|                      |   | SOP-RCIC-INJECTION-QC | RCIC RPV Injection - Quick Card  | 008              |
| SOP-RCIC-LU          | RCIC Valve and Breaker Lineup           | 004                   |  |                  |
| SOP-RCIC-OIL         | RCIC Turbine or Pump Oil Fill and Prime | 010                   |  |                  |

| Inspection Procedure | Type                        | Designation           | Description or Title   | Revision or Date |
|----------------------|-----------------------------|-----------------------|--|------------------|
|                      |                             | SOP-RCIC-SHUTDOWN     | RCIC Shutdown  | 010              |
|                      |                             | SOP-RCIC-START        | RCIC Start in Test Return Mode   | 006              |
|                      |                             | SOP-RCIC-STBY         | Placing RCIC in Standby Status   | 012              |
|                      |                             | SOP-RCIC-SUCTION      | RCIC Suction Transfer  | 001              |
|                      |                             | SOP-RCIC-TRANSFER-QC  | RCIC Transfer to CST - CST Mode  | 001              |
|                      |                             | SOP-RRC-ASD           | Reactor Recirculation ASD Operation  | 013              |
|                      |                             | SOP-RRC-FLOW-QC       | Reactor Power Change with RRC Flow Controllers - Quick Card                    | 005              |
|                      |                             | SOP-RRC-RESTART-QC    | Reactor Recirculation Pump Restart - QC  | 000              |
|                      |                             | SOP-RRC-SINGLELOOP    | Reactor Recirculation Single Loop Operation                                    | 014              |
|                      |                             | SOP-RRC-START         | Reactor Recirculation System Start   | 021              |
|                      | Work Orders                 |                       | 02182368, 02066997, 02087948, 02136139, 02137881, 02140403, 02128068, 02126087 |                  |
| 71111.05             | Corrective Action Documents | Action Requests (ARs) | 403399   |                  |
|                      | Miscellaneous               | ISP 20-0010           | Plant Ignition Source Permit for RHR-P-3, H3/4.7                               | 01/22/2020       |
|                      |                             | TCP 20-001            | Transient Combustible Permit for RHR-C inside door R13 - H3/4.7                | 01/22/2020       |
|                      | Procedures                  | 1.3.10C               | Control of Combustibles  | 021              |
|                      |                             | 10.2.222              | Seismic Storage Requirements for Transient Equipment                           | 002              |
|                      |                             | ISPM-2                | Compressed Gases and Welding/Cutting   | 011              |
|                      |                             | PFP-RB-422            | Reactor 422  | 006              |
| Work Orders          |                             | 02157539              |  |                  |
| 71111.06             | Corrective Action Documents | Action Requests (ARs) | 381023, 405330   |                  |
|                      | Drawings                    | E-822-1               | Electrical Manholes Development and Details                                    | 004              |
|                      |                             | E823-1                | Underground Duct Banks Plans and Profiles                                      | 027              |



| Inspection Procedure | Type                        | Designation           | Description or Title   | Revision or Date |
|----------------------|-----------------------------|-----------------------|--|------------------|
|                      |                             | E824-2                | Underground Duct Banks Plans and Profiles  | 008              |
|                      | Engineering Changes         | 13650                 | Calc 6.08.01-SII-6 Rev 0 - Modification to Tornado Holddown Bolting for E-MH-E10, E-MH-E11, and E-MH-E15 Manhole Covers  | 000              |
|                      | Miscellaneous               | 19-0454               | E-MH-E10 Manhole South of DG Building Barrier Impairment Permit  | 03/24/2020       |
|                      |                             | 19-0455               | E-MH-E11 30' East of Bldg 88 (north end) Building Barrier Impairment Permit  | 03/24/2020       |
|                      |                             | 5059SCREEN-14-0063    | Temporary Concrete Deadmen will be Placed on Top of Class 1 Electrical Manholes E10, E11, and E15  | 000              |
|                      | Procedures                  | 1.3.57                | Barrier Impairment   | 038              |
|                      | Work Orders                 |                       | 02124766   |                  |
| 71111.11Q            | Miscellaneous               |                       | Crew D 4.0 Critique Summary LR002475   | 02/03/2020       |
|                      |                             | LR002475              | Operations Requalification Training Cycle 20-1 Evaluated Scenario  | 000              |
|                      | Procedures                  | 13.1.1                | Classifying the Emergency  | 049              |
|                      |                             | ABN-EARTHQUAKE        | Earthquake   | 015              |
|                      |                             | ABN-ROD               | Control Rod Faults   | 029              |
|                      |                             | OSP-SW/IST-Q701       | Standby Service Water Loop A Operability   | 032              |
| 71111.12             | Corrective Action Documents | Action Requests (ARs) | 373197, 403552, 403553, 403554, 403557, 403559, 403630, 403631, 403664, 403688, 403732, 404225, 404235, 404245, 404246, 404256, 404257, 404259, 404283, 404303, 404305, 404306 |                  |
|                      | Procedures                  | 10.20.18              | Division 3 Diesel Generator Engine 2/4/6/12/18 Year Preventive Maintenance   | 007              |
|                      |                             | 10.25.68              | RRC-IMD-ASD1A/1 and RRC-IMD-ASD1A/2 Induction Motor Drive Software Settings and Self-test  | 000              |
|                      |                             | MI-1.6                | Peer Verification Program  | 010              |
|                      |                             | OSP-RRC-C103          | RRC Pump Start Temperature and Loop Flow Verification  | 013              |
|                      |                             | QAP-ASU-07            | Peer Verification Program Planning   | 005              |
|                      |                             | SOP-RRC-ASD           | Reactor Recirculation ASD Operation  | 013              |

| Inspection Procedure | Type                        | Designation                              | Description or Title   | Revision or Date |
|----------------------|-----------------------------|--|--|------------------|
|                      |                             | SOP-RRC-FLOW-QC                          | Reactor Power Change with RRC Flow Controllers - Quick Card  | 005              |
|                      |                             | SOP-RRC-RESTART-QC                       | Reactor Recirculation Pump Restart - QC  | 000              |
|                      |                             | SOP-RRC-SINGLELOOP                       | Reactor Recirculation Single Loop Operation  | 014              |
|                      |                             | SOP-RRC-START                            | Reactor Recirculation System Start   | 021              |
|                      |                             | SWP-INS-01                               | Quality Control Inspection and Peer Verification   | 008              |
|                      | Work Orders                 |  | 02123657, 02124798, 02126087, 02126091, 02126096, 02126105, 02136348, 02153813, 02126093, 02131506, 02158380, 02158476 |                  |
| 71111.13             | Corrective Action Documents | Action Requests (ARs)                    | 403631, 403667   |                  |
|                      | Miscellaneous               |  | Fire Tour Log Sheet  | 01/28/2020       |
|                      |                             |  | Fire Tour Log Sheet  | 01/29/2020       |
|                      | Procedures                  | 1.3.10                                   | Plant Fire Protection Program Implementation   | 034              |
|                      |                             | 1.3.76                                   | Integrated Risk Management   | 059              |
|                      |                             | 1.3.83                                   | Protected Equipment Program  | 031              |
|                      |                             | 1.3.85                                   | On-Line Fire Risk Management   | 005              |
|                      |                             | 1.3.86                                   | Online Fire Risk Management  | 005              |
| PFP-RW-467           |                             | Radwaste 467                             | 005  |                  |
|                      | SOP-DG2-START               | Emergency Diesel Generator (DIV 2) Start | 032  |                  |
|                      | SOP-RFT-START               | Reactor Feedwater Turbine System Start   | 022  |                  |
| 71111.15             | Calculations                | E/I-02-92-1063                           | Calculation for Setting Range Determination for Instrument Loop MS Differential Pressure Indicating Switch 8A          | 001              |
|                      | Corrective Action Documents | Action Requests (ARs)                    | 402942, 301084, 344042, 402397, 403325, 403084, 403090, 397067, 403302   |                  |
|                      | Engineering Changes         |  | 14942, 14973   |                  |
|                      | Miscellaneous               | 02E22-13,15                              | Durco Mark 3 Sealed Metallic Pumps   | 000              |
|                      |                             | AED-SPC-311                              | Design Basis Document Residual Heat Removal System   | 018              |
| Procedures           | 1.3.66                      | Operability and Functionality Evaluation | 034  |                  |

| Inspection Procedure | Type                        | Designation                   | Description or Title  | Revision or Date |
|----------------------|-----------------------------|-------------------------------|---|------------------|
|                      |                             | ISP-MS-Q928                   | Main Steam Line HI Flow Channel D - CFT/CC  | 013              |
|                      |                             | OSP-SW-M101                   | Standby Service Water Loop A Valve Position Verification  | 041              |
|                      | Work Orders                 |                               | 02147076, 02156728, 02156735, 02157606, 29153247, 02107044, 02128633, 02157539,   |                  |
| 71111.18             | Corrective Action Documents | Action Requests (ARs)         | 369318, 399463, 399557, 403249, 402490, 403302, 403465, 403668, 404607  |                  |
|                      | Drawings                    | A990F07001                    | Schematic Diagram Air Start System  | 002              |
|                      |                             | M512-1                        | Flow Diagram Diesel Oil & Miscellaneous Systems Diesel Generator Building   | 047              |
|                      |                             | M512-1                        | Flow Diagram Diesel Oil and Miscellaneous Systems Diesel Generator Building   | 047              |
|                      | Engineering Changes         | 12174                         | One DSA Air Receiver for All Four Air Start Motors of HPCS-DG   | 000              |
|                      |                             | 15024                         | Replace Obsolete DG3 DSA-PCV-1C and DSA-PCV-2C Pressure Regulating Assemblies with OEM Recommended Replacement Assemblies | 000              |
|                      | Miscellaneous               |                               | DSA-PCV-2C Instrument Master Data Sheet   | 001, 004         |
|                      |                             |                               | DSA-PCV-1C Instrument Master Data Sheet   | 001, 004         |
|                      |                             | 02E22-07,54,1                 | HPCS Diesel Generator and Battery and Installation  | 010              |
|                      |                             | AD-09-1584; SOP-DG-DSA Rev. 5 | This is an applicability determination review for procedure SOP-DG-DSA change to Revision 5.                              | 000              |
|                      |                             | ME-02-94-44                   | Diesel Starting Air System Capabilities to Meet the Number of Starts Requirement  | 002, 003         |
|                      |                             | TM-2076                       | Design Basis for DSA Air Receiver 1C and 2C to Provide Three Starts   | 000              |
|                      | Procedures                  | 1.3.29                        | Locked Valve Checklist  | 085              |
|                      |                             | 10.27.63                      | PM/CAL Test – Pressure Control Valves with Integrated Pilot Regulators – HPCS DG  | 011              |
|                      |                             | 8.3.290                       | DG3 Air Receiver Capacity Test  | 000              |
|                      |                             | DES-2-10                      | Minor Alteration  | 032              |
|                      |                             | DES-5-4                       | Design and Safety Assessment  | 003              |
|                      |                             | SOP-DG-DSA                    | Diesel Starting Air Operations  | 016              |
|                      | Work Orders                 |                               | 02141293  |                  |

| Inspection Procedure | Type                        | Designation  | Description or Title   | Revision or Date |
|----------------------|-----------------------------|--|--|------------------|
| 71111.19             | Corrective Action Documents | Action Requests (ARs)  | 403221, 403232, 403894, 403898, 403953, 403958, 402961, 403265                   |                  |
|                      | Procedures                  | 10.2.10  | Fastener Torque and Tensioning   | 028              |
|                      |                             | ISP-SEIS-M202  | Seismic System Channel Check   | 002              |
|                      |                             | MI-1.8   | Conduct of Maintenance   | 073              |
|                      |                             | OSP-CCH/IST-M701   | Control Room Emergency Chiller System A Operability                              | 046              |
|                      |                             | OSP-ELEC-S703  | HPCS Diesel Generator Semi-Annual Operability Test                               | 064              |
|                      |                             | OSP-INST-M201  | Accident Monitoring Instrumentation Channel                                      | 015              |
|                      |                             | OSP-SW/IST-Q701  | Standby Service Water Loop A Operability   | 032              |
| Work Orders          |                             | 02182368, 02066997, 02087948, 02136139, 02137881, 02140403, 02128068, 02110369, 02114830, 02131992, 02145234, 02126087, 02123665, 02153813, 02156676, 02120386, 02113572, 00402961 |  |                  |
| 71111.22             | Calculations                | 02E12-03,6   | Residual Heat Removal System Design Specification Data Sheet                     | 009              |
|                      |                             | C106-92-03.01  | Calculation for LPCS Motor Operated Valve Design Basis Review                    | 002              |
|                      |                             | C106-92-03.03  | Calculation for RHR Motor Operated Valve Design Basis Review                     | 005              |
|                      | Corrective Action Documents | Action Requests (ARs)  | 403669, 404026, 404079, 404030, 404031, 404062                                   |                  |
|                      | Drawings                    | EWD-15E-010  | Electrical Wiring Diagram Reactor Protection System Trip System B Relays Sheet 1 | 019              |
|                      |                             | M520   | Flow Diagram: HPCS and LPCS Systems Reactor Building                             | 105              |
|                      | Miscellaneous               | IST-4  | Inservice Testing Program Plan Fourth Ten-Year Inspection Interval               | 003              |
|                      | Procedures                  | ISP-MS-B608  | Main Steam Isolation Valve Closure Trip Channel B1 - RTT                         | 006              |
|                      |                             | OSP-ELEC-M701  | Diesel Generator 1 - Monthly Operability Test                                    | 060              |
|                      |                             | OSP-ELEC-M702  | Diesel Generator 2 - Monthly Operability Test                                    | 065              |
|                      |                             | OSP-FLEX-A102  | B.5.B Pumper Truck Flex Functional Test  | 001              |
|                      |                             | OSP-LPCS/IST-Q702  | LPCS System Operability Test   | 044              |

| Inspection Procedure | Type                        | Designation           | Description or Title   | Revision or Date      |
|----------------------|-----------------------------|-----------------------|--|-----------------------|
|                      |                             | OSP-RHR/IST-Q702      | RHR Loop A Operability Test  | 052                   |
|                      |                             | SOP-APRM/LPRM-OPS     | APRM/LPRM Operations   | 001                   |
|                      |                             | SOP-APRM/LPRM-OPS     | APRM/LPRM Operations   | 001                   |
|                      |                             | TSP-LPCS/ISI-G801     | ASME LPCS System Leakage Test  | 004                   |
|                      | Work Orders                 |                       | 02124819, 02069917, 02123922, 02128884, 02146431, 02121561, 02123933, 02153138, 02120416, 02131553                   |                       |
| 71114.04             | Miscellaneous               | LDCN-19-022           | Licensing Document Change Notice: EP-01, Rev. 67 Emergency Plan (including 10 CFR 50.54(q) Screening and Evaluation) | 02/20/2020            |
|                      | Procedures                  | EPI-16                | §50.54(Q) Change Evaluation  | 16                    |
| 71151                | Procedures                  | SWP-LIC-02            | Licensing Basis Impact Determinations  | 15                    |
|                      | Corrective Action Documents | Action Requests (ARs) | 380257, 387594, 389079, 396522   |                       |
|                      | Miscellaneous               |                       | Operations Logs  | 01/01/2019–12/31/2019 |
| 71152                | Procedures                  | 1.10.10               | Consolidated Data Entry Process Description  | 008                   |
|                      | Corrective Action Documents | Action Requests (ARs) | 009870, 280168, 394573, 394458, 394052, 393723, 402394, 402459, 402996, 403007, 403293, 403915, 403947, 405244       |                       |
|                      | Procedures                  | 1.5.13                | Preventive Maintenance Optimization Living Program   | 042                   |
| 71153                | Procedures                  | SYS-4-22              | Maintenance Rule Program   | 014                   |
|                      | Corrective Action Documents | Action Requests (ARs) | 403173, 403256, 403257, 404225   |                       |
|                      | Miscellaneous               |                       | Reactivity Control Plan January 2020 ASD Channel Recovery  | 01/15/2020            |
|                      |                             |                       | Reactivity Control Plan February 2020 RRC-P-1A Recovery and Ascension to 100% CTP                                    | 02/15/2020            |
| Procedures           | 3.2.6                       | Power Maneuvering     | 013  |                       |

| Inspection Procedure | Type        | Designation          | Description or Title                | Revision or Date |
|----------------------|-------------|----------------------|-------------------------------------|------------------|
|                      |             | ABN-CORE             | Unplanned Core Operating Conditions | 017              |
|                      |             | ABN-FWH-HILEVEL/TRIP | Feedwater Heater High Level Trip    | 007              |
|                      |             | ABN-OG               | Off-Gas System Trouble              | 004              |
|                      |             | ABN-POWER            | Unplanned Reactor Power Change      | 016              |
|                      |             | ABN-RRC-LOSS         | Loss of Reactor Recirculation Flow  | 016              |
|                      |             | SOP-RRC-ASD          | Reactor Recirculation ASD Operation | 013              |
|                      | Work Orders |                      | 29153498                            |                  |