



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION I
2100 RENAISSANCE BOULEVARD, SUITE 100
KING OF PRUSSIA, PENNSYLVANIA 19406-2713

February 12, 2021

Mr. John Grabnar
Site Vice President
Energy Harbor Nuclear Corporation
Beaver Valley Power Station
Route 168
Shippingport, PA 15077

**SUBJECT: BEAVER VALLEY POWER STATION, UNITS 1 AND 2 – INTEGRATED
INSPECTION REPORT 05000334/2020004 AND 05000412/2020004**

Dear Mr. Grabnar:

On December 31, 2020, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Beaver Valley Power Station, Units 1 and 2. On January 29, 2021, the NRC inspectors discussed the results of this inspection with you 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. One Severity Level IV violation without an associated finding is documented in this report. We are treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violations or the significance or severity of the violations 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 I; the Director, Office of Enforcement; and the NRC Resident Inspector at Beaver Valley Power Station, Units 1 and 2.

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 I; and the NRC Resident Inspector at Beaver Valley Power Station, Units 1 and 2.

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,

X /RA/

Signed by: Matthew R. Young
Matt R. Young, Chief
Reactor Projects Branch 5
Division of Reactor Projects

Docket Nos. 05000334 and 05000412
License Nos. DPR-66 and NPF-73

Enclosure:
As stated

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SUBJECT: BEAVER VALLEY POWER STATION, UNITS 1 AND 2 – INTEGRATED
INSPECTION REPORT 05000334/2020004 AND 05000412/2020004 DATED
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**U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report**

Docket Numbers: 05000334 and 05000412

License Numbers: DPR-66 and NPF-73

Report Numbers: 05000334/2020004 and 05000412/2020004

Enterprise Identifier: I-2020-004-0015

Licensee: Energy Harbor Nuclear Corporation

Facility: Beaver Valley Power Station, Units 1 and 2

Location: Shippingport, PA 15077

Inspection Dates: October 1, 2020 to December 31, 2020

Inspectors: G. Eatmon, Senior Resident Inspector
R. Rolph, Resident Inspector
L. Cline, Senior Project Engineer
J. DeBoer, Reactor Inspector
O. Masnyk Bailey, Health Physicist

Approved By: Matt R. Young, Chief
Reactor Projects Branch 5
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 Beaver Valley Power Station, 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

Open Flood Door between Reactor Plant River Water Pumps			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Initiating Events	Green NCV 05000334/2020004-01 Open/Closed	[H.11] - Challenge the Unknown	71153
The inspectors identified a Green finding and associated non-cited violation (NCV) of Title 10 of the <i>Code of Federal Regulations</i> (10 CFR) Part 50, Appendix B, Criterion III, "Design Control," when the licensee failed to maintain an interconnecting flood door between the Unit 1, 'A' and 'B' Reactor Plant River Water pump cubes in the closed position.			

Failure to Notify the NRC within Eight Hours following the Discovery of a condition that could have prevented the Fulfillment of a Safety Function			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Not Applicable	NCV 05000334/2020004-02 Open/Closed	Not Applicable	71153
The inspectors identified a Severity Level IV non-cited violation (NCV) of 10 CFR 50.72(b)(3)(v) for not reporting an event or condition to the NRC within eight hours that, at the time of the discovery, could have prevented the fulfillment of a safety function.			

Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
LER	05000334/2020-001-00	LER 2020-001-00 for Beaver Valley Power Station, Unit 1, Intake Structure Interconnecting Flood Door Found Open Resulting in a Loss of Train Separation for the Reactor Plant River Water System	71153	Closed

PLANT STATUS

Unit 1 operated at or near rated thermal power for the entire inspection period.

Unit 2 operated at or near rated thermal power for the entire 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 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 and regional 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, increasing the amount of time on site as local COVID-19 conditions permitted. As part of their onsite activities, resident inspectors conducted plant status activities as described in IMC 2515, Appendix D; observed risk significant activities; and completed on site portions of IPs. In addition, resident and regional baseline inspections were evaluated to determine if all or portion 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 some cases, portions of an IP were completed remotely and on site. The inspections documented below met the objectives and requirements for completion of the IP.

REACTOR SAFETY

71111.01 - Adverse Weather Protection

External Flooding Sample (IP Section 03.03) (1 Sample)

- (1) The inspectors evaluated that flood protection barriers, mitigation plans, procedures, and equipment are consistent with the licensee's design requirements and risk analysis assumptions for coping with external flooding on December 8, 2020 for the common intake structure

71111.04 - 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) Unit 1 reactor plant river water train 'B' on October 14, 2020
- (2) Unit 1 quench spray train 'A' after maintenance on October 29, 2020

- (3) Unit 2 recirculation spray train 'A' and 'B' on November 2, 2020
- (4) Unit 2 quench spray train 'B' after maintenance on November 17, 2020

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

- (1) Unit 2 accessible portions of charging system 'B' on November 2, 2020

71111.05 - Fire Protection

Fire Area Walkdown and Inspection Sample (IP Section 03.01) (6 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) Unit 2 auxiliary building elevation 735' on October 21, 2020
- (2) Unit 1 control room heating, ventilation, and air conditioning equipment room on November 18, 2020
- (3) Unit 1 west cable vault on November 18, 2020
- (4) Unit 1 fuel building on November 18, 2020
- (5) Unit 2 auxiliary building 755' on November 19, 2020
- (6) Unit 2 waste handling building 735' on November 19, 2020

71111.06 - Flood Protection Measures

Inspection Activities - Internal Flooding (IP Section 03.01) (1 Sample)

The inspectors evaluated internal flooding mitigation protections in the:

- (1) Unit 1 and Unit 2 common main intake structure, pump bay 'A', pump bay 'B', pump bay 'C', and pump bay 'D' on November 12, 2020

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:
 - Unit 2 emergency diesel generator 2 surveillance on October 21, 2020
 - Unit 1 motor driven auxiliary feedwater pump 'B' surveillance on October 22, 2020
 - Unit 1 quench spray pump 'A' post-maintenance test on October 27, 2020

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

- (1) The inspectors observed and evaluated training scenarios involving a load rejection, loss of main feed water, reactor trip, and a failed open pressurizer code safety on November 18, 2020

71111.12 - Maintenance Effectiveness

Maintenance Effectiveness (IP Section 03.01) (1 Sample)

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

- (1) Periodic (a)(3) evaluation of scoped SSC for effective maintenance on the following systems and associated basis for (a)(1) and (a)(2) status:
 - Unit 1, system 34, compressed air
 - Unit 1, system 31, circulating water
 - Unit 2, system 23B, heater drains

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)
 - Unit 1 steam driven auxiliary feedwater pump, system 24B auxiliary feedwater in part/component equivalent replacement package for lube oil fitting to PI-1LO-3C on December 21, 2020
 - Unit 1 cooling tower pump 'A', system 31 circulating water system in WO200816466 on December 21, 2020
 - Unit 2 service water pump 'B', system 30 service water system in post-maintenance test, 2OST on December 21, 2020
 - Unit 2 480V breaker for control rod drive mechanism shroud fan, system 37 480V station service system, WO200756658 on December 21, 2020

Aging Management (IP Section 03.03) (1 Sample)

The inspectors evaluated the effectiveness of the aging management program for the following SSCs that did not meet their inspection or test acceptance criteria:

- (1) Manholes 1EMH18A, 1EMH18B, 1EMH20A, 1EMH21A, which contain medium and high voltage cables that support alternate intake structure pumps and motors and are managed by the Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Aging Management Program

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (1 Sample)

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) Unit 1 emergent work control when operators determined the 'A' quench spray pump inboard bearing motor oil sample had dark color compared to outboard

motor oil (1QS-P-1A-MOTOR) and oil in both sumps was replaced on October 27, 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) Unit 2 21 steam generator hydraulic snubber reservoirs were topped off using hydraulic fluid from a batch in which opaque semi solid material was found at another site (Curtiss-Wright Nuclear Division 10 CFR Part 21 notification (ML20206K891))
- (2) Unit 2 elevated release radiation monitor, 2HVS-RQ109, out of service for greater than allowed by the Offsite Dose Calculation Manual
- (3) Unit 2 turbine driven auxiliary feedwater steam supply valve (2MSS-SOV105C) failed open
- (4) Unit 2 EDG 2 lube oil leak originating from the oil seal of the upper and lower thrust bearing housing joint

71111.19 - Post-Maintenance Testing

Post-Maintenance Test Sample (IP Section 03.01) (4 Samples)

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

- (1) 2OST-36.2, Unit 2 emergency diesel generator 2, 2EGS-EG2-2, monthly test after the oil separator drain flex hose was removed and reinstalled on the diesel generator in accordance with WO 200476626
- (2) Unit 2 motor driven auxiliary feedwater pump 'B', 2FWE-23B, after preventive maintenance on November 20, 2020
- (3) Unit 2 quench spray pump 'A', 2QSS-P21A, after preventive maintenance on December 3, 2020
- (4) Unit 1 loop 1 steam flow channel IV calibration after power supply change on December 14, 2020

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Surveillance Tests (other) (IP Section 03.01) (2 Samples)

- (1) Observed the performance of the Meteorological System diesel generator surveillance on December 18, 2020
- (2) 2OST-36.1, Unit 2 Emergency Diesel Generator 1 Month Test, on December 30, 2020

RCS Leakage Detection Testing (IP Section 03.01) (1 Sample)

- (1) Unit 1, reactor coolant system (RCS) unidentified leak rate action Level 1 entries and associated leak rate calculations between October 9 and December 30, 2020

RADIATION SAFETY

71124.01 - Radiological Hazard Assessment and Exposure Controls

Contamination and Radioactive Material Control (IP Section 03.03) (1 Sample)

The inspectors evaluated licensee processes for monitoring and controlling contamination and radioactive material.

- (1) The inspectors observed personnel exiting the Unit 2 Safeguard area during period of high Radon Gas. The inspectors observed the responding radiation protection technician survey personnel and equipment.

Radiological Hazards Control and Work Coverage (IP Section 03.04) (2 Samples)

The inspectors evaluated in-plant radiological conditions during facility walkdowns and observation of radiological work activities.

- (1) The inspectors observed an entry of two instrumentation and control technicians calibrating an instrument at 100 percent power in the Unit 1 Containment Building. The inspectors also evaluated Locked high radiation area controls inside the Containment Building.
- (2) The inspectors observed Mechanical Maintenance performing preventive maintenance on the Unit 1 'B' charging pump during plant operation.

71124.06 - Radioactive Gaseous and Liquid Effluent Treatment

Walkdowns and Observations (IP Section 03.01) (3 Samples)

The inspectors evaluated the following radioactive effluent systems during walkdowns:

- (1) Unit 1 Auxiliary Building Ventilation to the Ventilation Vent
- (2) Unit 1 liquid effluent system discharge to the river
- (3) Unit 2 liquid effluent discharge system to the river

Sampling and Analysis (IP Section 03.02) (3 Samples)

Inspectors evaluated the following effluent samples, sampling processes and compensatory samples:

- (1) Unit 2 Compensatory grab gas sample of the Supplementary Leak Collection Release System while 2 HVS RQ 109 monitor is out of service
- (2) Unit 2 Station weekly vent sample change out and analysis
- (3) Unit 1 Tritium (H3) sample of the Unit 1 Station Vent

Dose Calculations (IP Section 03.03) (2 Samples)

The inspectors evaluated the following dose calculations:

- (1) Unit 1 batch release of liquid waste tank 1BR-TK-4B and calculations for permit U1LB2020-044
- (2) Unit 2 batch release of liquid waste tank 2SGC-TK23A and calculations for permit U2LB2020-076

Abnormal Discharges (IP Section 03.04) (1 Sample)

The inspectors evaluated the following abnormal discharges:

- (1) There were no abnormal discharges for 2018 or 2019 to evaluate

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

BI01: RCS Specific Activity Sample (IP Section 02.10) (2 Samples)

- (1) Unit 1 October 1, 2019 through September 30, 2020
- (2) Unit 2 October 1, 2019 through September 30, 2020

BI02: RCS Leak Rate Sample (IP Section 02.11) (2 Samples)

- (1) Unit 1 October 1, 2019 through September 30, 2020
- (2) Unit 2 October 1, 2019 through September 30, 2020

OR01: Occupational Exposure Control Effectiveness Sample (IP Section 02.15) (1 Sample)

- (1) January 2019 through September 2020

PR01: Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual Radiological Effluent Occurrences (RETS/ODCM) Radiological Effluent Occurrences Sample (IP Section 02.16) (1 Sample)

- (1) January 2019 through September 2020

71152 - Problem Identification and Resolution

Semiannual Trend Review (IP Section 02.02) (1 Sample)

- (1) The inspectors reviewed the licensee's corrective action program for potential adverse trends in the identification and evaluation of NFPA 805 fire doors that do not meet the defined fire barrier requirement with associated evaluation and corrective actions that might be indicative of a more significant safety issue on December 21, 2020

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) CR-2019-09324, Unit 1 manual scram due to rising reactor power, reports of steam leak in the Main Steam Valve Room and an Open Main Steam Safety Valve on November 4, 2019
- (2) CR 2019-09261, Unit 1-RV-1SI-845A lifted unexpectedly during 1OST-11.1 on November 2, 2019

71153 – Follow-up 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 0500000334/2020-001-00, Intake Structure Interconnecting Flood Door Found Open Resulting in a Loss of Train Separation for the Reactor Plant River Water System (ADAMS Accession No. ML ML20325A147). The inspection conclusions associated with this LER are documented in this report under Inspection Results Section 71153.

OTHER ACTIVITIES – TEMPORARY INSTRUCTIONS, INFREQUENT AND ABNORMAL

60855.1 - Operation of an Independent Spent Fuel Storage Installation at Operating Plants

The inspectors evaluated Beaver Valley's independent spent fuel storage installation cask loadings on October 19 through October 22, 2020. Specifically, the inspectors observed the following activities:

- Fuel selection and fuel loading
- Heavy load movement of Transfer cask and loaded Dry Storage Cask
- Drying and backfill evolutions
- Closure welding and non-destructive weld evaluations
- Transfer and transport evolutions
- Radiological field surveys

Refer to Beaver Valley Power Station Units 1 and 2 Independent Spent Fuel Storage Installation Inspection Report 07201043/2020001 and 07201043/2020002 (ADAMS Accession No. ML20339A070) for further details.

INSPECTION RESULTS

Observation: Follow-up to Unit 1-RV-1SI-845A lifted unexpectedly during 1OST-11.1 under CR 2019-09261, on November 2, 2019	71152
The inspectors reviewed a root cause evaluation completed by the licensee and their associated corrective actions for a problem involving the 845A relief valve lifting and remaining open during a quarterly surveillance test on November 2, 2019. The problem was reported to the NRC in an LER dated December 30, 2019 (ML20003D859).	

The inspectors determined the licensee's evaluation concluded that their maintenance staff did not properly set the guide ring settings on the 845A relief valve installed in the low-head safety injection system dating back to 2012. Improperly set guide ring settings would prevent the relief valve from reseating properly. The NRC issued a violation associated with this problem in a prior inspection report dated August 13, 2020 (ML20226A214). As part of immediate corrective actions, licensee staff removed the 845A relief valve from service by preventing its opening until the next planned refueling outage and verified other installed relief valves were capable of relieving pressure to protect the system pipe and components.

The inspectors determined the licensee's root cause evaluation identified a contributing problem unrelated to the 845A relief valve guide ring setting where system pressure increased briefly above relief valve set points during pump startup. The licensee contracted with an outside vendor to perform a hydraulic analysis to determine the potential causes of the brief pressure spike. The vendor concluded that a small air void present inside the system's valve bonnets was the most likely cause of the pressure spike and that increasing the vacuum pressure from 21' Hg to 24' Hg during system fill and vent activities should decrease the small volume further and reduce the pressure spike during pump start to below the relief valve set point. The inspectors verified the licensee planned to implement this change during the upcoming spring refueling outage. The inspectors noted as an interim action, the licensee modified their procedures to station an equipment operator at the two remaining relief valves in the system (845B and 845C) to verify that these relief valves reseal following the brief pressure spike whenever the system is operated. The inspectors also reviewed documentation that showed sufficient relief capacity was maintained with the 845A valve out of service in the interim.

The inspectors reviewed the root cause, the vendors hydraulic analysis, extent of condition review, revised maintenance procedures, and relevant action reports and interviewed the current system engineer and licensee subject matter expert on the topic. Based on the documents reviewed and discussions with licensee personnel regarding the concerns identified in this condition report, the inspectors did not identify performance deficiencies or violations.

Observation: CR-2019-09324, November 4, 2019, Unit 1 manual scram due to rising reactor power, reports of steam leak in the Main Steam Valve Room and an Open Main Steam Safety Valve	71152
<p>CR 2019-09324 was initiated to track the evaluation and corrective actions for the November 2019 scram. The problem was reported to the NRC in LER 2019-002-00 dated December 30, 2019, and NRC Inspection Report 05000334 and 412/2020001 documented the results of the inspector's review of the licensee's performance for the event. For this inspection, the inspectors reviewed the licensee's causal evaluation and the status of corrective actions.</p> <p>The licensee concluded that the root cause of the event was the overlap of the setpoint ranges for the 1A atmospheric steam dump valve (ASDV) pressure switch and the 1A main steam safety valve (MSSV) pressure switch. The overlap allowed both set points to be set near each other so when the 1A ASDV pressure switch drifted high, the 1A MSSV setpoint was reached before the 1A ASDV setpoint. As interim corrective action to ensure the 1A ASDV would open before the 1A MSSV during a similar event, before restart after the November 2019 trip, the licensee recalibrated the pressure switch input for the 1A ASDV to the low end of its tolerance band. Then to permanently eliminate the tolerance overlap for the ASDV and MSSV pressure switches, the licensee initiated EER 601245545 to specify new</p>	

setpoints, resets, and tolerances for the three ASDV pressure switches. The inspectors confirmed that Work Orders 200810373, 200810374, and 200810375 that were written to implement the new setpoints for the three ASDV pressure switches, were scheduled for March and April of 2021.

The licensee also identified other casual factors that contributed to the event: the bank 1 condenser steam dump valves (CSDVs) and the bypass feedwater regulating valves were oscillating, operators took manual control of the CSDVs to stabilize the bypass feedwater regulating valve oscillations, and the ASDVs were operated in manual instead of auto. The inspectors confirmed the licensee was taking actions to address these factors.

The inspectors reviewed the status of licensee procedure changes and engineering products intended to address the operation of the condenser and atmospheric steam dumps and the bypass feedwater regulating valves during the event. Actions that are currently planned to be implemented during the next refueling outage include: improving the bypass feedwater regulating valve calibration procedure by incorporating previously used skill-of-the-craft methods into the procedure and re-sequencing the order of operation of the bank 1 condenser steam dump control valves to provide finer control from these valves at lower steam flows. Additional engineering changes are also being considered if these actions do not provide improvements in the operation of the equipment.

The inspectors also reviewed training and evaluations completed by the licensee to improve operator knowledge and proficiency at operating the steam dumps and the bypass feedwater regulating valves at low power. The training addressed topics like, when to take these systems to manual, how to operate them in manual, and when to leave them in auto based on control room response. The inspectors confirmed all applicable training and evaluations were completed prior to the end of the 2020 training cycle and, where appropriate, were added to the operation's departments long range training plans.

Based on the documents reviewed and discussions with engineering and operations personnel regarding the concerns identified in this condition report, the inspectors did not identify performance deficiencies or violations.

Open Flood Door between Reactor Plant River Water Pumps			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Initiating Events	Green NCV 05000334/2020004-01 Open/Closed	[H.11] - Challenge the Unknown	71153
The inspectors identified a Green finding and associated non-cited violation (NCV) of Title 10 of the <i>Code of Federal Regulations</i> (10 CFR) Part 50, Appendix B, Criterion III, "Design Control," when the licensee failed to maintain an interconnecting flood door between the Unit 1, 'A' and 'B' Reactor Plant River Water pump cubes in the closed position.			
<u>Description:</u> On September 16, 2020, inspectors identified an open interconnecting flood door between the Unit 1 Reactor Plant River Water pump cubicle 'A' and 'B'.			
The reactor plant river water system consists of two redundant trains ('A' and 'B') supplied by three pumps ('A', 'B', and 'C') located in the intake structure. Normally, the system configuration is pump 'A' supplies train 'A', pump 'B' supplies train 'B', and the 'C' pump is a spare that can be aligned to either train. Unit 1 normally operates with one train in service			

and the other in standby. Two trains are required to be operable per Technical Specification limiting condition for operation 3.7.8, "Service Water."

Each reactor plant river water pump is located in a separate cubical: 'A' pump in the 'A' cubicle, 'B' in the 'B' cubicle, and 'C' in the 'C' cubicle and the 'A' and 'B' cubicles are interconnected with a normally closed, sliding flood door. The 'C' cubicle interconnecting flood door connects with the 'D' cubicle and contains the Unit 2 service water pumps. The flood door is identified as closed in the Unit 1 updated final safety analysis report (UFSAR), Section 9.7.2, "River Water Pumps and Engine-Driven Fire Pump-Intake Structure." This configuration was incorporated into the UFSAR as part of a Unit 1 and Unit 2 license amendment request (LAR) in 1998. The licensee determined that the closed flood door was needed to maintain train separation for the Unit 1 river water system. It protected the equipment in the 'A' and 'B' cubicles from failure caused by flooding from a rubber expansion joint rupture in the other interconnected cubicle. The internal flooding analysis for the intake structure cubicle, calculation 8700 DMC 3443, "BVPS Intake Structure Cubicles Internal Flood Analysis," credits the flow resistance of the closed flood door to determine water level in the impacted pump cubical and the connected pump cubical during an internal flooding event. This calculation determined the expected flood water level in the connected cubical was acceptable with the flood door closed.

The inspectors determined that this common cause failure scenario was identified and formally documented with approved LAR Nos. 257 and 128 for Unit 1 and Unit 2 respectively, on December 16, 1998. These LARs updated the Unit 1 and Unit 2 UFSARs to specifically identify that the interconnecting flood doors between the pump cubicles would be maintained closed.

During the investigation into the cause of the mispositioned flood door, the licensee could not determine when the interconnecting flood door was opened. The last time the licensee could confirm that the door was closed was after a flood door seal test completed on February 11, 2020, as documented in Unit1/Unit2OST-30.21A, Group 1 Flood Door Seal System Operability Check. The inspectors determined that this was the only licensee procedure that provided direction to maintain the interconnecting flood doors between the pump cubicles closed in accordance with the UFSAR. The pump cubicles are monitored during plant operation by daily operator rounds, security rounds, and periodic maintenance activities. Licensee staff who performed these activities during this period, failed to question why the configuration of the interconnecting flood door for the 'A' and 'B' cubicle was left open, while the interconnecting flood door between the 'C' and 'D' cubicle was closed.

Corrective Actions: The licensee closed the flood door on September 16, 2020, in addition to revising the operator logs to ensure the two interconnecting flood doors between the 'A' and 'B' cubicle and the 'C' and 'D' cubicle are shut. A temporary barrier was installed in front of the interconnecting flood door until a locking mechanism is installed. A training analysis for Initial Training Courses for Unit 1 and Unit 2 were updated to include information on the interconnecting flood doors.

The licensee plans to install additional signage on the interconnecting flood door emphasizing the significance of the door combined with pump configuration and impact of safety function. They also plan to develop a locking mechanism for each interconnected flood door to secure them in the closed position. The licensee plans to revise applicable operating procedures to include additional information regarding the impact of the pump cubicle interconnecting flood

doors and the associated pump configuration on safety function.

Corrective Action References: CR2020-07218

Performance Assessment:

Performance Deficiency: 10 CFR Part 50, Appendix B, Criterion III, "Design Control," requires that measures shall be established to assure the design basis is correctly translated into specification, drawings, procedures, and instructions. The inspectors determined that the licensee did not adequately translate design basis requirements established in the Unit 1 UFSAR, Section 9.7.2, "River Water Pumps and Engine-Driven Fire Pump-Intake Structure," regarding the position of the interconnecting flood doors between pump cubicles in the intake structure into specifications, procedures and instructions.

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 September 16, 2020, the inspectors identified that the interconnecting flood door between two redundant trains of reactor plant river water was mispositioned open, while the credited position for train separation against internal flooding is closed. The open interconnecting flood door made both trains of reactor plant river water inoperable resulting in a loss of safety function.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." The inspectors screened the finding using Inspection Manual Chapter 0609 Attachment 4, "Initial Characterization of Findings," effective December 20, 2019, and Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 1, for safety significance and determined that a detailed risk evaluation was required. Specifically, the finding impacted the frequency of an internal flooding initiating event between the operating reactor plant river water pumps by removing train separation.

A Region I senior reactor analyst completed the detailed risk evaluation. The Beaver Valley Unit 1 standardized plant analysis risk (SPAR) model, version 8.59, was used to calculate the estimated conditional increase in risk for this issue.

The evaluation assessed the increase in risk associated with the open intake structure flood door located between the 'A' and 'B' cubicles. This interconnecting flood door is normally closed with its seals depressurized. The flood door is designed to protect the interconnecting cubicles, (in this case the 'A' and 'B'), from the consequences of a major pipe failure from the rubber expansion joints associated with any of the applicable pumps within the rooms.

In order to estimate the change in risk associated with the condition, the base case or risk associated with a flood within the 'A' cubicle was calculated. This area consists of a non-safety-related turbine building cooling pump, fire protection pumps, and the 1A safety-related river water cooling pump. The initiating event flooding frequency was considered to consist of potential failures of the expansion joints from the pumps within this room and from ruptures of the various system piping within the room. Any rupture of piping was conservatively assumed to result in a plant transient due to the loss of the turbine building cooling train and one of the Unit 1 river water pumps. No credit was given for fire system piping potentially resulting in alarms with manual recovery actions to identify and isolate. The Risk Assessment of

Operational Events (RASP) handbook, Volume 2 – External Events, Revision 1.02, was referenced in order to develop inputs for estimating the initiating event flooding frequency for the intake structure 'A' cubicle. Table 3-4, "Data Calculation Internal Flooding Frequency for Non-PCS Rupture," was used to represent an estimated nominal failure rate for the piping in the room. Table 3-4 of the RASP handbook referenced a failure rate of $4.5\text{E-}5/\text{year}$ for circulating water pump expansion joint failures. This was used as a surrogate for the pumps within these rooms. For the 'A' cubicle flood area, IS-1, the total relevant piping length was estimated at a nominal 125 feet. There were two pumps used in the calculation of the initiating event frequency for expansion joint failures. The SPAR model was then used to directly solve and calculate a conditional core damage probability (CCDP) for the base case. This was performed using a change set and setting the transient event to $1.0/\text{year}$, with a failure to run of the 1A river water pump (SWS-MDP-FR-WRP1A - set to TRUE). The base case CCDP was calculated at $3.76\text{E-}5$.

The initiating event base case flood frequency was calculated as the sum of the expansion joint failure frequency and flood frequency due to piping within the room. The expansion joint failure frequency was calculated as $2 \times (4.5\text{E-}5/\text{yr}) = 9\text{E-}5/\text{yr}$. The flood frequency for the piping was calculated as follows: $1.2\text{E-}10/\text{hour-ft} \times (8760 \text{ hours}/\text{yr}) \times 125 \text{ ft of piping} = 1.3\text{E-}4/\text{yr}$. The base case core damage frequency was therefore $2\text{E-}4/\text{yr} \times 3.76\text{E-}5 = 7.5\text{E-}9/\text{yr}$.

The conditional risk associated with the flood door being inadvertently opened consisted of three pumps with rubber expansion joints and a combined piping length of an estimated 425 feet for both the 'A' and 'B' cubicles. The SPAR model was used to directly solve and calculate this condition using a change set. The transient event was set to $1.0/\text{yr}$ within the SPAR model with a failure of the 1A and 1B river water pumps to run (SWS-MDP-FR-WRP1A and SWS-MDP-FR-WRP1B set to TRUE). The conditional CCDP was calculated as $1.87\text{E-}3$. The initiating event conditional case expansion joint flood frequency was $3 \times (4.5\text{E-}5/\text{yr}) = 1.3\text{E-}4/\text{yr}$. The piping flood frequency was $1.2\text{E-}10/\text{hour-ft} \times (8760 \text{ hours}/\text{yr}) \times 425 \text{ ft of piping} = 4.4\text{E-}4/\text{yr}$. This resulted in a total flood frequency estimate for the conditional case of $5.7\text{E-}4/\text{yr}$. The conditional case core damage frequency was therefore $5.7\text{E-}4/\text{yr} \times 1.87\text{E-}3 = 1.0\text{E-}6/\text{yr}$. The dominant core damage sequence was a transient initiated by a flooding event within either the 'A' or 'B' cubicle, with a common cause failure of the Unit 1 river water pumps, with the reactor coolant pump seal stage 2 failing, with failure of the shutdown seal to actuate. The assessment was bounding because both turbine building cooling water pumps were assumed to always be in service with the resulting increased contribution to the frequency of flooding.

The increase in core damage frequency (CDF) was $1.0\text{E-}6/\text{yr}$. Both the 1A and 1B trains of river water were considered to be inoperable for 218 days. Section 2.4 of RASP Volume 1 guidance was used for the exposure time, because it was unknown when the door was opened after the door seals were last tested on February 11, 2020. The door was verified and documented to be closed after this test. Because it was unknown when this door was reopened, the 218 days divided by two or (T/2), was used as the exposure time or 109 days consistent with the RASP guidance. The increase in CDF for this condition was $1.0\text{E-}6/\text{yr} \times (109 \text{ days}/365 \text{ days}) = 3\text{E-}7/\text{yr}$. Therefore, the issue was determined to be of very low safety significance (Green). A review for this condition on the impact to large early release frequency resulted in the conclusion that the increase in risk was dominated by the calculated change in CDF. This estimate for the increase in CDF for Unit 1 bounded the effect on Unit 2, because only one Unit 2 river water pump was affected.

Cross-Cutting Aspect: H.11 - Challenge the Unknown: Individuals stop when faced with

uncertain conditions. Risks are evaluated and managed before proceeding. The inspectors determined that operators did not challenge the difference between the flood door configurations, specifically the door between the 'A' and 'B' cubicle was open with the 'C' and 'D' cubicle was closed. The same operator tour includes all four cubicles and is performed multiple times per day.

Enforcement:

Violation: 10 CFR Part 50, Appendix B, Criterion III, "Design Control," which states in part that, "Measures shall be established to assure that applicable regulatory requirements and the design basis for those structures, systems, and components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions." BVPS Unit 1 UFSAR, Section 9.7.2, "River Water Pumps and Engine-Driven Fire Pump-Intake Structure," identifies that the interconnecting flood door between the 'A' and 'B' river water pump cubicles should remain closed as credited by calculation 8700 DMC 3443, "BVPS Intake Structure Cubicles Internal Flood Analysis."

Contrary to the above, between February 11, 2020 and September 16, 2020, licensee measures did not assure that applicable regulatory requirements and the design basis for those SSCs to which this appendix applies, (i.e., the river water pumps and engine driven fire pump-intake structure) were correctly translated into specifications, drawings, procedures, and instructions. Licensee specifications, drawings, procedures, and instructions did not assure that the position of the interconnecting flood door between the 'A' and 'B' river water pump cubicles was controlled in accordance with the design basis described in calculation 8700 DMC 3443, "BVPS Intake Structure Cubicles Internal Flooding Analysis," and BVPS Unit 1 UFSAR, Section 9.7.2.

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

Failure to Notify the NRC within Eight Hours following the Discovery of a condition that could have prevented the Fulfillment of a Safety Function

Cornerstone	Severity	Cross-Cutting Aspect	Report Section
Not Applicable	Severity Level IV NCV 05000334/2020004-02 Open/Closed	Not Applicable	71153

The inspectors identified a Severity Level IV non-cited violation (NCV) of 10 CFR 50.72(b)(3)(v) for not reporting an event or condition to the NRC within eight hours that, at the time of the discovery, could have prevented the fulfillment of a safety function.

Description: On September 16, 2020, inspectors identified an open interconnecting flood door between the Unit 1 Reactor Plant River Water pump cubicle 'A' and 'B' (see NCV 05000334/2020004-02). The licensee did not recognize that the open flood door represented a loss of train separation and adversely impacted the operability and availability of reactor plant river water train 'A' and train 'B'. As a result, the licensee failed to identify that the issue represented a loss of safety function of the reactor plant river water system that was reportable.

The licensee subsequently made the determination about system operability based on guidance provided in licensee procedure Unit1/Unit2OST-30.21A, Group 1 Flood Door Seal

System Operability Check, on October 21, 2020. The inspectors reviewed the licensee's past operability evaluation and concluded that this condition, which could have prevented the fulfillment of a safety function, was discovered on September 16, 2020, at 1129 and that the licensee was required to report the condition within eight hours in accordance with 10 CFR 50.72(b)(3)(v)(A) and 50.72(b)(2)(v)(B).

Corrective Actions: The licensee reported the loss of safety function and technical specification compliance (LER 0500334/2020-001-00), under 10 CFR 50.73(a)(2)(i)(B), 10 CFR 50.73(a)(2)(v)(A), 10 CFR 50.73(a)(2)(v)(B), 10 CFR 50.73(a)(2)(vii)(B) within the required sixty days.

Corrective Action References: CR2020-08145

Performance Assessment: The inspectors determined this violation was associated with a minor performance deficiency. Specifically, the inspectors determined that not recognizing that both Unit 1 Reactor Plant River Water trains were inoperable and, thus, not reporting the loss of safety function event within either hours to the NRC under 10 CFR 50.72(b)(3)(v)(A) and 50.72(b)(3)(v)(B) was a failure that was reasonably foreseeable and preventable.

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 reviewed Section 6.9.d.9 of the NRC Enforcement Policy and determined this violation was a Severity Level IV violation because the licensee failed to make a report required by 10 CFR 50.72, and that failure did not involve information that, had the report been made, would have caused the NRC to reconsider a regulatory position or undertake substantial further inquiry.

Violation: 10 CFR 50.72(b)(3)(v) requires, in part, that the licensee shall notify the NRC Operations Center via the Emergency Notification System within eight hours of the occurrence of any event or condition that at the time of discovery could have prevented the fulfillment of the safety function of structures or systems that are needed to: (A) shut down the reactor and maintain it in a safe shutdown condition and (B) remove residual heat. Contrary to the above, on September 16, 2020, the licensee did not notify the NRC Operations Center via the Emergency Notification System within eight hours of the occurrence of a condition that at the time of discovery could have prevented the fulfillment of the safety function of the Unit 1 Reactor Plant River Water system that is needed to shut down the reactor and maintain it in a safe shutdown condition and remove residual heat.

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 January 29, 2021, the inspectors presented the integrated inspection results to John Grabnar, Site Vice President and other members of the licensee staff.

- On October 23, 2020, the inspectors presented the Rad Safety Inspection 71124.06 debrief inspection results to Mr. Rod Penfield, former Site Vice President and other members of the licensee staff.
- On November 13, 2020, the inspectors presented the Unit 1 low-head safety injection discharge relief valve problem identification and resolution sample inspection results to Michael Ressler, Engineering and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.01	Procedures	1-MSP-M-33-300	Unit 1 Flood Seals Visual Inspection In-Field Reference	Issue 4 Revision 2
		1/2OM-53C.4A.75.2	Unit 1/Unit 2 Acts of Nature – High River Elevation	Revision 36
		1BVT 1.33.7	Unit 1 Flood Seals Visual Inspection	Revision *
		2BVT 1.33.7	Unit 2 Flood Seals Visual Inspection	Revision 4
		NORM-LP-7120	Nuclear Operating Reference Material, Beaver Valley Flood Hazard Re-evaluation Report Support Document	Revision 0
71111.04	Corrective Action Documents	CR2020-06001		
		CR2020-07740		
	Drawings	RM-0085B	Containment Depressurization Piping SH 2	Revision 31
		RM-0413-001	Valve Oper No Diagram, Recirculation Spray System	Revision 12
		RM-0414-001	Containment Depressurization System	Revision 26
		RM-0430-001	Unit 1 piping and instrumentation diagram river water system	Revision 40
		RM-0430-002	Unit 1 piping and instrumentation diagram river water system	Revision 24
		RM-0430-003	Unit 1 piping and instrumentation diagram river water system	Revision 34
	Procedures	1OST-13.1	Quench Spray Pump[1QS-P-1A] Test	Revision 45
		1OST-13.12	Containment Depressurization System Monthly Valve Position Verification	Revision 4
		2OST-1.12.c	Safeguards Protection System Train B CIB/Spray Actuation Test	Revision 34
		2OST-48.7	Padlock Review of Components Outside Containment	Revision 44
71111.05	Corrective Action Documents	CR2020-08207	*NRC initiated	
	Procedures	1PFP-FULB-735-766	Fuel Building	Revision 4
		1PFP-SFGB-735	WEST CABLE VAULT	Revision 0
		1PFP-SRVB-713-CR-2	Control Room HVAC Equipment Room	Revision 2
		2PFP-AXLB-735	Auxiliary Building General Area, Fire Compartments 2-PA-3, 2-PA-3A, 2-PA-3B, 2-PA-3C	Revision 2
		2PFP-AXLB-755	Primary Auxiliary Building, Fire Compartments 2-PA-4, 2-PA-	Revision 2

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			6, 2-PA-7	
		2PFP-WHBX-7351	Waste Handling Building	Revision 1
71111.06	Calculations	8700-DMC-3443	BVPS Unit 1 Intake Structure Cubicles Internal Flood Analysis	Revision 2
	Corrective Action Documents	2020-07218		
	Miscellaneous	PRA-BV1-AL-R07	Unit 1 PRA Notebook Internal Flooding Analysis	Revision 7
	Procedures	1BVT 1.33.07	Unit 1 Flood Seals Visual Inspection	Revision 5
		2BVT 1.33.07	Unit 2 Flood Seals Visual Inspection	Revision 4
		Unit 1/Unit 2 ADM-2021	Control of Penetrations (Including HELB Doors)	Revision 14
		Unit 1/Unit 2 OST-30.21A	Group 1 Flood Door Seal System Operability Check	Revision 11
71111.11Q	Miscellaneous	NOP-OP-1013-02	Simulator and Walkthrough Scenario: LBLOCA - Transfer to Cold Leg Recirculation/Recirc Spray Pump Flow Reduction (Unit 1)	Revision 0
	Procedures	1OM-53A.1.E-1(ISS3)	Loss of Reactor or Secondary Coolant	Revision 0
		1OM-53A.1.ES-1.3(ISS2)	Transfer to Cold Leg Recirculation	Revision 1
		1OM-53A.1.ES-1.4(ISS2)	Transfer to Simultaneous Cold Leg and Hot Leg Recirculation	Revision 0
		NOBP-OP-0003-01	Control Room Team Position Specific Leadership and Team Effectiveness Behaviors	Revision 0
		NOBP-TR-1112	Conduct of Simulator Training and Evaluation	Revision 13
		NOBP-TR-1151	4.0 Crew Critique	Revision 11
		NOP-OP-1002	Conduct of Operations	Revision 15
71111.12	Corrective Action Documents	2020-07065		
		2020-08402		
	Engineering Evaluations		Unit 1, System 31 (Circulating Water) draft evaluation 50.65(a)(2) evaluation	September 16, 2020
			Unit 2, System 23B (Heater Drains) draft evaluation 50.65(a)(2) evaluation	September 15, 2020
			Unit 1, System 34 (Compressed Air) draft evaluation	September

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			50.65(a)(2) evaluation	2020
			Unit 1, System 34 (Compressed Air) evaluation 50.65(a)(1) evaluation	December 15, 2017
		ATA-2020-14185	Maintenance Rule Paragraph (a)(3) Periodic Assessment	July 1, 2018 thru December 31, 2019, December 15, 2020
		Unit 1, System 31 (Circulating Water) draft evaluation 50.65(a)(2) evaluation		September 16, 2020
	Miscellaneous		Maintenance Rule Expert Panel	September 17, 2020
			BVPS-2 Updated Final Safety Analysis Chapter 19 - Managing the Effects of Component Aging	Revision 19
			Part/Component Equipment Replacement Package for lube oil fitting to PI-1LO-3C	
		BV2-RBN-21	Electrical Protective Device Setting Sheet	Revision 6
	Procedures		FENOC Quality Assurance Program Manual	Revision 26
		1/2-ADM-2304	Inaccessible Medium-Voltage Cables not Subject to 10 CFR 50.49 Environment Qualification Requirements	Revision 5
		1/2MI-75-MANHOLE-1E	Inspection of Manholes for Water Induced Damage	01/21/2019
		NOP-ER-2101	Engineering Program Management	Revision 15
		NOP-ER-3004	Maintenance Rule Program	Revision 6
		Unit1/Unit2-PMP-E-37-010	ITE Low Voltage Circuit Breaker Inspection Test for Model: K600S, K800S, K1600S, K2000S	Issue 4 Revision 23
	Work Orders	WO 200756658		
		WO 200816466		
71111.13	Corrective Action	2020-08339		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Documents	2020-08447		
71111.15	Calculations	2502.190-230-001	BVNPS Lube Oil Sump Capacity And Fill Rate Computations	10/25/83
		2BVT 1.11.2 Page 29	Safety Injection Recirculation Mode Leak Test (Leakage Total Conversion Calculation)	Revision 12
	Corrective Action Documents	2020-07160		
		2020-07454		
		2020-07868		
		2020-07940		
		CR-2018-10923	2R20 2RCS-SN21B12 Snubber Fluid Sample Testing Results Satisfactory	
		CR-2020-08279	Part 21 notification for Snubber Hydraulic fluid (SF-1154, batch 16DLVS852)	
		CR-2020-09504	On 12/16/20, a 2-2 EDG lube oil leak observed during the performance of 2OST-36.2	
	Miscellaneous	Curtis-Wright Letter to NRC Document Control	10 CFR Part 21 Notification for SF-1154 Hydraulic Fluid	04/21/2020
	Procedures	BVRM-EP-5003	Equipment Important to Emergency Response	Revision 25
		Figure 48.1.I-1A from BVPS - GSR Conduct of Operations Technical Specification Compliance 1/2OM-48.1.I	Mission Times For Technical Specification Related SSCs	Revision 36
	Work Orders	WO 200774925	Diesel Generator (2EGS-EG2-2) Test – Monthly	12/16/2020
71111.19	Drawings	RM-043-002	Quench Spray System	Revision 21
	Procedures	1MSP-21.29-I, F-MS475	Loop 1 Steam Flow Channel IV Calibration	Revision 21
		2OST-13.1	Quench Spray Pump (2QSS*21a) test	Revision 37
		2OST-24.3	Operating Surveillance test of the Motor Driven Auxiliary Feed Pump	Revision 45

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		BVBP-SITE-0053	Post-Maintenance Test Requirements	Revision 12
		NOBP-LP-2601	Human Performance Program	Revision 13
		NOP-WM-1001	Order Planning Process	Revision 31
		NOP-WM-1005	Work Management Order Testing Process	Revision 7
	Work Orders	WO 200747257	Perform 1MSP-21.29-I	
		WO 200763207	Clean Bearing Drip Pockets and Clean Bearing Housing Drip Pockets and Lines	
		WO 200770615	2OST-36.02 Diesel Generator (2EGS-EG2-2) Test (Monthly)	10/21/2020
		WO 200785329	Replace Power Supply in Loop 1 Steam Flow Channel IV	
71111.22	Corrective Action Documents	2020-07856		
		2020-09558		
		2020-09749		
	Procedures	½ OST-45.8	Operating Surveillance Test/Meteorological System Test	Revision 16
		1OST-6.2	Computer Generated Reactor Coolant System Water Inventory Balance	Revision 27
		Unit 1/Unit 2-ADM-0710	RCS Integrated Leakage Program	Revision 4
71124.06	Corrective Action Documents	2020-03889	ISCO Pump knocked over	
		2020-04143	Permit not generated for continuous release	
		2020-06382	Minimum Air Monitoring Required not met	
		2020-07020	Increase in th Unit 1 Gas Dose	
		2020-07160	Effluent Monitor Return to service greater than 30 days	
		2020-07737	Flow transmitter return to service greater than 30 days	
71152	Corrective Action Documents		Root Cause Analysis Report, Unit 1-RV-845A lifted unexpectedly during 1OST-11.1	12/13/2019
		2020-03445		
		2020-04769		
		2020-06086		
		2020-06161		
		2020-06218		
		2020-06815		
		2020-07036		
		2020-07073		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		2020-07443		
		2020-07575		
		2020-07579		
		2020-07611		
		2020-07908		
		2020-08347		
		CR-2019-09261		
		CR-2020-08136	New hose received for 2-2 Emergency Diesel Generator Oil Separator Drain was not correct length	
	Engineering Changes	ECP 20-0028-000	Rescale Control for Unit 1 Bank 1 Condenser Steam Dump PCV Valves	Revision 0
		ECP-20-0028-001	Rescale Control for Unit 1 Bank 1 Condenser Steam Dump PCV Valves	Revision 0
	Engineering Evaluations		Low-head safety injection peak pulse pressure conceptual review	10/30/2020
	Miscellaneous	G-OTLC-2001OER_BV3	2020 Cycle 1 Operations Experience Review	
		G-OTLC-202002S-IF	Simulator Guide: BV2 Instrument Failures	03/02/2020
		G-OTLC-S2001IF_BV1	Simulator Guide: BV1 Instrument Failures	01/10/2020
	Procedures	1OM-42.4.B	Load Following	Revision 57
		2OST-36.2	Emergency Diesel Generator [2EGS*EG2-2] Monthly Test	Revision 76
		NOP-LP-2001	Corrective Action Program	Revision 48
		Unit 1/Unit 2 – ADM-1900	Fire Protection Program	
	Work Orders	WO 200816814	Implement ECP 20-0028	