



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

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

May 4, 2020

Mr. Bryan C. Hanson
Senior Vice President
Exelon Generation Company, LLC
President and Chief Nuclear Officer
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT, UNITS 1 AND 2 –
INTEGRATED INSPECTION REPORT 05000317/2020001 AND
05000318/2020001 AND INDEPENDENT SPENT FUEL STORAGE
INSTALLATION INSPECTION REPORT 07200008/2020001

Dear Mr. Hanson:

On March 31, 2020, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Calvert Cliffs Nuclear Power Plant, Units 1 and 2. On April 29, 2020, the NRC inspectors discussed the results of this inspection with Mr. Thomas Haaf 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 I; the Director, Office of Enforcement; and the NRC Resident Inspector at Calvert Cliffs Nuclear Power Plant, 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 Calvert Cliffs Nuclear Power Plant, 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: Patrick W. Finney

Patrick W. Finney, Acting Chief
Reactor Projects Branch 5
Division of Reactor Projects

Docket Nos. 05000317, 05000318,
and 07200008
License Nos. DPR-53 and DPR-69

Enclosure:
As stated

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 INTEGRATED INSPECTION REPORT 05000317/2020001 AND
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 INSTALLATION INSPECTION REPORT 07200008/2020001 DATED MAY 4,
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U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Numbers: 05000317, 05000318, and 07200008

License Numbers: DPR-53 and DPR-69

Report Numbers: 05000317/2020001 and 05000318/2020001 and 07200008/2020001

Enterprise Identifier: I-2020-001-0029
I-2020-001-0133

Licensee: Exelon Generation Company, LLC

Facility: Calvert Cliffs Nuclear Power Plant, Units 1 and 2

Location: Lusby, MD

Inspection Dates: January 1, 2020 to March 31, 2020

Inspectors: H. Anagnostopoulos, Senior Health Physicist
R. Clagg, Senior Resident Inspector
L. Cline, Senior Project Engineer
N. Floyd, Senior Reactor Inspector
B. Lin, Nuclear Systems Engineer
E. Love, Trans And Storage Safety Inspector
J. Nicholson, Senior Health Physicist
C. Roettgen, Resident Inspector
J. Schoppy, Senior Reactor Inspector
E. Torres Collazo, Reliability And Risk Analyst

Approved By: Patrick W. Finney, Acting 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 Calvert Cliffs Nuclear Power Plant, 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

Failure to Include Emergency Diesel Generator Starting Air System Check Valves in the Inservice Testing Program			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000317,05000318/2020001-01 Open/Closed	[H.12] - Avoid Complacency	71111.22
The inspectors identified a Green non-cited violation of 10 CFR 50.55(a)(f)(4)(ii) for the licensee's failure to update the inservice testing program to include the latest American Society of Mechanical Engineers OM Code. Specifically, the licensee failed to include emergency diesel generator starting air receiver inlet check valves, 2A-DSA-106, 2A-DSA-110, 2B-DSA-106, 2B-DSA-110, 1B-DSA-106, and 1B-DSA-110 in the inservice testing program.			

Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
LER	05000318/2019-001-00	LER 2019-001-00 for Calvert Cliffs Nuclear Power Plant, Unit 2, Misapplication of Technical Specification Following Failed Surveillance Resulted in Operation Prohibited by Technical Specifications.	71153	Closed

PLANT STATUS

Unit 1 began the inspection period at rated thermal power and operated at or near full power until January 22, 2020, when the unit entered end-of-cycle coastdown operations.

On February 16, 2020, operators commenced a shutdown, from 85 percent power, for a planned refueling outage. Operators commenced a reactor startup on March 11, 2020, and returned the unit to 100 percent power on March 17, 2020. The unit remained at or near rated thermal power for the remainder of the 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." From January 1 – March 19, 2020, 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 a 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 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

71111.04 - 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, 1B emergency diesel generator during 11 13 kilovolt bus and 11 saltwater header out of service for maintenance, February 24, 2020
- (2) Unit 1, 12 saltwater train during 11 saltwater train unavailable for maintenance, February 24, 2020

- (3) Units 1 and 2, spent fuel cooling during defueled mode, February 26, 2020
- (4) Unit 2, 22 and 23 saltwater pumps during 21 saltwater pump out of service for maintenance, March 17, 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 1, containment, fire area CNMT, March 3, 2020
- (2) Unit 1, turbine building, fire area TB, March 4, 2020
- (3) Unit 2, turbine building, fire area TB, March 4, 2020
- (4) Unit 1, 11 and 12 emergency core cooling system pump rooms, fire areas 3 and 4, March 7, 2020
- (5) Unit 1, service water pump room, fire area 39, March 9, 2020
- (6) Units 1 and 2, Intake structure, intake structure outside and intake structure pump room, fire area IS, March 11, 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) Units 1 and 2, auxiliary feedwater pump rooms, February 7, 2020

71111.08P - Inservice Inspection Activities (PWR)

PWR Inservice Inspection Activities Sample (IP Section 03.01) (1 Sample)

- (1) The inspectors verified that the reactor coolant system boundary, steam generator tubes, reactor vessel internals, risk-significant piping system boundaries, and containment boundary are appropriately monitored for degradation and that repairs and replacements were appropriately fabricated, examined and accepted by reviewing the following activities from February 24 to February 28, 2020:
 - 03.01.a - Nondestructive Examination and Welding Activities
 - Manual ultrasonic testing of the pressurizer upper head to shell weld, 8-411 (NDE Report CC20-IU-008)
 - Manual ultrasonic testing of the shutdown cooling pipe to tee weld, 12-SI-1214-15 (NDE Report CC20-IU-009). This was performed in accordance with MRP-192, "Materials Reliability Program: Assessment of Residual Heat Removal Mixing Tee Thermal Fatigue in PWR Plants"
 - Visual examinations of the core shroud tie-rods #1 through #8. This review involved a previous relevant indication that was analytically evaluated and accepted for continued service

- Visual examinations of the containment accessible surfaces, including the liner, leak chase channels, moisture barrier, and penetrations (WO C93708757)
- Welding activities and liquid penetrant testing associated with the repair of valve 1-CVC-500, volume control tank inlet valve (WO C92506025)

03.01.c – Pressurized-Water Reactor Boric Acid Corrosion Control Activities

- Boric acid evaluation for 1PZVRX11 (AR04319283 and WO C93740888)

03.01.d – Pressurized-Water Reactor Steam Generator Tube Examination Activities

- Eddy current examinations of 100% of tubes in steam generators 11 and 12
- Secondary side visual examinations of steam generators 11 and 12

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 main control room during the Unit 1 shutdown for refueling on February 16, 2020.

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

- (1) The inspectors observed and evaluated training scenarios involving loss of shutdown cooling during various plant conditions on January 24, 2020.

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (6 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) Units 1 and 2, Yellow risk condition due to high winds, February 7, 2020
- (2) Unit 1, Yellow risk condition due to Unit 1 auxiliary feedwater pump and auxiliary feedwater cross connect out of service for maintenance, February 14, 2020
- (3) Unit 1, Yellow risk condition due to reduced inventory in Unit 1 reactor coolant system to install steam generator nozzle dams, February 20, 2020
- (4) Unit 2, Yellow risk condition due to 11 13 kilovolt bus out of service, February 25, 2020
- (5) Unit 1, Yellow risk condition due to reduced inventory in Unit 1 reactor coolant system for vacuum fill, March 3, 2020
- (6) Unit 2, elevated risk condition due to 21 saltwater pump out of service for maintenance, March 17, 2020

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 03.01) (5 Samples)

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

- (1) Unit 1, AR04320512, 1-CKVIA-730, normal instrument air supply to the instrument air amplifier check valve, safety related boundary check valve, failed leak rate, February 23, 2020
- (2) Unit 1, AR04314042, Unit 1, fieldwork required to land wires to correct location 11 and 12 cavity cooling fans, March 10, 2020
- (3) Unit 1, AR04326560, 12 charging pump runs with an unusual noise, March 16, 2020
- (4) Unit 1, AR04326870, through wall leak downstream of O-FP-285, Unit 1 steam generator feedwater pump and hydrogen seal oil deluge isolation valve, March 18, 2020
- (5) Unit 2, AR04213963, 2A-DSA-106, 2A emergency diesel generator west air receiver inlet check valve, excessive check valve leakage, March 30, 2020

71111.18 - Plant Modifications

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

The inspectors evaluated the following temporary or permanent modifications:

- (1) Units 1 and 2, Engineering Change Package-19-000570, evaluation for a non-conductive conformal coating to apply to safety related inverter circuit cards, January 23, 2020
- (2) Unit 1, Engineering Change Package-17-000052, Unit 1 engineered safety features actuation system upgrade, March 12, 2020

71111.19 - Post-Maintenance Testing

Post-Maintenance Test Sample (IP Section 03.01) (8 Samples)

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

- (1) Unit 1, WO C91682481, 1-SI-627-MOV, auxiliary high pressure safety injection header isolation valve, repair or replace, February 22, 2020
- (2) Unit 1, WO C93648279, disassemble and inspect 1-CKVSI-4148, Unit 1 containment sump check valve, March 2, 2020
- (3) Unit 1, WO C93648292, STP-M-025-0, disassemble and inspect 1-CKVSI-4146, Unit 1 'A' train refueling water tank outlet check valve, March 4, 2020
- (4) Unit 1, WO C93648268, perform mechanical post maintenance test for 1-RV-1582, 11 containment air cooler, service water relief valve, March 4, 2020
- (5) Unit 1, WO C93647625, calibrate, test, and inspect protective relays 11 low pressure safety injection pump, March 9, 2020
- (6) Unit 1, WO C93647012, leak check safety injection system following completion of STP-O-67M-1, March 10, 2020

- (7) Unit 2, WO C93632716, inspect 21 saltwater pump motor feeder cables and junction boxes, March 17, 2020
- (8) Unit 2, WO C93696891, replace 2CKV2A-DSA-110, 2A emergency diesel generator east air receiver inlet check valve, March 26, 2020

71111.20 - Refueling and Other Outage Activities

Refueling/Other Outage Sample (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated refueling outage 1R25 activities from February 17, 2020 to March 12, 2020.

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

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

- (1) Unit 2, STP-O-8B-2, "Test of 2B DG and 4kV Bus 24 UV," Revision 34, February 11, 2020
- (2) Unit 1, STP-M-172, "Personnel Emergency Airlock Gasket Seal Test," Revision 17, February 11, 2020
- (3) Unit 1, STP-M-662-1, "Integrated Leak Rate Test Unit 1 Containment," Revision 01100T2, March 6, 2020
- (4) Unit 1, STP-O-004A-1, "'A' Train Integrated Engineered Safety Features Test," Revision 03300, March 7, 2020
- (5) Unit 2, STP-O-8A-1, "Test of 2A DG and 11 4kV Bus UV," Revision 03200, March 17, 2020

Inservice Testing (IP Section 03.01) (2 Samples)

- (1) Unit 1, STP-M-583-1, "Instrument Air Safety Related Pressure Boundary Check Valve Leak Test," Revision 01000, March 5, 2020
- (2) Unit 2, STP-I-584-2A, "Leak Rate Testing of the 2A Diesel Generator Air Receiver Inlet Check Valves," Revision 00100, March 20, 2020

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

- (1) Unit 1, STP-O-27-1, "Reactor Coolant System Leakage Evaluation," Revision 20, March 24, 2020

Containment Isolation Valve Testing (IP Section 03.01) (1 Sample)

- (1) Unit 1, STP-M-471-1, "Personnel Air Lock Door Operability and Local Leak Rate Test," Revision 14, February 15, 2020

FLEX Testing (IP Section 03.02) (1 Sample)

- (1) Units 1 and 2, WO C93696997, "Semi-Annual Maintenance of FLEX Equipment Located in the Robust Building," March 31, 2020

RADIATION SAFETY

71124.01 - Radiological Hazard Assessment and Exposure Controls

Radiological Hazard Assessment (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated how the licensee identifies the magnitude and extent of radiation levels and the concentrations and quantities of radioactive materials and how the licensee assesses radiological hazards.

Instructions to Workers (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated radiological protection-related instructions to plant workers.

Contamination and Radioactive Material Control (IP Section 03.03) (2 Samples)

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

- (1) The inspectors observed personnel monitoring and the monitoring of tools, materials, and equipment at the main access control point.
- (2) The inspectors observed contamination control practices for replacement of 1-CVC-500-CV, volume control tank inlet valve.

Radiological Hazards Control and Work Coverage (IP Section 03.04) (3 Samples)

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

- (1) The inspectors performed multiple, comprehensive tours of the primary containment to observe work, and observed fuel handling.
- (2) The inspectors observed the 1-CVC-500-CV, volume control tank inlet valve, replacement.
- (3) The inspectors observed the removal of the reactor head o-ring.

High Radiation Area and Very High Radiation Area Controls (IP Section 03.05) (2 Samples)

The inspectors evaluated licensee controls of the following High Radiation Areas and Very High Radiation Areas:

- (1) The inspectors examined all accessible high radiation and locked high radiation areas in the primary containment, including the access-way to the under-vessel area.
- (2) The inspectors examined all accessible high and locked high radiation areas in the auxiliary building.

Radiation Worker Performance and Radiation Protection Technician Proficiency (IP Section 03.06) (1 Sample)

- (1) The inspectors evaluated radiation worker and radiation protection technician performance as it pertains to radiation protection requirements.

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

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

- (1) Unit 1, January 1, 2019 - December 31, 2019
- (2) Unit 2, January 1, 2019 - December 31, 2019

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

- (1) Unit 1, January 1, 2019 - December 31, 2019
- (2) Unit 2, January 1, 2019 - December 31, 2019

71153 - Followup of Events and Notices of Enforcement Discretion

Event Report (IP Section 03.02) (1 Sample)

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

- (1) LER 05000318/2019-001-00, Misapplication of Technical Specification Following Failed Surveillance Resulted in Operation Prohibited by Technical Specifications. The circumstances surrounding this LER and identified violation are as discussed in the Inspection Results section of NRC Inspection Report 05000318/2019001 (ADAMS Accession Number: ML19128A279). No additional violations were identified.

OTHER ACTIVITIES – TEMPORARY INSTRUCTIONS, INFREQUENT AND ABNORMAL

60854.1 - Preoperational Testing of Independent Spent Fuel Storage Facility Installation at Operating Plants

Preoperational Testing of Independent Spent Fuel Storage Facility Installation at Operating Plants (1 Sample)

- (1) **OTHER ACTIVITIES – TEMPORARY INSTRUCTIONS, INFREQUENT, AND ABNORMAL**

60854 – Preoperational Testing of an Independent Spent Fuel Storage Installation

The inspectors evaluated Calvert Cliffs Nuclear Power Plant's performance during NRC observed preoperational dry run activities that were performed in order to fulfill requirements in the Certificate of Compliance No. 1032, Amendment 1, Condition 9. The inspectors observed dry run activities on March 16–17, 2020. Specifically, the inspectors observed or reviewed the following activities;

- Closure welding of an MPC mockup including lid to shell, port covers, and closure ring
- Non-destructive weld evaluations including visual and penetrant testing

- Simulated radiological field surveys and radiation protection coverage of welding activities
- Reviewed a recording of PCI welding personnel cutting open a welded canister mock-up removing the port covers and lid that was witnessed by NRC personnel

INSPECTION RESULTS

Failure to Include Emergency Diesel Generator Starting Air System Check Valves in the Inservice Testing Program			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000317,05000318/2020001-01 Open/Closed	[H.12] - Avoid Complacency	71111.22
<p>The inspectors identified a Green non-cited violation of 10 CFR 50.55(a)(f)(4)(ii) for the licensee's failure to update the inservice testing program to include the latest American Society of Mechanical Engineers OM Code. Specifically, the licensee failed to include emergency diesel generator starting air receiver inlet check valves, 2A-DSA-106, 2A-DSA-110, 2B-DSA-106, 2B-DSA-110, 1B-DSA-106, and 1B-DSA-110 in the inservice testing program.</p> <p><u>Description:</u> On January 25, 2019, 2A-DSA-106, 2A emergency diesel generator west air receiver inlet check valve, did not meet the back-leakage acceptance criteria of licensee procedure I-584-2A, "Leak Rate Test of 2A Emergency Diesel Generator Air Receiver Inlet Check Valves," Revision 00100. The licensee entered this condition into the corrective action program as AR04213963. After repairing the valve, on February 7, 2019, 2A-DSA-110, 2A emergency diesel generator east air receiver inlet check valve did not meet the back-leakage acceptance criteria in the same test procedure. The licensee entered this condition into the corrective action program as AR04218179.</p> <p>Emergency diesel generator air receiver inlet check valves on all four, safety-related emergency diesel generators ensure adequate air supply to the emergency diesel generators by closing in the event of a break in the non-safety-related piping between the non-safety-related air compressors and the safety-related air receivers. For the affected emergency diesel generator to remain operable following a pipe rupture only a single safety-related air receiver must be capable of supplying air to the emergency diesel generator.</p> <p>The inspectors discussed the operability of the 2A emergency diesel generator with the licensee based on the understanding that the starting air receiver inlet check valves had potentially both failed to meet the inservice test acceptance criteria, and thus were inoperable, at the same time. The licensee determined that based on the magnitude of back leakage observed for both check valves, and the size of the air receivers that a reasonable assurance existed that the 2A emergency diesel generator would have remained operable under all situations within the licensing basis (e.g. seismic event, stuck open up stream relief valve, etc.)</p> <p>The inspectors reviewed the licensee's 5th interval inservice testing program which began on July 1, 2018, and noted that it incorporated American Society of Mechanical Engineers Code OM-2012, "Operation and Maintenance of Nuclear Power Plants." The inspectors also noted that the incorporation of OM-2012 into the licensee's inservice testing program was completed by contractor personnel. The inspectors reviewed 10 CFR 50.55(a)(f)(4) and noted</p>			

that it requires inservice tests to verify operational readiness of pumps and valves, whose function is required for safety, and must comply with the requirements of the latest edition and addenda of the American Society of Mechanical Engineers OM Code incorporated by reference 12 months before the start of the 120-month interval. The inspectors also reviewed OM-2012 and noted that it requires valves that have a function required to mitigate the consequences of an accident be exercised to their required position(s) and the obturator position verified every three months to detect valve degradation. The inspectors reviewed the Calvert Cliffs Nuclear Power Plant Updated Final Safety Analysis Report, Revision 51, and noted that valves 2A-DSA-106 and 2A-DSA-110 have a function to close in the event of a break in the upstream non-safety-related piping to maintain pressure in the emergency diesel generator starting air receivers sufficient to start the 2A emergency diesel generator. The inspectors determined that 2A-DSA-106 and 2A DSA-110 are within the scope of OM-2012 and are required to be included in the licensee's inservice testing program or augmented inservice testing program. The inspectors reviewed the licensee's inservice testing program and determined that 2A-DSA-106 and SA-DSA-110 were not included and were not being tested at a three-month frequency as required by OM-2012. The inspectors noted that the valves were being tested by the licensee on a two year periodicity. The inspectors reviewed OM-2012, Section ISTC-5224, "Corrective Action," and determined that 2A-DSA-106 and 2A DSA-110 were required to be declared inoperable when they failed to meet the acceptance criteria of the test procedure due to failure to meet the inservice testing valve obturator movement verification in the closed direction. The inspectors noted that the licensee failed to declare the valves inoperable when they did not meet the acceptance criteria of I-584-2A.

The inspectors reviewed the previous eight years of performance histories of 2A-DSA-106 and 2A-DSA-110 and determined that 2A-DSA-106 met the acceptance criteria of I-584-2A for at least the previous four performances of the test; however, 2A-DSA-110, had failed to meet the acceptance criteria during two of the last four performances of I-584-2A prior to the February 2019 test. The inspectors confirmed that the emergency diesel generators remained operable in each case; however, the inspectors concluded that performing the inservice testing biannually instead of quarterly as required per the recent inservice test program interval update, adversely impacted emergency diesel generator reliability.

Corrective Actions: The licensee's immediate corrective actions included entering the DSA-106 and DSA-110 valves for the 1B, 2A, and 2B emergency diesel generators into the inservice testing program and submitting a preventative maintenance change request to begin testing the valves on a quarterly frequency. The licensee replaced 2A-DSA-110, the emergency diesel generator east starting air receiver inlet check valve with a valve better suited for the application due to its history of failure. All six air receiver inlet check valves were tested using licensee test procedure I-584 and met the acceptance criteria. Finally, the licensee has established a corrective action to conduct an extent of condition review to determine if other components have been incorrectly omitted from the inservice testing program.

Corrective Action References: 04280912, 04304871

Performance Assessment:

Performance Deficiency: The inspectors determined that the licensee's failure to update the inservice testing program to meet the latest American Society of Mechanical Engineers OM Code as required by 10 CFR 50.55(a)(f)(4)(ii) was a performance deficiency. Specifically, the licensee failed to include emergency diesel generator starting air receiver inlet check valves in the inservice testing program.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Equipment Performance 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, failure to test the emergency diesel generator starting air receiver inlet check valves as required by OM-2012 resulted in a failure of the licensee to identify the inoperability of the valves.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." The inspectors determined that this finding is of very low safety significance (Green) since it did not represent the loss of any system, function, or train of equipment, and did not affect the design or qualification of a mitigating structure, system, or component.

Cross-Cutting Aspect: H.12 - Avoid Complacency: Individuals recognize and plan for the possibility of mistakes, latent issues, and inherent risk, even while expecting successful outcomes. Individuals implement appropriate error reduction tools. The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Avoid Complacency, because the licensee failed to recognize and plan for the possibility of mistakes, latent issues, and inherent risk, even while expecting successful outcomes. Specifically, the licensee failed to identify mistakes in the work completed by contractor personnel while incorporating OM-2012 into the inservice testing program.

Enforcement:

Violation: 10 CFR 50.55a(f)(4)(ii) requires in part that, "Inservice tests to verify operational readiness of pumps and valves, whose function is required for safety . . . must comply with the requirements of the latest edition and addenda of the American Society of Mechanical Engineers OM Code incorporated by reference in . . . this section 12 months before the start of the 120-month interval.

Contrary to the above, from July 1, 2018 until December 18, 2019, the licensee's inservice tests to verify operational readiness of pumps and valves, whose function is required for safety did not comply with the requirements of the latest edition and addenda of the American Society of Mechanical Engineers OM Code incorporated by reference 12 months before the start of the 120-month interval that started on July 1, 2018. Specifically, the licensee failed to include emergency diesel generator starting air receiver inlet check valves, 1B-DSA-106, 1B-DSA-110, 2A-DSA-106, 2A-DSA-110, 2B-DSA-106, and 2B-DSA-110 in the inservice testing program.

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 April 29, 2020, the inspectors presented the integrated inspection results to Mr. Thomas Haaf, Site Vice President, and other members of the licensee staff.

- On March 17, 2020, the inspectors presented the Independent Spent Fuel Storage Installation inspection results inspection results to Mr. Michael Cazzolli, Senior Manager Dry Cask Storage, and other members of the licensee staff.
- On February 28, 2020, the inspectors presented the Unit 1 ISI inspection results to Mr. Mark Flaherty, Site Vice President, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
60854.1	Miscellaneous	Certificate of Compliance (CoC) No. 1032	HI-STORM Flood/Wind (FW) Multipurpose Canister (MPC) Storage System	Amendment 1
	Procedures	PI-CNSTR-OP-HLTC-H-01	Closure Welding of Holtec Multi-Purpose Canisters-HI-STORM 100, HI-STAR100, HI-STORM FW & UMAX Systems	Rev 4
71111.08P	Corrective Action Documents	04322358		
	Corrective Action Documents Resulting from Inspection	04322524		
		04322623		
	Miscellaneous	ER-CA-330-1001	ISI Program Plan Fifth Ten-Year Inspection Interval	Revision 1
71111.15	Corrective Action Documents	AR 04213963	2A-DSA-106 Excessive Check Valve Leaking	
		AR 04218179	Check Valve 2A-DSA-110 Failed Test Criteria	
	Corrective Action Documents Resulting from Inspection	AR 04280912	Unit 2 Diesel Starting Air Check Valves Not In IST Program Plan	
		AR 04304871	Generate WOs to Replace DSA Receiver Inlet Check Valves	
	Drawings	60727SH0002	Diesel Generator Cooling Water, Starting Air, Fuel & Lube Oil Diesel No. 1B	Revision 69
	Miscellaneous	CCNPP Unit 1 IST Basis Document	Calvert Cliffs Nuclear Power Plant Unit 1 Inservice Testing Basis Document.	
		PMC-20-122770	Preventative Maintenance Change requesting change of the frequency of the preventative maintenance to leak rate test all diesel starting air receiver inlet check valve, from every two years to quarterly.	
	Procedures	I-584-2A	Leak Rate Test of 2A DG Air Receiver Inlet Check Valves	Rev 00100
		OP-AA-108-115	Operability Determinations	Revision 22
	Work Orders	c93695727	2A-DSA-106 Excessive Check Valve Leaking	