UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE RD, STE 102
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

January 24, 2023

David P. Rhoades
Senior Vice President
Constellation Energy Generation, LLC
President & Chief Nuclear Officer (CNO)
Constellation Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT, UNITS 1 AND 2 – INTEGRATED INSPECTION REPORT 05000317/2022004 AND 05000318/2022004

Dear David Rhoades:

On December 31, 2022, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Calvert Cliffs Nuclear Power Plant. On January 19, 2023, the NRC inspectors discussed the results of this inspection with Patrick D. Navin, Site Vice President, 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.

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.

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,

Brice A. Bickett

Digitally signed by Brice A. Bickett
Date: 2023.01.24 07:40:16 -05'00'

Brice A. Bickett, Chief
Projects Branch 3
Division of Operating Reactor Safety

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

Enclosure:
As stated

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SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT, UNITS 1 AND 2 – INTEGRATED INSPECTION REPORT 05000317/2022004 AND 05000318/2022004 DATED JANUARY 24, 2023

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U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Numbers:	05000317 and 05000318
License Numbers:	DPR-53 and DPR-69
Report Numbers:	05000317/2022004 and 05000318/2022004
Enterprise Identifier:	I-2022-004-0030
Licensee:	Constellation Energy Generation, LLC
Facility:	Calvert Cliffs Nuclear Power Plant
Location:	Lusby, MD
Inspection Dates:	October 1, 2022 to December 31, 2022
Inspectors:	G. Dipaolo, Senior Resident Inspector S. Obadina, Resident Inspector B. Dyke, Operations Engineer P. Ott, Operations Engineer
Approved By:	Brice A. Bickett, Chief Projects Branch 3 Division of Operating Reactor Safety

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, in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to https://www.nrc.gov/reactors/operating/oversight.html for more information.

List of Findings and Violations

Failure to Follow Procedure Use and Adherence Requirements for a Continuous Use Procedure			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000318/2022004-01 Open/Closed	[H.8] - Procedure Adherence	71153
A self-revealing Green finding and associated NCV of Technical Specification (TS) 5.4.1, "Administrative Controls – Procedures," was identified when Constellation operators failed to follow procedure use and adherence requirements when bypassing engineered safety features actuation system actuation signals during a Unit 2 cooldown to Mode 5 on September 14, 2022. This resulted in an inadvertent safety injection actuation system (SIAS) actuation because the actuation logic was satisfied due to plant conditions.			

Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
LER	05000318/2022-002-00	LER 2022-002-00 for Calvert Cliffs Nuclear Power Plant, Unit 2, Unplanned Safety Injection Actuation Signal due to Human Error	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 performed activities described in IMC 2515, Appendix D, "Plant Status," observed risk significant activities, and completed on-site portions of IPs. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

REACTOR SAFETY

71111.01 - Adverse Weather Protection

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

(1) The inspectors evaluated readiness for seasonal extreme weather conditions prior to the onset of seasonal cold temperatures for the 12 condensate storage tank (auxiliary feedwater safety-related water supply), Units 1 and 2 refueling water tank rooms (emergency core cooling safety-related water supply), and the fire water system fire pump house components on November 21, 2022.

71111.04 - Equipment Alignment

Partial Walkdown (IP Section 03.01) (3 Samples)

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

(1) Unit 1, 11 auxiliary feedwater train with 12 auxiliary feedwater pump out of service for maintenance, October 18, 2022
(2) Unit 1, 13 high pressure safety injection train with 12 high pressure safety injection pump out of service for maintenance, November 17, 2022
(3) Unit 2, 21 high pressure safety injection train following restoration from system motor-operated valve operability testing, December 20, 2022

Complete Walkdown (IP Section 03.02) (1 Sample)

(1) The inspectors evaluated system configurations during a complete walkdown of the Unit 2 auxiliary feedwater system on December 2, 2022.

71111.05 - Fire Protection

Fire Area Walkdown and Inspection (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) Unit 1, auxiliary feedwater pump room 603, fire area 42, October 20, 2022
(2) Unit 1, 1A emergency diesel generator building, fire area EDG1A, November 8, 2022
(3) Units 1 and 2, outside yard area and buildings, including fire pump house, fire area YARD, November 10, 2022
(4) Units 1 and 2, charging pump rooms, fire areas 5-10, December 29, 2022
(5) Unit 2, emergency core cooling system rooms, fire areas 1-2, December 29, 2022

71111.11A - Licensed Operator Requalification Program and Licensed Operator Performance

Requalification Examination Results (IP Section 03.03) (1 Sample)

(1) The inspectors reviewed and evaluated the licensed operator annual requalification results for the annual operating exam completed on December 2, 2022.

71111.11Q - Licensed Operator Requalification Program and Licensed Operator Performance

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

(1) The inspectors observed and evaluated a licensed operator simulator examination involving loss of safety instrumentation, loss of plant operating equipment due to loss of electrical power requiring a manual reactor scram, and a steam line break in containment resulting in a declaration of an Unusual Event on November 2, 2022.

71111.12 - Maintenance Effectiveness

Maintenance Effectiveness (IP Section 03.01) (3 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) Unit 2, Action Request (AR) 4514916, trend in Unit 2 service water heat exchanger fouling, November 21, 2022
(2) Unit 2, ARs 2601484, 4086130, 4304860, and Work Order (WO) C93771934, auxiliary feedwater pump turbine speed controller as-found calibration adverse trend, December 5, 2022
(3) Unit 1, AR 4509626, 13 high pressure safety injection pump disconnect to 11 safety bus failed closed, December 27, 2022

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) Unit 1, AR 4518745, 12B service water heat exchanger leak repair, December 27, 2022

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management (IP Section 03.01) (3 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) Unit 2, elevated risk condition due to 22B service water heat exchanger cleaning, November 17, 2022
(2) Unit 2, elevated risk condition due to 21 emergency core cooling system air cooler maintenance, November 21, 2022
(3) Unit 1, elevated risk condition due to 12 steam generator auxiliary feedwater block valve maintenance, November 22, 2022

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 2, AR 4531310, 22B service water heat exchanger saltwater strainer flush piping (2-LJ1-2052) through-wall leak, October 28, 2022
(2) Unit 2, ECP-22-000363, American Society of Mechanical Engineers (ASME) Code, Case N-513-4, structural integrity evaluation of saltwater piping elbow LJ1-2052, November 4, 2022
(3) Unit 1, AR 4531207, cable tray support in direct contact with fire protection sprinkler piping in auxiliary feedwater pump room, November 9, 2022
(4) Unit 2, AR 4533346, control element assembly (CEA) 24 erratic secondary indication, December 5, 2022
(5) Units 1 and 2, AR 4540290, auxiliary feedwater block valve pressure control valve air pressure variances, December 9, 2022

71111.18 - Plant Modifications

Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (1 Sample)

The inspectors evaluated the following temporary or permanent modifications:

(1) Unit 1, ECP-22-00014, adding uninterruptible power supply for instrument bus 1Y09 to reduce single point vulnerability, December 29, 2022

71111.19 - Post-Maintenance Testing

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

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

(1) Unit 1, WO C93884831, 12A service water heat exchanger inlet drain fitting through-wall leak repair, October 6, 2022
(2) Unit 1, WO C93784301, 12 auxiliary feedwater pump speed control knob torque check, October 19, 2022
(3) Unit 1, WO C93805163, 1B emergency diesel generator supply fan inspection and testing, November 15, 2022
(4) Unit 2, WO C93802665, 21 emergency core cooling system pump room air cooler channel head inspection, November 22, 2022
(5) Unit 1, WO C93756027, 12 high pressure safety injection pump bearings and mechanical seal replacement, December 6, 2022

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance testing activities to verify system operability and/or functionality:

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

(1) Unit 1, STP-O-5A11-1, "11 Auxiliary Feedwater Pump Quarterly Surveillance Test," Revision 10, October 12, 2022
(2) Unit 2, STP-O-5ACV-2, "Auxiliary Feedwater Valves Quarterly Surveillance Test," Revision 4, November 2, 2022

71114.06 - Drill Evaluation

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

The inspectors evaluated:

(1) The conduct of a licensed operator simulator examination involving secondary plant failures, a main turbine trip, a reactor coolant system leak, and a station blackout resulting in a declaration of a Site Area Emergency on November 1, 2022.

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

IE03: Unplanned Power Changes per 7000 Critical Hours (IP Section 02.02) (2 Samples)

(1) Unit 1, October 1, 2021 through September 30, 2022
(2) Unit 2, October 1, 2021 through September 30, 2022

MS07: High Pressure Injection Systems (IP Section 02.06) (2 Samples)

(1) Unit 1, July 1, 2021 through September 30, 2022
(2) Unit 2, July 1, 2021 through September 30, 2022

MS09: Residual Heat Removal Systems (IP Section 02.08) (2 Samples)

(1) Unit 1, July 1, 2021 through September 30, 2022
(2) Unit 2, July 1, 2021 through September 30, 2022

MS10: Cooling Water Support Systems (IP Section 02.09) (2 Samples)

(1) Unit 1, July 1, 2021 through September 30, 2022
(2) Unit 2, July 1, 2021 through September 30, 2022

71152A - Annual Follow-up Problem Identification and Resolution

Annual Follow-up of Selected Issues (Section 03.03) (2 Samples)

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

(1) Unit 2 manual reactor trip on March 21, 2021, due to lowering steam generator water level (AR 04410594), November 18, 2022
(2) Unit 2 manual reactor trip on November 21, 2021, due to lowering steam generator water level (AR 04462339), November 29, 2022

71152S - Semiannual Trend Problem Identification and Resolution

Semiannual Trend Review (Section 03.02) (1 Sample)

(1) The inspectors reviewed the licensee's corrective action program for potential adverse trends that might be indicative of a more significant safety issue.

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 05000318/2022-002-00, "Unplanned Safety Injection Actuation Signal Due to Human Error," (Agencywide Documents Access and Management System (ADAMS) Accession No. ML22316A019). The inspection conclusions associated with this LER are documented in this report under Inspection Results.

INSPECTION RESULTS

Observation: Unit 2 Manual Reactor Trip Due to Lowering Steam Generator Water Level on March 21, 2021	71152A
Inspectors reviewed Constellation's root cause evaluation and corrective actions associated with the March 21, 2021, Unit 2 manual reactor trip due to lowering steam generator water	

level (AR4410594). A self-revealing Green finding associated with this event was documented as FIN 05000318/2021003-01 (ADAMS Accession No. ML21312A398). Constellation determined the root cause to be an unexpected, premature internal failure of the 21 main feedwater regulating valve 'B' positioner. Exelon Power Labs analysis of the failed positioner found manufacturing byproduct (foreign material). To correct and preclude repetition of the root cause, Constellation revised their Parts Quality Initiative Program (SM-AA-3019) to require all positioners of that series to undergo additional inspection and testing before being accepted for use.

Prior to the event, operations training materials did not indicate the valve could fail closed on a loss of positioners. Constellation identified an inadequacy in design documentation which informed the development of the training material. Subsequent corrective actions updated the design documentation and operations training material for the positioner failure that occurred.

Inspectors did not identify any findings or violations of more than minor significance during this review.

Observation: Unit 2 Manual Reactor Trip Due to Lowering Steam Generator Water Level on November 21, 2021	71152A

The inspectors reviewed Constellation's evaluation and corrective actions associated with the Unit 2 manual reactor trip due to lowering steam generator water level on November 21, 2021 (AR 4462339). A self-revealing Green NCV associated with this event was documented as NCV 05000318/2022002-01 (ADAMS Accession No. ML22220A038). The inspectors reviewed Constellation's corrective action documents and noted that corrective actions for this issue included revising MA-AA-716-008, "Foreign Material Exclusion Program," with a requirement to include a photo of system or component cleanliness before final closure. In addition, the photo has to be included in the work order documentation. The revised procedure was effective June 29, 2022. Constellation also determined that 2Y10 (120 volts-AC instrument bus) and upstream components were single point vulnerabilities and the same vulnerability existed on Unit 1. Corrective actions included installing uninterruptible power supplies on Unit 1 to eliminate single point vulnerabilities. In addition, uninterruptible power supplies are planned to be installed on Unit 2 during the next refueling outage.

The NRC inspectors did not identify any findings or violations of more than minor significance during this review.

Observation: Semi-Annual Trend Review	71152S

Inspectors performed a semi-annual review to identify trends that might indicate the existence of a more significant safety issue, including issues that may have been documented outside the normal corrective action program.

Constellation escalated their previously identified adverse trend (05000317;318/2021004 (ADAMS Accession No. ML22031A173)) associated with human performance/configuration control (AR 4527027) because actions to address configuration control behavioral gaps were ineffective in preventing additional events including an inadvertent Unit 2 safety injection actuation signal (AR 4522477) during maintenance outage, CC2M2201 (see Section 71153 Results in this report). Additional human performance/configuration control events included a loss of foreign material control during 1A fuel oil storage tank sampling (AR 4521525) and an out-of-position valve and fuel oil leak during clearance restoration on the diesel-driven fire pump fuel oil system (AR 4534371).

Inspectors identified an adverse trend associated with operability/functionality reviews that lacked sufficient documented information or details to justify immediate operability/ functionality per OP-AA-108-115, “Operability Determinations,” Revision 24. Examples included:

- The inspectors identified a cable tray hanger in contact with fire protection piping in the Unit 1 auxiliary feedwater pump room. The immediate operability determination did not initially consider the impact of the non-seismic fire protection piping on the cable tray being supported by the hanger (AR 4531207).
- A through-wall leak in ASME Code Class 3 pipe on the Unit 2 saltwater system. OP-AA-108-115 specifies factors to consider in the immediate operability determination to conclude there is a reasonable expectation of operability (e.g., degradation mechanisms are readily apparent, pertinent operating experience exists with the degradation mechanism on the system, etc.). While operators considered these factors, they were not documented in the immediate operability review (AR 4531310).
- An Operability Evaluation (22-002) for the pipe elbow through-wall leak documented in AR 4531310 utilizing ASME Code Case N-513-4, “Evaluation Criteria for Temporary Acceptance of Flaws in Moderate Energy Class 2 or 3 Piping Section XI, Division 1.” N-513-4, Section 3.3, specifies that flaws in elbows and bent piping may be evaluated using straight pipe procedures provided stresses used in the evaluation are adjusted to account for geometric differences. Inspectors identified the engineering evaluation accepted by Operations did not include a calculated stress to account for geometric differences despite the flaw being located in a pipe elbow.
- A Unit 2, 23 charging pump oil leak. The functionality evaluation described the condition was the result of oil seepage underneath the charging pump casing on the pedestal and that the condition did not impact functionality. Inspectors identified the evaluation did not address the leak rate, the leak’s effect on pump mission time, and the transient combustible hazard that the oil leak created (AR 4529578).
- Several nuisance alarms associated with Unit 2 CEA 24 position indication. Operators removed alarm cards and declared the CEA motion inhibit and control element deviation circuits inoperable. After assessing the alarm and associated circuit functions, operators logged that the alarm function was not required for operability of the CEA motion inhibit circuit and declared that circuit operable. Inspectors noted the operability determination was not updated to include the basis for declaring the circuit operable per OP-AA-108-115. Constellation generated an action item to document the basis for operability with the alarm function disabled (AR 4533346).

Constellation acknowledged the operability performance aspects, wrote AR 4535301, and revised the operability/functional determinations to fully document their bases. Operations issued Standing Order 22-14 to require additional actions during shift operability and functionality reviews to improve performance. The inspectors independently evaluated the deficiencies noted above for significance in accordance with IMC 0612, Appendix B and Appendix E guidance. No findings or violations of more than minor significance were identified during this review.

Failure to Follow Procedure Use and Adherence Requirements for a Continuous Use Procedure			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000318/2022004-01 Open/Closed	[H.8] - Procedure Adherence	71153

A self-revealing Green finding and associated NCV of Technical Specification (TS) 5.4.1, "Administrative Controls – Procedures," was identified when Constellation operators failed to follow procedure use and adherence requirements when bypassing engineered safety features actuation system actuation signals during a Unit 2 cooldown to Mode 5 on September 14, 2022. This resulted in an inadvertent safety injection actuation system (SIAS) actuation because the actuation logic was satisfied due to plant conditions.

Description: On September 14, 2022, operators were performing a plant shutdown and cooldown for maintenance outage CC2M2201. With the unit in Mode 5 (Cold Shutdown), operators were directed by OP-5, "Plant Shutdown from Hot Standby to Cold Shutdown," Revision 3100, to bypass the SIAS pressurizer pressure (PP) and SIAS pressurizer pressure block (PPB) sensor maintenance modules per OI-34-2, "Engineered Safety Features Actuation System," Revision 100. During the performance of the evolution, an unplanned SIAS actuation occurred. Constellation reported this via Event Notification 56108 and LER 05000318/2022-002-00 (ADAMS Accession No. ML22316A019).

OP-5 directs plant evolutions to shut down the unit from Mode 3 (Hot Standby) to Mode 4 (Hot Shutdown) to Mode 5 (Cold Shutdown). During depressurization in Mode 3, the procedure directed blocking the SIAS PP signal into SIAS trip logic prior to lowering pressure to 1785 pounds per square inch atmosphere (PSIA) using control room keylock switches. This activates the SIAS PPB sensor maintenance modules to allow plant pressure to be lowered below the SIAS PP actuation setpoint of 1740 PSIA without actuating the SIAS.

Prior to lowering reactor coolant system cold leg temperature below 301 degrees Fahrenheit, OP-5 required low temperature overpressure protection controls to be established. This included preventing an automatic high pressure safety injection system injection from over pressurizing the reactor coolant system at low temperatures.

OP-5, Section 6.4, "Continued Cooldown and Enter Mode 5," directed bypassing the SIAS PP and SIAS PPB sensor maintenance module per OI-34-2, "Engineered Safety Features Actuation System," to support longer-term reduced-pressure plant operation. OI-34-2 precautions state to prevent inadvertent engineered safety features action system actuations, all manipulations inside the system cabinets shall be performed by a licensed operator under the direct supervision of a senior reactor operator.

On September 14, 2022, a licensed reactor operator and senior reactor operator were dispatched to perform OI-34-2, Section 6.8, Appendix J, "Bypassing SIAS and SIAS Block Sensor Modules in Mode 5, 6, or Defueled." This procedure was designated as a continuous use procedure. For continuous use procedures, HU-AA-104-101, "Procedure Use and Adherence," required the performance of each step in the sequence specified and place keep each step as complete before proceeding to the next step. OI-34-2 required the sensor maintenance modules for SIAS PP to be bypassed (Step B.1) prior to bypassing the sensor maintenance modules for SIAS PPB (Step B.3). These steps accomplish bypassing the pressurizer pressure trip signals due to actual low pressurizer pressure prior to bypassing the

pressurizer pressure blocks into SIAS trip logic.

Contrary to the procedure, operators performed the steps in parallel which allowed two out of four SIAS trip logic sensor modules to sense an actual low pressurizer pressure trip condition; pressurizer pressure was approximately 135 PSIA, below the setpoint value for an SIAS condition (SIAS PP) of less than or equal to 1740 PSIA. The SIAS actuation operated as designed and initiated the SIAS operation such as the auto-start of the Unit 2 emergency diesel generators, auto-start of standby coolant charging pumps, and the closure of various containment isolation valves. The SIAS actuation sent an actuation signal to start the high-pressure safety injection system, however, because low temperature overpressure protection controls were in place, the actuation did not result in an actual injection with the system. As a result, the reactor coolant system did not experience a pressure transient. Other controls ensured that shutdown cooling was not adversely affected by the SIAS actuation.

Corrective Actions: Operators confirmed that the SIAS was unplanned, reset the actuation signal, and restored plant equipment to normal operation.

Corrective Action References: ARs 4522477 and 4538598

Performance Assessment:

Performance Deficiency: The failure of station operators to follow procedure use and adherence requirements of TS 5.4.1 and HU-AA-101-104 for continuous use procedures when implementing the operating instruction to bypass engineered safety features actuation system actuation signals during Unit 2 cooldown on September 14, 2022, was a performance deficiency that was reasonably within Constellation's ability to foresee and correct and should have been prevented.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Human Performance attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the human error of improperly implementing procedure steps resulted in an unplanned SIAS actuation that started various engineered safeguard features and challenged low temperature overpressure protection controls. Additionally, this issue is similar to IMC 0612, Appendix E, Example 4.b, in that the procedural error resulted in a reactor scram or other transient.

Significance: The inspectors assessed the significance of the finding using IMC 0609 Appendix G, "Shutdown Safety SDP." In accordance with Exhibit 4, although the finding involved an inadvertent safety injection actuation signal, no actual injection by the high-pressure safety injection system occurred or challenged the reactor coolant system pressure boundary. This was because low temperature overpressure protection controls were properly in place to prevent the high-pressure safety injection system from actually injecting. Therefore, this finding was determined to be of very low safety significance (Green).

Cross-Cutting Aspect: H.8 - Procedure Adherence: Individuals follow processes, procedures, and work instructions. In this case, operators deviated from the procedure and manipulated plant equipment when not appropriately authorized by approved procedures.

Enforcement:
Violation: Calvert Cliffs TS 5.4.1, "Administrative Controls – Procedures," requires, in part, that written procedures shall be established, implemented, and maintained covering the

applicable procedures recommended in NRC Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. NRC Regulatory Guide 1.33, Appendix A, Section 1, required administrative procedures for procedure adherence. HU-AA-104-101, “Procedure Use and Adherence,” required the performer of continuous use procedures to perform each step in the sequence specified and place keeping each step as complete before proceeding to the next step. OI-34-2, “Engineered Safety Features Actuation System,” Revision 00100, a continuous use procedure, contained requirements for the operation of the engineered safety features actuation system which actuates the emergency core cooling system. OI-34-2, Appendix J, “Bypassing SIAS and SIAS Block Sensor Modules in Mode 5, 6, or Defueled,” required the sensor maintenance modules for SIAS PP to be bypassed (Step B.1) prior to bypassing the sensor maintenance modules for SIAS PPB (Step B.3).

Contrary to the above, on September 14, 2022, while performing OI-34-2, Appendix J, operators did not complete bypassing the sensor maintenance modules for SIAS PP (Step B.1) prior to bypassing the sensor maintenance modules for SIAS PPB (Step B.3). This resulted in an unplanned Unit 2 SIAS actuation because the actuation logic was satisfied due to plant conditions.

Enforcement Action: This violation is being treated as a NCV, 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 19, 2023, the inspectors presented the integrated inspection results to Patrick D. Navin, Site Vice President, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.01	Corrective Action Documents	4484940		
71111.01	Procedures	OP-AA-108-111-1001	Severe Weather and Natural Disaster Guidelines	24
71111.01	Procedures	WC-AA-107	Seasonal Readiness	25
71111.04	Corrective Action Documents Resulting from Inspection	AR 4540283		
71111.04	Corrective Action Documents Resulting from Inspection	AR 4540290		
71111.04	Engineering Changes	036-D-AFWBLOCK VLV	AFW Pump Steam Generator Blocking Valves 1(2)CV4522, 1(2)CV4523, 1(2)CV4532, and 1(2)CV4533	0
71111.04	Procedures	OI-32A	Auxiliary Feedwater System	03800
71111.04	Procedures	STP-O-62-2	Monthly Valve Position Verification - Unit 2	4000
71111.05	Corrective Action Documents Resulting from Inspection	AR 4531207		
71111.05	Procedures	FFSM-109	NFPA 805 Fire Area: 42, Unit 1 Auxiliary Feedwater Pump Room 603	0
71111.05	Procedures	FFSM-161	NFPA 805 Fire Area: YARD, Outside - 45', Tank Farm, Units 1 and 2	A
71111.11Q	Miscellaneous	OP-117	Simulator Operating Examination for the Licensed Operator Training Program at the Calvert Cliffs Nuclear Plant	1
71111.12	Corrective Action Documents Resulting from Inspection	AR 4540516		
71111.12	Procedures	ER-AA-520	Instrument Performance Trending	5

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.12	Procedures	STP-O-5AC-2	Auxiliary Feedwater Valves Quarterly Surveillance Test	4
71111.15	Corrective Action Documents Resulting from Inspection	AR 4531207		
71111.15	Corrective Action Documents Resulting from Inspection	AR 4534023		
71111.15	Corrective Action Documents Resulting from Inspection	AR 4534023		
71111.15	Corrective Action Documents Resulting from Inspection	AR 4534752		
71111.15	Corrective Action Documents Resulting from Inspection	AR 4535301		
71111.15	Miscellaneous	ASME BPVC.CC.NC-2017	Case N-513-4, Evaluation Criteria for Temporary Acceptance of Flaws in Moderate Energy Class 2 or 3 Piping	2017
71111.15	Procedures	OP-AA-108-115	Operability Determinations	24
71111.19	Procedures	STP-O-5A12-1	12 Auxiliary Feedwater Pump Quarterly Surveillance Test	11
71114.06	Miscellaneous	OP-120	Simulator Operating Examination for the Licensed Operator Training Program at the Calvert Cliffs Nuclear Plant	0