UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

November 2, 2026

Bob Coffey
Executive Vice President, Nuclear Division
and Chief Nuclear Officer
NextEra Energy Inc.
700 Universe Blvd.
Mail Stop EX/JB
Juno Beach FL 33408

SUBJECT: SEABROOK STATION - INTEGRATED INSPECTION REPORT 05000443/2026003

Dear Bob Coffey:

On September 30, 2026, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Seabrook Station. On October 6, 2026, the NRC inspectors discussed the results of this inspection with Christina Sheridan, Site Vice President, and other members of your staff. The results of this inspection are documented in the enclosed report.

Three findings of very low safety significance (Green) are documented in this report. Three of these findings involved violations of NRC requirements. 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, 475 Allendale Rd, Ste 102, King of Prussia, PA 19406-1415; the Director, Division of Reactor Projects, Region I; and the NRC Resident Inspector at Seabrook Station.

If you disagree with a cross-cutting area 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, 475 Allendale Rd., Ste 102, King of Prussia, PA 19406-1415; and the NRC Resident Inspector at Seabrook Station.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at http://www.nrc.gov/reading-rm/adams.html and at the NRC Public Document Room in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

GLENN DENTEL

Digitally signed by GLENN DENTEL
Date: 2026.11.02 14:32:23 -05'00'

Glenn T. Dentel, Chief
Reactor Projects Branch B
Division of Reactor Projects, Region I
Office of the Chief Nuclear Reactor Inspector

Docket No. 05000443
License No. NPF-86

Enclosure:
As stated

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SUBJECT: SEABROOK STATION - INTEGRATED INSPECTION REPORT 05000443/2026003 DATED NOVEMBER 2, 2026

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U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Number:	05000443
License Number:	NPF-86
Report Number:	05000443/2026003
Enterprise Identifier:	I-2026-003-0030
Licensee:	NextEra Energy Seabrook, LLC
Facility:	Seabrook Station
Location:	Seabrook, New Hampshire
Inspection Dates:	July 1, 2026 to September 30, 2026
Inspectors:	T. Daun, Senior Resident Inspector S. Flanagan, Resident Inspector P. Cataldo, Senior Reactor Inspector N. Eckhoff, Health Physicist S. Quiroga, Resident Inspector
Approved By:	Glenn T. Dentel, Chief Reactor Projects Branch B Division of Reactor Projects, Region I Office of the Chief Nuclear Reactor Inspector

Enclosure

SUMMARY

The U.S. NRC continued monitoring the licensee's performance by conducting an integrated inspection at Seabrook Station, in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to https://www.nrc.gov/reactors/operating/oversight.html for more information.

List of Findings and Violations

Failure to Comply with Department of Transportation External Surface Dose Rate Limits for a Limited Quantity Package as Specified in 49 CFR 173.421			
Cornerstone	Significance	Cross-Cutting Area	Report Section
Public Radiation Safety	Green NCV 05000443/2026003-01 Open/Closed	Human Performance (H)	71125.04
A self-revealed Green finding and associated non-cited violation (NCV) of Title 10 of the *Code of Federal Regulations* (10 CFR) 71.5 was identified for the failure to comply with Department of Transportation (DOT) external surface dose rate limits for a limited quantity package as specified in 49 CFR 173.421.			

Failure to Appropriately Identify and Correct Degradation on the Cooling Tower Spray Header and Distribution Piping			
Cornerstone	Significance	Cross-Cutting Area	Report Section
Mitigating Systems	Green NCV 05000443/2026003-02 Open/Closed	Problem Identification and Resolution (P)	71152A
A self-revealed Green finding and associated NCV of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” was identified when the licensee failed to prevent progressive corrosion and through-wall degradation of the emergency cooling tower spray header and distribution piping, safety-related piping of the service water system credited as the alternate ultimate heat sink. Specifically, the licensee did not complete timely corrective actions or preventive maintenance to address known corrosion mechanisms, resulting in localized through-wall flaws and significant wall loss on portions of the spray and distribution piping.			

Failure to Maintain Diverse and Flexible Coping Strategies Equipment			
Cornerstone	Significance	Cross-Cutting Area	Report Section
Mitigating Systems	Green NCV 05000443/2026003-03 Open/Closed	Problem Identification and Resolution (P)	71152A
The inspectors identified a Green finding and associated NCV of 10 CFR 50.155(c)(1) when the licensee failed to maintain diverse and flexible coping strategies (FLEX) equipment in a state capable to respond to beyond-design-basis external events. Specifically, the FLEX 405kW diesel generator was not able to reliably perform Phase 2 alternating current (AC)			

power mitigation of beyond-design-basis event strategy for the station due to degraded pins in the wiring harness.

Additional Tracking Items

None

PLANT STATUS

Seabrook Station began the inspection period operating at 100 percent rated thermal power and remained at, or near, full power for the inspection period.

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors performed 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

71111.04 - Equipment Alignment

Partial Walkdown (IP Section 03.01) (2 Samples)

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

(1) Emergency feedwater system following engineered safety features actuation system testing on steam generator supply valves 394 and 395 on September 9, 2026
(2) 'B' emergency diesel generator and supplemental electrical power system during 'A' emergency diesel generator planned work window from September 14–20, 2026

Complete Walkdown (IP Section 03.02) (1 Sample)

(1) The inspectors evaluated system configurations during a complete walkdown of the ocean service water system on July 28, 2026

71111.05 - Fire Protection

Fire Area Walkdown and Inspection (IP Section 03.01) (4 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) Emergency feedwater pump house (EFP-F-1-A) on August 20, 2026
(2) Main steam and feedwater pipe enclosure ‘east’ all elevations (MS-F-1A-Z, MS-F-2A-Z, MS-F-3A-Z, MS-F-4A-Z, MS-F-5A-Z) on August 31, 2026
(3) 'A' emergency diesel generator room (DG-F-2A-A) on September 9, 2026
(4) 'A' electrical tunnel (ET-F-1A) on September 24, 2026

71111.11A - Licensed Operator Requalification Program and Licensed Operator Performance

Licensed Operator Training/Examination Observations (IP Section 03.01) (1 Sample)

(1) The inspectors observed and evaluated licensed operator annual requalification exams conducted in the plant reference simulator on September 21, 2026

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management (IP Section 03.01) (2 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) Risk management actions for elevated risk during 'A' emergency diesel generator planned work window from September 14–20, 2026
(2) Risk management actions for elevated risk during 'A' emergency diesel generator unplanned inoperability on September 21, 2026

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 03.01) (2 Samples)

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

(1) 'A' service water cooling tower spray piping degradation discovered on July 15, 2026
(2) 'A' emergency diesel generator lube oil temperature control valve following testing on September 18, 2026

Temporary and Permanent Modifications (IP Section 03.02) (1 Sample)

(1) Service water weld repair upstream of service water valve 34 on July 29, 2026

71111.24 - Testing and Maintenance of Equipment Important to Risk

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

Post-Maintenance and Surveillance Testing (IP Section 03.01) (10 Samples)

(1) Post-maintenance testing following preventive maintenance activities on 'A' charging pump on July 14, 2026
(2) Post-maintenance testing following patch repair to service water cooling tower pipe leak upstream of service water valve 34 on July 29, 2026
(3) Post-maintenance testing following air start solenoid valve replacement on 'B' emergency diesel generator on August 5, 2026
(4) Post-maintenance testing following preventive maintenance activities on supplemental emergency power supply on August 22, 2026

(5) Post-maintenance testing following preventive maintenance activities on 'B' residual heat removal pump on August 25, 2026
(6) Post-maintenance testing following preventive maintenance activities on 'A' emergency diesel generator on September 19, 2026
(7) Turbine-driven emergency feedwater pump surveillance testing on July 23, 2026
(8) Main steam valves 394 and 395 engineered safety features actuation system surveillance testing on September 2, 2026
(9) 'A' emergency diesel generator emergency power sequencer relay surveillance testing on September 15, 2026
(10) 3A and 3B reserve auxiliary transformer sudden pressure relay surveillance testing on September 29, 2026

In-service Testing (IP Section 03.01) (1 Sample)

(1) Startup feedwater pump quarterly in-service testing on September 24, 2026

Diverse and Flexible Coping Strategies (FLEX) Testing (IP Section 03.04) (1 Sample)

(1) Six-month test of FLEX 405kW diesel generator on July 22, 2026

SAFEGUARDS

71130.15 - Security Operations

Security Operations (IP Section 03.01) (1 Sample)

The inspectors evaluated security operations during observations of the following activity:

(1) Personnel and vehicle searches on July 22, 2026

Security Equipment Condition (IP Section 03.02) (1 Sample)

The inspectors evaluated the ability of security equipment to perform its intended function through a walkdown and observation of surveillances of the following:

(1) Vital and protected area barriers on July 23, 2026

OTHER ACTIVITIES – BASELINE

71125.04 - Public Radiation Safety On-site Inspection

Effluent Monitoring Calibration and Testing Program (IP Section 03.01) (2 Samples)

The inspectors evaluated the calibration and maintenance of the following radioactive effluent monitoring and measurement instrumentation:

(1) R-6473, Water treatment liquid effluent radiation monitor calibration
(2) 1-RM-RM-6505, Condenser air evacuators discharge radiation monitor calibration

Radiological Effluent Walkdowns and Observations (IP Section 03.02) (1 Sample)

The inspectors evaluated the following radioactive effluent systems during walkdowns:

(1) Personnel access building filtered exhaust monitor (RM-6532)

Environmental Monitoring Equipment and Sampling (IP Section 03.03) (1 Sample)

(1) The inspectors evaluated environmental monitoring equipment and observed collection of environmental samples

Radioactive Material Storage and Control (IP Section 03.04) (1 Sample)

The inspectors evaluated the licensee's performance in controlling, labeling and securing the following radioactive materials:

(1) Calibration facility

Solid Radioactive Waste System Walk Down (IP Section 03.05) (1 Sample)

The inspectors walked down the following accessible portions of the solid radioactive waste systems and evaluated system configuration and functionality:

(1) Resin sluice and transfer system

Shipment Preparation and Records (IP Section 03.06) (2 Samples)

The inspectors observed preparation of, or reviewed records for the following shipments:

(1) Shipment number 23-034, UN2915, type A package, fuel cleaning equipment
(2) Shipment number 26-009, UN2910, excepted package-limited quantity of material, framatone equipment

71152A - Annual Follow-up Problem Identification and Resolution

Annual Follow-up of Selected Issues (IP Section 03.03) (3 Samples)

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

(1) Service water cooling tower spray header degradation
(2) Repeat FLEX diesel generator failures
(3) Recurring loose parts monitoring system alarms

INSPECTION RESULTS

<table>
<tr><td colspan="4">Failure to Comply with Department of Transportation External Surface Dose Rate Limits for a Limited Quantity Package as Specified in 49 CFR 173.421</td></tr>
<tr><td>Cornerstone</td><td>Significance</td><td>Cross-Cutting Area</td><td>Report Section</td></tr>
<tr><td>Public Radiation Safety</td><td>Green
NCV 05000443/2026003-01
Open/Closed</td><td>Human Performance (H)</td><td>71125.04</td></tr>
<tr><td colspan="4">A self-revealed Green finding and associated NCV of 10 CFR 71.5 was identified for the failure to comply with DOT external surface dose rate limits for a limited quantity package as specified in 49 CFR 173.421.</td></tr>
<tr><td colspan="4">Description: On April 22, 2026, the licensee was notified about a discrepancy with a radiation survey measurement on shipment number 26-009. The radioactive shipment had been transported as an “excepted package for limited quantities” pursuant to the DOT requirements of 49 CFR 173.421(a)(2). Upon receipt by the package recipient, the contact dose rates on the external surface of the package were found to be greater than the 0.5 millirem per hour (mrem/h) limit allowed by the regulation. The recipient measured a contact radiation level of 29 mrem/h. The licensee’s survey conducted before shipment indicated a maximum dose rate on the package of 0.3 mrem/h. The package contained non-destructive examination testing equipment and was being shipped to another utility (but within the same corporation). The licensee’s investigation concluded that the direct cause of the discrepancy was a radiation protection technician survey error while working in a distractive environment during the refueling outage. The NRC reviewed the radiation survey information from both sites along with the associated shipping documents for any other inaccuracies. The NRC also interviewed radiation protection management about previous shipment reviews to validate this as a one-time occurrence and that the licensee had a plan to prevent re-occurrence.

Corrective Actions: The licensee took immediate corrective actions which, in part, included verification of the specific survey instrumentation used to complete the survey was within calibration, and prior shipment surveys were reviewed to confirm no additional inaccurate survey results were identified. Further, licensee reinforced human performance tools during surveys of radiological shipments and issued a standing order requiring enhanced verification controls for shipment surveys, including two independent surveys using different instruments with immediate notification to radiation protection supervision of discrepancies prior to shipment release.

Corrective Action References: Condition Report 02541129; “Radiological Shipment Survey Dose Rate Discrepancy” issue investigation</td></tr>
<tr><td colspan="4">Performance Assessment:

Performance Deficiency: The licensee failed to prepare and deliver a radioactive material shipment for transportation in accordance with 10 CFR 71.5 and 49 CFR 173.421. This was within the licensee's ability to foresee and correct and led to the licensee exceeding the excepted package limits for the radioactive shipment to another utility.

Screening and Significance: The inspectors assessed the significance of the finding using IMC 0609, Appendix D, “Public Radiation Safety Significance Determination Process.” The performance deficiency was associated with the Public Radiation Safety cornerstone. In accordance with IMC 0609, Appendix D, "Public Radiation Safety Significance Determination</td></tr>
</table>

Process," the inspectors determined the finding was of very low safety significance (Green), because the regulatory limit was exceeded due to the surface radiation levels on the package exceeded the 0.5 mrem/hr maximum allowed radiation level for excepted packages. Since the allowable radiation levels for excepted packages was exceeded, the package was incorrectly classified as an excepted package and should have been shipped as a higher classification shipment (i.e. low specific activity-I (LSA-I)), making the performance deficiency more than minor. Section 02.04, Section B, of IMC 0609, Appendix D uses Low Specific Activity-I (LSA-I) as the threshold for determining the significance of findings related to radioactive material shipments. Since the shipment from Seabrook exceeded the excepted package limits but did not exceed LSA-I limits, and the dose rate was not reasonably accessible by the public, the finding screens to Green.

Cross-Cutting Area: Human Performance (H). The inspectors determined that the licensee became complacent with survey of items for shipment and did not utilize additional error reduction methods, such as independent surveys of shipment, before leaving the site.

Enforcement:

Violation: 10 CFR 71.5(a) requires that a licensee who offers licensed radioactive material for transport comply with the DOT regulations in 49 CFR Parts 107, 171–180, and 390–397. 49 CFR 173.421 excepts limited quantity shipments of radioactive material from certain marking, labeling, and shipping paper requirements, including emergency response information, provided that the radiation level at any point on any external surface of the package does not exceed 0.5 millirem per hour. Contrary to this, on April 17, 2026, the licensee offered a package for transport as an excepted package-limited quantity of material, but the dose rate on the external surface exceeded 0.5 mrem per hour.

Enforcement Action: This violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy.

Failure to Appropriately Identify and Correct Degradation on the Cooling Tower Spray Header and Distribution Piping

Cornerstone	Significance	Cross-Cutting Area	Report Section
Mitigating Systems	Green NCV 05000443/2026003-02 Open/Closed	Problem Identification and Resolution (P)	71152A

A self-revealed Green finding and associated NCV of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” was identified when the licensee failed to prevent progressive corrosion and through-wall degradation of the emergency cooling tower spray header and distribution piping, safety-related piping of the service water system credited as the alternate ultimate heat sink. Specifically, the licensee did not complete timely corrective actions or preventive maintenance to address known corrosion mechanisms, resulting in localized through-wall flaws and significant wall loss on portions of the spray and distribution piping.

Description: On May 26, 2026, during work under Work Order (WO) 2546572, extensive corrosion was identified on the carbon steel spray distribution piping in the 'B' train cooling tower, including multiple large through-wall openings on several six-inch laterals and heavy corrosion on portions of the eighteen-inch header and a short vertical spool in the twenty-four-inch header. This condition was documented in Action Request (AR) 2546572 cooling tower 'B' train spray header and associated ultrasonic testing examinations, which mapped a

population of flaws concentrated on inboard lateral segments beneath the mist eliminator support structures.

There were at least two precursors to this condition. During a 2015 'B' train nozzle and fill inspection, approximately 40 of 256 nozzles were found blocked with rust and corrosion product, and AR02053117 documented external piping corrosion. In 2021, the 'B' train nozzles again required cleaning, with about one-quarter of a five-gallon bucket of scale removed, and engineering recommended recoating the spray header piping due to coating delamination and corrosion on pipe and flanges. Preventive maintenance, however, focused on nozzles, ceramic fill and supports and did not explicitly include the spray header piping, allowing established degradation mechanisms to persist.

After corrosion was identified in May 2026, a past operability review was conducted that required extensive re-analysis to regain margin in thermal performance during design basis accident conditions as well as re-gaining margin to structural integrity during seismic events. Ultimately the licensee was able to show that the degradation identified in the ‘B’ train of the cooling tower piping would not have prevented the service water system from performing its specified safety functions.

In July 2026, extent of condition inspections of the cooling tower 'A' train identified localized corrosion, sub-minimum wall thickness at the twenty-four-inch riser spacer, degraded lateral clamps, and through-wall openings on portions of six-inch lateral spray piping. Reviewing previous inspections of the 'A' train of the cooling tower spray header, inspectors noted scale and external piping corrosion was identified in 2016 under WO40412473 and again in 2023 under WO40756531. AR02162327 was initiated to clean the exterior surfaces of the piping and apply new coatings following the inspection in 2016, the AR was closed to WR94148908 to perform but was never completed.

While these inspections documented progressive coating failure and external corrosion on the carbon steel spray distribution piping, WOs to clean, inspect, and recoat the headers were not completed after the 2015, 2016, 2021, and 2023 inspections, which led to the localized through-wall degradation identified. The monitoring strategy did not identify degradation before wall loss approached minimum requirements, and preventive maintenance instructions covered tiles/fill/nozzles but did not include inspection of the spray header/distribution piping itself. Long-term replacement actions were scheduled but not effectively tracked such as WO40401212 which remained in an approval/placeholder status.

Corrective Actions: These issues were entered into the corrective action program as AR02546572 and AR02551056. Immediate and prompt operability determination evaluations were documented. A past operability review, AR02546572, was performed for the 'B' train cooling tower and a prompt operability determination, AR02551056, for the 'A' train cooling tower. Immediate corrective actions were initiated including replacement of degraded 'B' train piping, weld repairs to the 'A' train riser spacer, and enhanced inspection scope and frequency.

Planned and completed corrective actions include:

- ‘B’ train piping replacement: Degraded spray header/distribution piping was replaced with like-for-like material (completed June 21, 2026).

- ‘A’ train repairs and structural evaluation: Weld overlay restored spacer thickness; American Society of Mechanical Engineers evaluations confirmed acceptability of laterals/supports under safe shutdown earthquake conditions (completed July 23, 2026).
- Life-cycle management program and preventive maintenance improvements: Develop a service water life-cycle management program; track 'A' and 'B' trains AL6XN replacements; review preventive maintenance instructions to include distribution headers and spray piping; increase cooling tower inspection frequency from 5 years to 2.5 years.
- Monitoring: Establish an adverse condition monitoring program to maintain initial basin temperature ≤65F until analyses are formally updated.

Corrective Action References: ARs 02546572, 02551056

Performance Assessment:

Performance Deficiency: The licensee failed to promptly identify and correct conditions adverse to quality for the safety-related cooling tower spray distribution piping, allowing known corrosion to progress to multiple through-wall defects. Specifically, after documented nozzle blockage and corrosion observations in 2015, 2016, 2021, and 2023, actions to establish adequate preventive and monitoring controls were not implemented in a timely manner. Work planning delayed mitigation and completion of bridging WOs intended to clean, inspect, and recoat the spray header. The preventive maintenance work instructions did not explicitly include the spray header piping, and condition monitoring did not identify degradation before wall thickness fell below minimum requirements in areas not normally accessible for routine walkdowns. This failure to promptly identify and correct adverse conditions and to establish adequate preventive controls was reasonably within the licensee’s ability to foresee and correct.

Screening and Significance: The inspectors assessed the significance of the finding using IMC 0609, Appendix A, “The Significance Determination Process for Findings At-Power,” Exhibit 2, Mitigating Systems Screening Questions A, Mitigating Structures, Systems, and Components and Probabilistic Risk Assessment Functionality, Question 1. The performance deficiency affected the service water mitigating structure, system, and component and required extensive re-analysis to regain margin to maintain operability and probabilistic risk assessment functionality. The finding screened to very low safety significance (Green). (Q1--> b)

Cross-Cutting Area: Problem Identification and Resolution (P). The inspectors determined that the licensee did not evaluate the historical issues and failed to address the ongoing pipe corrosion without adequate preventive and monitoring actions in place.

Enforcement:

Violation: 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” requires that conditions adverse to quality be promptly identified and corrected. Contrary to the above, from 2015 through discovery on May 26, 2026, the licensee did not promptly identify and correct adverse conditions in the cooling tower spray distribution piping nor establish adequate preventive and monitoring controls, which allowed corrosion to progress to multiple through-wall defects.

Enforcement Action: This violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy.

Failure to Maintain Diverse and Flexible Coping Strategies Equipment			
Cornerstone	Significance	Cross-Cutting Area	Report Section
Mitigating Systems	Green NCV 05000443/2026003-03 Open/Closed	Problem Identification and Resolution (P)	71152A

The inspectors identified a Green finding and associated NCV of 10 CFR 50.155(c)(1) when the licensee failed to maintain FLEX equipment in a state capable to respond to beyond-design-basis external events. Specifically, the FLEX 405kW diesel generator was not able to reliably perform Phase 2 AC power mitigation of beyond-design-basis event strategy for the station due to degraded pins in the wiring harness.

Description: The station's FLEX program requires one FLEX 405kW, 480V diesel generator available as part of their Phase 2 coping strategy with the supplemental emergency power supply system unavailable. This FLEX generator will ensure direct current control power remains available to power vital instrumentation. The FLEX generator tripped during its 2-hour function runs on five separate occasions between November 2020 and June 2026. Each trip was noted to be early into the run and due to high oil temperature trip with no apparent cause.

The repeated trips on December 13, 2023, and July 3, 2024, were followed by additional runs that passed the 2-hour functional run time. Both trips were captured and trended in the corrective action process, but no further actions were taken. On November 3, 2025, after another trip of the diesel generator, the station replaced the oil temperature sensor based on the vendor's recommendation, and the diesel generator subsequently ran satisfactorily. The most recent diesel generator trip on June 30, 2026, required the license to conduct more complex trouble shooting with vendor involvement. It was discovered that pin connections in the wiring harness that connect the sensors to the internal computer were degraded causing inadvertent loss of signal to the computer, causing the diesel generator to trip sporadically. The diesel generator trips were all screened using the station's condition reporting procedure through the "equipment reliability" section. Under the severity level 2 examples, the procedure states "Repeat failure of FLEX or B.5.b related equipment in last 5 yr. period that has potential to impact equipment reliability." Contrary to this, the station screened the four repeat failure condition reports as only a severity level 3 following the November 2020 trip, and did not appropriately evaluate the condition in accordance with the procedure.

Corrective Actions: The FLEX 405kW diesel generator wiring harness was repaired and the diesel generator was successfully retested on July 22, 2026. An issue investigation has also been launched.

Corrective Action References: ARs 02549809, 02555072, 02557991

Performance Assessment:

Performance Deficiency: The licensee's failure to follow their condition reporting procedure to evaluate and correct failures of the FLEX 405kW diesel generator was a performance deficiency. Specifically on December 3, 2023, the station had a repeat failure of the DG-4 FLEX 405kW diesel generator and did not appropriately screen the issue and open an issue

investigation in accordance with the station's condition reporting procedure. The issue was screened through the "equipment reliability" section of the procedure and under the severity level 2 examples has "Repeat failure of FLEX or B.5 b related equipment in last 5 yr. period that has potential to impact equipment reliability." Contrary to this, the station screened the condition report as a severity level 3 and did not appropriately evaluate the condition. This was within the licensee's ability to foresee and correct and led to the extended unavailability of the diesel generator.

Screening and Significance: The inspectors assessed the significance of the finding using IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," Exhibit 2, Mitigating Systems Screening Questions. FLEX-related performance deficiencies are screened using Section E, with Question E.3 directing to go to Detailed Risk Evaluation section because the finding did involve equipment credited in the station's Phase 2 FLEX strategy for providing AC power such that the function could not be implemented in accordance with existing plant procedures and the exposure time was greater than 21 days.

A detailed risk evaluation was performed by a regional Senior Reactor Analyst (SRA) using Systems Analysis Programs for Hands-On Integrated Reliability Evaluations, Version 8.2.12 and the Seabrook Standardized Plant Analysis Risk (SPAR) model Version 8.83. The SRA adjusted the SPAR model to reflect Seabrook's post-Fukushima diverse and flexible coping strategies, modeled the failure of the 405kW diesel generator as a failure to run, and did not provide recovery credit for the 405kW diesel generator. Assuming an exposure time of one year, the estimated increase in core damage frequency and large early release frequency was <1E-6/year and <1E-7/year, respectively, representing a finding of very low safety significance (Green). The dominant sequences included losses of offsite power with failure of the emergency diesel generators and supplemental emergency power supply, failure of FLEX injection, and failure to recover offsite power.

Cross-Cutting Area: Problem Identification and Resolution (P). The inspectors determined that the licensee did not thoroughly evaluate equipment issues to ensure that resolutions address causes commensurate with their safety significance.

Enforcement:

Violation: 10 CFR 50.155(c)(1) requires, "equipment relied on for the mitigation strategies and guidelines required by paragraph (b)(1), mitigation strategies for beyond-design basis external events, of this section must have sufficient capacity and capability to perform the functions required by paragraph (b)(1) of this section." Contrary to this requirement from the period of December 13, 2023, and July 22, 2026, the licensee failed to have sufficient capability to perform functions required by paragraph (b)(1). Specifically, the FLEX 405kW diesel generator required by paragraph(b)(1) was incapable of performing Phase 2 AC power mitigation of beyond-design-basis event strategy for the station due to degraded pins in the wiring harness.

Enforcement Action: This violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy.

Observation: Recurring Loose Parts Monitoring System Alarms	71152A
Inspectors completed a review of the licensee's corrective actions associated with loose parts monitoring system alarms that have been recurring over the past few operating cycles. In	

general, the main focus of the licensee has been on the two sensors associated with the reactor vessel head area that has been the predominant source of alarms received since 2023.

Inspectors reviewed corrective actions and investigation reports from the past two refueling outages, which contained actions conducted by the site and vendors, to determine the cause of the loose parts alarms. The investigations contained reasonable searches, such as through activities under WO 41033679, which could only be performed during outages, such as in-vessel searches, control rod guide tube inspections, and the outside surface of the vessel head. Inspectors noted that loose insulation handles were identified and removed, and other foreign material were identified. The foreign material was removed and determined not to be a credible source of the alarms, based on the mass of the identified material, as well as the energy signatures evaluated during the investigations. Multiple corrective actions are outstanding, which had been generated by site personnel, and contain reasonable efforts to continue the search for the source of the alarms, as well as to ensure compliance with the guidance in Regulatory Guide 1.133, “Loose Part Detection Program For The Primary System Of Light Water Cooled Reactors," Revision 1.

Inspectors noted that the corrective action program has been recently populated with several actions that, if implemented, will provide reasonable assurance that the loose parts monitoring system alarms and associated procedures are enhanced to ensure the function of the system meets the original intent. Specifically, the integrity of the reactor coolant pressure boundary remains intact and any potential loose part that can challenge that integrity will be identified, and appropriate actions taken by licensee staff to identify and take appropriate corrective actions. Additionally, the inspectors noted that the investigations to date have provided reasonable assurance that the source of the loose parts alarms are not being generated from inside the reactor vessel or other reactor coolant system component.

EXIT MEETINGS AND DEBRIEFS

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

- On October 6, 2026, the inspectors presented the integrated inspection results to Christina Sheridan, Site Vice President, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.04	Drawings	1-FW-B20688	Emergency Feedwater System Details	Revision 21
		1-MS-B20582	Main Steam Emergency Feedwater Pump Supply	Revision 21
		PID-1-DG-B20456	Diesel Generator Train B Overview	Revision 4
	Miscellaneous	DBD-EFW-01	Design Basis Document Emergency Feedwater System	Revision 10
71111.13	Corrective Action Documents	02557470		
	Procedures	OP-AA-102-1003	Guarded Equipment	Revision 46
	Work Orders	40894703		
		41049883		
71111.15	Corrective Action Documents	02551056		
		02552807		
		02557640		
	Engineering Changes	EC301881		
	Work Orders	40981514		
		41071012		
71111.24	Corrective Action Documents	02546494		
		02552807		
	Engineering Changes	EC301881		
	Procedures	ES1807.025	In-service Inspection Visual Examination Procedure	Revision 11
		IS1605.312	1-DGB-FY-AS-1 Air Start Solenoid Time Response Test	Revision 5
		LN0561.301	1-ED-X-3-A Westinghouse Sudden Pressure Relay Test	Revision 0
		LN0561.302	1-ED-X-3-B Westinghouse Sudden Pressure Relay Test	Revision 0

		LS0563.113	'A' Diesel Generator Emergency Power Sequencer Output Relay PM	Revision 3
		OS1016.05	Service Water Cooling Tower Operation	Revision 46
		OX1413.03	B Train RHR Quarterly Flow and Valve Stroke Test	Revision 25
		OX1426.27	DG 1B Semiannual Operability Surveillance	Revision 36
		OX1436.02	Turbine Driven Emergency Feedwater Pump Quarterly and Monthly Valve Alignment	Revision 39
		OX1436.08	Startup Feed Pump Quarterly Surveillance	Revision 18
		OX1456.01	Charging Pump 'A' & 'B' Quarterly Flow and Valve Stroke Test	Revision 34
		OX1456.86	Operability Testing of IST Pumps	Revision 31
		OX1456.87	Train B ESFAS Slave Relay K641B Go Test	Revision 5
		OX1461.05	SEPS Annual Availability Surveillance	Revision 14
	Work Orders	40062439		
		40890151		
		40893251		
		40893447		
		40893449		
		40894507		
		40894760		
		40993084		
		40994319		
		41025942		
		41027640		
		41030507		
		41031237		
		41035868		
		41036795		
		41038291		

		41039026		
		41063012		
		41071012		
71152A	Corrective Action Documents	02541665		
		02556712		
		02556713		
		02556714		
		02557076		
		02557078		
		02557084		
	Corrective Action Documents Resulting from Inspection	02556704		
		02557106		