



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
2056 WESTINGS AVENUE, SUITE 400
NAPERVILLE, IL 60563-2657

February 3, 2025

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

SUBJECT: BRAIDWOOD STATION – INTEGRATED INSPECTION REPORT
05000456/2024004 AND 05000457/2024004

Dear David Rhoades:

On December 31, 2024, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Braidwood Station. On January 14, 2025, the NRC inspectors discussed the results of this inspection with D. Hudak, Plant Manager 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.

A licensee-identified violation which was determined to be of very low safety significance is documented in this report. 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 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 III; the Director, Office of Enforcement; and the NRC Resident Inspector at Braidwood Station.

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

Sincerely,



Signed by Szwarc, Dariusz
on 02/03/25

Dariusz Szwarc, Chief
Reactor Projects Branch 3
Division of Operating Reactor Safety

Docket Nos. 05000456 and 05000457
License Nos. NPF-72 and NPF-77

Enclosure:
As stated

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Letter to David Rhoades from Dariusz Szwarc dated February 3, 2025.

SUBJECT: BRAIDWOOD STATION – INTEGRATED INSPECTION REPORT
05000456/2024004 AND 05000457/2024004

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

Docket Numbers: 05000456 and 05000457

License Numbers: NPF-72 and NPF-77

Report Numbers: 05000456/2024004 and 05000457/2024004

Enterprise Identifier: I-2024-004-0053

Licensee: Constellation Energy Generation, LLC

Facility: Braidwood Station

Location: Braceville, IL

Inspection Dates: October 01, 2024, to December 31, 2024

Inspectors: R. Bowen, Illinois Emergency Management Agency
R. Farmer, Health Physicist
J. Heimke, Project Engineer
T. Hooker, Health Physicist
E. Kokkinis, Project Engineer
J. Kutlesa, Senior Emergency Preparedness Inspector
E. Magnuson, Reactor Inspector
T. McGowan, Emergency Preparedness Inspector
J. Robbins, Program Manager
P. Smagacz, Senior Resident Inspector
J. Steffes, Senior Resident Inspector

Approved By: Dariusz Szwarc, Chief
Reactor 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 Braidwood 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. A licensee-identified non-cited violation is documented in report section: 71111.08P.

List of Findings and Violations

Failure to Implement Preventive Maintenance Testing on DC Breakers			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000456,05000457/2024004-02 Open/Closed	None	71152A
A finding of very low safety significance (Green) and an associated NCV of TS 5.4.1, “Procedures,” was NRC identified, for the failure to implement component replacement or trip testing as specified in Preventive Maintenance Change Request (PMCR) 83591. As a result, degrading performance went undetected and on April 16, 2024, 1DC05E-AF1 breaker tripped during charger capacity testing.			

Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
URI	05000456,05000457/2024004-01	Failure to Correctly Install Essential Service Water Strainer Baskets	71111.12	Open
URI	05000456,05000457/2024004-03	Failure to Maintain Emergency Diesel Generator (EDG) Lube Oil Pressure During Strainer Changeout for EDG Mission Time	71152A	Open
LER	05000457/2023-001-00	LER 2023-001-00 for Braidwood Station, Unit 2, Train B Auxiliary Feedwater Pump was inoperable due to Degraded Oil in the Crank Case	71153	Closed

PLANT STATUS

Unit 1 began the inspection period operating at full power. With the exception of minor reductions in power to support scheduled testing activities and load changes requested by the transmission system dispatcher, the unit remained operating at or near full power for the entire inspection period.

Unit 2 began the inspection period operating at 96 percent power due to coasting down for a scheduled refueling outage. On October 7, the unit was taken offline to begin scheduled refueling outage A2R24. On October 24, 2024, the unit achieved criticality and entered Mode 1 on October 25, 2024. The unit reached full power on October 27, 2024. With the exception of minor reductions in power to support scheduled testing activities and load changes requested by the transmission system dispatcher, the unit remained operating at or near full power for the rest of the inspection period

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors performed 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 Sample (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 following systems:
 1. Diesel and electric fire pumps and refueling water storage tank heat tracing during the week ending December 14, 2024

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 and 2 spent fuel pool cooling and clean-up systems while protected for full core offload during A2R24 during the week ending October 19, 2024
- (2) Unit 2 safety injection (SI) Train A while protected as a makeup train during A2R24 during the week ending October 19, 2024

- (3) Unit 1 auxiliary feedwater (AF) Train A during Train B testing during the week ending November 9, 2024
- (4) Unit 1 diesel generator (DG) Train A during the week ending December 21, 2024

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

- (1) The inspectors evaluated system configurations during a complete walkdown of the Unit 2 residual heat removal (RH) system during the weeks ending October 5 through November 2, 2024

71111.05 - Fire Protection

Fire Area Walkdown and Inspection Sample (IP Section 03.01) (7 Samples)

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

- (1) Fire Zone 1.3-2; Unit 2 containment 426' elevation, containment upper area during the week ending October 12, 2024
- (2) Fire Zone 12.1-0; fuel handling building 426' elevation during the week ending October 12, 2024
- (3) Fire Zone 8.5-2; turbine building 426' elevation, verified fire system impairment permits for scaffolds that may impair fire suppression spray pattern during the week ending October 12, 2024
- (4) Fire Zone 5.6-2; auxiliary building 451' elevation division 21 miscellaneous electrical equipment and battery room during the week ending October 19, 2024
- (5) Fire Zones 9.2-2 and 9.3-2; DG 401' elevation, diesel generator room 2A and day tank room during the week ending October 19, 2024
- (6) Fire Zone 1.1-2; Unit 2 containment 401' elevation, Unit 2 containment missile shield during the week ending October 19, 2024
- (7) Fire Zone 11.6-2; auxiliary building 426' elevation, division 22 electrical penetrations area on week ending October 26, 2024

71111.06 - Flood Protection Measures

Flooding Sample (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated internal flooding mitigation protections in the Unit 2 diesel fuel oil storage tank rooms during the week ending December 28, 2024

71111.08P - Inservice Inspection Activities (PWR)

The inspectors verified that the reactor coolant system boundary, 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 in Unit 2 during refueling outage A2R24 from October 7, 2024, to October 16, 2024.

PWR Inservice Inspection Activities Sample - Nondestructive Examination and Welding Activities (IP Section 03.01) (1 Sample)

The inspectors verified that the following nondestructive examination and welding activities were performed appropriately:

(1) Ultrasonic Examination

- Auxiliary Feedwater System Piping Weld, 2AF-06-06, Cat. R-A, Item R1.11-2
- Feedwater System Piping Welds, 2FW-04-21 and 22, Cat. R-A, Item R1.11-3
- Reactor Coolant System (RCS) Piping Welds, 2RC-32-11, 16 and 17, Cat. R-A, Item R1.20-4

Surface Examination

- Dye Penetrant (PT) Exam of RH Pump Welded Attachments, 2-RHP-01-RHP-01, 02 and 03, Cat. C-C, Item C3.30

Visual Examination

- RPV Bottom Head Visual Exam of Bottom Mounted Instrument (BMI) Penetrations and Bare Metal Surface, Code Case N-722 Exam, Item B15.80
- VT-3 of 2AF04032V Variable Spring Can, Cat. F-A, Item F1.20C
- VT-3 of 2AF07036R Rigid Pipe Support, Cat. F-A, Item F1.20A

Welding Activities

- Gas Tungsten Arc Welding (GTAW) Process Welds
 - Base Metal Repair of 2VP01AD Chiller Divider Plate, Work Order (WO) 05189536-19

PWR Inservice Inspection Activities Sample - Vessel Upper Head Penetration Inspection Activities (IP Section 03.02) (1 Sample)

The inspectors verified that the licensee conducted the following vessel upper head penetration inspections and addressed any identified defects appropriately:

- (1) • Bare Metal Visual (BMV) Examination of RPV Upper Head Surface Penetrations

PWR Inservice Inspection Activities Sample - Boric Acid Corrosion Control Inspection Activities (IP Section 03.03) (1 Sample)

The inspectors verified the licensee is managing the boric acid corrosion control program through a review of the following evaluations:

- (1) • Boric Acid Leakage on 2CV01PB, AR 4742589
- Boric Acid Leakage on 2RY03MA, AR 4675667

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 examination failure rates for the requalification annual operating examinations and biennial comprehensive written examinations administered between August 22, 2024, and September 27, 2024.

71111.11Q - Licensed Operator Requalification Program and Licensed Operator Performance

Licensed Operator Performance in the Actual Plant/Main Control Room (IP Section 03.01) (1 Sample)

- (1) The inspectors observed and evaluated licensed operator performance in the control room during reactor shutdown and fuel moves during the week ending October 12, 2024

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

- (1) Observation of the performance of a complex casualty graded scenario by a crew of licensed plant operators in the facility's simulator on December 10, 2024

71111.12 - Maintenance Effectiveness

Maintenance Effectiveness (IP Section 03.01) (4 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) Maintenance effectiveness review associated with the AF system during the weeks ending November 16 through November 23, 2024
- (2) Maintenance effectiveness review associated with the essential service water (SX) system due to a failure of the 2B SX strainer on November 21, 2024, as documented in Issue Report (IR) 4818984
- (3) Maintenance effectiveness review associated with the emergency diesel generators (EDGs) due to delayed maintenance work windows during the weeks ending November 30 through December 14, 2024
- (4) Maintenance effectiveness review associated with the steam generator (SG) power operated relief valves (PORVs) due to 2C SG PORV failure as documented in IR 4820817 during the weeks ending December 14 through December 21, 2024

Quality Control (IP Section 03.02) (1 Sample)

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

- (1) Maintenance effectiveness, performance history, and quality reviews for the diesel driven AF pump, with specific emphasis on the commercial grade dedication process

following identification of failed fuel injectors, as documented in IR 4763519 during the weeks ending November 9 through November 16, 2024

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) Review and evaluation of the risk and activities associated with Unit 2 shutdown for a refueling outage including lowered water inventory in A2R24 during the week ending October 12, 2024
- (2) Review and evaluation of the risk and activities associated with 2B SX and 2B AF emergent work in A2R24 during the week ending October 26, 2024
- (3) Review and evaluation of the risk and activities associated with conservative operations alerts issued by PJM during the week ending November 9, 2024
- (4) Review and evaluation of the risk and activities associated with 0B auxiliary building HVAC plenum maintenance and testing during the week ending November 16, 2024
- (5) Review and evaluation of the risk due to emergent work on the 2B SX strainer as documented in IR 4818984 during the weeks ending November 23 through 30, 2024
- (6) Review and evaluation of the risk associated with 2CV8385B and winter weather conditions during the week ending December 21, 2024

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 reactor trip bypass breaker B position indication issue noted during SI testing as Documented in IR 4807493 during the week ending October 19, 2024
- (2) Evaluation of the operability of the auxiliary building ventilation system following the 0VA437Y damper failing to open during surveillance testing, as documented in IR 4807520 during the week ending October 19, 2024
- (3) Evaluation of the operability of the reactor coolant system (RCS) following questions regarding leakage from valve 2RC003A, as documented in IR 4810722 during the week ending October 26, 2024
- (4) Evaluation of the operability of the Unit 2 chemical and volume control (CV) system following questions regarding a failed post-maintenance test (PMT), as documented in IR 4816999 during the week ending November 16, 2024
- (5) Evaluation of the operability of the Unit 2 pressurizer heaters following unexpected annunciators as documented in IR 4822139 during the week ending December 21, 2024

71111.18 - Plant Modifications

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

The inspectors evaluated the following temporary or permanent modifications:

- (1) Review of permanent plant modification per Engineering Change (EC) 638351: Feedwater Regulating Valve Dual Positioner Unit 2 during the weeks ending October 19 through November 2, 2024
- (2) Review of permanent plant modification per EC 639486: 2A Iso Phase Bus Duct Fan and Motor Replacement during the week ending November 2, 2024
- (3) Review of permanent plant modification per EC 633477: Unit 1 UAT Replacement with SGB-SMT Transformers

71111.20 - Refueling and Other Outage Activities

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

- (1) The inspectors evaluated refueling outage A2R24 activities from October 7 to October 25, 2024.

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 Testing (PMT) (IP Section 03.01) (11 Samples)

- (1) Functional and operational testing of the diesel fire pump following installation, as documented in WO 5278379 during the week ending October 5, 2024
- (2) Functional and operational testing of SSPS following A2R24, as documented in WO 5372619 during the week ending October 26, 2024
- (3) Functional and operational testing of the manual reactor trip breakers following A2R24, as documented in WO 5367132 during the week ending October 26, 2024
- (4) Functional and operational testing of the 2B AF pump following A2R24, as documented in WO 5222017 during the weeks ending October 26 through November 2, 2024
- (5) Functional and operational testing of 2A EDG sequencer following refuel outage A2R24, as documented in WO 5221868 during the week ending November 2, 2024.
- (6) Functional and operational testing of the 2B RH system following A2R24 maintenance, as documented in WO 5366484 during the week ending November 2, 2024
- (7) Functional and operational testing of the 2A AF pump following A2R24, as documented in WO 5221838 during the week ending November 2, 2024
- (8) Functional and operational testing of 2AF005A and B following valve actuator rebuild, as documented in WO 5222080 and 5222077 during the week ending November 2, 2024
- (9) Functional and operational testing of 2RH8716B following maintenance, as documented in WO 5221799 during the week ending November 2, 2024

- (10) Core verification following A2R24 as documented in WO 5362031 during the weeks ending November 9 and November 16, 2024
- (11) Functional and operational testing of the 2B SX system after emergent maintenance on the strainer, as documented in WO 5600236 during the week ending November 30, 2024

Surveillance Testing (IP Section 03.01) (4 Samples)

- (1) Main steam safety valve testing, as documented in WO 5364630 during the week ending October 5, 2024
- (2) Full flow surveillance testing of the AF system, as documented in WO 5360923 during the week ending October 5, 2024
- (3) Anticipated transient without scram Refueling Outage End to End Surveillance, as documented in WO 5361594 during the week ending October 12, 2024
- (4) Calibration of the 1A AF suction pressure switch, as documented in WO 5353821 during the week ending November 9, 2024

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

- (1) Local leak rate testing of primary containment isolation valve 2VQ005B, as documented in WO 5053661 during the week ending October 12, 2024

Reactor Coolant System Leakage Detection Testing (IP Section 03.01) (1 Sample)

- (1) Review and evaluation of Unit 1 reactor coolant system (RCS) unidentified leakage following a small increase in the normal periodic calculated leakage, as documented in IR 4808652 during the week ending November 9, 2024

71114.04 - Emergency Action Level and Emergency Plan Changes

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

- (1) The inspectors evaluated the following submitted Emergency Action Level and Emergency Plan changes.
 - EP-AA-1001, Constellation Radiological Emergency Plan Annex for Braidwood Station, Revision 36
 - EP-AA-1001 Addendum 1, Braidwood Station On-Shift Staffing Technical Basis, Revision 3
 - EP-AA-1001 Addendum 2, Braidwood Evacuation Time Estimates, Revision 2
 - EP-AA-120-1001, BRW Emergency Plan Revised for IPAWS Implementation, Evaluation No. 23-34

This evaluation does not constitute NRC approval.

RADIATION SAFETY

71124.01 - Radiological Hazard Assessment and Exposure Controls

Radiological Hazards Control and Work Coverage (IP Section 03.04) (1 Sample)

The inspectors evaluated the licensee's control of radiological hazards for the following radiological work:

- (1) Removal of the Unit 2 reactor head

71124.03 - In-Plant Airborne Radioactivity Control and Mitigation

Permanent Ventilation Systems (IP Section 03.01) (1 Sample)

The inspectors evaluated the configuration of the following permanently installed ventilation systems:

- (1) Technical Support Center HVAC

Self-Contained Breathing Apparatus for Emergency Use (IP Section 03.04) (1 Sample)

- (1) The inspectors evaluated the licensee's use and maintenance of self-contained breathing apparatuses.

71124.04 - Occupational Dose Assessment

Source Term Characterization (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated licensee performance as it pertains to radioactive source term characterization.

External Dosimetry (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated how the licensee processes, stores, and uses external dosimetry.

Internal Dosimetry (IP Section 03.03) (2 Samples)

The inspectors evaluated the following internal dose assessments:

- (1) Intake Investigation 2022
- (2) Intake Investigation 2023

Special Dosimetric Situations (IP Section 03.04) (2 Samples)

The inspectors evaluated the following special dosimetric situations:

- (1) Reactor Head Inspection EDEX
- (2) Various DPWs

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, 2023, through August 31, 2024)
- (2) Unit 2 (January 1, 2023, through August 31, 2024)

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

- (1) Unit 1 (October 1, 2023, through September 30, 2024)
- (2) Unit 2 (October 1, 2023, through September 30, 2024)

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

- (1) January 1, 2023, through June 30, 2024

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

- (1) January 1, 2023, through June 30, 2024

71152A - Annual Follow-up Problem Identification and Resolution

Annual Follow-up of Selected Issues (Section 03.03) (4 Samples)

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

- (1) Review and assessment of the station's corrective actions for low EDG lube oil pressures during 1A EDG surveillances during the weeks ending September 29 through December 27, 2024
- (2) Review and assessment of the station's corrective actions for misalignments of auxiliary feedwater diesel turbo outlet hose clamps during the week ending December 27, 2024
- (3) Review and assessment of the station's corrective actions for DC breaker 111 tripped during battery charger testing during the week ending December 14, 2024
- (4) Review and assessment of the station's corrective actions for manual isolation valve 1D failed to close during Train B actuation test during the week ending December 14, 2024

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 to identify potential trends in unidentified leakage rates that might be indicative of a more significant safety issue.

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

Reporting (IP Section 03.05) (1 Sample)

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

- (1) Retraction of LER 05000457/2023-001-00, *Unit 2 Train B Auxiliary Feedwater Pump was Inoperable due to Degraded Oil in Crank Case*, (ADAMS Accession No. [ML23321A224](#)). This LER was submitted and subsequently retracted by licensee correspondence *Cancellation of Licensee Event Report 2023-001-00 — Unit 2 Train B Auxiliary Feedwater Pump was Inoperable due to Degraded Oil in the Crank Case*, dated April 26, 2024, (ADAMS Accession No. [ML24117A344](#)). This LER is Closed.

INSPECTION RESULTS

Licensee-Identified Non-Cited Violation	71111.08P
<p>This violation of very low safety significance was identified by the licensee and has been entered into the licensee corrective action program and is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.</p>	
<p>Violation: Title 10 of the <i>Code of Federal Regulations</i>, Part 50, Section 50.55a(g)(6)(ii)(E), “Augmented ISI requirements: Reactor coolant pressure boundary visual inspections,” stated, “(1) All licensees of pressurized water reactors must augment their inservice inspection program by implementing ASME Code Case N-722-1, subject to the conditions specified in paragraphs (g)(6)(ii)(E)(2) through (4) of this section. The inspection requirements of ASME Code Case N-722-1 do not apply to components with pressure retaining welds fabricated with Alloy 600/82/182 materials that have been mitigated by weld overlay or stress improvement.”</p>	
<p>The licensee’s RPV bottom head nozzle-to-thimble guide tube welds were fabricated with Alloy 82 material that have not been mitigated by weld overlay or stress improvement.</p>	
<p>ASME Code Case N-722-1 required, in part, that the additional examinations of Table 1 shall be performed for pressurized water reactor plants having partial or full penetration welds in Class 1 components fabricated with Alloy 600/82/182 material.</p>	
<p>Table 1 of Code Case N-722-1 required, in part, that the instrument connections identified as Item No. B15.100 be visually examined once per interval.</p>	
<p>Contrary to the above, as of October 3, 2024, the licensee’s inservice inspection program failed to comply with the requirements of ASME Code Case N-722-1. Specifically, the licensee failed to complete visual examination of all Class 1 nozzle-to-thimble guide tube welds to satisfy the requirements of N-722-1. The conditions specified in paragraphs (g)(6)(ii)(E)(2) through (4) of Section 50.55a did not apply.</p>	
<p>Significance/Severity: Green. The inspectors assessed the significance of the finding using IMC 0609 Appendix A, “The Significance Determination Process (SDP) for Findings At-Power.” The inspectors answered “No” to questions, “After a reasonable assessment of degradation, could the finding result in exceeding the reactor coolant system (RCS) leak rate for a small LOCA (leakage in excess of normal makeup)?” and “After a reasonable assessment of degradation, could the finding have likely affected other systems used to mitigate LOCA (e.g., Interfacing System LOCA)?” under Section A of Exhibit 1 – Initiating Events Screening Questions. Therefore, the finding was screened as having very low safety significance (Green).</p>	
<p>Corrective Action References: AR 4806584</p>	

Unresolved Item (Open)	Failure to Correctly Install Essential Service Water Strainer Baskets URI 05000456,05000457/2024004-01	71111.12
<p><u>Description:</u></p> <p>On November 21, 2024, in preparations for a 2B essential service water (SX) surveillance, operations attempted to manually backwash the 2B SX strainer. Operations personnel identified the sheer pin was broken and the motor was spinning, however, the shaft for the strainer did not rotate. Before the attempt, the thermals for the strainer motor were found tripped and needed to be reset. The licensee declared the 2B SX system inoperable due to the inoperability of the backwash function of the strainer and entered a 72-hour action for LCO 3.7.8. The subsequent investigation revealed set screws that hold the upper and lower baskets of the strainer apart became undone and allowed the baskets to impact each other resulting in a mechanical lock of the strainer system. A review of the maintenance procedures for the SX strainers call out using spacers vice set screws. The licensee committed to fully investigate this incident by performing a CAPE which would not be concluded until after the inspection period. Therefore, the inspectors are opening an Unresolved Item (URI) until the inspectors can review the CAPE and make a final determination. The strainer was repaired with the correct spacer and returned to service.</p> <p>Planned Closure Actions: The licensee’s review of the event via a CAPE will be completed in the 1st quarter of 2025. The inspectors will review the evaluation and make a final determination in the 1st quarter of 2025.</p> <p>Licensee Actions: The licensee chartered a formal equipment review evaluation, and the licensee has generated extent of condition work orders to evaluate the other service water strainers that may have been installed with set screws instead of spacers.</p> <p>Corrective Action References: AR 4818984; 2B SX Strainer Not Rotating</p>		

Failure to Implement Preventive Maintenance Testing on DC Breakers			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000456,05000457/2024004-02 Open/Closed	None	71152A
<p>A finding of very low safety significance (Green) and an associated non-cited violation (NCV) of Technical Specification (TS) 5.4.1, "Procedures," was NRC identified, for the failure to implement component replacement or trip testing as specified in Preventive Maintenance Change Request (PMCR) 83591. As a result, degrading performance went undetected and on April 16, 2024, 1DC05E-AF1 breaker tripped during charger capacity testing.</p> <p><u>Description:</u></p> <p>On April 16, 2024, 1DC05E-AF1 breaker tripped during charger capacity testing. Subsequently, the breaker was replaced and passed post-maintenance testing. At the time of the failure, Unit 1 was in a refueling outage, Bus 111 had already been cross-tied to Bus 211 as battery capacity testing was a planned maintenance activity.</p> <p>In response to NRC inspector's questions, as documented in IR 4789778, "Deviation from PCM (Performance Centered Maintenance) Template not documented," subsequent evaluations identified that breakers in similar locations on both divisions of DC power on both units had not been replaced or tested in accordance with PCM template for safety-related, non-critical, 125 VDC molded case circuit breakers (MCCBs).</p> <p>To determine the reason why the MCCBs were not being tested, a review of maintenance records was performed. On November 13, 2013, the licensee implemented PMCR 83591 in response to fleet operating experience.</p> <p>This PMCR created new PM tasks to replace/trip test the 125VDC ESF (Engineered Safety Feature) [&] Non-ESF MCCBs. The PMCR also directed the task to "trip test 250 and 125 VDC Multiple Pole MCCB" on a 6Y frequency for breakers classified as 3 and a 10Y frequency for breakers classified as 7 [non-critical]. All 125VDC breakers were included in the PM addition. The PM also provided associated work order numbers and explicitly listed components impacted by the PMCR. MCCBs 1DC05E-AF1, 1DC06E-AF1, 2DC05E-AF1, and 2DC06E-AF1 were not on the list. These breakers were located between the battery charger and the battery on each DC bus. The inspectors concluded that the likely cause of MCCBs 1DC05E-AF1, 1DC06E-AF1, 2DC05E-AF1, and 2DC06E-AF1 not being replaced or trip tested was that these breakers were not on the list of explicitly identified components. These breakers are safety-related, 125 VDC Multiple Pole MCCBs classified as 7, non-critical, and each should have been on the list contained in PMCR 83591.</p> <p>The preventive maintenance process allows for deviations from the template, but the licensee failed to identify an approved deviation that would support the exclusion of MCCBs 1DC05E-AF1, 1DC06E-AF1, 2DC05E-AF1, and 2DC06E-AF1 from PMCR 83591.</p> <p>Corrective Actions: Corrective actions included replacing breaker 1DC05E-AF1 and planned to replace AF1 breaker on each division of DC power when able and establishing the preventive maintenance frequency in accordance with the PCM template.</p>			

Corrective Action References: AR 4766946; OSP-A 1DC05E-AF1 Tripped During Charger 111 Capacity Test

Performance Assessment:

Performance Deficiency: The inspectors concluded that the failure to replace or trip test MCCBs in accordance with PMCR 83591, constituted a performance deficiency that warranted further evaluation.

Screening: The inspectors determined the performance deficiency was more-than-minor because if left uncorrected, it would have the potential to lead to a more significant safety concern. Specifically, failing to replace or trip test the same breaker location across both divisions of DC power on each unit creates the potential for an undetected age-related degradation that could affect multiple divisions.

Significance: The inspectors assessed the significance of the finding using IMC 0609 Appendix G, "Shutdown Operations Significance Determination Process." The inspectors answered "No" to questions 1 thru 8 where the issue screened as having very low risk significance, Green.

Cross-Cutting Aspect: None

Enforcement:

Violation: TS 5.4.1, "Procedures," requires that written procedures shall be established, implemented, and maintained as recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Regulatory Guide 1.33, Appendix A, Section 9, "Procedures for Performing Maintenance," specifically addresses the need to have appropriate procedures for preventive maintenance that can affect the performance of safety-related equipment. The licensee developed procedure ER-AA-200, "Preventive Maintenance Program," to implement that regulatory requirement and WC-AA-120, "Preventive Maintenance Database Revision Requirements" to manage changes to PM requirements. PMCR 83591 was implemented using guidance found in WC-AA-120.

Contrary to the above, since November 13, 2013, and until the failure on April 16, 2024, the licensee failed to implement component replacement or trip testing as specified in PMCR 83591. Specifically, the licensee failed to replace or perform trip setpoint testing of molded case circuit breakers 1DC05E-AF1, 1DC06E-AF1, 2DC05E-AF1, and 2DC06E-AF1.

As a result, degrading performance went undetected and on April 16, 2024, 1DC05E-AF1 breaker tripped during battery capacity testing.

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

Unresolved Item (Open)	Failure to Maintain Emergency Diesel Generator (EDG) Lube Oil Pressure During Strainer Changeout for EDG Mission Time URI 05000456,05000457/2024004-03	71152A
<p><u>Description:</u></p> <p>The inspectors reviewed EDG operating logs from September, October, and November of 2022. The inspectors found the lube oil pressure was stable in September but experienced a step change drop in pressure during the October monthly run followed by a trending decrease in pressure during the 24-hour endurance run that occurred on November 6, 2022. The inspectors performed simplified calculations based on the pressure decrease starting from the end of the monthly run in September through the 24-hour endurance run in November. The inspectors found the EDG would have reached the 30 psi minimum pressure limit established by the diesel vendor approximately two days into the seven day mission time.</p> <p>Recent inspector questions have led to the discovery of a calculation indicating a minimum pressure of 15 psi. However, the inspectors questioned if strainer cleaning at the 30 psi limit would make lube oil pressure drop below the 15 psi minimum from the calculation. Also, the inspectors questioned whether this minimum pressure was a hard value for catastrophic failure or just the beginning of engine wear. The licensee is developing a response to the inspectors' questions and expected to be resolved in the first quarter of 2025.</p> <p>Planned Closure Actions: This issue is planned to be resolved in the first quarter of 2025 when the licensee presents an analysis of the EDG lube oil pressure during a strainer changeout.</p> <p>Licensee Actions: The licensee will provide the inspectors with an analysis for lube oil pressures during strainer changeouts to demonstrate if the emergency diesel engine can remain operable.</p>		

Minor Performance Deficiency	71152A
<p>Minor Violation for Component with Incorrect Trip Settings Installed in DC Protection System</p> <p>Minor Performance Deficiency: Following discharge of the DC Bus 111 battery, as part of planned capacity testing, breaker 1DC05E-AF1 tripped. Following removal of the failed component, two issues were identified. 1) the breaker rating was incorrect and 2) the trip setting on the installed trip unit was set incorrectly. Specifically, design drawing 20E-1-4010G, "Tabulation of Trip Settings 125V DC Dist. Center Bus 111 a& 112 (1DC05E & 1DC06E) 250V DC Non-Safety-Related," called for a 600 amp breaker and the installed breaker was rated for 400 amps. The trip unit was set to High (5000A) vs. the expected setting of Low (1500A) as documented in design drawing 20E-1-4010G.</p> <p>In response to this discovery, the licensee initiated Engineering Change 641912, "Evaluation for Breaker Frame Used on 125VDC Distributions," to assess the potential impacts of these differences. This evaluation concluded that Braidwood is not designed or evaluated to allow the 125VDC batteries to completely discharge under normal operation. Normal and accident loads were within the rating of the installed breaker, i.e., less than 400 amps. Additionally, reviews showed that only loads associated with recovery from battery capacity testing would</p>	

be expected to exceed the rating of the installed breaker. Based on this information, the licensee concluded that the breaker could perform its design function under normal operating and analyzed accident conditions.

Engineering Change 641912 also evaluated the impact of the higher trip set point. The breaker in question is downstream of a battery charger and this charger has a control circuit to limit charger output. The licensee evaluated the thermal heating to conductors assuming this control circuit did not function correctly with the actual higher trip setpoint. They concluded that conductors would not be damaged even when the control circuit fails to function correctly and the trip setpoint is set to high.

Inspectors concluded that decades of successful battery capacity testing provided a reasonable basis to conclude that the breaker would not have opened early as normal and analyzed accident loads are smaller than those experienced during battery capacity testing. As the trip set point was set high and damage to conductors was determined not to be an issue, the inspectors accepted the licensee’s conclusion that the component would perform its design function.

The inspectors determined that the design drawings contained sufficient information for the licensee to have identified these issues during installation of the component and that these discrepancies were a performance deficiency. This component appears to have been installed during original construction as a review of the corrective action program documents and maintenance records did not identify previous issues with performance, replacement, or adjustment of this specific breaker.

Screening: The inspectors determined that the performance deficiency was minor as it was similar to IMC 0612, Appendix E, “Examples of Minor Issues,” example 3.a. Specifically, neither the incorrect breaker rating nor the incorrect trip setting adversely affected the mitigating systems cornerstone objective to ensure the availability, reliability, and capacity of systems that respond to initiating events to prevent undesirable consequences. Additionally, the installation of this component did not result in inoperability of DC Bus 111. The licensee entered this issue into the corrective action program as AR 4766946.

Observation: Review of Issues Involving Hose Clamps on the Auxiliary Feedwater Turbo Outlet Piping	71152A
The inspectors reviewed the corrective actions involving hose clamps on the outlet of the 1B auxiliary feedwater turbo being misaligned on December 18, 2024, given a similar instance occurring on the 2B auxiliary feedwater diesel four months prior on August 12, 2024. The inspectors reviewed the initial 2B AF misalignment, including the CAPE and extent of condition associated with the event. At the time of the event, there was no indication of an issue with the clamps the Unit 1B AF diesel engine. The inspectors ensured the misalignment did not represent an issue with operability of the diesel engines and the corrective actions from the December 18 misalignment. No issues were identified by the inspectors challenging operability or corrective actions from the previous instance in August.	
Observation: Semiannual Trend Review of Unidentified Leakage for Units 1 and 2	71152S
The inspectors reviewed the licensee’s response and identification of variances in the unidentified leakage rate for both units over the course of the calendar year. The inspectors reviewed corrective action documents, operator logs, and work orders, among other items,	

to assess if the licensee was promptly identifying, trending, and attempting to correct issues with unidentified leakage. Both units had a refueling outage in the calendar year, and increases in the baseline unidentified leakage rate occurred for both units after their respective refueling outages. The inspectors concluded the licensee was promptly identifying variances in the unidentified leakage rate, entering the issues into their corrective action program, and performing troubleshooting and investigations into causes for the fluctuating numbers. The inspectors also noted that overall unidentified leakage is higher than in past cycles and swings in the calculated value for leakage has more variance than in those cycles as well. However, the inspectors concluded the licensee is appropriately tracking and trending the data.

EXIT MEETINGS AND DEBRIEFS

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

- On January 14, 2025, the inspectors presented the integrated inspection results to D. Hudak, Plant Manager, and other members of the licensee staff.
- On October 10, 2024, the inspectors presented the radiation protection inspection results to N. Ramage, Senior Manager Site Radiation Protection, and other members of the licensee staff.
- On October 16, 2024, the inspectors presented the ISI inspection results to A. Schuerman, Site Vice President, and other members of the licensee staff.
- On December 16, 2024, the inspectors presented the emergency action level and emergency plan changes inspection results to A. Nissen, Emergency Preparedness Manager, and other members of the licensee staff.
- On January 14, 2025, the inspectors presented the Exit Meeting inspection results to D. Hudak, Plant Manager, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.01	Miscellaneous	Letter, Adam Schuerman, Site Vice President, Braidwood Generating Station, to John Keenan, Senior Vice President Midwest Operations Constellation	2025 Winter Readiness Certification	11/15/2024
71111.04	Drawings	M-63, Sheet 1A	Diagram of Fuel Pool Cooling and Clean-up Units 1 and 2	BA
		M-63, Sheet 1B	Diagram of Fuel Pool Cooling and Clean-up	BI
		M-63, Sheet 1C	Diagram of Fuel Pool Cooling and Clean-up	BD
	Procedures	BwOP AF-E1	Electrical Lineup - Unit 1 Operating	15
		BwOP AF-M1	Operating Mechanical Lineup Unit 1	20
		BwOP DG-E1	Electrical Lineup - Unit 1	7
		BwOP DG-M1	Operating Mechanical Lineup Unit 1	17
		BwOP FC-E2	Electrical Lineup - Unit 2	1
		BwOP FC-M1	Operating Mechanical Lineup Unit 1	11
		BwOP FC-M2	Operating Mechanical Lineup Unit 2	8
		BwOP RH-E2	Electrical Lineup - Unit 2 Operating	9
		BwOP RH-M3	Operating Mechanical Lineup Unit 2 2A RH Train	10
		BwOP RH-M4	Operating Mechanical Lineup Unit 2 2B RH Train	8
BwOP SI-M2	Operating Mechanical Lineup Unit 2	27		
71111.05	Fire Plans	160	FZ 11.6-2; AB 426' Division 22, Electrical Penetrations Area	3
		52	FZ 5.6-2; Auxiliary Building 451' Elevation Division 21 Miscellaneous Electrical Equipment and Battery Room	1
		74	FZ 8.5-2; TB 426' Unit 2, Turbine Building Mezzanine Floor (NE)	4
		75	FZ 8.5-2; TB 426' Unit 2, Turbine Building Mezzanine Floor (NW)	2

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		91	FZ 9.2-2 and 9.3-2; DG 401' Diesel Generator Room 2A and Day Tank Room	2
	Miscellaneous	24-036	Fire System Impairment Permit	08/21/2024
		24-050	Fire System Impairment Permit	09/24/2024
	Procedures	MA-AA-796-024	Scaffold Installation, Inspection, and Removal	14
		OP-AA-201-007	Fire Protection Impairment Control	2
71111.06	Drawings	A-231	Auxiliary Building Upper Basement Floor Plan ~EL.383'-0" Area 4	AA
71111.08P	Corrective Action Documents	185677	2RF010 Reactor Cavity Sump Flow Indication	11/10/2003
		4454677	04-OSP-R A2R22LL AP to Address Unit 2 RX Head Residues	10/21/2021
		4673688	OSP-A 2D RCFC Head Ribs Sealing Surface Defects	04/28/2023
		4674445	OSP-A A2R23 ISI- Relevant Condition Identified on 2CV06009C	05/01/2023
		4675667	OSP-A 2RY03MA Boric Acid Leak and Potential Bolting Wastage	05/04/2023
		4692930	Steam Generator Program Health Report - Yellow Cornerstone	07/27/2023
		4731208	U1 SG Na (Sodium) >.4 ppb	01/16/2024
		4742589	2B CV Inboard Seal Leakage	02/04/2024
		4763512	1A Steam Generator Anion (Chloride/Sulfate): Action Limit 2	04/04/2024
		4773737	AL2 on the Steam Generator Blow Down Rough Chiller	05/13/2024
		4806584	Byron EOC: N-722-1 Augmented ISI Program	10/03/2024
		4807820	OSP-? ISI - Relevant Condition on 2AF07036R Pipe Support	10/08/2024
		4807823	OSP-? ISI - Relevant Condition on 2AF04032V Pipe Support	10/08/2024
		Drawings	SK-5415	Machined RCFC Head
	Engineering Changes	457846	Evaluate Minimum Thickness for 2VP01AD Heads	0
		635377	2RC01R Upper Head Primer Coating Delamination Resulting in Spotting on Surface	10/25/2021
		638969	Minor Revision 001G to Calc 061807 Address Relevant Condition Identified for 2CV06009C	05/08/2023
		638985	Evaluation of 2CV06/2CV03 Supports Due to Relevant Condition on Support 2CV06009C	05/08/2023

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	NDE Reports	A2R21-VEN-001	Bare Metal Visual of 2RC01R Bottom Head BMI	04/29/2020
		A2R23-VEN-01	Bare Metal Visual of 2RC01R Bottom Head BMI	04/26/2023
		A2R24-PT-001	PT Examination of 2-RHP-01-RHP-01,02,03	10/14/2024
		A2R24-UT-001	Ultrasonic Examination of 2AF-06-06	10/08/2024
		A2R24-UT-004	Ultrasonic Examination of 2FW-04-21	10/10/2024
		A2R24-UT-005	Ultrasonic Examination of 2FW-04-22	10/10/2024
		A2R24-UT-007	Ultrasonic Examination of 2RC-32-16	10/10/2024
		A2R24-UT-008	Ultrasonic Examination of 2RC-32-17	10/10/2024
		A2R24-UT-009	Ultrasonic Examination of 2RC-32-11	10/10/2024
		A2R24-VT-012	VT-3 of 2AF07036R	10/09/2024
		A2R24-VT-013	VT-3 of 2AF04032V	10/09/2024
		A2R24-VT-070	Bare Metal Visual Exam of RPV Upper Head Surface Penetrations	10/15/2024
	Procedures	CC-AA-501-1021	Constellation Nuclear Welding Program Repair of Welds and Base Material	6
		ER-AA-335-002	Liquid Penetrant (PT) Examination	12
		ER-AA-335-016	VT-3 Visual Examination of Component Supports, Attachments, and Interiors of Reactor Vessels	14
		ER-AA-335-030	Ultrasonic Examination of Ferritic Piping Welds	6
		ER-AA-335-031	Ultrasonic Examination of Austenitic Piping Welds	11
		ER-AP-331	Boric Acid Corrosion Control (BACC) Program	13
		ER-AP-331-1002	Boric Acid Corrosion Control (BACC) Program Identification, Screening, and Evaluation	13
		ER-AP-335-001	Bare Metal Visual Examination for Nickel Alloy Materials	8
		ER-BR-330-1001	Braidwood Generating Station in Service Inspection Program Plan	1
PDI-UT-1		Generic Procedure for the Ultrasonic Examination of Ferritic Pipe Welds	G	
PDI-UT-2	Generic Procedure for the Ultrasonic Examination of Austenitic Pipe Welds	J		
WPS 1-1-GTSM-PWHT	Welding Procedure Specification	5		
Work Orders	1576384	Bare Metal Visual of 2RC01R Bottom Head BMI	04/28/2014	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		1865044	Bare Metal Visual of 2RC01R Bottom Head BMI	04/21/2017
		5189536	CM 2VP01AD - 2D RCFC - Repair Refurbish Heads	04/29/2023
71111.11A	Miscellaneous	TQ-AA-150-F25	Braidwood Generating Station Licensed Operator Requalification Annual Exam Status Report	09/27/2024
71111.11Q	Miscellaneous	TM-241111-010	Braidwood Station Licensed Operator Requalification Simulator Scenario Guide	10/28/2024
71111.12	Corrective Action Documents	4714650	2DG01SB-B Not Working Properly	11/02/2023
		4720712	Dry Boric Acid Residue on 2AF01PB	11/30/2023
		4721485	2AF005B Indicates Dual When Full Open	12/04/2023
		4722111	2A DG Lube Oil Leak near Turbo LO Filters	12/07/2023
		4723414	1B DG read 620 rpm	12/13/2023
		4723575	Water Leaking from Top of Engine Of 2B AF PP	12/14/2023
		4724818	2B DG Jacket Water Leak Worse Again	12/20/2023
		4731243	Adverse Trend - Diesel Fuel Injectors Parts Quality Issue	01/16/2024
		4731476	1DG01KB-X1 Leaks at Flange	01/16/2024
		4733115	1B DG Failed Cylinder Temperature Indications	01/18/2024
		4750116	1B DG Showing 620 Rpm Locally at Full Speed	02/14/2024
		4757027	Smoke Leaking Out of Running 2B AF Pump	03/11/2024
		4760078	2B DG 4R Injector Pump Fuel Oil Leak	03/21/2024
		4760588	3D Corrosion on Multiple Cells Of 2C PORV Battery	03/24/2024
		4763428	Scoring on #2 Bearing 2AF01PB	04/03/2024
		4763519	Refurbished Injector for 16V149 Aux Feed Diesel	04/04/2024
		4764105	Corrosion on 2D SG PORV UPS Batteries	04/07/2024
		4766997	OPS-A 1AF005F Will Not Go Closed	04/17/2024
		4769029	1a Dg Starting Speed Slow	04/24/2024
		4769660	OSP-A 1SX01FA Broken Sheer Key Collar and Missing Spacer	04/26/2024
4773567	2D S/G PORV Battery Cell Specific Gravity Deviation High	05/12/2024		
4774469	Intentional Abbreviated Maintenance	05/15/2024		
4777028	2MS018A Failed to Close	05/29/2024		
4777278	Vibes Trending Higher On 1A AF Pump	05/29/2024		
4778907	2A DG Monthly Run - KVAR Oscillations	06/05/2024		
4786420	1SX2073A - Valve Internal Body Found Degraded	07/11/2024		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		4788664	1D SG PORV inverter	07/23/2024
		4793457	2B AF Pump Turbo Exhaust Disconnected	08/12/2024
		4817845	1AF005F Handwheel Disengaged	11/15/2024
		4818984	2B SX Strainer Not Rotating	11/21/2024
		4818984	2B SX Strainer Not Rotating	11/21/2024
		4819593	FME Event on @B SX Strainer	11/24/2024
		4819646	2B SX Strainer Issues During PMT Run	11/25/2024
		4820817	2C S/G PORV Failed to Close with C/S	12/01/2024
		4824700	1B AF Engine NW Turbo Outlet Hose Clamp Misaligned	12/18/2024
		4824932	EOC for 2B SX Strainer CAPE - Inspect 1SX01FA	12/19/2024
		4824933	EOC for 2B SX Strainer CAPE - Inspect 1SX01FB	12/19/2024
		4824936	EOC for 2B SX Strainer CAPE - Inspect 2SX01FA	12/19/2024
	Miscellaneous	10 CFR Part 21 Final Notification: P21-12182023- FN	Defect with Detroit Diesel/MTU Fuel Injectors	0
		Engage Health	Report for Essential Service Water System	11/27/2024
		Engage Health	Report for Emergency Diesel Generator System	12/09/2024
		Engage Health	Report for Main Steam System	12/12/2024
	Procedures	BwMP 3200-028	Diesel Generator Fuel Injection Performance Test	3
		SM-AA-102	Warehouse Operations	33
		SM-AA-104	In-Storage Maintenance	15
	Work Orders	5586815	2B SX Strainer Not Rotating	10/11/2024
		5586815-1	2B SX strainer not rotating	10/11/2024
71111.13	Corrective Action Documents	4816999	Failed PMT for 2CV8385B 2B Seal Injection Filter Vent Valve	11/13/2024
	Miscellaneous		Protected Equipment List - 1B PZR Heaters	December 2024
			RMAs and RICT for LCO 3.7.5 & 3.7.8	October 2024
			Protected Equipment List - 2B SX Strainer Repair	November 2024

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Procedures	OP-BR-201-012-1001	Braidwood On-Line Fire Risk Management	4
71111.15	Corrective Action Documents	4807520	Evaluate 2BwOSR 3.3.2.9-1 Due to 0VA437Y Failure	10/07/2024
		4810722	OSP-A Dry Boric Acid 2RY48AA for 2RC003A Valve Leakoff Line	10/20/2024
		4822139	Unexpected Annunciators 1-12-C5/D5	12/06/2024
	Drawings	108D685, Sheet 8	Safeguard Actuation S-G-DIG	8
		20E-2-4030AN053	Window Engraving Trip Status Lights and Bypass - Permissive Lights	I
		20E-2-4030EF36	Schematic Diagram Reactor Protection Safeguards Actuation and Manual Reset - Train A	K
		20E-2-4030EF80	Schematic Diagram Reactor Protection Safeguards Actuation and Manual Reset - Train B	L
	Procedures	2BwOSR 3.3.2.9-1	Unit Two - Train A Safety Injection Manual Initiation and Phase A Containment Isolation Manual Initiation Surveillance	27
2BwOSR 3.3.2.9-1		Unit Two - Train A Safety Injection Manual Initiation and Phase "A" Containment Isolation Manual Initiation Surveillance	27	
71111.18	Engineering Changes	638351	Feedwater Regulating Valve Dual Positioner Unit 2	0
		639486	2A Iso Phase Bus Duct Fan and Motor Replacement	1
71111.20	Corrective Action Documents	4807493	OSP-X BYB Closed TSLB Lit with Breaker Open	10/07/2024
		4809306	OSP-R Inactive Leakage at 2SI01B-24" Flush Connection Flange	10/14/2024
		4811196	Failed Start of 2B AF Pump	10/22/2024
	Procedures	2BwOSR 3.3.2.9-1	Unit Two - Train A Safety Injection Manual Initiation and Phase "A" Containment Isolation Manual Initiation Surveillance	27
71111.24	Corrective Action Documents	4467708	1AF004A Not Operating as Expected	12/20/2022
		4525939	00-OSP-X Dual Indication for 1AF005B	09/30/2022
		4530154	A1R23: (IAM) 1AF005A Actuator	10/12/2022
		4548184	2AF01PB-A Aux Oil Pump not Spinning with Motor	01/12/2023
		4675507	Periodic Inspection of Limitorque Valve 2RH8701A	05/04/2023
		4676981	OSP-X2AF01PB Failed to Crank as Required during 2BWoS	05/10/2023

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			TRM 2.7.a.1	
		4695274	1AF001B Out of Tolerance	08/08/2023
		4764055	Another SX Leak in Pipe Upstream of 1AF017A	04/06/2024
		4768133	OSP-R 1RH8716A - Grade 3 Grease	04/21/2024
		4780595	0B FP Diesel Fire Pump Level Gauge Not Moving	06/13/2024
		4780831	Failed Portions of 0BwOS FP.3.3.E-12	06/14/2024
		4783497	PM for 2RH618 Actuator Rebuild Will Go Late 06/30/3034	06/27/2024
		4799780	MOV 1AF017A - Diagnostics UNSAT during Testing	09/06/2024
		4799802	1AF017A MOV Diagnostics Trend Review	09/06/2024
		4805348	1BwOSR 3.4.13.1 Action Level II Exceeded	09/29/2024
		4806350	2AF005C Indicates Dual with Full Closed Signal	10/02/2024
		4806371	OSP-A 2AF005F Indicates Duel with Full Closed Air Signal	10/02/2024
		4806635	2MS017A - Valve Failed As-Found Testing	10/03/2024
		4808605	OSP-X 2RH01SB Valve Containment Assembly Failed LLRT	10/11/2024
		4808652	1BwOSR 3.4.13.1 Action Level II & Level III Exceeded	10/11/2024
		4810515	OSP-X Failed PMT for 2BAF005B	10/19/2024
		4815752	1CV8382A Leakby Identified	11/06/2024
	Miscellaneous	A2R24 Reload Video Recordings	A2R24 Reload Recording	10/16/2024
	Procedures	0BwOS FP.2.2.M-2	Diesel Driven Fire Pump Surveillance	19
		0BwOS FP.3.3.E-12	0B Fire Pump NFPA Test	14
		1BwOSR 3.4.13.1	Unit One Reactor Coolant System Water Inventory Balance Surveillance	44
		2BwOS ATWS-R1	Anticipated Transient Without Scram Mitigation System Refueling Outage End to End Surveillance	2
		2BwOSR 3.7.5.7-1	Unit Two Train A Auxiliary Feedwater Flow Path Operability Non-Routine Surveillance (Following Cold Shutdown)	8
		2BwOSR 5.5.8.AF-4A	Unit Two Comprehensive Inservice Testing (IST) Requirements for 2A Auxiliary Feedwater Pump	21
		2BwOSR 5.5.8.AF-4B	Unit Two Comprehensive Inservice Testing (IST) Requirements for 2B Auxiliary Feedwater Pump	26

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Work Orders	2BwOSR 5.5.8.RH-6	Residual Heat Removal System Comprehensive Pump Test and Check Valve Stroke Test	15
		5179895	0B Fire Pump Annual NFPA Test	06/21/2024
		5221799	2RH8716B Lubricate Valve Stem	10/15/2024
		5221838	Perform PMT After Maintenance	10/20/2024
		5254633	Relay AF1AX2 at Panel 2AP05EQ	10/20/2024
		5355850	PMT 2RH8701B Perform Functional Stroke	10/13/2024
		5360923	Full Flow Test and Equipment Response of Auxiliary Feedwater Pumps	10/02/2024
		5361594	Anticipated Transient Without Scram Mitigation System Refueling Outage Surveillance	10/07/2024
		5362031	Physical Reactor Inventory Prior to Installing Reactor Head	10/16/2024
		5364630	2MS013S/014S/015S/016S/017S-MSSV Operability Test	10/03/2024
		5364630-13	2MS016A Testing of Main Steam Safety Valves	10/03/2024
		5364630-17	2MS017A Testing of Main Steam Safety Valves	10/03/2024
		5366484	IST-2RH01PB Comprehensive Flow Testing	10/15/2024
		5383863	IST-U2 Train A AF Flowpath Operability Following Cold Shutdown	10/20/2024
71114.04	Calculations	EP-AA-1001 Addendum 2	Braidwood Evacuation Time Estimates	2
		EP-AA-120-1001	BRW Emergency Plan Revised for IPAWS Implementation	23-34
	Procedures	EP-AA-1001	Constellation Radiological Emergency Plan Annex for Braidwood Station	36
		EP-AA-1001 Addendum 1	Braidwood Station On-Shift Staffing Technical Basis	3
71124.01	ALARA Plans	RP-AA-401	Remove/Reinstall Rx Head Upper Internals ALARA Plan	30
	Radiation Work Permits (RWP)	BW-02-24-0064	Remove/Reinstall Rx Head/Upper Internals	0
71124.03	Corrective Action Documents	AR 04560726	FM ID'd 401 FB SCBAs OOS	03/09/2023
		AR 04721685	Fire Brigade SCBA Missing SCBA Masks TB 426;	12/05/2023
		AR 04759139	Radwaste Ventilation (VW) is Not Functioning	03/19/2024
		AR 04763684	Solid Radwaste Ventilation Not Functional	04/04/2024

Inspection Procedure	Type	Designation	Description or Title	Revision or Date	
	Corrective Action Documents Resulting from Inspection	AR 04799125	FM ID SCBAs in the 426 cage not in a ready state	09/04/2024	
		AR 04807787	NRC ID: Radiation Protection Record Question	10/08/2024	
	Miscellaneous	Intertek PSI 00465391	Quarterly Service Air and Self Contained Breathing Apparatus - Performed 9.21.23	09/25/2023	
		Intertek PSI 00465790	Quarterly Service Air and Self Contained Breathing Apparatus - Performed 7/10/24	07/11/2024	
		RP-AA-825-101	Annual Flow Testing of FireHawk SCBAs	09/26/2024	
		Trace Analytics 24-13005	MAKO Air Compressor Certificate of Analysis	04/19/2024	
		Trace Analytics 24-28473	MAKO Air Compressor Certificate of Analysis	09/04/2024	
	Procedures	RP-AA-825-101	Monthly Inspection and Maintenance of MSA FireHawk Mask Mounted Regulator SCBAs	4	
		RP-AA-825-101 Attachment 1	Annual Respiratory Inspection and Certification Log	09/09/2024	
		RP-AA-825-101 Attachment 7	September 2024 SCBA Battery Replacement and O-ring Lubrication	09/26/2024	
		RP-AA-825-101 Attachments 4-5	July 2024 MSA SCBA / Firehawk Monthly Inspection	07/18/2024	
		RP-AA-825-101 Attachments 4-5	August 2024 MSA SCBA / Firehawk Monthly Inspection	09/03/2024	
		RP-BR-832	Charging of Air Cylinders for Self-Contained Breathing Apparatus Using MAKO BAM07H Compressor	2	
	Self-Assessments	AR 04540872	Respiratory Protection Self-Assessment	10/20/2023	
	71124.04	Calculations	RP-AA-220 Attachment 2 01/03/2023	RP-AA-220 Attachment 2, 2022 Intake Investigation Forms for Braidwood Station Rad Workers	01/03/2023
			RP-AA-220 Attachment 2 12/27/2023	RP-AA-220 Attachment 2, 2023 Intake Investigation Forms for Braidwood Station Rad Workers - Dated 12/27/2023	12/27/2023
		Corrective Action	AR 04529624	Rad Worker Cannot Clear PM	10/15/2022

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Documents	AR 04667467	Dosimeters and DLRs Were Not Replaced Before Expiration Date	04/04/2023
		AR 04674587	Worker Alarmed PCM & Required WBC	05/01/2023
		AR 04807783	Worker Issued Wrong DLR	10/08/2024
	Corrective Action Documents Resulting from Inspection	AR 04808027	NRC ID: Comment Regarding Attachment 2 of RP-AA-220	10/09/2024
	Miscellaneous	2024 NVLAP Certificate of Accreditation	Certificate of Accreditation to ISO/IEC 17025:2017	01/01/2024
		2024 NVLAP Scope of Accreditation	Scope of Accreditation to ISO/IEC 17025:2017	01/01/2024
		23 DAW Ave	Average of 2018 - 2023 Dry Active Waste Sample Report	03/16/2023
		BRW-24-001	2024 Bioassay Program Annual Review at Braidwood Nuclear Power Station	03/28/2024
		BRW-24-002	2024 Shallow Dose Equivalent Annual Review at Braidwood Generating Station	04/01/2024
		RP-AA-270 Attachments 2-5	Declared Pregnant Worker Records	11
		Procedures	RP-AA-203-1001 Attachment 1	"Sample" Personnel Exposure Investigation
	RP-AA-210		Dosimetry Issue, Usage, and Control	33
	RP-AA-210-1001 Attachment 3		Multiple Dosimetry Issue Log (Single Entry)	Various
	RP-AA-222		Methods for Estimating Internal Exposure from In Vivo and In Vitro Bioassay Data	7
	RP-AA-270		Prenatal Radiation Exposure	11
	Self-Assessments	PI-AA-126-1001-F-01	2022 Dosimetry Self-Assessment	12/16/2022
	71151	Calculations	LS-AA-2090	Monthly Data Elements for NRC ROP Indicator - Reactor Coolant System (RCS) Specific Activity
LS-AA-2150			Monthly Data Elements for NRC ROP Indicator -	Various

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Procedures	LS-AA-2100	RETS/ODCM Radiological Effluent Occurrences MONTHLY DATA ELEMENT FOR NRC ROP INDICATOR - REACTOR COOLANT SYSTEM (RCS) LEAKAGE	6
	Radiation Surveys		RCA exit dose and dose rate records	Various
71152A	Corrective Action Documents	4530461	OSP-A 1MS001D Failed to Close on B Train Manual Actuation	10/18/2022
		4539225	Low Lube Oil and Turbo Oil Pressure During 1A DG Run	11/27/2022
		4539982	1A DG Low Lube Oil and Turbo Oil Pressure After Adjustment	11/30/2022
		4766946	OSP-A 1DC05E-AF1 Tripped during Charger Capacity Test	04/16/2024
		4767520	ECR needed to Evaluate 1DC05E-AF1 Bus Bar	04/18/2024
		4788098	Need Maintenance Rule Expert Panel Review of 4766946	07/18/2024
		4789778	Deviation form PCM Template not Documented	07/26/024
		4793457	2B AF Pump Turbo Exhaust Disconnected	08/12/2024
		4824700	1B AF Engine NW Turbo Outlet Hose Clamp Misaligned	12/18/2024
	Drawings	20E-1-4010A	125V DC ESF Distribution Center Bus 111 (1DC05E) Part-1	L
	Engineering Evaluations	EC 641912	Evaluation for Breaker Frame used on 125 VDC Distributions	1
	Procedures	BwOP DG-8	Swapping Parallel Path Filters or Strainers	5E3
ER-AA-200		Preventive Maintenance Program	0	
WC-AA-120		Preventive Maintenance Database Revision Requirements	1	
71152S	Corrective Action Documents	4825260	U2 RCS Leakrate Exceeds Deviation Action Level III	12/20/2024