



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, ILLINOIS 60532-4352

July 26, 2022

Mr. David P. 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
05000456/2022002; 05000457/2022002; AND 07200073/2022001

Dear Mr. Rhoades:

On June 30, 2022, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Braidwood Station. On July 15, 2022, the NRC inspectors discussed the results of this inspection with Mr. G. Gugle, Site Vice President, and other members of your staff. The results of this inspection are documented in the enclosed report.

No findings or violations of more than minor significance were identified during this inspection.

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,

A handwritten signature in black ink, appearing to read "Hironori Peterson".

Signed by Peterson, Hironori
on 07/26/22

Hironori Peterson, Chief
Branch 3
Division of Reactor Projects

Docket Nos. 05000456; 05000457; and
07200073
License Nos. NPF-72 and NPF-77

Enclosure:
As stated

cc w/ encl: Distribution via LISTSERV

Letter to David Rhoades from Hironori Peterson dated July 26, 2022.

SUBJECT: BRAIDWOOD STATION – INTEGRATED INSPECTION REPORT
05000456/2022002; 05000457/2022002; AND 07200073/2022001

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U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Numbers: 05000456; 05000457; and 07200073

License Numbers: NPF-72 and NPF-77

Report Numbers: 05000456/2022002; 05000457/2022002; and 07200073/2022001

Enterprise Identifier: I-2022-002-0044 and I-2022-001-0100

Licensee: Constellation Energy Generation, LLC

Facility: Braidwood Station

Location: Braceville, IL

Inspection Dates: April 01, 2022 to June 30, 2022

Inspectors: R. Bowen, Illinois Emergency Management Agency
A. Demeter, Acting Resident Inspector
G. Edwards, Health Physicist
D. Kimble, Senior Resident Inspector
J. Masse, Reactor Engineer
P. Smagacz, Resident Inspector

Approved By: Hironori Peterson, Chief
Branch 3
Division of Reactor Projects

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting an integrated inspection at 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.

List of Findings and Violations

No findings or violations of more than minor significance were identified.

Additional Tracking Items

None.

PLANT STATUS

Unit 1 and Unit 2 began the inspection period operating at full power. With the exception of short duration reductions in power to support scheduled testing activities and load changes requested by the transmission system dispatcher, both units remained operating at or near full power for the entire inspection period.

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors performed activities described in IMC 2515, Appendix D, "Plant Status," observed risk significant activities, and completed on-site portions of IPs. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

REACTOR SAFETY

71111.01 - Adverse Weather Protection

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

- (1) The inspectors evaluated the station's offsite and alternate alternating current (AC) power systems for summer readiness and the onset of hot weather during the weeks ending May 21 through June 4, 2022.

71111.04 - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (5 Samples)

The inspectors evaluated system configurations during partial physical alignment verifications of the following systems/trains:

- (1) The 1B Emergency Diesel Generator (EDG) during 1A EDG maintenance during the week ending April 16, 2022
- (2) The 2B Residual Heat Removal (RH) Train during 2A RH Train maintenance during the week ending May 5, 2022
- (3) Unit 1 and Unit 2, Division 1, direct current (DC) power while protected during an extended Unit 1 Station Auxiliary Transformer (SAT) maintenance window during the week ending May 14, 2022
- (4) Unit 1 EDGs while protected during an extended Unit 1 SAT maintenance window during the week ending May 14, 2022
- (5) The 2B Auxiliary Feedwater (AF) Train while protected during an extended Unit 1 SAT maintenance window during the week ending May 14, 2022

71111.11Q - Licensed Operator Regualification Program and Licensed Operator Performance

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

The inspectors observed and evaluated the following licensed operator activities in the control room:

- (1) Various activities involving on-watch operations crews. These activities included, but were not limited to:
 - Unit 1 power maneuvering in response to the system transmission dispatcher, during the week ending April 30, 2022.

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

The inspectors observed and evaluated the following licensed operator training activity:

- (1) A complex casualty graded scenario involving a crew of licensed operators was observed in facility's simulator on June 11, 2022.

71111.12 - Maintenance Effectiveness

Maintenance Effectiveness (IP Section 03.01) (2 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 leakage from the Unit 1 Charging and Letdown Regenerative Heat Exchanger Return to the Reactor Coolant System (RCS) Manual Isolation Valve (1CV-8321A) during the weeks ending April 23 through June 25, 2022.
- (2) Maintenance effectiveness review associated with EDG local annunciator panel power supplies during the week ending April 23, 2022.

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (5 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) Evaluation of the emergent work associated with the 2B EDG annunciator panel, as documented in Issue Report (IR) 4490289 during the week ending April 9, 2022.
- (2) Evaluation of the planned work associated with 1A EDG, as documented in Work Order (WO) 4901183 during the week ending April 16, 2022.
- (3) Evaluation of the emergency activities associated with a leak from a welded joint on the Unit 0 Component Cooling (CC) Heat Exchanger Essential Service Water (SX) Outlet, as documented in IR 4494801 and WO 5252064 during the weeks ending April 23 through April 30, 2022.

- (4) Evaluation of the emergent activities associated with the loss of local alarm annunciators for the 2A EDG, as documented in IR 4493589 and 5249849 during the week ending April 23, 2022.
- (5) Evaluation of the work associated with the Unit 1 SAT maintenance window utilizing a planned Technical Specification Risk-Informed Completion Time (TS RICT), as documented in multiple WOs during the week ending May 14, 2022.

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 03.01) (4 Samples)

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

- (1) Evaluation of the operability of the 1B EDG following identification of a crack in the jacket water cooling manifold, as documented in IR 4492197 during the week ending April 16, 2022.
- (2) Evaluation of the functionality of the Unit 2 Rod Drive System following identification of a degraded power supply, as documented in IR 4471553 during the week ending May 28, 2022.
- (3) Evaluation of the operability of the Unit 0 CC Heat Exchanger following identification of a leak through a welded joint on the SX outlet of the heat exchanger, as documented in IR 4494801 during the week ending June 4, 2022.
- (4) Evaluation of the operability of the 0B Control Room Chiller (VC) following identification of a degraded chiller oil level, as documented in IR 4505042 during the weeks ending June 25 through June 30, 2022.

71111.18 - Plant Modifications

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

The inspectors evaluated the following temporary configuration change on Unit 2:

- (1) A temporary plant modification per Engineering Change (EC) 635793: *Install Temporary Power Supply in 2RD033*, during the weeks ending May 21 through May 28, 2022

71111.19 - Post-Maintenance Testing

Post-Maintenance Test Sample (IP Section 03.01) (1 Sample)

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

- (1) Non-destructive testing on the SX side of the Unit 0 CC Heat Exchanger following analysis and evaluation of a leak through a welded joint, as documented in WO 5253243 during the week ending May 21, 2022

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance testing activities:

Surveillance Tests (other) (IP Section 03.01) (1 Sample)

- (1) BwISR 3.3.1.6-004: *Quarterly Excore Power Range N44 Axial Flux/7300 Delta Flux Penalty Calibration*, as documented in WO 5242877 during the weeks ending June 11 through June 18, 2022

FLEX Testing (IP Section 03.02) (1 Sample)

- (1) 0BwOS FX-12: *FLEX Pump Full Flow Test Surveillance*, as documented in WOs 5011598 and 5013180 during the weeks ending June 18 through June 25, 2022

71114.06 - Drill Evaluation

Drill/Training Evolution Observation (IP Section 03.02) (2 Samples)

The inspectors evaluated site's emergency plan by observing the following emergency response organization (ERO) activities:

- (1) A site-wide emergency preparedness drill that resulted in a simulated General Emergency event classification on May 18, 2022
- (2) A site-wide emergency preparedness drill that resulted in a simulated General Emergency event classification on June 1, 2022

RADIATION SAFETY

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) Fuel Handling Building ventilation systems

Use of Respiratory Protection Devices (IP Section 03.03) (1 Sample)

- (1) The inspectors evaluated the licensee's use of respiratory protection devices

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) Internal dose assessment conducted for an individual reporting onsite that had previously reported having an intake at another facility conducted on October 20, 2021
- (2) Internal dose assessment conducted for an individual who was hanging shielding during a valve repair on February 9, 2021

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

The inspectors evaluated the following special dosimetric situations:

- (1) Dose assessment for a declared pregnant worker in 2021
- (2) Dose assessment for a declared pregnant worker in 2022

71124.05 - Radiation Monitoring Instrumentation

Walkdowns and Observations (IP Section 03.01) (5 Samples)

The inspectors evaluated the following radiation detection instrumentation during plant walkdowns:

- (1) Area Radiation Monitors in auxiliary building
- (2) Area Radiation Monitors in the fuel handling building
- (3) Friskers used at the exit to the auxiliary building
- (4) Portable ion chambers stored 'ready for use' and/or during use at the Radiation Protection checkpoint at the auxiliary building entrance
- (5) Portable ion chambers stored 'ready for use' and/or during use in the Radiation Protection instrument room in the auxiliary building

Calibration and Testing Program (IP Section 03.02) (10 Samples)

The inspectors evaluated the calibration and testing of the following radiation detection instruments:

- (1) Thermo Scientific PM12; SN #12084
- (2) Bicron RSO-50E; SN #C613F
- (3) Thermo Scientific SAM12; SN #235A
- (4) Mirion Telepole II; SN #0019520
- (5) Mirion Argos 5; SN #1011-279
- (6) Ludlum Model 30; SN #26144

- (7) Ludlum Model 12-4; SN #336338
- (8) Thermo Scientific PM12; SN #12060
- (9) Thermo Scientific PM12; SN #12082
- (10) Mirion RDS-31; SN #2B.106

Effluent Monitoring Calibration and Testing Program Sample (IP Sample 03.03) (2 Samples)

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

- (1) Auxiliary building ventilation stack effluent stack monitor, 1PRJ28
- (2) Station blowdown line liquid effluent radiation monitor, 0R-PR010

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors reviewed and verified selected portions of the licensee's performance indicator submittals listed below:

MS05: Safety System Functional Failures (SSFFs) Sample (IP Section 02.04) (2 Samples)

- (1) Unit 1 (April 1, 2021 - March 31, 2022)
- (2) Unit 2 (April 1, 2021 - March 31, 2022)

MS06: Emergency AC Power Systems (IP Section 02.05) (2 Samples)

- (1) Unit 1 (April 1, 2021 - March 31, 2022)
- (2) Unit 2 (April 1, 2021 - March 31, 2022)

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

- (1) Unit 1 (April 1, 2021 - March 31, 2022)
- (2) Unit 2 (April 1, 2021 - March 31, 2022)

71152A - Annual Follow-Up Problem Identification and Resolution

Annual Follow-Up of Selected Issues (Section 03.03) (1 Sample)

The inspectors conducted an in-depth review of the licensee's implementation of the corrective action program (CAP) related to the following issue:

- (1) Review and assessment of the station's corrective actions from a Unit 2 configuration control event where a pressure test signal was applied to the incorrect instrument loop, as documented in IR 4474052 during the weeks ending April 2 through June 30, 2022.

71152S - Semiannual Trend Problem Identification and Resolution

Semiannual Trend Review (Section 03.02) (1 Sample)

- (1) The inspectors conducted a semiannual review of the licensee's CAP for potential adverse trends that might be indicative of a more significant safety concern during the weeks ending June 4 through June 30, 2022. A specific trend related to Reactor Vessel Level Indication System (RVLIS) issues is documented in the Results Section of this report.

OTHER ACTIVITIES – TEMPORARY INSTRUCTIONS, INFREQUENT AND ABNORMAL

60855 - Operation of an ISFSI

Operation of an ISFSI (1 Sample)

- (1)
- The inspectors assessed the licensee's Independent Spent Fuel Storage Installation (ISFSI) cask loading activities from May 16 through May 20, 2022. Specifically, the inspectors observed the following activities during the loading of multi-purpose canister (MPC) No. 676:
 - heavy lift of the loaded transfer cask (HI-TRAC) from the spent fuel pool to the cask processing area
 - closure welding and non-destructive evaluations
 - canister processing including blowdown and forced helium dehydration
 - stack-up and download of the MPC from the HI-TRAC into the storage cask (HI-STORM)
 - radiological field surveys

The inspectors performed walkdowns of the ISFSI pad, including walkdowns of the ISFSI haul path.

The inspectors evaluated the following:

- spent fuel selected for loading into dry cask storage during this loading campaign
- selected corrective action program documents
- selected 72.48 screenings and evaluations

INSPECTION RESULTS

Observation: Test Signal Inadvertently Applied to the Incorrect Instrument Loop	71152A
The inspectors performed a detailed review of IR 4474052, <i>Level 3 Configuration Control: Incorrect Connection of Test Equipment</i> . The issue involved Instrument Maintenance Department (IMD) calibration procedure BwIP 2P-0120, <i>Calibration of Charging Header Pressure Loop 2P-0120 (CV)</i> , which was performed under Work Order (WO) 5063738, <i>2P-0120 Charging Header Pressure Loop</i> . On January 26, 2022, IMD technicians performing this calibration activity were prompted to change out their test signal equipment partway through the procedure due to a low battery indication. Despite the use of robust barriers within the applicable 2PA06J instrumentation cabinet intended to prevent such an error, the	

IMD technicians connected the replacement test signal equipment to test connection points associated with the Unit 2 Volume Control Tank (VCT) pressure instrument loop, vice the intended 2P-0120 Charging Header Pressure instrument loop. When the test signal was subsequently applied, Unit 2 operators in the main control room were forced to respond to invalid VCT pressure indications and took steps to stabilize VCT pressure.

The inspectors chose this issue for an in-depth review of the licensee's actions within their corrective action program (CAP) because of the inherent risk associated with wrong unit / wrong component manipulations. While in this particular case the wrong component error did not result in any significant adverse impact to the applicable unit, such an error could have resulted in a significant plant transient or unintended automatic equipment actuation. Consequently, for this detailed Problem Identification and Resolution inspection sample, the inspectors focused on assessment of the licensee's corrective actions taken both for this specific error, as well as those targeted at the more generic issue of addressing potential wrong unit / wrong component errors.

The inspectors determined that the erroneous connection of the IMD test signal equipment to test connection points associated with the Unit 2 VCT pressure instrument loop, vice the intended 2P-0120 Charging Header Pressure instrument loop on January 26, 2022, had constituted a violation of the requirements of TS 5.4.1(a), which requires that written procedures be established, implemented, and maintained for the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. In this case, Section 8.a of Regulatory Guide 1.33, Revision 2, Appendix A, February 1978, contains the requirement for procedures associated with instrument calibrations, and licensee procedure BwIP 2P-0120, *Calibration of Charging Header Pressure Loop 2P-0120 (CV)*, Revision 1, is an applicable procedure. Section 4.1, *Test Setup*, of this procedure directs that the IMD test equipment is to be connected to Terminals TBF-7 and TBF-8 in Cabinet 2PA06J to facilitate calibration of the Charging Header Pressure Loop 2P-0120. Contrary to these instructions, the IMD test signal equipment was connected to Terminals TBF-1 and TBF-2 in Cabinet 2PA06J. However, because there were no safety consequences associated with this event, the inspectors concluded that the error had not adversely affected the Initiating Events Cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. As a result, the issue was determined to be a violation of minor significance that was not subject to formal actions per Section 2.3.1 of the NRC Enforcement Policy.

The inspectors did not identify any issues with the licensee's CAP actions taken. The licensee's formal CAP evaluation revealed that human performance failures had occurred at multiple times during the calibration. Subsequent interviews performed with station supervisors and technicians revealed that multiple interpretations of standards and expectations existed with respect to the use of several human performance tools. Multiple corrective actions targeting this aspect of the event were implemented by the licensee; these included the reinforcement of standards and expectations by plant management with shop superintendents regarding the use of human performance tools, peer-to-peer coaching, and supervisory oversight in the field.

No findings or violations of NRC requirements of more than minor safety significance were identified by the inspectors in the course of this review.

Observation: Trend in Reactor Vessel Level Indication System (RVLIS) Issues	71152S
<p>The inspectors performed a review of plant issues, particularly those entered into the licensee's CAP over the past several months. During their review, the inspectors noted an adverse trend involving the performance of the Reactor Vessel Level Indication System (RVLIS). The majority of issues were on Unit 1, but the inspectors noted that the trend was not exclusive to only that unit. Specific CAP entries reviewed by the inspectors included, but were not limited to:</p> <ul style="list-style-type: none"> - IR 4442055; 1-9-D6 - <i>Unexpected Main Control Room Alarm - RVLIS Sensor Uncovered.</i> - IR 4442887; 1-9-D6 - <i>Unexpected Main Control Room Alarm - RVLIS Sensor Uncovered.</i> - IR 4450389; <i>Unexpected Main Control Room Alarm - RVLIS Sensor/Core Exit Thermocouple (CETC) Failure.</i> - IR 4472056; <i>Alarm 2-9-D6 - RVLIS Level Sensor 7B Erratic.</i> - IR 4482013; 1-9-D6, <i>RVLIS Sensor Uncovered, Sensor 6A (Plenum 27%).</i> - IR 4488602; <i>Unexpected Alarm on Unit One A-Train RVLIS.</i> - IR 4508584; <i>Unexpected Alarm 1-9-D6, RVLIS Sensor Uncovered, Sensor 3A.</i> <p>The Reactor Vessel Level Indication System is described in Appendix E, <i>Requirements Resulting from the Three Mile Island 2 Accident</i>, of the station's Updated Final Safety Analysis Report (UFSAR) as part of a system of instrumentation used to detect inadequate core cooling (ICC) during significant accident scenarios. Operability requirements for RVLIS in operational Modes 1, 2, and 3 are set forth in Section 3.3.3 of the station's Technical Specifications (TS). The Bases for TS 3.3.3 states, in part:</p> <p><i>The Reactor Vessel Water Level Monitoring System provides a direct measurement of the liquid level above the fuel. Two channels are required OPERABLE (Train A and Train B). Each channel consists of eight sensors on a probe. For a channel to be considered OPERABLE one of the two sensors in the "head" region and three of the six sensors in the "plenum" region shall be OPERABLE. The level indicated by the OPERABLE sensors represents the amount of liquid mass that is in the reactor vessel above the core. Operability of each sensor may be determined by reviewing the error codes displayed on the control room indicator.</i></p> <p>In the cases reviewed, the inspectors noted that the issues typically involved brief or spurious abnormal readings from a single RVLIS sensor, which was insufficient by itself to render the applicable RVLIS channel inoperable. The inspectors also noted, however, that the continuing presence and frequency of these abnormal readings was, at best, becoming a nuisance for control room operators and, at worst, a chronic issue that could eventually challenge RVLIS TS operability.</p> <p>The inspectors further noted that the licensee was placing an appropriate level of emphasis on this issue; at the conclusion of the inspection period the licensee generated IR 4508208; <i>Potential Trend in Unit 1/Unit 2 RVLIS Issues</i>, within the station's CAP to drive additional engineering reviews into this issue.</p> <p>The inspectors did not identify any findings or violations of NRC requirements in the course of their review.</p>	

EXIT MEETINGS AND DEBRIEFS

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

- On July 15, 2022, the inspectors presented the integrated inspection results to Mr. G. Gugle, Site Vice President, and other members of the licensee staff.
- On April 1, 2022, the inspectors presented the radiation protection inspection results to Mr. J. Petty, Plant Manager, and other members of the licensee staff.
- On May 20, 2022, the inspectors presented the ISFSI Cask Loading inspection results to Mr. G. Gugle, Site Vice President, and other members of the licensee staff.
- On June 10, 2022, the inspectors presented the radiation protection inspection results to Mr. G. Gugle, Site Vice President, and other members of the licensee staff.

THIRD PARTY REVIEWS

As discussed in IMC 0611, Section 13.01, the inspectors completed a review of the final report issued by the Institute of Nuclear Power Operations (INPO) for the most recent periodic plant performance evaluation of Braidwood Station, which was performed during July 2021 and had a formal exit on September 13, 2021.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
60855	ALARA Plans	BW-00-22-00325	Dry Cask Storage and Support Activities	0
	Calculations	BRW-14-0070-N	Braidwood Cask Model Update for 2014 ISFSI Campaign	0
		BRW-21-0027-N	Braidwood Cask Model Update for 2022 ISFSI Campaign	0
	Corrective Action Documents	00157367	Entry Into 1BwOA PRI-4 Due to High RCS Activity on 1PR06J	05/05/2003
		04244340	Abnormal Noise Emanating from the FHB Crane	04/29/2019
		04265230	DCS - Indication Found During MPC Delivery Inspection	07/18/2019
		04270528	MPC 531 Lid Has Minor Indications (Acceptable)	08/08/2019
		04274522	2019 Braidwood DCS Campaign Lessons Learned	08/26/2019
		04323080	DCS PM Partial Performance	03/02/2020
		04329064	PCRA to Update BwFP FH-20 FHB Crane Temp Requirement	03/24/2020
		04375525	NOS Finding: M&TE Not Entered for ISFSI Campaign WOs	10/09/2020
		04486579	OI Benchmark: Industry Use of Admin Controls for Cask Ops	03/22/2022
	Miscellaneous		SFP Boron Sample Results	05/16/2022
		72.48-203	Procedure OU-MW-671-300	7B
		72.48-204	Holtec RRTI-2788-002	0
		72.48-205	EC 628051/Analysis No. BRW-09-0028 and Analysis No. BRW-09-0029	0, 2, 1A
		72.48-206	Holtec Notice HN-01	1
		72.48-208	ECR 443383, ISFSI Grillage Polyethylene Bars	0
		72.48-212	Holtec FCR 27881002	1
		72.48-223	EC 629492/Analysis No. BRW-09-0028 and Analysis No. BRW-09-0029	0, 2A, 1B
		72.48-224	BWNPS 10 CFR 72.212 Evaluation Report	06-01
		72.48-226	EC 635339	0
		72.48-227	EC 635339	0
		72.48-228	EC 635339	0
		72.48-229	BWNPS 10 CFR 72.212 Evaluation Report	06-02
		72.48-31	Review of PCI/CES and LTS Procedures	0

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		BRW-21-0026-N	Braidwood Fuel Selection Package and Alternative List for 2022 ISFSI Campaign	0
		DIT-BRW-2010-0104	Braidwood Fuel Characterization	12/14/2010
		DOC-1023-677	MPC 32 to Braidwood Generating Station	0
	NDE Reports	2021-175	MPC Lift Spider Assembly	12/07/2021
		Report No. 914743-676-01	Lid to Shell	05/17/2022
		Report No. 914743-676-02	Lid to Shell / SN 676	05/17/2022
		Report No. 914743-676-03	Lid to Shell / SN 676	05/18/2022
		Report No. 914743-676-04	Lid to Shell / SN 676	05/18/2022
	Procedures	BwFP FH-69	HI-TRAC Movement Within the Fuel Building	27
		BwFP FH-83	Spent Fuel Cask Contingency Procedures	15
		OU-MW-671-300	Forced Helium Dehydration (FHD) for PWRs (ISFSI)	16
		PC-CNSTR-OP-EXE-H-01	Closure Welding of Holtec Multi-Purpose Canisters at Exelon Facilities	Revision 22
	Self-Assessments	NOSA-BRW-20-10 (AR 4370017)	Independent Spent Fuel Storage Installation Audit Report	10/14/2020
	Work Orders	00676183 01	WH-Perform In-Mast Sipping of All Fuel Assemblies	10/18/2004
		04673912 01	Fuel BLDG Overhead Crane Lubrication	04/29/2019
		05063024	0HC03G INSP of FHB Overhead Crane	06/03/2021
		05063029	LR-Yearly Inspection	06/18/2021
		05121105 05	ISFSI RX ENG Inventory MPC After Fuel Load	05/17/2022
		05123909	MPC Lift Cleat Inspection	12/07/2021
		05123918	HI STORM Lift Bracket Inspection	12/07/2021
		05123919	Inspect MPC Spider Lift	12/07/2021
		05138020	HI-TRAC Trunnion Inspect	02/11/2022
		05138021	Lift Yoke Inspection	02/11/2022
71111.01	Miscellaneous		Letter from Mr. Greg Gugle to Ms. Marri Marchionda-Palmer, Certification of 2022 Summer Readiness	05/13/2022

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Procedures	0BwOA ENV-1	Adverse Weather Conditions Unit 0	124
		CC-BR-118-1001	Site Implementation of Diverse and Flexible Coping Strategies (FLEX) and Spent Fuel Pool Instrumentation Program	8
		OP-AA-102-102	General Area Checks and Operator Field Rounds	18
		OP-AA-108-107-1001	Station Response to Grid Capacity Conditions	9
		OP-AA-108-111-1001	Severe Weather and Natural Disaster Guidelines	24
		OP-BR-102-102-1001	Augmented Operator Field Rounds	4
		WC-AA-107	Seasonal Readiness	24
71111.04	Corrective Action Documents	4407811	Date Wrong for 1ER-DC05E/Evaluate for Y2K Compliancy	03/10/2021
		4452755	1ER-DC05E Positive Ground Pushed is High Out of Band	10/13/2021
	Procedures	BwOP AF-E2	Electrical Lineup — Unit 2 Operating	11
		BwOP AF-M2	Operating Mechanical Lineup, Auxiliary Feedwater, Unit 2	18
		BwOP DC-E2	Electrical Lineup — Unit 1 Operating-125V DC Division	9
		BwOP DG-E1	Electrical Lineup — Unit 1 1A Diesel Generator	7
		BwOP DG-M1	Operating Mechanical Lineup Unit 1 1A D/G	17
		BwOP DG-M2	Operating Mechanical Lineup Unit 1 1B D/G	17
		BwOP RH-E2	Electrical Lineup — Unit 2 Operating	9
		BwOP RH-E2	Electrical Lineup — Unit 2 Operating	9
		BwOP RH-M4	Operating Mechanical Lineup Unit 2 2B Train	8
71111.11Q	Miscellaneous		Braidwood Station Licensed Operator Requalification Simulator Scenario Guide, Cycle 22-3 OBE	0
	Procedures	OP-AA-101-111-1001	Operations Standards and Expectations	30
		OP-AA-101-113	Operator Fundamentals	15
		OP-AA-101-113-1006	4.0 Crew Critique Guidelines	12
		OP-AA-103-1-2-1001	Strategies for Successful Transient Mitigation	3
		OP-AA-103-102	Watch-Standing Practices	20

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		OP-AA-103-103	Operation of Equipment	2
		OP-AA-104-101	Communications	5
		OP-AA-108-107-1002	Interface Procedure Between BGE/COMED/PECO and Exelon Generation (Nuclear/Power) for Transmission Operations	14
		OP-AA-111-101	Operating Narrative Logs and Records	19
		OP-AA-300	Reactivity Management	14
		TQ-AA-10	Systematic Approach to Training Process Description	7
		TQ-AA-150	Operator Training Programs	22
		TQ-AA-155	Conduct of Simulator Training and Evaluation	12
		TQ-AA-306	Simulator Management	11
		TQ-BR-201-0113	Braidwood Training Department Simulator Examination Security Actions	26
71111.12	Corrective Action Documents	4482320	Boron Accumulation at 1CV8321A	03/03/2022
		4490289	2PL08J Annunciator Panel Has No Power	04/05/2022
		4492850	1CV8321A Steam Leak	04/13/2022
		4493891	Work Request for 1B EDG Annunciator Power Supply	04/18/2022
		4493892	Work Request for 1A EDG Annunciator Power Supply	04/18/2022
	Drawings	M-64, Sheet 5	Diagram of Chemical and Volume Control and Boron Thermal Regeneration — Unit 1	BI
	Procedures	ER-AA-310-1002	Maintenance Rule Functions — Safety Significant Classification	3
		ER-AA-320	Maintenance Rule Implementation per NEI 18-10	0
		ER-AA-320-1001	Maintenance Rule 18-10 — Scoping	0
		ER-AA-320-1003	Maintenance Rule 18-10 — Failure Definitions	0
		ER-AA-320-1004	Maintenance Rule 18-10 — Performance Monitoring and Dispositioning Between (a)(1) and (a)(2)	1
	Work Orders	4901183	6 Year Inspection	06/03/2022
71111.13	Corrective Action Documents	4493589	Unexpected Annunciators: 2-21-C8 & 2-21-D8	04/16/2022
		4494966	Scope Expansion of 0SX02D-30"	04/22/2022
		4494967	Scope Expansion Inspection of 1SX02B-30"	04/22/2022
		4494969	Scope Expansion Inspection of 1SX03A-30"	04/22/2022
		4494970	Scope Expansion Inspection of 2SX02B-30"	04/22/2022

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Miscellaneous		Adverse Condition Monitoring and Contingency Plan (ACMP): SX Leak on Unit 0 CC Heat Exchanger (0SX03A)	0
			Final RICT Record for Unit 1 Station Auxiliary Transformer (SAT) 142-1 and 142-2 Work Window	05/15/2022
	Procedures	ER-AA-600	Risk Management	7
		ER-AA-600-1023	PARAGON Model Capability	10
		ER-AA-600-1042	On-Line Risk Management	13
		ER-AA-600-1052	Risk Management Support of RICT	1
		ER-AA-600-1053	Calculation of RMAT and RICT for Risk Informed Completion Time Program	0
		ER-BW-600-2001	Braidwood RICT System Guidelines	0
		MA-AA-716-004	Conduct of Troubleshooting	19
		OP-AA-107	Integrated Risk Management	4
		OP-AA-108-117	Protected Equipment Program	7
		OP-AA-108-118	Risk Informed Completion Time	2
		WC-AA-101-1006	On-Line Risk Management and Assessment	4
	Work Orders	4901183	6 Year Inspection	06/03/2022
		5249849-01	Troubleshoot Annunciator Panel	04/18/2022
		5253243-01	Ultrasonic Thickness Exam on Line 0SX02D-30" - 0CC01A Heat Exchanger Inlet Nozzle	05/17/2022
		5253244-01	Ultrasonic Thickness Exam on Line 1SX02B-30" - 0CC1A Heat Exchanger Inlet Nozzle	05/04/2022
		5253245-02	Ultrasonic Thickness Exam on 1SX03A-30" - 1CC01A Heat Exchanger Outlet Nozzle	05/04/2022
71111.15	Corrective Action Documents	4471553	Reflash of U2 Rod Control Non-Urgent Failure Alarm	01/13/2022
		4492197	1B DG Repair Crack in Manifold	04/11/2022
		4494801	SX Piping Leakage at Outlet of U-O CC Hx	04/22/2022
		4505042	0B VC Chiller Oil Additions	06/11/2022
	Engineering Changes	635793	Install Temporary Power Supply in 2RD03J	1
		636541	Engineering to Evaluate Seal Weld for Cracked 1B DG Manifold	0
		636627	Configuration Control Processing of Design Analysis 051853, Revision 005M, for Evaluation of the Structural	0

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Integrity of Line 0SX03A-30" per Code Case N-513-4, Considering the Through Wall Leakage Identified	
		636646	Operability Evaluation 22-001: Pinhole Leak on a Weld on Line 0SX03A-30"	0
		636646	Operability Evaluation 22-001: Pinhole Leak on a Weld on Line 0SX03A-30"	0
	Miscellaneous	BRW-2-2021-0304	ODM: Unit 2 Rod Drive Non-Urgent Failure	0
	Procedures	CC-AA-309-101	Engineering Technical Evaluations	16
		ER-AA-600-1012	Risk Management Documentation	14
		OP-AA-106-101-1006	Operational Decision-Making Process	23
		OP-AA-108-111	Adverse Condition Monitoring and Contingency Planning	17
		OP-AA-108-115	Operability Determinations (CM-1)	24
	Work Orders	5214697	IM 2RD03J Fab & Install Temp PS in Parallel with PS1, PS2	05/25/2022
71111.18	Corrective Action Documents	4467108	Unexpected Annunciator 2-10-D6: Rod Control Non-Urgent Failure	12/16/2021
		4468189	Reflash of Unit 2 Rod Control Non-Urgent Failure Alarm 2-10-D6	12/24/2021
		4471553	Reflash of Unit 2 Rod Control Non-Urgent Failure Alarm	01/13/2022
	Engineering Changes	635793	Install Temporary Power Supply in 2RD03J	1
	Procedures	CC-AA-112	Temporary Configuration Changes	29-30
		IP-ENG-001	Standard Design Process (EB-17-06)	2
	Work Orders	5253243-01	Ultrasonic Thickness Exam on Line 0SX02D-30" - 0CC01A Heat Exchanger Inlet Nozzle	05/17/2022
71111.19	Procedures	ER-AA-335-004	Ultrasonic (UT) Measurement of Material Thickness and Interfering Conditions	9
71111.22	Corrective Action Documents	4502482	0FX03PA Battery Voltage Low - Failed Acceptance Criteria	05/28/2022
		4502483	0FX03PB Battery Voltage Low - Failed Acceptance Criteria	05/28/2022
		4502484	0FX01PA Battery Voltage Low - Failed Acceptance Criteria	05/28/2022
		4502485	0FX01PB and 0FX01PC Battery Voltages Low but Still in Band	05/28/2022

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		4504183	OOT and Blown Control Power Fuse on 2N-NR8041	06/07/2022
		4504563	Cleared Controller Fuse for 2N-NR8042	06/09/2022
		4505840	0FX03PA Voltage Low	06/16/2022
		4505992	0A Medium Head Flex Pump Won't Stay Running	06/16/2022
		4505994	0A High Head Flex Test Connection Bad Fitting	06/16/2022
		4506515	0FX03PB Developed Leak from Diesel Oil Filter When Started	06/20/2022
		4507359	0FX03PB Low Head Flex Pump Flow	06/24/2022
		4507621	0FX03PB Fuel Oil Leak	06/26/2022
		4507623	B High Head Flex Pump Did Not Meet Test Parameters	06/26/2022
		4508035	0B High Head Flex Pump High Oil Temp	06/28/2022
	Procedures	0BwOS FX-12	FLEX Pump Full Flow Test Surveillance	0
		BwISR 3.3.1.6-004	Quarterly Excore Power Range N44 Axial Flux Difference/7300 Delta Flux Penalty Calibration	44
		OP-BR-FX-1003	High Head FLEX Pump Operating Guideline	1
		OP-BR-FX-1004	Medium Head FLEX Pump Operating Guideline	0
		OP-BR-FX-1005	Low Head FLEX Pump Operating Guideline	1
	Work Orders	5011598	0FX01PA (A Train Medium Head FLEX Pump) Performance Test	06/20/2022
		5013180	0FX03PA (A Train Low Head FLEX Pump) Performance Test	06/16/2022
71114.06	Corrective Action Documents	4504645	Braidwood 2022 Performance Indicator Drill Critique and Learnings — Operations Support Center	06/09/2022
		4504679	Braidwood 2022 Performance Indicator Drill Learnings — Technical Support Center 1 of 2	06/09/2022
		4504684	Braidwood 2022 Performance Indicator Drill Learnings — Technical Support Center 2 of 2	06/09/2022
		4504733	Braidwood 2022 Performance Indicator Drill Learnings — Main Control Room / Simulator	06/09/2022
	Procedures	EP-AA-1000	Standardized Radiological Emergency Plan	33
		EP-AA-1001	Radiological Emergency Plan Annex for Braidwood Station	35
		EP-AA-1001, Addendum 1	Braidwood Station On-Shift Staffing Technical Basis	2

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		EP-AA-1001, Addendum 3	Emergency Action Levels for Braidwood Station	7
71124.03	Corrective Action Documents	AR 04435959	0EA01C SCBA Air Compressor PM's Needed Air Replacement	07/21/2021
		AR 04490491	SCBA Compressor Out of Service	04/05/2022
	Miscellaneous		Trace Analytics SCBA Grade D Quality Air Report	05/05/2022
			Air One Equipment SCBA Hydrostatic Testing Results	01/25/2022
	Procedures	RP-AA-444	Controlled Negative Pressure (CNP) Fit Testing	12
		RP-AA-700-1246	Operation of Air Samplers	6
		RP-AA-825	Maintenance, Care, and Inspection of Respiratory Protective Equipment	9
71124.04	Calibration Records		Calibration of the Accuscan II WBC System at the Exelon Generating Station	02/23/2022
	Miscellaneous		Dose Assessment for a Declared Pregnant Worker.	02/01/2022
			Dose Assessment for a Declared Pregnant Worker.	02/20/2021
			Braidwood Dry Activated Waste Part 61 Analysis	2020
	Procedures	RP-AA-12	Internal Dose Control Program Description	2
		RP-AA-441	TEDE ALARA Evaluation	12
		RP-AA-700-1235	Operation and Calibration of the PM-12 Gamma Portal Monitor	5
71124.05	Calibration Records	Serial Number 0019520	Mirion Telepole II	07/27/2021
		Serial Number 1011-279	Argos 5 Monitor	03/17/2022
		Serial Number 12060	Thermo Scientific PM12	03/22/2022
		Serial Number 12082	Thermo Scientific PM12	12/03/2021
		Serial Number 12084	Thermo Scientific PM12 Unit 1 Containment Access Facility	03/23/2022
		Serial Number 235A	Thermo Scientific SAM12	03/17/2022
		Serial Number	Ludlum Model 30	02/25/2021

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		26144		
		Serial Number 2B.106	Mirion RDS-31	09/21/2021
		Serial Number 336338	Ludlum Model 12-4	02/25/2021
		Serial Number C613F	Bicron RSO-50E	03/14/2022
	Corrective Action Documents	AR 04431313	Low Flow and Pump (2PR30PB) Turning Off on 2PR3DJ	07/24/2021
		AR 04444789	Unexpected Alarm: 0AR68J High Alarm	09/05/2021
		AR 04486858	U1 CAF PM12 12010 Needs Battery Replaced	03/23/2022
	Work Orders	04956514	1PR28J Calibration of Effluent Gaseous Rad Monitor Plant Ventilation Monitor	01/27/2021
		04999329-01	Calibration Liquid Effluent Radiation Monitor Station Blowdown Line	09/01/2021
71151	Miscellaneous		NRC Performance Indicator Data; Mitigating Systems — Safety System Functional Failures	04/01/2021 - 03/31/2022
			NRC Performance Indicator Data; Mitigating Systems — Mitigating System Performance Index for Emergency AC Power	04/01/2021 - 03/31/2022
			NRC Performance Indicator Data; Mitigating Systems — Mitigating Systems Performance Index for High Pressure Injection	04/01/2021 - 03/31/2022
	Procedures	LS-AA-2001	Collecting and Reporting of NRC Performance Indicator Data	17
		LS-AA-2080	Monthly Data Elements for NRC Safety System Functional Failures	8
		LS-AA-2200	Mitigating System Performance Index Data Acquisition and Reporting	7
71152A	Corrective Action Documents	4474052	Level 3 Configuration Control: Incorrect Connection of Test Equipment	01/26/2022
		4475596	4.0 Critique - Volume Control Tank Pressure Abnormal Indication	02/02/2022
		4475837	Maintenance Department For-Cause Management Review Meeting Results	02/03/2022

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Procedures	BwAR 2-9-B2	Volume Control Tak (VCT) Pressure High/Low	54
		BwIP 2P-0120	Calibration of Charging Header Pressure Loop 2P-0120 (CV)	1
		BwOP RP-11A18	2PA06J Panel Appendix	6
		NO-AA-10	Quality Assurance Topical Report (QATR)	98
		PI-AA-120	Issue Identification and Screening Process	12
		PI-AA-125-1001	Root Cause Analysis Manual	6
		PI-AA-125-1003	Corrective Action Program Evaluation Manual	6
		PI-AA-125-1004	Effectiveness Review Manual	2
	Work Orders	5063738	2P-0120 Charging Header Pressure Loop	01/26/2022
71152S	Corrective Action Documents	4442055	1-9-D6 - Unexpected Main Control Room Alarm -RVLIS Sensor Uncovered	08/23/2021
		4442887	1-9-D6 - Unexpected Main Control Room Alarm - RVLIS Sensor Uncovered	08/26/2021
		4450389	Unexpected Main Control Room Alarm - Reactor Vessel Level Indication System (RVLIS) Sensor/Core Exit Thermocouple (CETC) Failure	10/03/2021
		4472056	Alarm 2-9-D6 - RVLIS Level Sensor 7B Erratic	01/15/2022
		4482013	1-9-D6, RVLIS Sensor Uncovered Sensor 6A (Plenum 27%)	03/02/2022
		4488602	Unexpected Alarm on Unit One-A RVLIS	03/30/2022
		4508208	Potential Trend in Unit 1/Unit 2 RVLIS Issues	06/29/2022
		4508584	Unexpected Alarm 1-9-D6, RVLIS Sensor Uncovered Sensor 3A	06/30/2022