



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
2443 WARRENVILLE ROAD, SUITE 210  
LISLE, ILLINOIS 60532-4352

May 5, 2023

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

SUBJECT: BYRON STATION – INTEGRATED INSPECTION REPORT 05000454/2023001  
AND 05000455/2023001

Dear David Rhoades:

On March 31, 2023, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Byron Station. On April 11, 2023, the NRC inspectors discussed the results of this inspection with A. Schuerman, Plant Manager, 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 cursive script that reads "April M. Nguyen".

Nguyen, April signing on behalf  
of Peterson, Hironori  
on 05/05/23

Hironori Peterson, Chief  
Reactor Projects Branch 3  
Division of Operating Reactor Safety

Docket Nos. 05000454 and 05000455  
License Nos. NPF-37 and NPF-66

Enclosure:  
As stated

cc w/ encl: Distribution via LISTSERV

Letter to David Rhoades from Hironori Peterson dated May 5, 2023.

SUBJECT: BYRON STATION – INTEGRATED INSPECTION REPORT 05000454/2023001  
AND 05000455/2023001

DISTRIBUTION:

Jessie Quichocho  
Paul Zurawski  
RidsNrrDorlLp13  
RidsNrrPMByron Resource  
RidsNrrDrolrib Resource  
John Giessner  
Mohammed Shuaibi  
Diana Betancourt-Roldan  
Allan Barker  
R3-DORS

ADAMS ACCESSION NUMBER: ML23124A386

<input checked="" type="checkbox"/> SUNSI Review		<input checked="" type="checkbox"/> Non-Sensitive <input type="checkbox"/> Sensitive		<input checked="" type="checkbox"/> Publicly Available <input type="checkbox"/> Non-Publicly Available	
OFFICE	RIII	RIII			
NAME	NShah:ls	ANguyen for HPeterson			
DATE	05/05/2023	05/05/2023			

OFFICIAL RECORD COPY

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

Docket Numbers: 05000454 and 05000455

License Numbers: NPF-37 and NPF-66

Report Numbers: 05000454/2023001 and 05000455/2023001

Enterprise Identifier: I-2023-001-0055

Licensee: Constellation Energy Generation, LLC

Facility: Byron Station

Location: Byron, IL

Inspection Dates: January 01, 2023 to March 31, 2023

Inspectors: B. Bergeon, Senior Operations Engineer  
J. Bozga, Senior Reactor Inspector  
J. Cassidy, Senior Health Physicist  
A. Demeter, Resident Inspector  
T. Hooker, Health Physicist  
R. Knutson, Illinois Emergency Management Agency  
E. Magnuson, Reactor Inspector  
J. Masse, Acting Resident Inspector  
J. Robbins, Senior Resident Inspector  
E. Sanchez Santiago, Senior Project Engineer

Approved By: Hironori Peterson, 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 Byron 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

Type	Issue Number	Title	Report Section	Status
URI	05000454,05000455/ 2021011-01	Main Steam Tunnel and Safety Valve Room Use of ACI 349-85 Appendix C Provisions	71111.21M	Closed
LER	05000454/2021-001-00	LER 2021-001-00 for Byron Station, Unit 1 Pressurizer Safety Valves As-Found Lift Pressure Outside of Tech Spec Limit	71153	Closed
LER	05000454/2021-001-01	LER 2021-001-01 for Byron Station, Unit 1, Pressurizer Safety Valves As-Found Lift Pressure Outside of Tech Spec Limit	71153	Closed
LER	05000455/2022-001-00	LER 2022-001-00 for Byron Station, Unit 2, Volumetric Examinations of Reactor Pressure Vessel Head Core Exit Thermocouple Penetration P-75 Identified an Indication Attributed to Primary Water Stress Corrosion Cracking.	71153	Closed

## PLANT STATUS

Unit 1 began the inspection period operating at full power. On March 6, 2023, Unit 1 was taken offline for a planned refueling outage. On March 24, Unit 1 went critical and returned to full power on March 27. The unit remained at full power for the remainder of the inspection period.

Unit 2 began the inspection period operating at full power. Apart from minor reductions in power to support scheduled testing activities or small load changes requested by the transmission dispatcher, the unit remained 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

### 71111.04 - Equipment Alignment

#### Partial Walkdown Sample (IP Section 03.01) (3 Samples)

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

- (1) Engineered safety feature switchgear 141 bus on January 25, 2023
- (2) Accessible portions of 1A and 1B essential service water trains on February 7, 2023
- (3) Unit 1 and 2 component cooling trains during maintenance of the common component cooling train on March 30, 2023

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

- (1) The inspectors evaluated system configurations during a complete walkdown of the Unit 1 emergency diesel generators (EDGs) on March 14, 2023.

### 71111.05 - Fire Protection

#### Fire Area Walkdown and Inspection Sample (IP Section 03.01) (4 Samples)

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

- (1) Fire Zone 12.1-0; fuel handling building, 401' and 426' elevations on January 6, 2023
- (2) Fire Zone 11.3-0; auxiliary building 364' elevation general area on January 24, 2023
- (3) Fire Zone 11.4-0; auxiliary building 383' elevation general area on March 28, 2023
- (4) Fire Zone 11.6-0; auxiliary building 426' elevation general area on March 29, 2023

#### 71111.06 - Flood Protection Measures

##### Flooding Sample (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated flooding mitigation protections in the Unit 1 auxiliary feedwater (AF) tunnel following the discovery of water intrusion into the tunnel, as documented in Issue Report (IR) 4558592 on March 2, 2023.

#### 71111.08P - Inservice Inspection Activities (PWR)

##### 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

- Feedwater System Weld: 1FW03DC-16/C20.01, Cat R-A/R1.11
- Reactor Coolant System Weld: 1RC35AA-6/J04, Cat R-A/R1.11
- Pressurizer Overlay Weld: 1RY-01-S PN-04-F4S, Augmented Inspection

- Dye Penetrant and Magnetic Particle Examination

- Dye Penetrant and Magnetic Particle Test of Service Water System Weld: 1SX06BB-16/C01A, C-C/C3.20

- Welding Activities

- Weld Repair/Replacement of 1SX2167A 1B Auxiliary Feedwater Pump Cubicle Cooler Inlet Isolation Valve, Work Order (WO) 04631529-01
- Weld Repair/Replacement of CM-1SXE5A-3," Auxiliary Feedwater Pump Recirculation to Service Water Piping, WO 05027587-01

##### 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 of 1RC01R Reactor Top Head

##### 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:

- (1) Boric Acid Evaluations
- Action Request (AR) 4492901; Active Leak Identified in 1FC02F Vault
  - AR 4534558; 1SI077 Boric Acid Leakage - Additional Targets Identified
  - AR 4485008; 1CV8147 Boric Acid

Corrective Action Documents

- AR 4501643; 1CV008A Boric Acid Buildup on Upstream Flange
- AR 439113; Standing Water in 1FC04F Vault

Walkdowns

- Performed on March 5, 2023 and March 9, 2023

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 of various on-watch operations shift crews in the Control Room including, but not limited to:
- shutdown and cooldown for refuel outage B1R25

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

- (1) The inspectors observed and evaluated Licensed Operator Requalification Training 23-1-1, Revision 1 on February 16, 2023.

71111.12 - Maintenance Effectiveness

Maintenance Effectiveness (IP Section 03.01) (1 Sample)

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 Unit 1 control rod drive system (CRDM) thermal sleeve lowering on February 8, 2023

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 planned work associated with new fuel receipt and inspection in preparation for Refueling Outage B1R25, as documented in WO 5266937 on January 31, 2023

- (2) Evaluation of the plant risk associated with changing shutdown safety risk during draindown in cavity level in preparation of head detensioning and removal for refuel outage B1R25 on March 7, 2023
- (3) Verification of select risk mitigating actions implemented in the plant during reduced inventory conditions while the head was being removed during B1R25 on March 8, 2023
- (4) Evaluation of the risk associated with the loose parts evaluation decision to leave unrecovered foreign material within the reactor coolant system, as documented in IRs 4561361 and 4561439 on March 21, 2023
- (5) Evaluation of the risk associated with the emergent risk informed completion time (RICT) implementation for the 1FW009A maintenance work window, as documented in WO 5348724 on March 28, 2023

#### 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) Evaluation of the operability of Unit 2 reactor vessel level indication system following unexpected alarm on January 24, 2023
- (2) Evaluation of the operability for 125 VDC batteries following identification of cracks in battery cell lids on January 24, 2023
- (3) Evaluation of the operability of 1A EDG, as documented in IR 4550405 on January 31, 2023
- (4) Evaluation of the operability of the component cooling system following the failure of surveillance 1BOSR CC-7 and associated post-maintenance testing on March 21, 2023
- (5) Evaluation of the common component cooling heat exchanger following discovery of a pinhole leak at the service water inlet pipe, as documented in IR 4563104 on March 31, 2023

#### 71111.18 - Plant Modifications

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

The inspectors evaluated the following temporary or permanent modifications:

- (1) Installation and removal of temporary containment penetration cover at penetration 74 during B1R25 on March 23, 2023

#### 71111.20 - Refueling and Other Outage Activities

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

- (1) The inspectors evaluated refueling outage B1R25 activities from March 6 through March 24, 2023.

#### 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) (6 Samples)

- (1) 1A centrifugal charging pump, 1CV01PA, comprehensive pump run following a pump outage work window on March 16, 2023
- (2) 1BOSR Z.7.a.1, 1B Diesel Driven Feedwater Pump Overspeed Trip Test, following pump inspection, as documented in WO 5237710 on March 23, 2023
- (3) 1B auxiliary feedwater pump surveillance testing following maintenance, as documented in WOs 5325010-01 and 5336866-01 on March 24, 2023
- (4) 1FW009A hydraulic system testing following maintenance and associated RICT implementation, as documented in WO 5348724 on March 28, 2023
- (5) 1D main steam isolation valve operability test following maintenance, as documented in WO 5234361 on March 24, 2023
- (6) 1SI8814 valve exercise testing following discovery of additional needed maintenance, as documented in WO 1151716 and IR 4561502 on March 29, 2023

Surveillance Testing (IP Section 03.01) (6 Samples)

- (1) 2BOSR 7.5.4-2; 2B AF Pump Run, as documented in WO 05324617-01 on January 24, 2023
- (2) 1BOSR 8.1.2-2; 1B EDG Operability Monthly Surveillance, as documented in WO 05335746-01 on February 23, 2023
- (3) 2BOSR 8.1.2-1; 2A EDG Semiannual Run, as documented in WO 05292744-01 on February 27, 2023
- (4) BMP 3114-21; Main Steam Safety Valve Testing Using Setpoint Verification Device for Unit 1 on March 1, 2023
- (5) 1BOSR 8.1.11-1; 1A Diesel Generator Sequencer Test on March 16, 2023
- (6) 1BOSR 5.5.8.SI.2-3; Unit One Accumulator Discharge Primary and Backup Check Valve Stroke Test on March 20, 2023

Inservice Testing (IST) (IP Section 03.01) (2 Samples)

- (1) Inservice Testing of the 2B Safety Injection Pump as documented in WO 5302386 on January 19, 2023.
- (2) Inservice testing of the Unit 1 motor and diesel driven auxiliary feedwater pumps, as documented in WOs 5188424 and 5188305 on March 3, 2023.

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

- (1) 1BOSR 6.1.1-8; Primary Containment Type C Local Leak Rate Testing for Primary Sampling System Containment Isolation Valves, as documented in WOs 4617034, 4618041, and 5022294 on March 9, 2023

**RADIATION SAFETY**

71124.01 - Radiological Hazard Assessment and Exposure Controls

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

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

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

- (1) The inspectors evaluated how the licensee instructs workers on plant-related radiological hazards and the radiation protection requirements intended to protect workers from those hazards.

Contamination and Radioactive Material Control (IP Section 03.03) (1 Sample)

The inspectors observed/evaluated the following licensee processes for monitoring and controlling contamination and radioactive material:

- (1) Licensee surveys of potentially contaminated material leaving the radiological controlled area at the Unit 1 Containment Access Facility

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

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

- (1) Reactor coolant pump maintenance activities
- (2) Containment sump inspection and cleaning
- (3) Containment insulation activities

High Radiation Area and Very High Radiation Area Controls (IP Section 03.05) (3 Samples)

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

- (1) Spent resin transfer pump room
- (2) Unit 1 incore detector sump area
- (3) Unit 1 fuel transfer tube area

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

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

**OTHER ACTIVITIES – BASELINE**

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

IE01: Unplanned Scrams per 7000 Critical Hours Sample (IP Section 02.01) (2 Samples)

- (1) Unit 1 (January 1, 2022 through December 31, 2022)
- (2) Unit 2 (January 1, 2022 through December 31, 2022)

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

- (1) Unit 1 (January 1, 2022 through December 31, 2022)
- (2) Unit 2 (January 1, 2022 through December 31, 2022)

IE04: Unplanned Scrams with Complications (USwC) Sample (IP Section 02.03) (2 Samples)

- (1) Unit 1 (January 1, 2022 through December 31, 2022)
- (2) Unit 2 (January 1, 2022 through December 31, 2022)

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

Event Report (IP Section 03.02) (2 Samples)

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

- (1) LER 05000454/2021-001-00 and 454-2021-001-01, "Pressurizer Safety Valves As-Found Lift Pressure Outside of Tech Spec Limit," (ADAMS Accession No. [ML21322A197](#) and [ML22243A193](#)). The inspectors determined that it was not reasonable to foresee or correct the cause discussed in the LER therefore no performance deficiency was identified. The inspectors could not substantiate that a violation of technical specifications occurred. The inspectors reviewed the previous LER submittal and the updated LER submittal. This LER is Closed.
- (2) LER 05000455/2022-001-00, "Byron Station Unit 2 Volumetric Examinations of Reactor Pressure Vessel Head Core Exit Thermocouple Penetration P-75 Identified an Indication Attributed to Primary Water Stress Corrosion Cracking," (ADAMS Accession No. [ML22173A039](#)). The inspectors determined that it was not reasonable to foresee or correct the cause discussed in the LER therefore no performance deficiency was identified. The inspectors did not identify a violation of NRC requirements. This LER is Closed.

**INSPECTION RESULTS**

URI	Main Steam Tunnel and Safety Valve Room Use of ACI 349-85 Appendix C Provisions URI 05000454,05000455/2021011-01	71111.21M
<p>Description: The Unresolved Item (URI) was opened to determine whether American Concrete Institute (ACI) 349-85, "Code Requirements for Nuclear Safety Related Concrete Structures, Appendix C, Special Provisions for Impulsive and Impactive Effects," was part of the licensing basis.</p> <p>Updated Final Safety Analysis Report (UFSAR) Section 3.8.4.1 described the main steam tunnel as a seismic category I structure. Section 3.8.4.1.4 of the UFSAR described the main steam safety valve room as a reinforced concrete structure which was a part of the main steam tunnel (also a reinforced concrete structure). The inspectors reviewed Calculation No. 5.6.3-BYR96-233, "Evaluation of Main Steam and Aux-Feedwater Tunnels for Revised Accident Pressures and Temperatures Associated With Replacement Steam Generators,"</p>		

Revision 1, Calculation No. 5.6.1-BYR96-234, "Evaluation of Safety Valve Rooms for Revised Accident Pressures and Temperatures Associated With Replacement Steam Generators," Revision 1, and Calculation No. 5.6.1, "Main Steam and Auxiliary Feedwater Tunnel Analysis and Design," Revision 7. These calculations used ACI 349-85, Appendix C, to analyze the main steam tunnel and main steam safety valve rooms for the applied loading due to compartment pressurization from a main steam line break. The inspectors also reviewed the associated 10 CFR 50.59 regulatory evaluation which incorporated ACI 349-85, Appendix C, into Revision 1 of the UFSAR.

The inspectors considered Regulatory Guide (RG) 1.142, "Safety-Related Concrete Structures for Nuclear Power Plants (Other than Reactor Vessels and Containments)," Revisions 0 and 1. This RG provided the regulatory guidance for licensees on application of the ACI 349 appendix containing special provisions for impulsive and impactive effects on a reinforced concrete structure for the applied loading due to compartment pressurization. The inspectors also consulted with the Office of Nuclear Reactor Regulation.

The inspectors did not identify any findings or violations. This URI is closed.

## **EXIT MEETINGS AND DEBRIEFS**

The inspectors confirmed that proprietary information was controlled to protect from public disclosure.

- On April 11, 2023, the inspectors presented the integrated inspection results to A. Schuerman, Plant Manager, and other members of the licensee staff.
- On March 16, 2023, the inspectors presented the radiation protection inspection results to S. Leach, Senior Manager, Site Radiation Protection, and other members of the licensee staff.
- On March 16, 2023, the inspectors presented the inservice inspection results to P. Murray, Engineering Programs Manager, and other members of the licensee staff.

## DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.04	Corrective Action Documents	AR 04563104	Leak from U-0 CC HX SX Inlet Pipe	03/18/2023
	Drawings	6E-1-4006A	Key Diagram 4160V ESF SWGR Bus 141 (1AP05E)	08/07/1995
		M-42 Sheet 1A	Diagram of Essential Service Water	01/22/1998
		M-42 Sheet 1B	Diagram of Essential Service Water	01/22/1998
		M-42 Sheet 2A	Diagram of Essential Service Water	01/22/1998
		M-42 Sheet 2B	Diagram of Essential Service Water	01/22/1998
		M-42 Sheet 3	Diagram of Essential Service Water	01/22/1998
		M-42 Sheet 4	Diagram of Essential Service Water	01/22/1998
	Procedures	BOP CC-E1	Unit 1 Component Cooling System Electrical Lineup	7
		BOP CC-E2	Unit 2 Component Cooling System Electrical Lineup	5
		BOP CC-M1	Unit 1 Component Cooling System Valve Lineup	29
		BOP CC-M2	Unit 2 Component Cooling System Valve Lineup	24
71111.05	Corrective Action Documents Resulting from Inspection	AR 04546971	NRC Identified Lack of Housekeeping Signs	01/06/2023
	Fire Plans	11.4-0 North	Aux Building 383' Elevation General Area - North	4
		11.4-0 South	Aux Building 383' Elevation General Area - South	3
		11.4-0 West	Aux Building 383' Elevation General Area - West	3
		PFP FHB 401-0 FZ 12.1-0	Pre-Fire Plan Fuel Handling Building 401-0 Elevation FZ 12.1-0 Plan #176	4
		PFP FHB 426-0 FZ 12.1-0	Pre-Fire Plan Fuel Handling Building 426-0 Elevation FZ 12.1-0 Plan #176	3
	Miscellaneous	FPR Chapter 2.3	Fire Area Analysis	Amendment 29
71111.06	Corrective Action Documents	AR 04558592	Water Intrusion into U1 AF Tunnel	03/02/2023
	Drawings	S-1055	1A Auxiliary Feedwater Tunnel Cover (1DSFO06)	10/13/2008
	Procedures	BAP 1100-3	Plant Barrier Impairment (PBI) Program	27
BAP 1100-3A3		Pre-Evaluated Plant Barrier Matrix	44	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date	
		CC-AA-201	Plant Barrier Control Program	14	
71111.08P	Corrective Action Documents	AR 04391133	Standing Water in 1FC04F Vault	12/18/2020	
		AR 04446714	NRC ID Repair/Replacement Plan #04930998-01 Deficiency	09/16/2021	
		AR 04447291	1RC01004V Missing Travel Stop with Chain	09/18/2021	
		AR 04447377	RXS Recovered String-like FM from U1 Reactor Core Plate	09/19/2021	
		AR 04447381	1 SI03008C - O-Ring Found on Component Body	09/19/2021	
		AR 04485008	1CV8147 Boric Acid	03/15/2022	
		AR 04492901	Active Leak Identified in 1FC02F Vault	04/13/2022	
		AR 04501643	1CV008A Boric Acid Buildup on Upstream Flange	05/24/2022	
		AR 04519864	Repeated 1FC02F Leakage - Long Term Solution Required	08/31/2022	
		AR 04519868	Repeated 1FC04F Leakage-Long Term Solution Required	08/31/2022	
		AR 04558675	Inactive Boric Acid Leak Beneath 1FC02F	03/02/2023	
		AR 04559721	B1R25 BACC MODE 3 Walkdown Results	03/06/2023	
		AR 04561174	b1R25 ISI - Relevant Condition Identified on 1SI01019X Strut	03/11/2023	
		AR 04561174	Relevant Condition Identified on 1SI01019X Strut	03/10/2023	
		AR 04561361	FME Found Unit 1 RX Upper Internals During Guide Card Exam	03/12/2023	
		AR 04561439	Foreign Material found in Guide Tube H10	03/12/2023	
		AR 04561441	B1R25 - Suspected Boric Acid Residues from Conoseal Removal	03/12/2023	
		Corrective Action Documents Resulting from Inspection	AR 04563221	NRC ID: Minor PD Identified During the ISI Inspection	03/19/2023
		Drawings	10055C14	Pressurizer Safety/Relief Nozzle SWOL Design	06/11/2006
			M1SI01019X	HANGER as Built Drawing	F
	NDE Reports	B1R19-VT-022	VT-3 of 1SI05DA-6/1SI01019X	03/20/2014	
		B1R22-VEN-002	1RC01R Reactor Top Head BMV	09/15/2018	
		B1R24 BMV	B1R24 Reactor Top Head BMV Report	09/19/2021	
		B1R25-MT-001	MT of 1SX06BB-16/C01A	03/13/2023	
		B1R25-PT-001	PT of 1SX06BB-16/C01A	03/13/2023	
		B1R25-UT-009	UT of 1FW03DC-16/C20.01	03/11/2023	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		B1R25-UT-016	UT of 1SI09AD-10/C08	03/14/2023
		B1R25-UT-020	UT of 1RC35AA-6/J05	03/12/2023
		B1R25-VEN-001	1RC01R Reactor Top Head BMV	03/14/2023
		B1R25-VT-040	VT-3 of 1SI05DA-6/1SI01019X	03/10/2023
		B1R25-VT-061	VT-3 of 1SI05DA-6/1SI01019X	03/16/2023
		B1R25-WOL-001	UT of Weld Overlay on 1RY03AA-6/J018	03/13/2023
		B1R25-WOL-002	UT of Weld Overlay on 1RY-01-S PN-04-F4S	03/13/2023
	Procedures	AR-AP-331-1001	Boric Acid Corrosion Control (BACC) Inspection Locations, Implementation and Inspection Guidelines	12
		AR-AP-331-1002	Boric Acid Corrosion Control (BACC) Program Identification, Screening and Evaluation	12
		ER-AA-335-003	Magnetic Particle (MT) Examination	10
		ER-AA-335-014	VT-1 Visual Examination	12
		ER-AA-335-016	VT-3 Visual Examination of Component Supports, Attachments and Interiors of Reactor Vessels	13
		ER-AA-335-049	Ultrasonic Examination in Accordance with ASME Section V, Article 4	3
		ER-AA-335-1008	Code Acceptance & Recording Criteria for Nondestructive (NDE) Examination	6
		ER-AP-331	Boric Acid Corrosion Control (BACC) Program	11
		ER-AP-335-001	Bare Metal Visual Examination for Nickel Alloy Materials	8
		PDI-UT-1	PDI Generic Procedure for the Ultrasonic Examination of Ferritic Pipe Welds	G
		PDI-UT-2	PDI Generic Procedure for the Ultrasonic Examination of Austenitic Pipe Welds	I
		PDI-UT-8	PDI Generic Procedure for the Ultrasonic Examination of Weld Overlaid Similar and Dissimilar Metal Welds	I
		WPS 1-1-GTSM-PWHT	Welding Procedure Specification	5
		WPS 8-8-GTSM	Welding Procedure Specification	7
		Work Orders	05192287	CM-1SXE5A-3" Replace Pipe with Stainless Steel EC 631322
	WO 04631529-01		1SX2167A COULD NOT BE MANIPULATED	10/03/2022

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		WO 05027587-01	LEAK ON AF PUMPS RECIRC RETURN TO SX PIPING	06/15/2021
71111.11Q	Procedures	1BGP 100-4	Power Descension	70
		1BGP 100-5	Plant Shutdown and Cooldown	83
71111.12	Corrective Action Documents	AR 04320104	WEC NSAL-20-1 RVH CRDM Penetration Thermal Sleeve Failure	02/21/2020
		AR 04322068	Westinghouse Justification to Postpone NSAL-20-1 Inspections	02/27/2020
		AR 04447364	B1R24 CRDM Thermal Sleeve Metrology and VT-1 Exam Results	09/19/2021
	Engineering Changes	EC 635099	B1R24 CRDM Thermal Sleeve Metrology Evaluation	09/25/2021
	Miscellaneous	142-9336720-000	Framatome Inc. Metrology Services Information Record: Byron 1 CRDM Thermal Sleeve As-Found Dimensional Report 2021 [PROPRIETARY]	09/17/2021
		LTR-RIDA-20-32	Byron Unit 1 CRDM Thermal Sleeve Cracking Inspection Deferral [PROPRIETARY]	02/27/2020
		NSAL-20-1	Reactor Vessel Head Control Rod Drive Mechanism Penetration Thermal Sleeve Cross-Sectional Failure	09/23/2021
		PWROG-16003-P	Evaluation of Potential Thermal Sleeve Flange Wear	08/01/2017
	Work Orders	5093408	Reactor Head Metrology Required in B1R24	08/03/2021
		5137678	VT-1 of Thermal Sleeves (Unit 1)	08/03/2021
71111.13	Corrective Action Documents	AR 04561361	FME Found Unit 1 RX Upper Internals During Guide Card Exam	03/12/2023
		AR 04561439	Foreign Material Found in Guide Tube H10	03/12/2023
		AR 04563995	1FW009A Hydraulic Pressure Low	03/22/2023
	Drawings	38539	Reservoir Assembly Hydraulic Reservoir	M00
		38559	Reservoir Assembly Hydraulic Operator	M00
		80210	Feedwater Isolation Valve 16X10X16 900 LB. Carbon Steel	M00
		M-152	Pneumatic-Hydraulic Diagram for Feedwater Isolation Valves 1 & 2FW009	M05
	Engineering Evaluations	638661	FME Lost Parts Evaluation for N-5 & H-10 Guide Cards	0
		638693	Lost Parts Evaluation for the 1D RCP #1 Seal Faceplate	0
		6E-23-004	50.59 Screening for Lost Parts Evaluation for the 1D RCP #1 Seal Faceplate	0



Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		6G-23-002	50.59 Evaluation for the Lost Parts Evaluation for FM Discovered During Guide Card Inspections at Guide Tubes N5 and H10	0
	Miscellaneous		Emergent RICT Record for 1FW009A Maintenance and PMT	03/27/2023
				B1R25 Shutdown Safety and Contingency Plans
	Procedures	1BEP-0	Reactor Trip or Safety Injection Unit 1	306
		1BFR-H.1	Response to Loss of Secondary Heat Sink Unit 1	304
		1BOA ELEC-2	Loss of Instrument Bus Unit 1	110
		1BOA PRI-6	Component Cooling Malfunction Unit 1	114
		1BOA PRI-7	Essential Service Water Malfunction Unit 1	110
		BOP CC-10	Alignment of the U-0 CC Pump and U-0 CC Heat Exchanger to A Unit	35
		CC-AA-309-101	Engineering Technical Evaluations	16
		ER-AA-2006	Lost Parts Evaluations	14
		ER-AA-600-1052	Risk Management Support of RICT	001
		MA-BY-716-008-1008	Reactor Services Refuel Floor FME Plan	0
		OP-AA-108-117	Protected Equipment Program	7
		OP-AA-108-118	Risk Informed Completion Time	2
		OU-AA-101-1011	Outage Risk Management	004
		OU-AA-103	Shutdown Safety Management Program	23
		OU-AA-103-1001	Shutdown Safety Plan Independent Review	5
	OU-AP-201	New Fuel Receipt and Inspection for Byron, Braidwood, and Ginna	18	
	OU-AP-203	Operation of the New Fuel Elevator for Byron and Braidwood	8	
	Work Orders	5266937	RXS New Fuel Receipt and Inspection for U-1 Outage	01/31/2023
71111.15	Calculations	3C8-1281-001	Flooding Analysis for the Auxiliary Building 364' Floor Elevation	12A
		NED-M-MSD-014	Byron Ultimate Heat Sink Cooling Tower Basin Makeup Calculation	009A
	Corrective Action Documents	AR 04228044	SX Leak By 0SX007	03/09/2018
		AR 04415429	1A DG JW Header Leak	04/09/2021

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		AR 04476444	Unexpected Alarm RVLIS Sensor Uncovered	02/07/2022
		AR 04481669	Minor Cracking on the Cell Covers for Batt. 111, 112 & 212	03/01/2022
		AR 04481897	Minor Cracking on the Cell Covers for Batt. 112	03/02/2022
		AR 04483675	Battery 111 Addition Cells Covers with Cracks	03/09/2022
		AR 04514245	Unit 2: B Train RVLIS Sensor #3 Alarm	08/01/2022
		AR 04525362	Division 111 & 112 Additional Battery Cover Cracks	09/29/2022
		AR 04544700	SX Water Leaking from Weepholes 1A DG JW Cooler 1DG01KA-X2	12/24/2022
		AR 04547076	Unexpected Alarm U2 RVLIS	01/06/2023
		AR 04550405	1A DG JW Leak	01/25/2023
		AR 04559414	1BOSR CC-7 Surveillance Failed and PMT Failure	03/05/2023
	AR 04563104	Leak from U-0 CC HX SX Inlet Pipe	03/18/2023	
	Engineering Changes	EC 623441	Evaluation of Impact of Leaks for Various Fixed Volume Systems on the Emergency Diesel Generators (EDGs)	000
		EC 627668	Minimum Wall Evaluation of Lines 0SX02D-30," 0SX02C-30" and 1SXH1C-6" in Support of CC N-513-4 Evaluation Reference IR 4228044	000
	Miscellaneous	BYRON-00-5043	Generic Jacket Water Leakage Evaluation for Emergency Diesel Generators	06/02/2000
	NDE Reports	2023-UT-046	UT Erosion/Corrosion Examination of 0SX02D-30"	03/19/2023
	Operability Evaluations	OPS Assessment 99-011	Supporting Operability Documentation for 1A Diesel Generator Jacket Water Leak	04/05/1999
	Procedures	1BOSR CC-7	Unit One Component Cooling from Primary Sample Cooler Panel Return Line Check Valves 1CC091B and 1CC092B Test	0
		2BOL 3.3	LOCAR Post Accident Monitoring (PAM) Instrumentation Tech Spec LCO # 3.3.3	5
		2BOSR 3.3.1-1	Unit Two Accident Monitoring Instrumentation Monthly Channel Checks	27
		BAR 2-9-D6	Rx Vessel Lvl Msrment Sys Sensor Uncovered	2
BOP RC-12		Placing RVLIS/HJTC/CETC in Service	5	
BOP RC-12T1		Table 1 RVLIS Error Codes Train A and B	1	
Work Orders	5016218	1BOSR CC-7 Surveillance Failed Leak Rate Test	03/05/2023	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		5177731	Perform 1 BOSR CC-7	03/06/2023
71111.18	Drawings	M-197-3	Reactor Containment Penetration Sleeve Scheduled for Byron Unit 1	S
	Engineering Changes	EC 345542	Guidance for Temporarily Disconnecting Pipe; Equipment Anchors, Cutting Pip, and or Disconnection of Flanges	1
		EC 361370	Evaluation of Proceduralized TCCP: BMP 3300-28	1
	Procedures	BMP 3300-28	Installation and Removal of Temporary Containment Penetration Covers	7
	Work Orders	5220978	LLRT For P-74 - Spare	03/20/2023
5228280		Containment Temporary Penetration PC074M	03/21/2023	
71111.20	Miscellaneous	BY-MODE-034	TS 3.0.4.b Evaluation - Mode Change with Technical Specification Equipment Out of Service	1
	Procedures	1BGP 100-2	Plant Startup	54
		1BGP 100-2A1	Reactor Startup	38
		1BGP 100-3	Power Ascension	107
		1BGP 100-3T2	Mode 2 to 1 Checklist	22
		OP-AA-106-101-1006	Operational Decision Making (ODM) Process	24
		OU-AA-101	Refuel Outage Management	30
		OU-AA-101-1007	Outage Scope Control	20
OU-AP-104	Shutdown Safety Management Program Byron/Braidwood Annex	29		
71111.21M	Calculations	5.6.1-BYR96-233	Evaluation of Main Steam and Aux-Feedwater Tunnels for Revised Accident Pressures and Temperatures Associated with Replacement Steam Generators.	1
	Corrective Action Documents	AR 04417167	Byron NRC DBAI - Unresolved Issue (URI)	04/16/2021
		AR 04424322	NRC URI: MS Tun & SV Rm Use ACI 349-85 App C Provisions	05/18/2021
	Miscellaneous	10 CFR 50.59 Safety Evaluation	UFSAR Revision 1 Final Draft	12/07/1989
Regulatory Guide 1.142		Safety-Related Concrete Structures for Nuclear Power Plants (Other than Reactor Vessels and Containments)	1	
71111.24	Calculations	BYR97-193	Battery Duty Cycle and Sizing for Byron Diesel Driven Auxiliary Feedwater Pumps and Byron Diesel Driven SX	3A

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			M/U Pumps	
	Corrective Action Documents	AR 04548135	2B AF PP Gear Changer Aux Oil Pump Cycling	01/12/2023
		AR 04561502	WO: 1151716-01 1SI8814 Tripper Fingers Not Engaging	03/13/2023
		AR 04562629	Issue During DG Sequence Testing	03/16/2023
		AR 04564121	1B Aux FW Pump Gear Box Lube Oil Pump Cycling	03/22/2023
	Drawings	934D209	Swing Check Valve 10C88	7
	Engineering Changes	EC 638737	Justification for Not Performing 1FW009A Valve Stroke Testing After Limited Actuator Reservoir Maintenance per Work Package 05348724 Exiting B1R25	000
		EC 638741	ALT DTL - FW009 Anti-Rotation Bars and Hole for Limit Switch Plate	000
	Engineering Evaluations	CQD-043914-SR	Calculation for Minimum Flow Velocity for Swing Check Valves	07/06/1989
	Procedures	1BOSR 0.5-2.FW.1	Unit One Main Feedwater System Containment Isolation Valves Full Stroke and Position Indication Test	10
		1BOSR 0.5-2.SI.2-2.1	Unit One 1SI8802A, 1SI8806, 1SI8809A, 1SI8835, 1SI8840, 1CV8804A, 1SI8811A and 1SI8923A Stroke Test and Position Indication Test	23
		1BOSR 0.5-2.SI.3-1	Unit One 1SI8821A, 1SI8812A, 1SI8924, 1SI8807A/B, and 1SI8814 Position Indication Test	10
		1BOSR 0.5.2.SI.1-1	Unit One SI8821A, 1SI8812A, 1SI8924, 1SI8807A/B and 1SI8814 Exercise Test	12
		1BOSR 5.5.8.CV.5-1c	Unit One Comprehensive Inservice Testing (IST) Requirements for Centrifugal Charging Pump 1CV01PA	8
		1BOSR 6.1.1-8	Unit One Primary Containment Type C Local Leakage Rate Tests and IST Tests of Primary Sampling System	14
		1BOSR 8.1.11-1	Unit One 1A Diesel Generator Sequencer Test	32
		1BOSR Z.7.a.1	Unit One Auxiliary Feedwater Diesel Engine Starting Sequence and Overspeed Trip Test	6
		1BVSR 7.1.1-1	Unit 1 Main Steam Safety Valves Operability Test	12
		2BOSR 5.5.8.SI.5-2a	Unit Two Group A Inservice Testing (IST) Requirements for Safety Injection Pump 2SI01PB	4
		2BOSR 7.5.4-2	Unit Two Diesel Driven Auxiliary Feedwater Pump Monthly Surveillance	36

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		BMP 3100-5	Limitorque Operator SMB/SMC Removal and Installation	21
		BMP 3112-1	Feedwater Isolation Valve Hydraulic Actuator Maintenance	31
		BMP 3112-2	Main Feedwater Isolation Valve Actuator Filling and Charging	19
		BMP 3114-21	Main Steam Safety Valve Testing Using Setpoint Verification Device	2
	Work Orders	1151716	Replace Body to Bonnet Gasket & Repack Valve	03/14/2023
		4617034	LLRT For P-70 - 1PS9354A and 1PS9354B	03/09/2023
		4618041	LLRT For P-70 - 1PS9356A and 1PS9356B	03/09/2023
		4818840	MM - 1CV01PA Repair Inboard & Outboard Pump Seals	03/16/2023
		4997520	PM - MOV Stem Lube	03/14/2023
		5020435	Replace MCB Control Switch for 1AF01PB	03/22/2023
		5022294	LLRT For P-70 - 1PS9357A and 1PS9357B	03/09/2023
		5188016	Main Steam Safety Valves Operability Test (<94% Reactor Power)	03/01/2023
		5188200	MOV PM, Actuator Inspection, Diagnostic Testing	03/14/2023
		5188202	PM Inspection, In-Service Diag Test, PIT	03/14/2023
		5188305	(NEIL)-1AP01PA Comprehensive IST Requirements for the Motor Drive Auxiliary Feedwater Pump	03/03/2023
		5188412	1A Diesel Generator Sequencer Test	03/15/2023
		5188424	(NEIL)-1AP01PB Comprehensive IST Requirements for the Diesel Drive Auxiliary Feedwater Pump	03/03/2023
		5237710	Diesel Driven Auxiliary Feed Pump Inspection Per BMP 3203-1	03/22/2023
		5302386	(NEIL) - 2SI01PB Group A IST Requirements for Safety Injection	01/19/2023
		5324617-01	2BOSR 7.5.4-2, 2B AF PP Run	01/03/2023
5348724	1FW009A Hydraulic Pressure Low	03/27/2023		
71124.01	ALARA Plans	BY-1-23-00503	ALARA Plan for RWP BY-1-23-00503, AUX (task 1) and Containment Insulation (tasks 2).	29
		BY-1-23-00609	ALARA Plan for RWP BY-1-23-00609, Containment Sump Inspection and Cleaning.	29
		BY-1-23-00614	ALARA Plan for RWP BY-1-23-00614, Reactor Head and	29

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Upper Internals Moves (task 2) and Visual Flange Inspection and Reactor Cavity Entry (task 3).	
		BY-1-23-00616	ALARA Plan for RWP BY-1-23-00616 Reactor Maintenance Activities.	29
	Corrective Action Documents Resulting from Inspection	AR 04561965	NRC ID: AMS-4 Air Sampler Running with No Digital Display	03/14/2023
	Miscellaneous	RP-AA-302 Attachment 3	Alpha Area Level Assessment for Unit One	04/13/2022
		RP-AA-302 Attachment 3	Alpha Area Level Assessment for Unit Two	04/15/2021
	Procedures	RP-AA-302	Determination of Alpha Levels and Monitoring	12
	Radiation Surveys	2023-188760	Radiological Survey Map of the Containment Floor Drain Sump at Elevation 377' in the Containment Building of Unit One, Map Number 432	03/11/2023
	Radiation Work Permits (RWPs)	BY-1-23-00503	Auxiliary Building (task 1) and Containment (task 2) Insulation Radiation Work Permit	00
		BY-1-23-00609	Containment Sump Inspection and Cleaning Radiation Work Permit	01
		BY-1-23-00616	Reactor Coolant Pump Maintenance Activities Radiation Work Permit	00
71151	Miscellaneous		NRC Performance Indicator Data: Initiating Events - Unit/Reactor Shutdown Occurrences	01/01/2022 - 12/31/2022
			NRC Performance Indicator Data: Initiating Events - Unplanned Power Changes per 7000 Critical Hours	01/01/2022 - 12/31/2022
			Review of Unit 1 and Unit 2 Plant Process Computer Data for the Calendar Year 2022	01/01/2022 - 12/31-2022
71153	Corrective Action Documents	AR 04447391	1RY8010B Failed As-Found Testing at Vendor	09/19/2021
		AR 04450104	1RY8010A Failed As-Found Testing at Vendor	10/01/2021
		AR 04495001	U2 Reactor Head Indication - B2R23	04/22/2022
		AR 04495098	U2 Reactor Head Indication at Penetration-75	04/23/2022
		AR 04550108	1RY8010C Failed As-Found Testing at Vendor	10/01/2021
		CAPE	Investigation into Byron Pressurizer Safety Valves Failed	03/31/2022

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			As-Found Lift Test during B1R24	
	Engineering Evaluations	635206	Byron Unit 1 Evaluation of Pressurizer Safety Out of Tolerance Impact on Safety Analyses	0