



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION IV
1600 EAST LAMAR BOULEVARD
ARLINGTON, TEXAS 76011-4511

February 12, 2024

Joseph Sullivan, Site Vice President
Entergy Operations, Inc.
17265 River Road
Killona, LA 70057

**SUBJECT: WATERFORD STEAM ELECTRIC STATION, UNIT 3 – INTEGRATED
INSPECTION REPORT 05000382/2023004**

Dear Joseph Sullivan:

On December 31, 2023, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Waterford Steam Electric Station, Unit 3. On January 24, 2024, the NRC inspectors discussed the results of this inspection with you and other members of your staff. The results of this inspection are documented in the enclosed report.

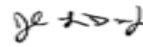
Two findings of very low safety significance (Green) are documented in this report. Two of these findings involved violations of NRC requirements. We are treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violations or the significance or severity of the violations documented in this inspection report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region IV; the Director, Office of Enforcement; and the NRC Resident Inspector at Waterford Steam Electric Station, Unit 3.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region IV; and the NRC Resident Inspector at Waterford Steam Electric Station, Unit 3.

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 Dixon, John
on 02/12/24

John L. Dixon, Jr., Chief
Reactor Projects Branch D
Division of Operating Reactor Safety

Docket No. 05000382
License No. NPF-38

Enclosure:
As stated

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05000382/2023004 – DATED – FEBRUARY 12, 2024

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05000382/2023004

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ADAMS ACCESSION NUMBERADAMS: ML24039A199

OFFICE	SRI:DRP/D	RI:DRP/D	SPE:DORS/D	BC:DORS/D	
NAME	APatz	AChilds	ASanchez	JDixon	
DATE	02/09/2024	02/09/2024	02/09/2024	2/12/2024	

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U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Number: 05000382

License Number: NPF-38

Report Number: 05000382/2023004

Enterprise Identifier: I-2023-004-0009

Licensee: Entergy Operations, Inc.

Facility: Waterford Steam Electric Station, Unit 3

Location: Killona, LA 70057

Inspection Dates: October 1, 2023, to December 31, 2023

Inspectors: D. Childs, Resident Inspector
J. Drake, Senior Reactor Inspector
N. Greene, Senior Health Physicist
R. Kopriva, Senior Project Engineer
J. O'Donnell, Senior Health Physicist
A. Patz, Senior Resident Inspector
B. Tharakan, Technical Assistant

Approved By: John L. Dixon, Jr., Chief
Reactor Projects Branch D
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 Waterford Steam Electric Station, Unit 3, in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information.

List of Findings and Violations

Failure to Follow ALARA Planning and Control Procedures Resulting in Unplanned Dose			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Occupational Radiation Safety	Green NCV 05000382/2023004-02 Open/Closed	[H.4] - Teamwork	71124.01
The inspectors identified a Green finding and associated non-cited violation (NCV) of Technical Specification 6.8.1.a for a failure to follow as low as reasonably achievable (ALARA) planning and control procedures during the 2024 Unit 1 refueling outage. Specifically, the licensee's planning or radiological controls did not prevent unplanned dose for two separate work activities conducted during the 2024 refueling outage.			

Failure to Maintain FLEX Equipment Starting Batteries			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000382/2023004-03 Open/Closed	[H.12] - Avoid Complacency	71152A
The inspectors reviewed a self-revealed Green finding and associated NCV of 10 CFR 50.155(b)(1), which states, in part, strategies and guidelines to mitigate beyond-design-basis events from natural phenomena must be capable of being implemented site-wide and must include maintaining or restoring core cooling capabilities. Specifically, from approximately February 14 to May 16, 2023, the licensee failed to ensure the starting batteries for the FLEX N and N+1 diesel generators had sufficient capacity to perform their required functions.			

Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
URI	05000382/2023004-01	Steam Generator 1 In-Situ Tube Pressure Testing Failures.	71111.08P	Open

PLANT STATUS

Unit 3 began the inspection period at rated thermal power. On October 14, 2023, the unit was shut down for refueling outage 25 and remained shut down for the remainder 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

Impending Severe Weather Sample (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated the adequacy of the overall preparations to protect risk-significant systems against external flooding from heavy rains and high winds on November 20, 2023.

71111.04 - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (1 Sample)

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

- (1) train B 7KV, 4KV and 480V safety-related electrical distribution systems while train A was out for planned maintenance on November 2, 2023

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

- (1) The inspectors evaluated system configurations during a complete walkdown of the containment fan cooler system on October 31, 2023.

71111.05 - Fire Protection

Fire Area Walkdown and Inspection Sample (IP Section 03.01) (8 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 area RAB 5-001, elevation +35.00' reactor auxiliaries building electrical penetration room B on October 17, 2023
- (2) fire area RAB 6-001, elevation +35.00' reactor auxiliaries building electrical penetration room A on October 18, 2023
- (3) fire area RCB-001, elevations -4.00' and +21.00' reactor containment building on October 20, 2023
- (4) fire area RAB 16-001, elevation +21.00' emergency diesel generator 3A room on October 23, 2023
- (5) fire area RCB-001, elevation +46.00' reactor containment building on October 24, 2023
- (6) fire area RAB 8C-001, elevation +21' switchgear room AB on October 30, 2023
- (7) fire area RAB 9-001, elevation +21.00' remote shutdown room on October 30, 2023
- (8) fire area RAB 1E-001, elevation +35.00' cable vault on November 8, 2023

71111.07A - Heat Exchanger/Sink Performance

Annual Review (IP Section 03.01) (1 Sample)

The inspectors evaluated readiness and performance of:

- (1) component cooling water heat exchanger A on November 3, 2023

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 from October 23 to November 30, 2023.

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) Dye Penetrant Examination

- Reactor Coolant System, Component ID # RCI TE0112 CD1, 1B Cold Leg Thermowell, Report No. BOP-PT-23-069

Magnetic Particle Examination

- Main Steam, Component ID # 04-071, S/G #2 Upper Key Support Lug Weld @ 0 Degree Axis, Report No W-ISI-MT-23-001

Visual Examination

- Component Cooling Water, Component ID # CCRR-00322, Rigid Restraint, Report No. W-ISI-VT-23-009
- Primary Containment (PC), Component ID # DS-5, Containment Dome Outer Surface, Report No. W-CISI-VT23-001
- Primary Containment (PC), Component ID # WS-13, Containment Liner Outer Surface 352.8 degrees - 138 degrees Azimuth, Report No. W-CISI-VT23-003
- Primary Containment (PC), Component ID # WS-01, Containment Liner Inner Surface 0 degrees- 90 degrees Azimuth at - 4-foot Elevation, Report No. W-CISI-VT23-006
- Primary Containment (PC), Component ID # WS-10, Containment Liner Inner Surface 90 degrees-180 degrees Azimuth at + 46-foot Elevation, Report No. W-CISI-VT23-014

Ultrasonic Examination

- Charging (CH), Component ID # 30-002, 2-inch Pipe to Elbow Weld, Report No. W-ISI-UT-23-011
- Charging (CH), Component ID # 30-018, Elbow to 2-inch Pipe Weld, Report No. W-ISI-UT-23-015
- Charging (CH), Component ID # 30-009, 2-inch Pipe to Tee Weld, Report No. W-ISI-UT-23-013
- Charging (CH), Component ID # 30-010, 2-inch Pipe to Tee Weld, Report No. W-ISI-UT-23-014
- Charging (CH), Component ID # 30-008, 2-inch Pipe to Pipe Weld, Report No. W-ISI-UT-23-012

Welding Activities

- Gas Tungsten Arc Weld
 - Reactor Coolant System, ID # RC ITE0112 DC1, Thermowell Cap - Fillet Weld FW-1
- Gas Tungsten Arc Weld
 - Safety Injection System, ID # SI MVAA303 A, Valve, Socket Welds - FW-1 and SW-6

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)
- Evaluation # 22-WF3-0029, Component ID # BAMMVAAA118B, CR-WF3-22-5000
 - Evaluation # 22-WF3-0030, Component ID # SI MPMP0002A, CR-WF3-22-5132
 - Evaluation # 22-WF3-0031, Component ID # SI MVAAA2031A, CR-WF3-22-5146
 - Evaluation # 22-WF3-0032, Component ID # CVCIDPI0203, CR-WF3-22-5403
 - Evaluation # 22-WF3-0033, Component ID # BAMMVAAA118B, CR-WF3-22-6403
 - Evaluation # 22-WF3-0034, Component ID # CS MPMP0001B, CR-WF3-22-6409
 - Evaluation # 22-WF3-0035, Component ID # FS MPMP0001B, CR-WF3-22-6415
 - Evaluation # 22-WF3-0036, Component ID # CS MPMP0001A, CR-WF3-22-6906
 - Evaluation # 22-WF3-0037, Component ID # SI MPMP0002A, CR-WF3-22-6905
 - Evaluation # 22-WF3-0038, Component ID # BAMMVAAA141, CR-WF3-22-6899
 - Evaluation # 22-WF3-0039, Component ID # FS MVAAA426, CR-WF3- 22-6910
 - Evaluation # 23-WF3-0001, Component ID # FS MVAAA512, CR-WF3-22-8036
 - Evaluation # 23-WF3-0002, Component ID # CS MPMP0002B, CR-WF3-22-8060
 - Evaluation # 23-WF3-0003, Component ID # BM MPMP0009, CR-WF3-22-8066
 - Evaluation # 23-WF3-0004, Component ID # BM MPMP0001, CR-WF3-22-8069
 - Evaluation # 23-WF3-0005, Component ID # SI MVAAA119B, CR-WF3-22-8076
 - Evaluation # 23-WF3-0006, Component ID # SI MVAAA205A, CR-WF3-23-0064
 - Evaluation # 23-WF3-0007, Component ID # SI MPMP0001A. CR-WF3-3-0180
 - Evaluation # 23-WF3-0008, Component ID # SI MVAAA2351, CR-WF3- 23-1215
 - Evaluation # 23-WF3-0009, Component ID # CVCMVAAA189A, CR-WF3-23-1700
 - Independent Boric Acid Walkdown, October 27, 2023
 - Boric Acid Walkdown with Boric Acid Engineer, October 28, 2023

PWR Inservice Inspection Activities Sample - Steam Generator Tube Inspection Activities (Section 03.04)

The inspectors verified that the licensee is monitoring the steam generator tube integrity appropriately through a review of the results of the 100 percent full length eddy current inspection of all tubes with bobbin coil probe. Four tubes in replacement steam generator 1 exhibited wear that exceeded the tube integrity criteria provided in the degradation assessment (DA).

Steam Generator 1

1. There were four tubes that required in situ pressure testing to support the condition monitoring assessment based on the DA and Electric Power Research Institute in situ pressure test guidelines. Additional discussion of these activities is included in an unresolved item in the results section of this report.
 - Two tubes from steam generator 1 (R1 C112 and R1 C138) were tested over the range of prescribed test pressures and successfully reached and maintained the structural limit pressure test of 5500 psi. No tube leakage was measured at any test pressure for these two tubes.
 - Two tubes from steam generator 1 (R1 C4 and R2 C35) were tested over the range of prescribed test pressures. Tube R1 C4 was unable to reach the structural limit test pressure as it experienced pop-through at 5243 psi. No leakage was measured in this tube at lower test pressures prior to the pop-through. Tube location R2 C35 was able to temporarily achieve the structural limit test pressure point at 5500 psi, but lost leak tight integrity via pop-through after a combined 131 seconds above the target pressure of 5500 psi. The combined 131 seconds at pressure was achieved by a period of 41 seconds above the test target, then briefly dropping below 5500 psi before being re-established above 5500 psi for 90 seconds prior to the pop through. No tube leakage was observed at any test pressure below the structural limit test.
2. No tube leakage was reported during this operating interval. The inspectors verified that the licensee is monitoring the steam generator tube integrity appropriately through a review of the examinations.

There were a total of 48 tubes plugged, including 27 tubes in steam generator 1 and 21 tubes in steam generator 2.

Problem Identification and Resolution. Review of in-service inspection items. (Inspection Procedure 71152 - Problem Identification and Resolution). The inspector evaluated a sample of 16 condition reports associated with in-service inspection activities. No findings or violations of more than minor significance were identified.

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)

- (1) The inspectors observed and evaluated licensed operator performance in the control room during unit shutdown for refueling outage on October 13-14, 2023.

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

- (1) The inspectors observed and evaluated a licensed operator exam in the simulator on December 12, 2023.

71111.12 - Maintenance Effectiveness

Maintenance Effectiveness (IP Section 03.01) (5 Samples)

The inspectors evaluated the effectiveness of maintenance to ensure the following structures, systems, and components remain capable of performing their intended function:

- (1) containment spray pump A following breaker failure on September 22, 2023
- (2) permanent temporary emergency diesel generator following failure of heating, ventilation, and air conditioning system on November 27, 2023
- (3) shield building ventilation train B failures on December 13, 2023
- (4) controlled ventilation area system following identification of incorrect open and close times in design basis calculations on December 14, 2023
- (5) essential services chilled water chiller AB following trip while in service for train A on December 26, 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) containment particulate-iodine-gas radiation monitor operability following restoration of particulate channel only on October 2, 2023
- (2) shutdown cooling trains A and B following instrument air transients on October 15, 2023
- (3) low pressure safety injection train B following identification of condensation inside minimum flow recirculation valve actuator on November 28, 2023
- (4) plant stack radiation monitoring following failures and maintenance of plant stack particulate-iodine-gas and plant stack wide range gas monitor on November 30, 2023
- (5) engineered safety features actuation system trains A and B following identification of no fire seals on December 13, 2023

71111.20 - Refueling and Other Outage Activities

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

- (1) (Partial)
The inspectors evaluated refueling outage 25 activities from October 14, 2023, to the end of the inspection period, December 31, 2023. The sample will be closed in a future inspection report.

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) (3 Samples)

- (1) startup transformer B following breaker repair on October 12, 2023
- (2) low pressure safety injection pump B following identification of condensation in minimum flow valve on December 4, 2023
- (3) auxiliary component cooling water train B following modification implementation for flow control valve on December 19, 2023

Surveillance Testing (IP Section 03.01) (4 Samples)

- (1) emergency diesel generator A safety injection actuation test with concurrent loss of offsite power on October 18, 2023
- (2) N+1 FLEX diesel generator on November 14, 2023
- (3) auxiliary component cooling water train B on December 7, 2023
- (4) charging pump A for boron flowrate verification on December 14, 2023

Inservice Testing (IP Section 03.01) (2 Samples)

- (1) safety injection valve 307A, safety injection tank 1A fill/drain valve testing on November 6, 2023
- (2) controlled ventilation area system train B on December 18, 2023

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

- (1) leak rate test on containment isolation valve SI-407A, loop 2 shutdown cooling suction outside containment isolation, on October 23, 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) (2 Samples)

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

- (1) surveys of potentially contaminated material leaving the radiologically controlled area exit
- (2) workers exiting the reactor containment building during a refueling outage

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) Move of the upper guide structure from the reactor vessel to the lower cavity using radiation work permit (RWP) 2023-702.
- (2) Chemical sampling and engineering inspection on the reactor vessel head using RWP 2023-0714.
- (3) Breach and disassembly of gaseous waste valve (NG MVAAA 230A) using RWP 2023-0404.

High Radiation Area and Very High Radiation Area Controls (IP Section 03.05) (5 Samples)

The inspectors evaluated licensee controls of the following high radiation areas (HRAs) and very high radiation areas (VHRAs):

- (1) (HRA) top of containment sump (+7' elevation in the reactor containment building)
- (2) (HRA) pre-concentrator filter cubicle A/B (-35' elevation in the reactor auxiliary building [RAB])
- (3) (HRA) purification ion exchange (IX) room A/B (-4' elevation in the RAB)
- (4) (HRA) pre-concentrator IX room A/B (-4' elevation in the RAB)
- (5) (HRA) fuel pool and chemical volume control filter cubicles and their respective hoist pendants (-4' elevation in the RAB)

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.

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) NRC Form 5 and dose assessment information for four workers, dated October 2, 2020
- (2) NRC Form 5 and dose assessment information for one worker, dated April 18, 2022

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

The inspectors evaluated the following special dosimetric situations:

- (1) NRC Form 5 and dose information for four declared pregnant workers
- (2) NRC Form 5 and assessments for four workers using effective dose equivalent monitoring for non-uniform radiation fields

71124.08 - Radioactive Solid Waste Processing & Radioactive Material Handling, Storage, & Transportation

Shipment Preparation (IP Section 03.04) (1 Sample)

- (1) The inspectors observed the preparation of radioactive shipment 23-1009 consisting of two intermodal containers (ESUU200865 and ESUU200404) of dry active waste on October 26, 2023.

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) (1 Sample)

- (1) October 1, 2022, through September 30, 2023

BI02: RCS Leak Rate Sample (IP Section 02.11) (1 Sample)

- (1) October 1, 2022, through September 30, 2023

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

- (1) April 1, 2021, through June 30, 2023

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

- (1) April 1, 2021, through June 30, 2023

71152A - Annual Follow-up Problem Identification and Resolution

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

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

- (1) containment fan cooler train B failures on November 21, 2023
- (2) component cooling water flow deviations to high pressure safety injection pump, low pressure safety injection pumps, and containment spray pumps on December 1, 2023
- (3) FLEX N and N+1 diesel generator starting battery failures on December 21, 2023

71152S - Semiannual Trend Problem Identification and Resolution

Semiannual Trend Review (Section 03.02) (1 Sample)

- (1) The inspectors reviewed the licensee's corrective action program for potential adverse trends in lead-acid battery performance that might be indicative of a more significant safety issue. The inspectors observed a negative trend in performance and longevity of flooded lead-acid battery performance. This observation is further detailed in the results section of this report.

INSPECTION RESULTS

Unresolved Item (Open)	Steam Generator 1 In-Situ Tube Pressure Testing Failures. URI 05000382/2023004-01	71111.08P
<p><u>Description:</u> The inspectors identified an unresolved item (URI) associated with the licensee's failure to meet the steam generator tube integrity performance criterion in technical specification (TS) 6.5.9.b.1, Steam Generator Program. Specifically, Waterford 3's Steam Generator Program structural integrity performance criterion includes retaining a safety factor of 3.0 against burst under normal steady state full power operation primary to secondary pressure differential and a safety factor of 1.4 against burst applied to the design basis accident primary to secondary pressure differentials. The licensee extended the inspection interval for the tube inspections from three cycles to four based on NRC approval of TSTF-577 (Technical Specification Task Force), "Revised Frequencies for Steam Generator Tube Inspections" and reevaluation of the refueling outage 21 (2017) operational assessment. During the Unit 3 refueling outage 25 four tubes failed to meet the condition monitoring criteria.</p> <p>Technical specification 6.5.9, Steam Generator Program, requires that a program be established and implemented to ensure that steam generator tube integrity is maintained. Pursuant to TS 6.5.9, tube integrity is maintained when the steam generator performance criteria are met. There are three steam generator performance criteria: structural integrity, accident induced leakage, and operational leakage. Meeting the steam generator performance criteria provides reasonable assurance of maintaining tube integrity at normal and accident condition. TS 6.5.9 also states that the Steam Generator Program shall include provisions for steam generator tube plugging criteria. Tubes found by in-service inspection to contain flaws with a depth equal to or exceeding 40 percent on the nominal tube wall thickness shall be plugged.</p>		

In steam generator 1, there were four tubes identified as having flaws that exceeded the condition monitoring structural limit at the tube support plates. Eddy current testing and sizing was performed, and the structural equivalent flaw parameters were calculated. The structural equivalent parameters were compared to the condition monitoring limit curve and determined that deficiencies existed. Since the tube performance criteria were not met analytically, in-situ pressure testing of the four tubes was required. Other than the four tubes in-situ pressure tested, all other tubes satisfied performance criteria analytically. In steam generator 2, the tube performance criteria were satisfied analytically.

Two of the four tubes in-situ pressure tested in steam generator 1 failed to meet Structural Integrity Performance Criterion. The examination results were also used, together with outage repairs (i.e., tube plugging), to demonstrate that the performance criteria would be met for upcoming cycles 26 through 27.

Upon completion of the tube examinations of pre and post pressure testing, +Point and Array probe data confirmed that flaws in steam generator 1, tube Row 1 (R1) – Column 4 (C4) and in tube R2-C35 had failed and burst. The inspectors reviewed condition report CR-WF3-2023-17005 which provides additional information and a causal evaluation.

The event was reported as an 8-hour, non-emergency notification per 10CFR72(b)(3)(ii)9A) as a degraded condition for not meeting the performance criteria for steam generator structural integrity in accordance with TS 6.5.9.b.1, Steam Generator Program, due to two tube failures in steam generator 1. Event notification (EN) 56834 was reported to NRC operations center on November 5, 2023.

The licensee's apparent cause analysis and EN 56834 identified that the vendor used non-conservation assumptions in the revised operational assessment to extend the inspection interval. Additional inspection is required to determine if there is a performance deficiency associated with this issue.

Planned Closure Actions: The NRC staff will review the available information, including a pending vendor causal evaluation, to determine if any performance deficiencies exist and identify any possible regulatory outcomes.

Licensee Actions: The licensee has placed the information into their corrective action program and will have the document reviews and corrective actions developed in January 2024.

Corrective Action References: Condition Reports CR-WF3-2023-17220 and CR-WF3-2023-17005.

Failure to Follow ALARA Planning and Control Procedures Resulting in Unplanned Dose			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Occupational Radiation Safety	Green NCV 05000382/2023004-02 Open/Closed	[H.4] - Teamwork	71124.01
The inspectors identified a Green finding associated with a non-cited violation (NCV) of Technical Specification (TS) 6.8.1.a for a failure to follow as low as reasonably achievable (ALARA) planning and control procedures during the refueling outage 24 (2022). Specifically,			

the licensee's planning or radiological controls did not prevent unplanned dose for two separate work activities conducted during the refueling outage.

Description: During refueling outage 24 (2022), the licensee performed work activities under RWP 2022-0512, "1RE24 Steam Generator 1 and 2 Feeding Mod," and RWP 2022-0615, "1RE24 Remove/Replace Pressurizer Heater." The accrued dose for each of these activities exceeded the planned dose estimate by 64 percent due to issues that NRC deemed were preventable or reasonably foreseeable. This presented two examples for a failure to follow ALARA planning and control procedures. These issues involved changing radiological conditions, delays in staging materials needed for work, inaccurate person-hours from various teams, and uncoordinated resources.

The first example is relative to RWP 2022-0512, "1RE24 Steam Generator 1 and 2 Feeding Mod," revision 2, which addressed the radiological work with the steam generators and the feeding. While conducting this work, multiple issues occurred. The steam generator design for installation was a new design to the site. The new design had higher u-tubes relative to the feedwater injection area than the previous steam generators installed. The licensee determined that the new design required more shielding for the foreign object search and retrieval activities, so they added more magnetic tungsten shielding. However, this additional shielding was not as effective as planned relative to the body positioning of the workers in that the licensee did not account for the larger plane source of the steam generators. The workers were exposed to higher than planned levels of radiation resulting in the additional dose. The actual dose for this task significantly increased the planned dose due to various issues identified during the review of the work activity.

Some of these issues were:

- There was difficulty with the torquing of bolts, in which multiple bolts were over-torqued and had to be addressed. The NRC deemed this as a human performance error and therefore preventable. NRC gave no credit for this additional dose.
- There were delays in staging material due to improper planning for the needed resources. For instance, the polar crane hook was unavailable when needed to stage materials. NRC deemed this as a human performance error and preventable. NRC gave no credit for this additional dose.
- Teams involved with the work activity underestimated activities and resources needed. For instance, the project team underestimated resources needed to assist the containment coordinator. NRC deemed this as a human performance error and preventable. NRC gave no credit for this additional dose.
- The licensee used surveys from mockup activities during the pre-outage phase and subsequently, the radiological levels increased. However, the licensee failed to confirm the new radiological conditions and properly address the changing radiological conditions in their planning phase prior to work. NRC deemed this as a human performance error and preventable. NRC gave no credit for this additional dose.
- During the job, the licensee experienced retrieval of foreign material on the secondary side of the steam generators. NRC determined this was an emergent issue that was not preventable or foreseeable. NRC gave additional dose credit in the amount of 208 millirem.

Based on the above information reviewed, the NRC determined that an additional 208 millirem may be added to the licensee's initial dose estimate of 3.656 rem, resulting in a

new NRC revised dose estimate of 3.864 rem. When comparing this to the actual accrued dose of the RWP (6.352 rem), NRC determined that the actual collective dose exceeded the revised dose estimate by approximately 64 percent.

The second example is relative to RWP 2022-0615, "1RE24 Remove/Replace Pressurizer Heater," revision 6, which addressed the radiological work to remove and replace the pressurizer heaters. While conducting this work, the licensee had trouble in various aspects of the activity. The three primary issues involved: (1) higher dose rates on the instrument lines requiring more shielding, (2) removing the packaging of the new heater equipment, and (3) more time needed to remove the heaters due to issues with the type of respiratory equipment used.

The details of these three issues included:

- The licensee surveyed the instrument lines prior to work and identified additional shielding was needed to protect workers from unintended dose. NRC gave additional dose credit in the amount of 132 millirem for adding shielding for this activity.
- The licensee had difficulty removing the type of packaging used on the new heater equipment, which seemed to have crystallized, and there was also wire meshing that proved difficult to remove. NRC gave additional dose credit in the amount of 372 millirem.
- The licensee chose to use a Pureflo respirator hood, described as a loose-fitting, all-in-one powered air purifying respirator (PAPR). Workers experienced fogging of these PAPRs that slowed down work significantly. However, NRC determined that the time estimate used for removal of each heater was inadequate and underestimated. The licensee estimated the removal of ten heaters at approximately 36 minutes per heater but needed about 3 hours per heater. Partial credit for additional dose was given due to unforeseen conditions of the PAPRs fogging resulting in slower work performance, but not for the general underestimation of man-hours needed for each heater removal. As a result, NRC gave additional dose credit in the amount of 724 millirem. NRC added this additional dose to the initial dose estimate, which generally allowed about one additional man-hour for the removal of each heater.

Based on the above information reviewed, the NRC determined that a total of 1.228 rem (132 millirem + 372 millirem + 724 millirem) in additional dose may be credited to the licensee's initial dose estimate of 3.262 rem, resulting in a new NRC revised dose estimate of 4.490 rem. When comparing this to the actual accrued dose of the RWP (7.383 rem), NRC determined that the actual collective dose exceeded the revised dose estimate by approximately 64 percent.

As the inspectors reviewed the ALARA procedure, EN-RP-110, Step 4.0[8], the following steps were not consistently followed in RWPs 2022-0512 and 2022-0615:

[8] Planning and Scheduling / Outage Groups: Responsibilities include the following:

- Providing accurate worksite person-hours and accurate work locations for ALARA Planning purposes.
 - In NRC's review, the worksite person hours for removal and replacement of the pressurizer heaters and the steam generator activities were not accurate for planning purposes to maintain doses ALARA

- Providing detailed work plans to allow for ALARA Planning to designate adequate radiological controls.
 - During NRC's review, in RWP 2022-0615, there were no written plans for sequence and steps of the pressurizer heater removal. Poor planning resulted in not maintaining doses ALARA. In RWP 2022-0512, the ALARA planning phase did not account for the larger plane source of the new steam generator design resulting in challenges with radiological exposures. Also, in the planning of this RWP, the surveys used were from the mockup during the pre-outage phase. When the radiological conditions changed, the licensee failed to adjust the planned dose estimate to account for the higher dose rates during the outage.
- Coordinating scheduling of work with radiation protection (RP) personnel to assure work is completed in a manner and sequence that supports the ALARA Program.
 - In NRC's review, there were examples of licensee groups not coordinating activities, such as delays in staging material needed to conduct the work and informal work plans. Activities and resources needed for work within the RCA were not coordinated and accounted for appropriately. In the post-outage review of RWP 2022-0512, the licensee deemed the delays in staging/de-staging as the largest percentage of unproductive RWP person-hours. In the post-outage review of RWP 2022-0615, the licensee stated that the RP technicians supporting the activity did not have good firsthand knowledge of the project scope and equipment being used which challenged effective team building. Also, informal discussions between the project team and RP staff for removal of the pressurizer heaters, in RWP 2022-0615, resulted in uncertainty regarding the sequence and steps of execution.

Therefore, NRC determined that multiple procedural steps were missed during the planning of these two work activities, RWP 2022-0512 and RWP 2022-0615, which resulted in unplanned dose to workers and challenging ALARA principles.

Corrective Actions: The licensee addressed the deficiencies identified during the work activity in their ALARA package post-job reviews. They also documented the failure to maintain doses ALARA for these work activities in a new condition report for assessment of applicable corrective actions.

Corrective Action References: CR-WF3-2023-16870

Performance Assessment:

Performance Deficiency: The licensee failed to follow ALARA planning procedures and did not properly plan the scope of work activities.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Program & Process attribute of the Occupational Radiation Safety cornerstone and adversely affected the cornerstone objective to ensure the adequate protection of the worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. Additionally, the finding was similar to Example 6(i) in Appendix E to Inspection Manual Chapter 0612, "Power Reactor Inspection Reports – Examples of Minor Issues." This example states that an issue is more than minor if it results in a collective dose greater than 5 person-Rem, and the actual

dose accrued exceeds the estimated dose by greater than 50 percent. Specifically, the actual dose accrued for each work activity exceeded 5 rem and both exceeded the revised dose estimate, as determined by the NRC, by 64 percent.

Significance: The inspectors assessed the significance of the finding using IMC 0609 Appendix C, "Occupational Radiation Safety SDP." The inspectors determined the finding had very low safety significance (Green) because: (1) it was associated with ALARA planning and work controls; and (2) the licensee's latest 3-year rolling average collective dose was less than 135 person-Rem.

Cross-Cutting Aspect: H.4 - Teamwork: Individuals and work groups communicate and coordinate their activities within and across organizational boundaries to ensure nuclear safety is maintained. Specifically, the licensee failed to implement the process of planning work activities with proper communication and coordination from each workgroup involved to include person-hour estimates, resources, and formal work steps needed for the job activities. This resulted in delays in staging material needed, inaccurate person-hours needed to perform work activities, and uncoordinated resources needed for work activities.

Enforcement:

Violation: Technical Specification 6.8.1.a requires, in part, that written procedures shall be established, implemented, and maintained covering the procedures recommended in Regulatory Guide 1.33, Appendix A, Revision 2, dated February 1978. Section 7(e) of Appendix A requires radiation protection procedures. Licensee Procedure EN-RP-110, "ALARA Program," revision 14, described the planning and scheduling responsibilities for outage groups, which included providing accurate work site person-hours, providing detailed work plans to allow ALARA planning to designate adequate radiological controls, and coordinating scheduling of work with Radiation Protection personnel to support ALARA.

Contrary to the above, during refueling outage 24 in the spring of 2022, the licensee failed to implement their ALARA program procedures for planning and controlling two work activities. Specifically, for two RWPs-2022-0512 and -2022-0615, the licensee failed to provide accurate work site person-hours, failed to provide detailed work plans for the pressurizer heater removals or account for the larger plane source of the new steam generator design, and failed to coordinate work activities and resources resulting in delays in staging materials and unavailable resources. This resulted in not maintaining doses ALARA for workers during these activities.

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

Failure to Maintain FLEX Equipment Starting Batteries

Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000382/2023004-03 Open/Closed	[H.12] - Avoid Complacency	71152A

The inspectors reviewed a self-revealed Green finding and associated NCV of 10 CFR 50.155(b)(1), which states, in part, strategies and guidelines to mitigate beyond -design-basis events from natural phenomena must be capable of being implemented site-wide and must include maintaining or restoring core cooling capabilities. Specifically, from approximately

February 14 to May 16, 2023, the licensee failed to ensure the starting batteries for the FLEX N and N+1 diesel generators had sufficient capacity to perform their required functions.

Description: As part of the licensee's phase 2 strategies as required by NRC Order EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," the licensee committed to the guidance described in NEI 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide," revision 0. NRC Order EA-12-049 has since been codified by 10 CFR 50.155, "Mitigation of beyond-design-basis events."

Specifically for FLEX AC power supply, the licensee developed mitigating strategies that utilize a FLEX N diesel generator as a 480V power supply that can be hooked up into a safety bus. A FLEX N+1 diesel generator was stored outside the protected area as a backup that can be brought into the protected area and connected into a safety bus. These two diesel generators are the only dedicated means of providing 480V power for a beyond-design-basis station blackout event. The diesel generators are started by a set of two commercial 8D batteries for each generator.

On May 6, 2023, power was lost for 3 hours to the FLEX N+1 building which maintains the FLEX N+1 diesel generator starting battery charge. On May 13, 2023, the licensee was performing weekly rounds when it was identified the control panel of the FLEX N+1 diesel generator had no power. The capacity of the batteries was too low to restart the battery charger to provide the float charge. The batteries would not have had the capacity to start the FLEX N+1 diesel generator if needed. On May 14, 2023, the degraded starting batteries were replaced with the charged and ready set of spare FLEX starting batteries.

On May 16, 2023, the licensee removed power to the FLEX N diesel generator for 8 hours for maintenance. The power was reconnected 24 minutes later, and the licensee attempted to start the FLEX N diesel. However, the generator failed to start due to degraded capacity of the starting battery. In both failures, the cause was a starting battery that had degraded capacity. Because there was a set of ready spare batteries that would be able to be changed out in an actual event, the function of the FLEX AC power supply was not considered fully lost. All FLEX functions could still be completed within the time allotted.

The licensee makes plans to replace the starting batteries on a 4-year frequency. No tests are performed specifically on the batteries to ensure their capacity is adequate beyond performing a start of the FLEX N and FLEX N+1 diesel generators every six months. Both sets of starting batteries were purchased and installed in May 2020. There is no expected lifetime of the battery provided by the manufacturer. The warranty on the batteries is for 6 months with a pro-rated replacement that extends until 30 months of life. As evidenced by the failure to start of the diesel generators, the capacity of these starting batteries was degraded beyond the ability to start the FLEX diesel generators.

The date on which the starting batteries had degraded to no longer be functional is unable to be determined with accuracy. The degradation mechanism is not able to be identified on the licensee weekly or monthly checks of the equipment. The previous successful surveillances that started the FLEX N and N+1 diesel generators were on November 15, 2022. The inspectors assume the degradation occurred halfway from the last successful surveillance to when both FLEX diesel generators were repaired. This date was determined to be February 14, 2023.

Corrective Actions: The licensee replaced the starting batteries for both FLEX N and FLEX N+1 diesel generators. After the initial replacement, the licensee performed another replacement with longer-lasting absorbed glass-mat batteries. Additionally, the licensee implemented preventive maintenance to perform monthly battery load testing for the FLEX N and FLEX N+1 diesel generator starting batteries.

Corrective Action References: CR-WF3-2023-13265, CR-WF3-2023-13293

Performance Assessment:

Performance Deficiency: The licensee failed to maintain mitigation strategies for beyond-design basis external events.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee failed to maintain the FLEX N and FLEX N+1 diesel generator batteries so their respective generators could start and provide power in accordance with the licensee mitigating strategies.

Significance: The inspectors assessed the significance of the finding using IMC 0609 Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." Using Exhibit 2, "Mitigating Systems Screening Questions," Section E, the inspectors determined the finding to be of very low safety significance (Green), because the performance deficiency was associated with equipment not solely purposed for spent fuel pool instrumentation or for containment venting, but it was associated with equipment credited in a Phase 2 FLEX strategy such that all FLEX functions could still be completed in accordance with existing plant procedures within the time allotted.

Cross-Cutting Aspect: H.12 - Avoid Complacency: Individuals recognize and plan for the possibility of mistakes, latent issues, and inherent risk, even while expecting successful outcomes. Individuals implement appropriate error reduction tools. The licensee failed to recognize and plan for the possibility of starting batteries to degrade faster than their service life and result a loss of ability of the FLEX diesels to start.

Enforcement:

Violation: 10 CFR 50.155(b)(1), states, in part, strategies and guidelines to mitigate beyond-design-basis events from natural phenomena must be capable of being implemented site-wide and must include maintaining or restoring core cooling capabilities.

Contrary to the above, from approximately February 14 to May 16, 2023, the licensee failed to maintain mitigation strategies for beyond-design basis external events. Specifically, the licensee failed to maintain the FLEX N and FLEX N+1 diesel generator batteries so their respective generators could start and provide power in accordance with the licensee mitigating strategies.

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

Observation: Flooded Lead-Acid Battery Performance	71152S
<p>The inspectors reviewed the licensee's corrective action program for potential adverse trends in lead-acid battery performance that might be indicative of a more significant safety issue. The inspectors observed a negative trend in performance and longevity of flooded lead-acid battery performance. In addition to the FLEX N and FLEX N+1 starting battery issues detailed in the IP 71152A section, the inspectors identified five other battery failures in 2023:</p> <ul style="list-style-type: none"> • CR-WF3-2023-01793: The starting batteries for the non-safety permanently-installed temporary emergency diesel generator were degraded and unable to perform their function. • CR-WF3-2023-14593: The starting batteries for the security diesel generator were degraded and unable to perform their function. • CR-WF3-2023-15322: The starting battery for the portable ultimate heat sink replenishment pump were below the required voltage. • CR-WF3-2023-15407: The starting battery for the diesel-driven dry cooling tower sump pump was degraded and unable to perform its function. • CR-WF3-2023-15858: The starting batteries for diesel-driven fire pump A were degraded and unable to perform their function. <p>These five diesel generators are considered non-safety but perform important functions for the site. The licensee documented the NRC concern about a negative trend in performance in CR-WF3-2023-15830 and performed an analysis of the issue. The corrective actions included replacement of the batteries and a reconsideration of the preventive maintenance strategies. No findings of significance were identified.</p>	

EXIT MEETINGS AND DEBRIEFS

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

- On October 27, 2023, the inspectors presented the occupational radiation safety inspection results to Joseph Sullivan, Site Vice President, and other members of the licensee staff.
- On November 2, 2023, the inspectors presented the radiation inspection results to Joseph Sullivan, Site Vice President, and other members of the licensee staff.
- On November 30, 2023, the inspectors presented the inservice inspection results to Joseph Sullivan, Site Vice President, and other members of the licensee staff.
- On January 24, 2024, the inspectors presented the integrated inspection results to Joseph Sullivan, Site Vice President, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.01	Engineering Evaluations	W3F1-2015-0042	Flood Hazard Reevaluation Report	07/21/2015
71111.01	Procedures	OP-901-521	Severe Weather and Flooding	342
71111.04	Corrective Action Documents	CR-WF3-YYYY-NNNN	2022-04265, 2022-06268, 2023-16951	
71111.04	Miscellaneous	W3-DBD-010	Containment Cooling HVAC and Related Systems	301
71111.04	Miscellaneous	W3-DBD-011	Electrical Distribution (AC portion)	302
71111.04	Procedures	OP-006-001	Plant Distribution System (7KV, 4KV, and SSD) System	346
71111.04	Procedures	OP-008-003	Containment Cooling System	303
71111.04	Work Orders		00580779, 00580781	
71111.05	Fire Plans	RAB 16-001	Emergency Diesel Generator Room 3A	12
71111.05	Fire Plans	RAB 1E-001	Cable Vault	11
71111.05	Fire Plans	RAB 5-001	Electrical Penetration Room B	10
71111.05	Fire Plans	RAB 6-001	Electrical Penetration Room A	10
71111.05	Fire Plans	RAB 8C-001	Switchgear Room AB	12
71111.05	Fire Plans	RAB 9-001	Auxiliary Control Panel Room	9
71111.05	Fire Plans	RCB-001	RCB General Area	12
71111.07A	Miscellaneous	W3-DBD-4	Component Cooling Water Auxiliary Component Cooling Water Design Basis Document	307
71111.07A	Work Orders		52586237, 53000031	
71111.08P	Corrective Action Documents	CR-WF3-YYYY-NNNN	2022-01969, 2022-02400, 2022-02472, 2022-02656, 2022-02665, 2022-02915, 2022-03207, 2022-03855, 2022-04131, 2022-04850, 2022-05025, 2022-05227, 2022-05244, 2022-05355, 2022-08116, 2023-01326, 2023-01346, 2023-01565, 2023-16490, 2023-16753, 2023-16755, 2023-16971, 2023-91568, 2023-01568, 2023-01632	
71111.08P	Corrective Action Documents Resulting from Inspection	CR-WF3-YYYY-NNNN	2023-16714, 2023-16720, 2023-16883, 2023-16938, 2023-16966, 2023-16971, 2023-16985, 2023-16990, 2023-17005, 2023-17042, 2023-17043, 2023-17044, 2023-17058, 2023-17070, 2023-17219, 2023-17220, 2023-17259, 2023-17278, 2023-376	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.08P	Drawings		S/G 32 Hot Primary Face, Hardware Repair Status Pre-3R25-10/23 - S/G 32 Hot Leg	08/11/2023
71111.08P	Drawings	02-9367763-E-000	S/G 31 Cold Primary Face, Hardware Repair Status Pre-3R25-10/23 - S/G 31 Cold Leg	08/11/2023
71111.08P	Drawings	02-9367764-E-000	S/G 31 Hot Primary Face, Hardware Repair Status Pre-3R25-10/23 - S/G 31 Hot Leg	08/11/2023
71111.08P	Drawings	02-9367765-E-000	S/G 32 Cold Primary Face, Hardware Repair Status Pre-3R25-10/23 - S/G 32 Cold Leg	08/11/2023
71111.08P	Drawings	6660E03	Replacement Steam Generator Waterford 3 Water Level Vs. Span	2
71111.08P	Drawings	H33760-1201, Sheet 1 of 4	Rosemount Engineering Company, Certified Configuration Drawing - Sensor, Temperature Platinum Resistance Type	C
71111.08P	Engineering Changes	EC# 0000084109	Waterford 3 - Steam Generator Strategic Plan Document Plan Per EN-DC-317, Para 7.13	000
71111.08P	Engineering Changes	EC-0054070627	ASME Section XI VT-3 examination of rigid strut support FWRR-0017 under WO-554302	
71111.08P	Miscellaneous	Certificate of Calibration No. 20846-502	Parker Research Corporation, TB-10 Magnetic Weight Lift Test Bar	04/12/2007
71111.08P	Miscellaneous	LA191736	SOCOTEC WF3 Feedwater Piping Monitoring for RSG Flow Diverter Modification	001
71111.08P	Miscellaneous	PQR 344	Procedure Qualification Record, Manual Gas tungsten Arc Welding (GTAW)	1
71111.08P	Miscellaneous	PQR 456	Procedure Qualification Record, Manual Gas Tungsten & Shielded Metal Arc Welding (GTAW and SMAW)	0
71111.08P	Miscellaneous	WPS-NI-43/43-B	Manual Gas Tungsten Arc Welding (GTWA) of P-No.43 nickel alloys, in all positions, for all joint types, fillets and repairs using F-No. 43 filler metal, without Postweld Heat Treatment (PWHT).	0
71111.08P	NDE Reports	BOP-PT-23-069	1B Cold Leg Thermowell, Component ID: RCI TE0112 CD1	11/04/2023
71111.08P	NDE Reports	PT-VT-22-031	Bolted Connection RC MRCT0001 (RV Studs)	04/15/2022
71111.08P	NDE Reports	PT-VT-22-039	S/G System - RCB/Outside D-Rings	06/24/2022
71111.08P	NDE Reports	W-CISI-VT 22-002	Inner Moisture Between Col. 19 and Col. 21 (Approx.)	04/27/2022

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.08P	NDE Reports	W-CISI-VT22-007	Inner Moisture Barrier Between Col. 11 and Col. 13 (Approx.)	04/27/2022
71111.08P	NDE Reports	W-CISI-VT22-013	Moisture Barrier Inside Annulus 0 degrees to 103 degrees azimuth.	04/27/2022
71111.08P	NDE Reports	W-CISI-VT22-014	Moisture Barrier Inside Annulus 103 degrees to 256 degrees Azimuth	04/27/2022
71111.08P	NDE Reports	W-CISI-VT22-015	Moisture Barrier Inside Annulus 256 degrees to 360 degrees Azimuth	04/27/2022
71111.08P	NDE Reports	W-ISI-VT-22-009	ASME Section XI VT-3 examination of rigid strut support FWRR-0017 under WO-554302. A loose lock nut was not in the proper location according to design drawing FWRR-117 SH 1 of 3 and the Bergen-Paterson Pipe Support Corp.	10/30/2023
71111.08P	Procedures	CEP-BAC-001	Boric Acid Corrosion Control (BACC) Program Plan	2
71111.08P	Procedures	CEP-NDE-0400	Ultrasonic Examination	9
71111.08P	Procedures	CEP-NDE-0404	Manual Ultrasonic Examination of Ferritic Piping Welds (ASME XI)	9
71111.08P	Procedures	CEP-NDE-0407	Straight Beam Ultrasonic Examination of Bolts and Studs (ASME XI)	6
71111.08P	Procedures	CEP-NDE-0423	Manual Ultrasonic Examination of Austenitic Piping Welds (ASME XI)	9
71111.08P	Procedures	CEP-NDE-0641	Liquid Penetrant Examination (PT) for ASME Section XI	10
71111.08P	Procedures	CEP-NDE-0731	Magnetic Particle Examination (MT) for ASME Section XI	7
71111.08P	Procedures	CEP-NDE-0901	VT-1 Examination	6
71111.08P	Procedures	CEP-NDE-0902	VT-2 Examination	10
71111.08P	Procedures	CEP-NDE-0903	VT-3 Examination	8
71111.08P	Procedures	CEP-NDE-0965	Visual Welding Inspection ASME, ANSI B31-1	7
71111.08P	Procedures	CEP-PT-0001	ASME Section XI Pressure Test (PT) Program	313
71111.08P	Procedures	CEP-RR-001	ASME Section XI Repair/Replacement Program	320
71111.08P	Procedures	CEP-SG-002	Steam Generator Secondary Side Examinations and Maintenance	5
71111.08P	Procedures	CEP-WP-GWS-1	General Welding Standard ASME/ANSI	8
71111.08P	Procedures	EN-DC-319	Boric Acid Corrosion Control Program (BACCP)	13
71111.08P	Procedures	EN-DC-328	Entergy Nuclear Welding Program	008
71111.08P	Procedures	EN-DC-342	Entergy Repair/Replacement Program	004

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.08P	Procedures	EN-DC-351	Inservice Inspection Program Duties and Responsibilities	007
71111.08P	Procedures	EN-LI-102	Corrective action Program	049
71111.08P	Procedures	SEP-BAC-WF3-001	Waterford 3 Boric Acid Corrosion Control Program (BACCP) Program Section	4
71111.08P	Procedures	SEP-ISI-104	Program Section For ASME Section XI, Division 1 WF3 Inservice Inspection Program	14
71111.08P	Procedures	SEP-ISI-104	Program Section for ASME Section X, Division 1 WF3 Inservice Inspection Program	14
71111.08P	Procedures	SEP-PT-WF3-001	Waterford 3 Inservice Inspection Pressure Testing (PT) Program Section	001
71111.08P	Procedures	SEP-SG-WF3-001	Waterford -3 (W3/WF3) Steam Generator Program	4
71111.08P	Self-Assessments	LO-HQNLO-2021-19	2022 Welding Program Assessment	02/17/2022
71111.08P	Self-Assessments	LO-WLO-2022-0060-CA	Pre-NRC RF25 ISI Activities Self -Assessment Report	08/08/2023
71111.08P	Self-Assessments	LO-WLO-2022-0060-CA-3	Pre-NRC RF25 ISI Activities Self-Assessment Report	08/08/2023
71111.08P	Work Orders	WO No.	572188-24, 589604-15	
71111.11Q	Procedures	EN-OP-115	Conduct of Operations	31
71111.11Q	Procedures	OP-010-005	Plant Shutdown	345
71111.11Q	Procedures	OP-901-311	Loss of Train B Safety Bus	313
71111.11Q	Procedures	OP-901-521	Severe Weather and Flooding	343
71111.11Q	Procedures	OP-902-001	Reactor Trip Recovery	21
71111.11Q	Procedures	OP-902-003	Loss of Offsite Power / Loss of Forced Circulation Recovery	11
71111.12	Corrective Action Documents	CR-WF3-YYYY-NNNN	2022-06818, 2023-01910, 2023-01944, 2023-13294, 2023-13313, 2023-13331, 2023-14317, 2023-14967, 2023-16596, 2023-13943, 2023-14310, 2023-14314	
71111.12	Corrective Action Documents Resulting from Inspection	CR-WF3-YYYY-NNNN	2024-00169	01/10/2024
71111.12	Engineering Changes	EC 54051011	Engineering Change	09/14/2023

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.12	Miscellaneous	TD G080.0095	General Electric Switchgear Magne Blast Breakers	6
71111.12	Procedures	EN-DC-205	Maintenance Rule Monitoring	9
71111.12	Procedures	ME-004-115	4.16/6.9 kV G.E. Magne-Blast Breaker Overhaul	6, 9
71111.12	Procedures	OP-903-094	ESFAS Subgroup Relay Test - Operating	35
71111.12	Work Orders		00517244, 00586519, 52790255, 52805142, 54034973, 54038818	
71111.15	Corrective Action Documents	CR-WF3-YYYY-NNNN	2023-16283, 2023-16372, 2023-16376, 2023-17876, 2023-15594	
71111.15	Engineering Changes	EC 54056366	Engineering Change	0
71111.15	Procedures	OP-009-005	Shutdown Cooling	45
71111.15	Procedures	OP-901-511	Instrument Air Malfunction	20
71111.15	Corrective Action Documents	CR-WF3-YYYY-NNNN	2023-17399	
71111.24	Corrective Action Documents	CR-WF3-YYYY-NNNN	2019-01293, 2023-18027, 2017-03359, 2017-04081, 2018-00948,	
71111.24	Engineering Changes	EC 54093486	ACC-127B Input to Operability CR-23-18244/18245	12/21/2023
71111.24	Engineering Changes	EC 72080	Use of instrumentation for ACCW System Flow Balance PE-004-024	05/12/2017
71111.24	Procedures	FSG-005	Initial Assessment and FLEX Equipment Staging	15
71111.24	Procedures	OP-903-003	Charging Pump Operability Check	315
71111.24	Procedures	OP-903-052	Controlled Ventilation Area System Operability Check	15
71111.24	Procedures	OP-903-096	Boron Flowrate Verification	11
71111.24	Procedures	OP-903-115	Train A Integrated Emergency Diesel	59
71111.24	Procedures	OP-903-121	Safety Systems Quarterly IST Valve Tests	36
71111.24	Procedures	PE-004-024	ACCW & CCW System Flow Balance	310
71111.24	Procedures	STA-001-004	Local Leak Rate Test (LLRT)	320
71111.24	Work Orders		53013043, 54002710, 00586332, 53017375, 54067505, 54085552, 00474102, 00495521, 00502714, 00517264, 00518612	
71124.01	ALARA Plans	RWP 2022-0512	1RE24 Steam Generator 1 and 2 Feeding Mod	2
71124.01	ALARA Plans	RWP 2022-0615	1RE24 Remove/Replace Pressurizer Heater	6

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71124.01	Corrective Action Documents	CR-WF3-YYYY-XXXXX	2022-01953, 2023-00421, 2022-03390, 2022-06963, 2023-00518, 2023-01766, 2023-01234, 2022-02542, 2022-07912, 2023-00114, 2023-16348, 2023-16474,	
71124.01	Corrective Action Documents Resulting from Inspection	CR-WF3-YYYY-XXXXX	2023-16870, 2023-16872, 2023-16893	
71124.01	Procedures	EN-RP-100	Radiation Worker Expectations	14
71124.01	Procedures	EN-RP-101	Access Control for Radiologically Controlled Areas	17
71124.01	Procedures	EN-RP-102	Radiological Control	008
71124.01	Procedures	EN-RP-110	ALARA Program	14
71124.01	Procedures	EN-RP-121	Radioactive Material Control	19
71124.01	Procedures	EN-RP-141-01	Job Coverage Using Remote Monitoring Technology	8
71124.01	Procedures	EN-RP-152	Conduct of Radiation Protection	008
71124.01	Procedures	HPI-001-123	Plant Conditions and Radiological Concerns	010
71124.01	Radiation Surveys	WF3-2301-00269	RAB -4 Purification Ion Exchangers	01/24/2023
71124.01	Radiation Surveys	WF3-2308-00181	RAB -35 Spent Resin Tank Pump Room / Waste Condensate IX	08/22/2023
71124.01	Radiation Surveys	WF3-2309-00144	RAB -35 Boric Acid Pre-Concentrator Filters	09/14/2023
71124.01	Radiation Surveys	WF3-2309-00185	FHB +46 Fuel Handling Area	09/18/2023
71124.01	Radiation Surveys	WF3-2309-00225	RAB -4 Center Wing	09/23/2023
71124.01	Radiation Surveys	WF3-2309-00251	Radwaste Solidification Building	09/26/2023
71124.01	Radiation Surveys	WF3-2310-00066	RAB -4 Flash Tank / Purification Filter Area	10/05/2023
71124.01	Radiation Work Permits (RWPs)	2022-0623	REFUEL 24 - Perform miscellaneous contaminated system valve work in the Regen Hx Room including all support activities, troubleshooting, walkdowns, tagouts, tours and inspections.	01
71124.01	Radiation Work	2022-0641	REFUEL 24 - Emergent Dose added Inside the Reactor	00

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Permits (RWPs)		Containment Building.	
71124.01	Radiation Work Permits (RWPs)	2023-0404	REFUEL 25 - Plant Maintenance Valve Work on Contaminated and Clean System Valves outside the Reactor Containment Building.	00
71124.01	Radiation Work Permits (RWPs)	2023-0702	REFUEL 25 - Disassembly of Reactor Head and All Associated Work Activities.	02
71124.01	Radiation Work Permits (RWPs)	2023-0714	REFUEL 25 - Cleaning of the Reactor Head Surface. Includes all supporting activities and Bare Metal Inspections.	00
71124.01	Self-Assessments	LO-WLO-2022-0051 CA-00004	Radiological Hazard Assessment and Exposure Controls	08/21/2023
71124.04	Corrective Action Documents	CR-WF3-YYYY-NNNN	2020-01981, 2020-02198, 2020-03232, 2020-07014, 2021-00302, 2021-02028, 2022-01780, 2022-01921, 2022-03253, 2022-07004, 2023-01604, 2023-15043, 2023-16119	
71124.04	Miscellaneous		Evaluation of DLR/SRD Discrepancies and DLRs Not Returned for Processing	06/30/2020
71124.04	Miscellaneous		Evaluation of DLR/SRD Discrepancies and DLRs Not Returned for Processing	07/10/2022
71124.04	Miscellaneous		NRC Annual Dose Report (REIRS)	2022
71124.04	Miscellaneous	15403	Dose Assessment from PCE	10/02/2020
71124.04	Miscellaneous	56286	Dose Assessment from PCE	10/02/2020
71124.04	Miscellaneous	57700	Dose Assessment from PCE	10/02/2020
71124.04	Miscellaneous	64832	Dose Assessment from PCE	10/02/2020
71124.04	Miscellaneous	92905	Dose Assessment from PCE	04/18/2022
71124.04	Procedures	EN-RP-122	Alpha Monitoring	10
71124.04	Procedures	EN-RP-201	Dosimetry Administration	5
71124.04	Procedures	EN-RP-203	Dose Assessment	10
71124.04	Procedures	EN-RP-204	Special Monitoring Requirements	11
71124.04	Procedures	EN-RP-204-01	Effective Dose Equivalent (EDEX) Monitoring	3
71124.04	Procedures	EN-RP-205	Prenatal Monitoring	5
71124.04	Procedures	EN-RP-206	Dosimeter of Legal Record Quality Assurance	7
71124.04	Procedures	EN-RP-208	Whole Body Counting/In-Vitro Bioassay	7
71124.04	Self-Assessments	LO-WLO-2022-00051	Occupational Dose Assessment	10/05/2023

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71124.04	Self-Assessments	QA-14/15-2021-W3-01	Quality Assurance Audit: Combined Radiation Protection and Radwaste	10/25/2021
71124.08	Shipping Records	RSN#: 23-1009	Shipment consisting of two 20-foot intermodal containers (ESUU200404 and ESUU200865) of dry active waste, UN2912, radioactive material, low specific activity (LSA-I)	10/26/2023
71152A	Corrective Action Documents	CR-WF3-YYYY-NNNN	2022-01874, 2022-03111, 2022-06393, 2022-06647, 2022-06852, 2023-15179, 2023-15245, 2023-16237	
71152A	Corrective Action Documents Resulting from Inspection	CR-WF3-YYYY-NNNN	2023-14746, 2023-14747, 2023-14895, 2023-15933, 2023-15424	
71152A	Work Orders		53005507, 53022055, 53022177, 53005391, 54003998	
71152S	Corrective Action Documents	CR-WF3-YYYY-NNNN	2023-01793, 2023-01911, 2023-14593, 2023-15322, 2023-15407, 2023-15858, 2023-16043	
71152S	Corrective Action Documents Resulting from Inspection	CR-WF3-YYYY-NNNN	2023-15830	