



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

January 19, 2024

Fadi Diya
Senior Vice President
and Chief Nuclear Officer
Ameren Missouri
8315 County Road 459
Steedman, MO 65077

SUBJECT: CALLAWAY PLANT – INTEGRATED INSPECTION REPORT 05000483/2023004

Dear Fadi Diya:

On December 31, 2023, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at the Callaway Plant. On January 9, 2024, the NRC inspectors discussed the results of this inspection with J. Beck, Vice President Nuclear Engineering, and other members of your staff. The results of this inspection are documented in the enclosed report.

Four findings of very low safety significance (Green) are documented in this report. All 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.

A licensee-identified violation which was determined to be of very low safety significance is documented in this report. We are treating this violation as a non-cited violation 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 the Callaway Plant.

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 the Callaway Plant.

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."

F. Diya

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Sincerely,



Signed by Werner, Gregory
on 01/19/24

Gregory E. Werner, Chief
Reactor Projects Branch B
Division of Operating Reactor Safety

Docket No. 05000483
License No. NPF-30

Enclosure:
As stated

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

Docket Number: 05000483

License Number: NPF-30

Report Number: 05000483/2023004

Enterprise Identifier: I-2023-004-0003

Licensee: Ameren Missouri

Facility: Callaway Plant

Location: Steedman, MO

Inspection Dates: October 1 through December 31, 2023

Inspectors: C. Alldredge, Health Physicist
B. Baca, Senior Health Physicist
N. Brown, Resident Inspector
J. Drake, Senior Reactor Inspector
J. Mejia, Reactor Inspector
J. O'Donnell, Senior Health Physicist
S. Schwind, Senior Resident Inspector

Approved By: Gregory E. Werner, Chief
Reactor Projects Branch B
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 Callaway Plant, in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC’s program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information. A licensee-identified non-cited violation is documented in report section 71124.01.

List of Findings and Violations

Failure to Meet Surface Preparation Requirements for Volumetric Examinations in Accordance with ASME Section XI Code			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000483/2023004-01 Open/Closed	None (NPP)	71111.08P
The inspectors identified a finding of very low safety significance (Green) and associated non-cited violation of 10 CFR 50.55a, “Codes and Standards,” involving the licensee’s failure to meet examination surface requirements for volumetric examinations in accordance with ASME Section XI Code.			

Failure to Follow Maintenance Procedure Regarding Post-Maintenance Testing of the Control Room Envelope			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000483/2023004-02 Open/Closed	[H.8] - Procedure Adherence	71111.24
The inspectors identified a Green finding and associated non-cited violation of Technical Specification 5.4.1a. when the licensee failed to follow the applicable post-maintenance test procedure after replacing the seal on the control room door.			

Failure to Identify and Correct an Inoperable Containment Instrument Sump Level Indicator			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000483/2023004-04 Open/Closed	[P.5] - Operating Experience	71153
The inspectors reviewed a self-revealed Green finding and associated non-cited violation of 10 CFR Part 50 Appendix B, Criterion XVI, “Corrective Action,” for the licensee’s failure to promptly identify and correct a condition adverse to quality. Specifically, from March 2 through September 30, 2023, the licensee failed to identify and correct an inoperable containment instrument sump level detector. As a result, the containment sump level and flow monitoring system was inoperable for greater than the technical specification allowed outage time. This event was reported as License Event Report 05000483/2023-001-00.			

Inadequate Procedure Results in a Fire in the Secondary Alarm Station			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Initiating Events	Green NCV 05000483/2023004-03 Open/Closed	[H.8] - Procedure Adherence	71153
The inspectors reviewed a self-revealed Green, non-cited violation of License Condition 2.C.(5), "Fire Protection Program," regarding an inadequate fire prevention program. Specifically, the licensee's fire prevention program did not address overloading electrical outlets which resulted in a fire in an outlet in the secondary alarm station.			

Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
LER	05000483/2022-003-01	LER 2022-003-01 for Callaway Plant Unit 1, Class 1E Electrical Air Conditioning System Thermal Expansion Valve Failure Resulted in Condition Prohibited by Technical Specifications	71153	Closed
LER	05000483/2023-001-00	LER 2023-001-00 for Callaway, Unit 1, Inoperable Instrument Tunnel Sump Level Indication Resulted in Condition Prohibited by Technical Specifications	71153	Closed

PLANT STATUS

The Callaway plant began the inspection period at rated thermal power. On September 29, 2023, the licensee commenced a planned shutdown in preparation for Refueling Outage 26. The plant was taken offline and remained in a shutdown condition from September 30 through November 5, 2023, when plant startup was commenced. The main generator was synchronized to the grid on November 7, 2023, and full power operations resumed on November 9, 2023. The plant remained at rated thermal power 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

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

- (1) The inspectors evaluated readiness for seasonal extreme weather conditions prior to the onset of seasonal cold temperatures on November 1, 2023.

71111.04 - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (2 Samples)

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

- (1) residual heat removal train A on October 5, 2023
- (2) turbine-driven auxiliary feedwater steam supply following maintenance on FCST0001, turbine-driven auxiliary feedwater pump steam supply drain trap, on November 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 area C-9, engineered safety features switchgear on October 11, 2023
- (2) fire area D-1, diesel generator A on October 11, 2023
- (3) fire area RB-1, reactor building on October 23, 2023
- (4) fire area A-13, auxiliary feedwater pump room B, fire area A-14, auxiliary feedwater pump room A, and fire area A-15, turbine-driven auxiliary feedwater pump room on November 14, 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 9 through October 20, 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) Ultrasonic Examination

- safety injection, 2-EM-03S014-C, pipe to elbow
- main steam, 2-AB-01-F050, pipe to pipe
- CVCS, 2-BG-22-F001, nozzle to elbow
- RPV Head Closure Bolting, 1-54, studs

Magnetic Particle Examination

- essential service water, EF-009-HBC-30, weld overlay repair

Dye Penetrant Examination

- pipe support, EJ02C022131, lug welds

Visual Examination

- fuel pool CLG HX B, EEC01B, inner shell side
- pipe support, EJ01-R017/134, support welds
- RPV Head Closure Bolting, 1-54, nuts and washers

Welding Activities

- gas tungsten arc welding and shielded metal arc welding
 - feedwater, AE-079-EBB-I4, FW-02, FW-03, elbow to pipe

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)
- The inspectors observed portions of the reactor vessel head inspection, penetration nozzles 1, 2, 5, 6, 8, 32, 33, 36-40, 42, 44, 45, 47, 50-53, 56-58, 61, 66, 68, 71, 72, 75, RVLIS C-B, and general head area.

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

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

- (1)
- 202207467, pass hot leg 1 sample out containment isolation valves downstream test valve, SJV0056
 - 202207698, threaded connection, Cat. 1, Class 1, FLM 17-0002, BGFT0145
 - 202207879, packing, Cat. 1, Class 2, FLM 10-0011, BGV0102
 - 202303556, reactor coolant drain tank heat exchanger out header to side flush conn pipe cap, HBC0033

- 202307476, train A walkdown, October 15, 2023

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

- No steam generator tube inspections were scheduled nor performed during this outage.

71111.11Q - Licensed Operator Requalification Program and Licensed Operator Performance

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

- (1) The inspectors observed and evaluated licensed operator performance in the control room during reactor startup on November 5, 2023.

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

- (1) The inspectors observed and evaluated reactor startup and steam generator faults training in the simulator on November 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 remain capable of performing their intended function:

- (1) September 28, 2023, failure of SGK05A, train A class 1E air conditioner on November 9, 2023

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (3 Samples)

The inspectors evaluated the accuracy and completeness of risk assessments for the following planned and emergent work activities to ensure configuration changes and appropriate work controls were addressed:

- (1) risk profile and risk management actions for Refueling Outage 26 on October 1, 2023
- (2) risk management action for train A spent fuel pool decay heat removal yellow risk condition on October 16, 2023
- (3) risk management actions for drain down to lowered inventory for reactor head installation on October 19, 2023

71111.15 - Operability Determinations and Functionality Assessments

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

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

- (1) instrument tunnel sump level indicator on October 1, 2023
- (2) essential service water line EF-007-HBC below minimum required wall thickness on October 10, 2023

71111.20 - Refueling and Other Outage Activities

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

- (1) The inspectors evaluated various Refueling Outage 26 activities from September 29 through November 5, 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) (14 Samples)

- (1) SGK05A, class 1E electric equipment air conditioning unit on October 2, 2023
- (2) replacement of ESFAS channel 4 logic card SA036E on October 7, 2023
- (3) install in-line power supply filter in nuclear instrument rack SE054D on October 10, 2023
- (4) containment recirculation sump to residual heat removal pump B isolation valve EJ-HV-8811B post maintenance test on October 10, 2023
- (5) residual heat removal train A accumulator injection supply header relief valve (EJ8856A) replacement on October 11, 2023
- (6) emergency diesel generator B following fuel oil system inspections and maintenance on October 12, 2023
- (7) VT-2 inspection following replacement of valve EFHV0038, essential service water train B to ultimate heat sink cooling tower on October 13, 2023
- (8) control room door seal replacement on October 15, 2023
- (9) containment cooler C preventative maintenance test on October 15, 2023
- (10) essential service water train A to containment air coolers outlet valve EF-HV-0031 post-maintenance test on October 17, 2023
- (11) safety injection accumulator C check valve BB8948C repairs on November 5, 2023
- (12) body-to-bonnet leak repairs on BLV0007, reactor makeup water storage tank recycle/waste evaporator condensate inlet isolation valve BLV0007 on November 9, 2023
- (13) overhaul/rebuild steam trap FCST0001, turbine-driven auxiliary feedwater pump steam supply drain trap on November 13, 2023
- (14) centrifugal charging pump A motor oil sample and change out on November 16, 2023

Surveillance Testing (IP Section 03.01) (3 Samples)

- (1) BGHV8160 inservice test on October 17, 2023
- (2) reactor coolant system resistance temperature detector cross-calibration on October 25, 2023
- (3) steam generator A narrow range level channel 4 operability test on November 27, 2023

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

- (1) EGHV0059, component cooling water from reactor coolant system on October 5, 2023

71114.06 - Drill Evaluation

Drill/Training Evolution Observation (IP Section 03.02) (1 Sample)

The inspectors evaluated:

- (1) emergency preparedness drill on November 16, 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
- (2) workers exiting the 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) eddy current testing of flux thimbles using radiation work permit R26STEC
- (2) upper internals move using radiation work permit R26UPPERINLIFT
- (3) access to regenerative heat exchanger cocoon for snubber testing using radiation work permit 22505893500

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) (VHRA) instrument in-core tunnel
- (2) (HRA) 7122 - waste holdup tank room
- (3) (HRA) 7123 - primary waste evaporator bottoms tank room
- (4) (HRA) 7213 - entrance to stock system/decant tank room
- (5) (HRA) 7220 - valve room (primary resin storage tank)

Radiation Worker Performance and Radiation Protection Technician Proficiency (IP Section 03.06) (2 Samples)

- (1) The inspectors evaluated radiation worker and radiation protection technician performance as it pertains to radiation protection requirements.
- (2) 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) (1 Sample)

The inspectors evaluated the following internal dose assessments:

- (1) April 23, 2022, incident where an individual accidentally fell in the reactor cavity pool

Special Dosimetric Situations (IP Section 03.04) (1 Sample)

The inspectors evaluated the following special dosimetric situations:

- (1) Form 5s for five declared pregnant workers

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) (1 Sample)

- (1) October 2022 through October 2023

IE03: Unplanned Power Changes per 7000 Critical Hours Sample (IP Section 02.02) (1 Sample)

- (1) October 2022 through October 2023

IE04: Unplanned Scrams with Complications (USwC) Sample (IP Section 02.03) (1 Sample)

- (1) October 2022 through October 2023

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

- (1) January 1, 2022, through June 30, 2023

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

- (1) January 1, 2022, through June 30, 2023

71152S - Semiannual Trend Problem Identification and Resolution

Semiannual Trend Review (Section 03.02) (1 Sample)

- (1) July 1 through December 31, 2023. The inspectors reviewed the licensee's corrective action program for potential adverse trends that might be indicative of a more significant safety issue. The inspectors observed a negative trend in worker protection assurance during maintenance activities.

71153 - Follow Up of Events and Notices of Enforcement Discretion

Event Follow up (IP Section 03.01) (2 Samples)

- (1) The inspectors evaluated a fire in the secondary alarm station on October 1, 2023.
- (2) The inspectors evaluated safety injection accumulator C check valve BB8948C that failed inservice leak rate testing on October 27, 2023.

Event Report (IP Section 03.02) (2 Samples)

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

- (1) The inspectors reviewed Licensee Event Report 2023-001-00, for Callaway Plant, Unit 1, Inoperable Instrument Tunnel Sump Level Indication Resulted in Condition Prohibited by Technical Specifications (ADAMS Accession No. ML23333A141). The circumstances surrounding this LER are documented in the Inspection Results section of this report. This LER is Closed.
- (2) The inspectors reviewed Licensee Event Report 050000483/2022-003-01 for Callaway, Unit 1, Class 1E Electrical Air Conditioning System Thermal Expansion Valve Failure Resulted in Condition Prohibited by Technical Specifications (ADAMS Accession No. ML23194A172). The inspection conclusions associated with this LER are documented in Inspection Report 2023001 (ML23102A139). This LER is Closed.

INSPECTION RESULTS

Failure to Meet Surface Preparation Requirements for Volumetric Examinations in Accordance with ASME Section XI Code
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Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000483/2023004-01 Open/Closed	None (NPP)	71111.08P
The inspectors identified a finding of very low safety significance (Green) and associated non-cited violation (NCV) of 10 CFR 50.55a, "Codes and Standards," involving the licensee's failure to meet examination surface requirements for volumetric examinations in accordance with ASME Section XI Code.			

Description: During refueling outage 26 the licensee identified surface defects on the Class 1 pressurizer safety relief piping below the elbow to flange welds at the inlets to the safety relief valves. The licensee initiated condition report 202307267 attributing the cause to usage of a hydraulic torque tool that tensioned the safety relief valve fasteners where the reaction arm would contact the pipe surface. This contact created surface irregularities around the piping surface and would have happened during pressurizer safety relief valve replacement which occurred between 1984 and 2008 as described in the condition report. After 2008, the hydraulic torque tool was updated to a newer version which allowed the reaction arm to contact the adjacent fastener, eliminating contact with piping surfaces.

After discovery of the indications, the licensee photographed, measured the surface indications' depths, and contracted with a vendor to perform an analytical evaluation of the surface indications. The evaluation determined that the indications did not require immediate corrective actions as the minimum wall thickness has adequate margin and was acceptable for 18 months of continued service (until the next refueling cycle). The evaluation also recommended the removal of the indications' stress risers and performance of non-destructive examination after repair. The licensee created work orders to perform repairs and non-destructive examination for refueling outage 27.

The licensee performs risk informed volumetric examinations once every interval on the elbow to flange welds of the inlets to the pressurizer safety relief valves. The volumetric examination procedure specifies the required examination volume shall be, as a minimum, the lower 1/3 weld volume and base material for a distance of 0.25" from each weld toe. The procedure also specifies limitations or other conditions, i.e., surface condition, that prevent a complete examination of the required volume shall be documented and the owner should be made aware of scanning limitations at the earliest possible opportunity. The procedure provides surface condition requirements where the examination surface shall be free of irregularities which may interfere with ultrasonic wave transmission.

The inspectors identified, through review of photos of each of the three elbow to flange welds and by visual inspection, that the surface conditions of each line also included portions of the surface irregularities within the required examination surface and volume. The inspectors further reviewed an examination report, dated May 6, 2010, from the 3rd interval which included a sketch of the examination volume and risk informed volume that extended the examination volume 0.5" distance from the weld toe. The ultrasonic examination reports dated May 6, 2010, and May 23, 2019, for both the 3rd and 4th intervals did not document the surface irregularities of the pipe condition. The weld surface condition was documented as smooth in the 2010 exam report and ground flush in the 2019 exam report. Section XI, of ASME code, Subsection IWB, Figure IWB-2500-8, defines the examination volume to be 0.25" from the weld end (toe) and the examination surface to be 0.5" from the weld end (toe).

Many of the surface irregularities were raised above the pipe surface outer diameter. Surface irregularities cause interference with ultrasonic wave transmission and the transducer's scan path.

Corrective Actions: The licensee documented the issue in their corrective action program and initiated actions to remediate the indications in the next outage.

Corrective Action References: condition report 202308929 was initiated to further evaluate the volumetric examinations previously performed.

Performance Assessment:

Performance Deficiency: The licensee's failure to meet surface preparation requirements in accordance with ASME Section XI was a performance deficiency. Specifically, the licensee failed to meet surface preparation requirements during the 2010 and 2019 ultrasonic examinations.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the RCS Equipment and Barrier Performance attribute of the Barrier Integrity Cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the failure of the surface to be free of irregularities could lead to not detecting flaws. The inspectors screened the finding using IMC 0609, Attachment 4, Initial Characterization of Findings with Table 2. The Barrier Integrity Cornerstone Note directs all other RCS boundary issues will be considered under the Initiating Events Cornerstone. Inspection Manual Chapter 0609, Attachment 4, Table 3, routes the finding to IMC 0609, Appendix A, because the inspectors answered all the SDP Appendix Router questions "no."

Significance: The inspectors assessed the significance of the finding using IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." The finding screened as very low safety significance (Green) because the inspectors answered all IMC 0609, Appendix A, Exhibit 1, Initiating Events Questions "no."

Cross-Cutting Aspect: Not Present Performance. No cross-cutting aspect was assigned to this finding because the inspectors determined the finding did not reflect present licensee performance.

Enforcement:

Violation: Title 10 CFR Part 50.55a(g)(4), "Inservice Inspection Standards Requirement for Operating Plants," requires that throughout the service life of a boiling or pressurized water-cooled nuclear power facility, components that are classified as ASME Code Class 1, Class 2, and Class 3 must meet the requirement set forth in Section XI of editions and addenda of the ASME Boiler and Pressure Vessel Code. ASME Section XI, Article III-4000 Examination, Subsection III-4200, Surface Preparation, states, in part, that the examination surface shall be free of irregularities which interfere with ultrasonic wave transmission. Figure IWB-2500-8 describes the examination surface as 0.5" from the weld end and the examination volume as 0.25" from the weld end.

Contrary to the above, during the code required examinations in 2010 (3rd ASME Section XI Code Interval), and in 2019 (4th ASME Section XI Code Interval), the licensee failed to ensure

the examination surface was free of surface irregularities which interfere with ultrasonic wave transmission.

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

Failure to Follow Maintenance Procedure Regarding Post-Maintenance Testing of the Control Room Envelope

Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000483/2023004-02 Open/Closed	[H.8] - Procedure Adherence	71111.24

The inspectors identified a Green finding and associated non-cited violation of Technical Specification 5.4.1a. when the licensee failed to follow the applicable post-maintenance test procedure after replacing the seal on the control room door.

Description: On October 13, 2023, while in Mode 6 (Refueling) the licensee documented a failure of the seal on inner control room door DSK 36043 in condition report 202307412. This is one of two doors in series used for normal access to the control room. The other, door DSK 36042, is a hardened door which is normally left open. Either door can be used as a pressure boundary to maintain the integrity of the control room envelope and operability of the control room emergency ventilation system (CREVS). The CREVS is not required to be operable in Mode 6 unless irradiated fuel assemblies are being moved; nevertheless, the licensee declared door DSK 36043 inoperable and established administrative controls to close door DSK 36042, if necessary, to maintain operability of CREVS. Job 23003787 was initiated to replace the door seal which was completed on October 14 at 12:43 am. Job 23003787 did not specify any post-maintenance test or quality control inspections.

On October 14 at 3:24 am the licensee began reloading the reactor core which required CREVS to be operable due to the movement of irradiated fuel assemblies. Control room door DSK 36042 was still under administrative control, so CREVS operability was not challenged. However, door DSK36043 was declared operable on October 14 at 11:21 am and those administrative controls were discontinued. At this point, door DSK 36043 would have been relied upon as a pressure boundary in the event of a fuel handling accident. Core alterations continued until completed October 16 at 3:00 am.

On October 16, following completion of core alterations, the licensee wrote condition report 202307517 to document that no post-maintenance test had been performed following corrective maintenance on door DSK 36043. This condition report stated, "Door was inspected and meets all the requirements of OSP-KC-00015 [Fire Door Inspections] for a Fire Door. Either door DSK 36043 or door DSK 36042 can satisfy the pressure boundary function and may be open under administrative control." No other tests or inspections to verify the pressure function of the door were performed and no administrative controls were established to close door DSK 36042, if necessary. Operability of CREVS during core alterations was not questioned in the condition report.

On October 23, the inspectors discussed with the licensee the lack of a pressure boundary test or inspection following maintenance on door DSK 36043 and the lack of administrative controls on door DSK 36042. A subsequent pressure boundary inspection on

door DSK 36043 indicated an unacceptable gap in the door seal of approximately 8.2 square inches which resulted in the door being declared inoperable. The seal was replaced again on October 24 under job 23004002. All required tests and inspections were completed satisfactorily, and the door was declared operable.

Procedure APA-ZZ-0000750, "Hazard Barrier Program," designates door DSK 36043 as a pressure boundary. Procedure APA-ZZ-00322, Appendix E, "Post-Maintenance Test Program," requires that following seal replacement, pressure boundary doors are to be inspected according to Procedure MPM-SK-QW001, Addendum 5, "Service and Inspection of Pressure Doors." This inspection was not performed following the initial corrective maintenance on October 14.

Following replacement of the door seal on October 24, the licensee evaluated the 8.2 square inch gap and concluded that the control room envelope remained operable since CREVS could have maintained a positive pressure of at least 1/8-inch water gauge as required by the Technical Specification Surveillance Requirement 3.7.10.4 in accordance with the control room envelope habitability program.

Corrective Actions: The licensee's immediate corrective actions included replacing the door seal on October 24 and inspection of the door per their post-maintenance testing program.

Corrective Action References: condition report 202307517

Performance Assessment:

Performance Deficiency: The licensee's failure to perform post-maintenance testing on control room door DSK 36043 in accordance with plant procedures was a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Configuration Control attribute of the Barrier Integrity Cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, control room door DSK 36043 was left in a configuration following corrective maintenance that did not assure operability of the control room envelope during a postulated fuel handling accident. Additionally, it was reasonable to question operability of CREVS due to the degraded door seal and, although operability was ultimately demonstrated, there was a significant loss of margin to operability.

Significance: The inspectors assessed the significance of the finding using IMC 0609 Appendix G, "Shutdown Safety SDP." The finding did not involve potential non-compliance with regulatory requirements for protection of the reactor pressure vessel against fracture; it did not involve fuel bundle misplacement or misorientation in the reactor core; it did not involve low temperature over pressurization (LTOP) or either an inadvertent safety injection actuation or the unavailability of a power operated relief valve or LTOP relief valve or their associated setpoints during LTOP operations when LTOP is required; it did not involve a freeze seal; it did not involve steam generator nozzle dam installation; it did not involve the potential for, or an actual, RCS boron dilution event; it did not degrade the ability to isolate a drain down or leakage path; it did not degrade the ability to close or isolate the containment; it did not degrade the physical integrity of reactor containment; it did not involve a pressurized

water reactor ice condenser containment or an AP1000 containment. Therefore, the finding screened as very low safety significance (Green).

Cross-Cutting Aspect: H.8 - Procedure Adherence: Individuals follow processes, procedures, and work instructions. Specifically, licensee personnel failed to fully implement the requirements of the post-maintenance testing procedure which could have detected the problem with the door seal prior to starting core alterations.

Enforcement:

Violation: Technical Specification 5.4.1.a. requires, in part, that written procedures shall be established implemented, and maintained covering the activities recommended in Regulatory Guide 1.33, Revision 2, Appendix A, dated February 1978. Regulatory Guide 1.33, Appendix A requires, in part, procedures for maintenance that can affect the performance of safety-related equipment. Procedure APA-ZZ-00322, Appendix E, "Post-Maintenance Test Program," provides post-maintenance testing requirements following maintenance on safety-related equipment and specifies inspections in accordance with Procedure MPM-SK-QW001, Addendum 5, "Service and Inspection of Pressure Doors."

Contrary to the above, on October 13, 2023, the licensee performed corrective maintenance on control room door DSK 36043 by replacing the door seal and did not perform inspections in accordance with procedure MPM-SK-QW001, Addendum 5, as required by procedure APA-ZZ-00322, Appendix E. Specifically, the licensee failed to complete procedure MPM-SK-QW001, Addendum 5, step 5.1.5 which required a visual inspection of the door seal for gaps to ensure the seal would be capable of providing a pressure boundary.

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

Licensee-Identified Non-Cited Violation

71124.01

This violation of very low safety significance was identified by the licensee and has been entered into the licensee corrective action program and is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Violation: On October 25, 2023, during a routine survey of the maintenance services building, the licensee identified an irradiated excore vessel neutron dosimeters box, with a maximum reading of 10 millirem per hour (mR/hr) at 30 centimeters, not stored within a posted radiation area. The box had been moved from the fuel building truck bay into the maintenance services building on October 24, 2023. Failure to store radioactive material in a posted radiation area is an ineffective radiation protection program barrier designed to protect the worker from unintended exposures to radiation. This failure is classified as a more-than-minor performance deficiency.

Title 10 CFR 20.1003 defines, in part, a radiation area as an area, accessible to individuals, in which radiation levels exceed 5 mR/hr at 30 centimeters from any surface that the radiation penetrates. Title 10 CFR 20.1902(a) stated the licensee shall post each radiation area with a conspicuous sign or signs bearing the radiation symbol and the words "Caution, Radiation Area."

Contrary to the above, on October 24, 2023, a box containing radioactive material with a dose rate exceeding 5 mR/hr (i.e., 10 mR/hr) was not stored within a posted radiation area bearing a conspicuous sign for a radiation area.

The licensee initiated multiple corrective actions in response to the incident: controlled the box once identified and moved it into a correctly posted radiation area, corrected the labeling of the box, lessons learned discussions were conducted in multiple morning meetings, an event review team, a prompt human performance evaluation, and a performance analysis worksheet were performed to determine the probable cause and recommend corrective actions to prevent recurrence.

Significance/Severity: Green. The significance of the finding was assessed using IMC 0609, Appendix C, "Occupational Radiation Safety SDP," and because the finding was not: (1) related to as low as is reasonably achievable planning, (2) did not involve an overexposure, (3) did not involve a substantial potential for overexposure, and (4) the ability to assess dose was not compromised, the finding was determined to be of very low safety significance (Green).

Observation: Negative Trend in Worker Protection Assurance During Maintenance Activities	71152S
<p>The inspectors performed a review of potential adverse trends in the licensee's corrective action program with emphasis on worker protection assurance (tagouts) during maintenance activities. The inspectors sampled a population of condition reports during the period of July 1 through December 31, 2023. Based on the samples reviewed, the inspectors identified three instances where the worker protection boundaries were either inadequate for the prescribed maintenance activity, were compromised during work, or failed to provide adequate protection. While degradation was apparent in the implementation of the licensee's worker protection assurance program, the licensee's organization successfully identified these degradations prior to any harmful events. The licensee independently identified this worker protection assurance trend in condition reports 202308879 and 202309050 and is taking appropriate actions to address the degraded conditions that were encountered during the inspection period.</p>	

Inadequate Procedure Results in a Fire in the Secondary Alarm Station			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Initiating Events	Green NCV 05000483/2023004-03 Open/Closed	[H.1] - Resources	71153
<p>The inspectors reviewed a self-revealed Green, non-cited violation of License Condition 2.C.(5), "Fire Protection Program," regarding an inadequate fire prevention program. Specifically, the licensee's fire prevention program did not address overloading electrical outlets which resulted in a fire in an outlet in the secondary alarm station.</p>			

Description: On September 9, 2023, at 4:34 pm, the secondary alarm station (SAS) operator opened fire door 36091 which separates SAS (fire area C-29) from the main control room (fire area C-27) and verbally called away a fire to the control room staff. The source of the fire was an overloaded electrical outlet on the south wall of SAS. The SAS operator saw flames coming out of the outlet and unplugged a surge protector from the outlet that was supplying a

portable space heater and a small refrigerator. At 4:42 pm the fire was determined to be out by lack of flame and lowering temperatures on the outlet. The fire brigade was activated, and the control room implemented procedure OTO-KC-00001, "Fire Response." The fire brigade responded to the control room, entered SAS, and verified the fire was out before discharging any extinguishing agent. In addition, the breaker feeding the affected electrical outlet was verified to have tripped. Emergency action levels were reviewed by licensed operators who determined that no emergency existed since the fire was extinguished in less than 15 minutes. Control room operators reported an acrid odor in the control room but no smoke or visibility issues. Control Room staff did not have any discomfort from the odor and no spurious actuations of control room equipment occurred. SAS is located within the control room envelope and is the primary egress route to the auxiliary building and the auxiliary shutdown panel in the event of a control room evacuation.

The licensee determined that the electrical outlet had been overloaded. A space heater and a small refrigerator had been plugged into a surge protector being powered from one receptacle of the outlet and a coffee maker was plugged into the second receptacle of the outlet. The inspectors noted a similar event on October 27, 2023, when an electrical outlet in a non-power block building caught on fire due to overloading. During the review of the event, the inspectors were unable to find any licensee procedures addressing electrical outlet loading to ensure the electrical wall outlets were not overloaded.

Corrective Action: The licensee's immediate corrective actions included their response to the fire as previously described and an extent-of-condition evaluation of other security stations for similarly overloaded circuits. A communication was also sent plant-wide to emphasize the correct usage of portable electric appliances.

Corrective Action Reference: condition report 202306050

Performance Assessment:

Performance Deficiency: The licensee's failure to establish adequate programmatic controls to prevent fires due to overloaded electrical outlets was a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Protection Against External Factors attribute of the Initiating Events Cornerstone and adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations and adversely affected the cornerstone objective to limit the likelihood of fires. Specifically, an overloaded outlet resulted in a fire in SAS.

Significance: The inspectors assessed the significance of the finding using Appendix F, "Fire Protection Significance Determination Process." The inspectors assigned fire prevention and administrative controls as the fire finding category. Using Appendix F, Attachment 2, "Degradation Rating Guidance," dated May 2, 2018, the inspectors assigned a high degradation rating, since it involved findings against the combustible controls program regarding an unapproved heater in the area. This issue was then assigned a fire finding category 1.4.1, "Fire Prevention and administrative Controls," with the screening questions determining that the finding was seen as increasing the likelihood of a fire since it resulted in an actual fire and there was no automatic fire detection in SAS, the finding required screening based on the licensee's fire probabilistic risk assessment (PRA) results.

According to the fire PRA, SAS is in room 3609 of the control building and is its own fire area, designated C-29, surrounded by a minimum 3-hour fire rated barrier. Area C-29 contains no PRA targets and no cables that support PRA targets in other areas. As a result, this fire area was screened from the fire PRA for individual areas. A multi-compartment analysis was also developed which demonstrated that area C-29 was analyzed as both an exposed compartment and an exposing compartment for all contiguous compartments containing shared penetrations, including the control room. Since there are no PRA targets or cable targets in C-29 it was screened as an exposed compartment. In the analysis performed for C-29 as an exposing compartment it was determined that a hot gas layer cannot be generated in C-29 and, therefore, it screens as an exposing compartment in accordance with the guidance in NUREG/CR-6850. As a result, the final fire PRA model completely screens area C-29 from further consideration. Based on the review completed by a senior reactor analyst, a fire in area C-29 can be considered as a negligible risk impact (i.e., the evaluated delta-CDF was less than 1E-6/year). Therefore, the inspectors determined that the finding had very low safety significance (Green).

Cross-Cutting Aspect: H.1 Resources: Leaders ensure the personnel, equipment, procedures, and other resources are available and adequate to support nuclear safety. Specifically, the licensee did not provide adequate procedure guidance regarding the loading of electrical outlets to prevent fires which resulted in a fire in SAS.

Enforcement:

Violation: License Condition 2.C.(5) requires, in part, that the licensee implement a fire protection program that complies with 10 CFR 50.48(c), "National Fire Protection Association Standard NFPA 805." Standard NFPA 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants," 2001 Edition, section 3.3 requires that a fire prevention program be established, documented, and implemented as part of the fire protection program. Section 3.3.1 requires the fire prevention program to control ignition sources, including programmatic elements necessary to prevent fires from starting.

Contrary to the above, on September 9, 2023, the licensee failed to establish an adequate fire prevention program which would ensure electrical outlets are not overloaded. Specifically, the licensee did not establish adequate programmatic elements, such as a procedure, to minimize the circuit from being overloaded and starting a fire.

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

Failure to Identify and Correct an Inoperable Containment Instrument Sump Level Indicator			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000483/2023004-04 Open/Closed	[P.5] - Operating Experience	71153

The inspectors reviewed a self-revealed Green finding and associated non-cited violation of 10 CFR Part 50 Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to promptly identify and correct a condition adverse to quality. Specifically, from March 2, through September 30, 2023, the licensee failed to identify and correct an inoperable

containment instrument sump level detector. As a result, the containment sump level and flow monitoring system was inoperable for greater than the technical specification allowed outage time. This event was reported as License Event Report 05000483/2023-001-00.

Description: The containment sump level and flow monitoring system was one of three technical specification leakage detection instrumentation systems that was designed to identify unidentified reactor coolant system leakage by monitoring increases in sump level. Reactor coolant system (RCS) leakage would result in reactor coolant flowing into the containment normal sumps and into the instrument tunnel sump. Indication of increasing sump level is transmitted to the control room by means of individual sump level transmitters. This information is used to provide a measurement of leakage by monitoring sump level increase versus time. The containment instrument tunnel sump level indication is summed with level indication from the containment normal sumps to determine a leak rate value for leakage making its way into the containment sumps. The containment sump level monitoring system was designed to detect an RCS leak rate of 0.5 to 1 gpm in accordance with Technical Specification 3.4.15.

To address obsolescence issues associated with an aging containment instrument tunnel sump level detector system the licensee developed modification package MP 20-0012 to install a new level detector system during Refueling Outage 25. The new level detector was installed in May 2022 under job 17005353.

On October 1, 2023, during Refueling Outage 26, per an outage preventive maintenance task, water was added to the containment instrument tunnel sump to verify the performance of the sump pumps and level indicator. Initially, there was no observed change in water level indication. However, about one hour after water addition to the sump had been secured the indicated sump level increased by an 8.3" step change. This prompted the licensee to review recent sump level trend data which indicated a steady water level in the sump of about 5.2" since March 2, 2023. Typically, the licensee would expect a steadily declining sump level due to evaporation. Before the modification was installed, the operators had to add water to the containment sump (approximately once every 3 to 6 months) for the previous sump level detector to indicate a level.

On October 20, 2023, the licensee performed an inspection of the containment instrument tunnel sump level sensing element under job 22003087. The inspection determined that the stem of the level instrument was not centered in the stilling well pipe. This allowed the float to contact the side of the pipe, making it unable to move freely along the stem. Additionally, the stem was found not resting on the bottom of the sump as specified in modification package MP 20-0012.

Based on the above, the licensee determined that the containment instrument sump level detector had stopped responding to changes in sump level as of March 2, 2023, and that it was inoperable since that time. Technical Specification 3.4.15 action (A) requires, in part, that with the containment sump level and flow monitoring system inoperable, within 30 days restore required containment sump level and flow monitoring system to operable status or be in hot standby within the next 6 hours and in cold shutdown within the following 30 hours.

Corrective Actions: Immediate corrective actions included lowering the stem of the level detector so that it rests on the sump floor and scheduling a preventative maintenance activity at three-month intervals to add water to the containment instrument tunnel sump to maintain the float above the level where it became stuck.

The licensee is also developing a modification package to install a centering bracket for the float stem and/or remove the stilling well pipe. The modification is planned to be installed during the next refueling outage. The licensee also updated their system trending and monitoring program to look for flatline trends of the containment instrument tunnel sump level detector.

Corrective Action References: condition reports 202306728, 20236800, 20236813, and 202307766

Performance Assessment:

Performance Deficiency: The licensee's failure to identify and correct an inoperable containment instrument sump level indicator was a performance deficiency.

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 containment instrument sump level indicator was inoperable from March 2 through September 30, 2023, resulting in a degraded ability to identify RCS leakage.

Significance: The inspectors assessed the significance of the finding using IMC 0609 Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." In accordance with Section B of IMC 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the finding is of very low safety significance (Green) because it was a design deficiency that did not represent a loss of operability or PRA functionality.

Cross-Cutting Aspect: P.5 - Operating Experience: The organization systematically and effectively collects, evaluates, and implements relevant internal and external operating experience in a timely manner. Specifically, the licensee failed to incorporate internal operating experience related to the required frequency of filling the instrument tunnel sump to maintain operability when implementing a new level detector design which led to not identifying the stuck level detector.

Enforcement:

Violation: Title 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected.

Technical Specification 3.4.15, "RCS Leakage Detection Instrumentation," requires, in part, that the containment sump level and flow monitoring system shall be operable in Modes 1, 2, 3, and 4. Technical Specification 3.4.15 action (A) requires, in part, that with the containment sump level and flow monitoring system inoperable, within 30 days restore required containment sump level and flow monitoring system to operable status or be in hot standby withing the next 6 hours and in cold shutdown within the following 30 hours.

Contrary to the above, from March 2 through September 30, 2023, the licensee failed to promptly identify and correct a condition adverse to quality. Specifically, the licensee failed to

identify that the instrument tunnel sump level detector was inoperable resulting in its technical specification allowed outage time being exceeded by approximately 6 months. As a result, from March 2 through September 30, 2023, the containment sump level and flow monitoring system was inoperable for greater than the allowed outage time permitted by Technical Specification 3.4.15 action (A), and the unit was not placed in hot standby within the following 6 hours.

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

EXIT MEETINGS AND DEBRIEFS

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

- On January 9, 2024, the inspectors presented the integrated inspection results to J. Beck, Vice President Nuclear Engineering, and other members of the licensee staff.
- On December 14, 2023, the inspectors presented the inservice inspection results to B. Jungmann, Senior Director, Nuclear Engineering, and other members of the licensee staff.
- On December 4, 2023, the inspectors presented the occupational cornerstone issue follow up inspection results to A. Enloe, Radiation Protection Manager, and other members of the licensee staff.
- On October 10, 2023, the inspectors presented the occupational radiation safety inspection results to K. Scott, Nuclear Site Vice President, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.01	Corrective Action Documents	Condition Reports	202307240, 202307241	
71111.01	Procedures	OTS-ZZ-00007	Plant Cold Weather	42
71111.04	Drawings	M-22EJ01	Residual Heat Removal System	64
71111.04	Procedures	OTN-AL-00001, Checklist 1	Auxiliary Feedwater System	22
71111.04	Procedures	OTN-EJ-00001	Residual Heat Removal System	28
71111.05	Corrective Action Documents	Condition Reports	202305993	
71111.05	Miscellaneous		Fire Preplan Manual	41
71111.05	Miscellaneous	Fire Safety Analysis Calculation	KC-120, Fire Area C-9	
71111.05	Miscellaneous	Fire Safety Analysis Calculation	KC-153, Fire Area RB-1	2
71111.05	Miscellaneous	Fire Safety Analysis Calculation	KC-93, Fire Area A-13	
71111.05	Miscellaneous	Fire Safety Analysis Calculation	KC-94, Fire Area A-14	
71111.05	Miscellaneous	Fire Safety Analysis Calculation	KC-95, Fire Area A-15	
71111.05	Miscellaneous	Fire Safety Analysis Calculation	KC-149 Fire Area D-1	
71111.05	Miscellaneous	Jobs	17503769	

71111.08P	Corrective Action Documents		202205808, 202207467, 202207698, 202207879, 202208145, 202303051, 202303052, 202303073, 202303961, 202303556, 202306922, 202306957, 202306960, 202307011, 202307060, 202307267, 202307476	
71111.08P	Corrective Action Documents Resulting from Inspection		202307475, 202307479, 202307481, 202308929	
71111.08P	Drawings	5042-23-0077	Visual Examination, VT-3 Fuel Pool CLG HX B Aging Management Inspection	10/12/2023
71111.08P	Drawings	AB-03-01 S001	Main Steam Loop 3	0
71111.08P	Drawings	EJ01R017134	Pipe Support Residual Heat Removal System Auxiliary Building "A" Train	3
71111.08P	Drawings	ISLT-M-22EJ01	Piping and Instrumentation Diagram Residual Heat Removal System	H
71111.08P	Drawings	ISLT-M-22EJ01	Piping and Instrumentation Diagram Residual Heat Removal System	59
71111.08P	Drawings	S-7.0-58-SA540-GRB24-C6.3-CS-95	Callaway Calibration Notch Fabrication CNGS RPV Stud Calibration Block WBS: 1-117724	0
71111.08P	Engineering Evaluations	RFR 230281	Accept the Condition of Pressurizer Safety Relief Valve Inlet Piping	0
71111.08P	Engineering Evaluations	SCP-PP000-TM-PX-000002	Analytical Assessment of Outer Surface Indications Observed on the Inlet Elbow Piping to the Pressurizer Safety Valves at Callaway	0
71111.08P	Miscellaneous	Fourth Interval Inservice Inspection Program Plan Appendix A	Code Cases and Requests for Relief/Alternative Applied to the Fourth Interval	3
71111.08P	NDE Reports	1012-005	Ultrasonic Examination, S-BB-02-S001-J Elbow to Flange Weld, S-BB-02-S007-J Elbow to Flange Weld	04/24/1989
71111.08P	NDE Reports	4560-0102	Ultrasonic Examination, 2-BB-02-S001-J Elbow to Flange Weld	12/29/1980

71111.08P	NDE Reports	5000-23-0058	Liquid Penetrant Examination, AE05R027241 12 attachment welds	10/10/2023
71111.08P	NDE Reports	5000-23-0062	Liquid Penetrant Examination, EJ02C022131 8 lugs	10/12/2023
71111.08P	NDE Reports	5030-23-001	Radiographic Examination, AE-079-EBB Weld Joint 001	10/13/2023
71111.08P	NDE Reports	5030-23-002	Radiographic Examination, AE-079-EBB Weld Joint 002	10/13/2023
71111.08P	NDE Reports	5041-23-0044	Visual Examination, VT-2 PM917264	10/16/2023
71111.08P	NDE Reports	5042-23-0079	Visual Examination, VT-3 EJ01R017134	10/16/2023
71111.08P	NDE Reports	6226-008	Ultrasonic Examination, 2-BB-02-S001-J Elbow to Flange Weld	10/16/1999
71111.08P	NDE Reports	6226-009	Ultrasonic Examination, 2-BB-02-S007-J Elbow to Flange Weld	10/16/1999
71111.08P	NDE Reports	UT-023-009	Calibration/Examination Data Sheet: RPV Studs	10/13/2023
71111.08P	NDE Reports	UT-023-011	Calibration/Examination Data Sheet: Safety Injection 2-EM-03-S014-C	10/16/2023
71111.08P	NDE Reports	UT-023-012	Calibration/Examination Data Sheet: Main Steam 2-AB-01-F050	10/13/2023
71111.08P	NDE Reports	UT-023-015	Calibration/Examination Data Sheet: Chemical Volume and Control 2-BG-22-F001	10/16/2023
71111.08P	NDE Reports	UT-19-225	Ultrasonic Examination, S-BB-02-S001-J Elbow to Flange Weld	05/23/2019
71111.08P	NDE Reports	UT-19-226	Ultrasonic Examination, S-BB-02-S001-J Elbow to Flange Weld	05/23/2019
71111.08P	NDE Reports	UT-19-227	Ultrasonic Examination, S-BB-02-S001-J Elbow to Flange Weld	05/23/2019
71111.08P	NDE Reports	WDI-PJF-1316481-FSR-001	Reactor Vessel Nozzle Inspection Outage RF21 Interval 4 Period 1 2016	0
71111.08P	Procedures	83A1012	Ultrasonic Examination Procedure for Fitting to Fitting Welds for Callaway Nuclear Power Plant	03/13/1989
71111.08P	Procedures	83A6226	Ultrasonic Examination Procedure for Austenitic Piping and Vessels =2 Inches Thickness for Callaway Nuclear Power Plant	04/12/1997
71111.08P	Procedures	APA-ZZ-00661	Administration of Welding	21
71111.08P	Procedures	APA-ZZ-00661 Appendix 1	P-Number Cross Reference Listing	1
71111.08P	Procedures	APA-ZZ-00661	WPS Selection Guidelines	2

		Appendix 2		
71111.08P	Procedures	APA-ZZ-00661 Appendix 3	Personnel Approved to Perform Weld Inspections/Examinations	11
71111.08P	Procedures	APA-ZZ-00662	ASME Section XI Repair/Replacement Program	26
71111.08P	Procedures	APA-ZZ-00662 Appendix A	ASME Section XI Repair/Replacement Program Mandatory Requirements	8
71111.08P	Procedures	APA-ZZ-00662 Appendix B	ASME Section XI Code Cases Applied to the Fourth Inspection Interval	6
71111.08P	Procedures	APA-ZZ-00662 Appendix E	ASME Section XI Repair/Replacement Matrix	5
71111.08P	Procedures	EDP-ZZ-01003	Inservice Inspection Program	38
71111.08P	Procedures	EDP-ZZ-01004	Boric Acid Corrosion Control Program	25
71111.08P	Procedures	LMT-08-PDI-UT-5	Straight Beam Ultrasonic Examination of Bolts and Studs	0
71111.08P	Procedures	LMT-08-UT-PDI- UT-2	Ultrasonic Examination of Austenitic Piping Welds	0
71111.08P	Procedures	MDP-ZZ-LM001	Fluid Leak Management Program	21
71111.08P	Procedures	PDI-UT-2	PDI Generic Procedure for the Ultrasonic Examination of Austenitic Pipe Welds	03/11/2020
71111.08P	Procedures	QCP-ZZ-05040	Visual Examination to ASME VT-1	26
71111.08P	Procedures	QCP-ZZ-05041	Visual Examination to ASME VT-2	31
71111.08P	Procedures	QCP-ZZ-05042	Visual Examination to ASME VT-3	23
71111.08P	Procedures	QCP-ZZ-05048	Boric Acid Walkdown for RCS Pressure Boundary	15
71111.08P	Procedures	QCP-ZZ-05049	RPV Head Bare Metal Examination	7
71111.08P	Work Orders	Job	16504025, 21003312, 22002737	
71111.11Q	Miscellaneous	LOCT 23-5	Reactor Startup	09/01/2023
71111.11Q	Miscellaneous	LOCT 23-5	Steam Generator Fault	10/25/2023
71111.11Q	Procedures	OTG-ZZ-00002	Reactor Startup	64
71111.11Q	Procedures	OTG-ZZ-00003	Plant Startup Hot Zero Power to 30% Power	66
71111.12	Corrective Action Documents	Condition Reports	202306579	
71111.12	Miscellaneous	Jobs	23502460	
71111.13	Miscellaneous		Callaway Energy Center RF26 Shutdown Safety Management Plan	3
71111.13	Procedures	APA-ZZ-00315,	Risk Management Actions	38

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71111.13	Procedures	APA-ZZ-00315, Appendix C, Checklist 3	Placing Postings for Lowered Inventory	
71111.13	Procedures	APA-ZZ-00315, Appendix E	Configuration Risk Management Program - Shutdown	
71111.13	Procedures	ODP-ZZ-00002, Appendix 1	Protected Equipment Program	
71111.15	Corrective Action Documents	Condition Reports	202306728, 202306800, 202306813, 202307060	
71111.15	Miscellaneous	Jobs	22503623, 23006728, 23002247	
71111.15	Procedures	EDP-ZZ-01121	Raw Water Systems Predictive Performance Program	30
71111.20	Miscellaneous		RF026 Water Plan	
71111.20	Miscellaneous		RPV Head Penetrations Examination Report, Callaway Energy Center RF26 Shutdown Safety Management Plan	3
71111.20	Procedures	ETP-BB-03154	Reactor Vessel Head Installation - IPTE	26
71111.20	Procedures	OSP-SA-00004	Visual Inspection of Containment for Loose Debris	28
71111.24	Corrective Action Documents	Condition Reports	201605144, 201901879, 201903093, 202006446, 202007059, 202101948, 202202265, 202301933, 202307185, 202307270, 202307305, 202307387, 202307393, 202307517, 202307556, 202307567, 202307842, 202307852, 202307902, 202308492, 202308497	
71111.24	Miscellaneous	CA 2651	BGHV8160 Past OD	0
71111.24	Miscellaneous	CA 2716	Valve Retest Instructions	1
71111.24	Miscellaneous	Calculation BG-90	BGHV8152 AOV Capability and Margin Control	0
71111.24	Miscellaneous	Jobs	23003300, 18003959, 22002593, 17512666, 21510022, 21001282, 20003577, 23003787, 22513653, 20001021, 23003856, 23004060, 15004072, 21509039, 21502833	
71111.24	Miscellaneous	MPM-ZZ-QV019	IST Relief Valve Removal and Reinstallation	9
71111.24	Procedures	APA-ZZ-00322, Appendix E	Post-Maintenance Test Program	38
71111.24	Procedures	APA-ZZ-00750	Hazard Barrier Program	30
71111.24	Procedures	ESP-SM-01001	Containment Leakage Rate Testing Program	27
71111.24	Procedures	ISF-AE-0L517	S/G A Narrow Range Level Protection 4 COT	21

71111.24	Procedures	ISP-BB-0T001	RTD/TC Cross Calibration	16
71111.24	Procedures	MSM-KJ-QK001	Emergency Diesel Generator Inspection	45
71111.24	Procedures	OSP-BB-VL006	RCS Pressure Isolation Valves Inservice Tests	48
71111.24	Procedures	OSP-BG-P005A	Centrifugal Charging Pump A Inservice Test - Group B	53
71111.24	Procedures	OSP-BG-V0002	Chemical and Volume Control Mode 5 Inservice	24
71111.24	Procedures	OSP-EG-LL075	Containment Isolation Valve Leakrate Test	17
71111.24	Procedures	OSP-KC-00015	Fire Door Inspections	30
71111.24	Procedures	OTN-GK-00001	Control Building HVAC System	68
71111.24	Procedures	OTN-GN-00001	Containment Cooling and CRDM Cooling	31
71111.24	Procedures	OTN-ZZ-00004	Operation of the Leak Rate Monitor (LRM)	12
71111.24	Procedures	OTS-SA-00001	Operation of Engineered Safety Feature Actuation System	30
71111.24	Procedures	QCP-ZZ-05041	Visual Examination to ASMI VT-2	31
71114.06	Miscellaneous	Emergency Preparedness 2023 ERO Modified Annual Drill, August 17 to December 5, 2023		
71124.01	ALARA Plans	16504197, Revision 2	ALARA Post-Work Review - Level 1 Remove/Install Insulation for Welds on Pressurizer (TBB03) for UT Inspections	05/04/2022
71124.01	ALARA Plans	22505893-500	Build / Remove Scaffold for Regenerative Heat Exchanger Shield Removal	10/05/2023
71124.01	ALARA Plans	ALARA Package # R25 S/G Primary	ALARA Post-Work Review - Level 2 for RWPs R25SGEC and R25SGECSETUP Steam Generator Eddy Current Testing and Setup for all Four Steam Generators	05/18/2022
71124.01	ALARA Plans	R25REGENHX, Revision 2	ALARA Post-Work Review - Level 1 Install Permanent Shielding on Regenerative Heat Exchanger and associated activities	05/16/2022
71124.01	Corrective Action Documents	Condition Reports	202202837, 202202907, 202300709, 202303817, 202305624, 202306025, 202306687, 202307013, 202307061, 202307944	
71124.01	Procedures	APA-ZZ-00014, Appendix A	Radiation Protection Skill of the Craft	5

71124.01	Procedures	APA-ZZ-01001	Callaway Plant ALARA Program	28
71124.01	Procedures	APA-ZZ-01004, Appendix A	General Instruction for Donning / Removing Protective Clothing	8
71124.01	Procedures	HDP-ZZ-01200	Radiation Work Permits	34
71124.01	Procedures	HDP-ZZ-01500	Radiological Postings	53
71124.01	Procedures	HDP-ZZ-03000	Radiological Survey Program	52
71124.01	Procedures	HDP-ZZ-03000, Appendix A	Frequency and Location of Routine Radiological Surveys	17
71124.01	Procedures	HTP-ZZ-02005	Handling of Radioactive Material	52
71124.01	Procedures	HTP-ZZ-02023	Unconditional Release of Material from Radiological Controls	26
71124.01	Procedures	HTP-ZZ-06001	High Radiation / Locked High Radiation / Very High Radiation Area Access	56
71124.01	Procedures	HTP-ZZ-06028	Radiological Controls for Pools that Contain or Store Spent Fuel	10
71124.01	Radiation Surveys	2008311307	Air Sample Location: Transfer Canal	08/31/2023
71124.01	Radiation Surveys	2204290658	Air Sample Location: Reactor Building Steam Generator B/C Primary Side	04/29/2022
71124.01	Radiation Surveys	2305170029	Air Sample Location: Containment Entry	05/17/2023
71124.01	Radiation Surveys	2308221715	Air Sample Location: Fuel Building Transfer Canal	08/22/2023

71124.01	Radiation Surveys	2308281132	Air Sample Location: 2047' Fuel Building Transfer Canal	08/28/2023
71124.01	Radiation Surveys	2308290850	Air Sample Location: Transfer Canal	08/29/2023
71124.01	Radiation Surveys	CA-M-20220409-17	RB2047CAV Upper Internals List	04/09/2022
71124.01	Radiation Surveys	CA-M-20231004-1	Reactor Building 2047 General Area	10/04/2023
71124.01	Radiation Surveys	CA-M-20231004-14	Reactor Building 2047 General Area	10/04/2023
71124.01	Radiation Surveys	CA-M-20231004-15	Reactor Building 2047 Refuel Cavity Area	10/04/2023

71124.01	Radiation Surveys	CA-M-20231005-16	RB2023I - Snubber Behind Regen HX Shielding / LHRA/RPB Posting Survey	10/05/2023
71124.01	Radiation Surveys	CA-M-20231006-4	RB2023I - Snubber Behind Regen HX Shielding	10/06/2023
71124.01	Radiation Surveys	CA-M-20231020-13	RSS-1 I/S Characterization Survey EVND box 700654	10/20/2023
71124.01	Radiation Surveys	CA-M-20231020-9	RSS-1 Characterization Survey shipment 700654	10/20/2023
71124.01	Radiation Surveys	CA-M-20231101-3	RSS-1 Characterization Survey - Container 700654 - Irradiated EVND	11/01/2023
71124.01	Radiation Work Permits (RWP)	22505893500	Remove / Replace Snubbers by Regen Hx	0
71124.01	Radiation Work Permits (RWP)	R26AOVMOV	AOV tests, LimiTorque Service, MOVATS, and associated maintenance	0
71124.01	Radiation Work Permits (RWP)	R26RCPSEAL	Reactor Coolant Pump seal change	0
71124.01	Radiation Work Permits (RWP)	R26RPCAVITY	RP Refuel Cavity job coverage and surveys	0
71124.01	Radiation Work Permits (RWP)	R26STEC	Eddy Current of Flux Thimbles. Flux Thimble Cleaning	0
71124.01	Radiation Work Permits (RWP)	R26UPPERINLIFT	Removal and reinstallation Upper Internals	0
71124.01	Self-Assessments	202007247-031	Self-Assessment: HRA/LHRA Controls	05/06/2021
71124.04	Calculations	HPCI 0202	Electronic Dosimeter Calibration Adjustment Factor	04/18/2016
71124.04	Calculations	HPCI 1602	Reactor Building Neutron Dosimeters Correction Factor	11/30/2020
71124.04	Calculations	HPCI 1603	ISFSI Neutron Dosimeters Correction Factor	10/24/2018
71124.04	Corrective Action Documents	Condition Reports	202002361; 202002363; 202002364; 202002404; 202002405; 202002486; 202005007 202007218; 202102992; 202105029; 202202620; 202203687; 202300304; 202304405	
71124.04	Miscellaneous	Dosimetry	2022 REIRS Data	

		Records		
71124.04	Miscellaneous	Dosimetry Records	Dosimetry records associated with facial contamination	May 2022
71124.04	Miscellaneous	Dosimetry Records	Dosimetry records associated with facial contamination	May 2023
71124.04	Miscellaneous	Dosimetry Records	Dose Assessment Associated with worker who fell in the reactor cavity	April 2022
71124.04	Miscellaneous	Dosimetry Records	Form 5s Associated with declared pregnant workers	
71124.04	Procedures	APA-ZZ-01000	Callaway Energy Center Radiation Protection Program	48
71124.04	Procedures	APA-ZZ-01004 Appendix D	General Instructions for Use of Dosimeter of Legal Record	4
71124.04	Procedures	HDP-ZZ-01200	Radiation Work Permits	34
71124.04	Procedures	HDP-ZZ-01300	Internal Dosimetry Program	38
71124.04	Procedures	HDP-ZZ-03000 Appendix D	Performing Airborne Radioactivity Surveys	12
71124.04	Procedures	HTP-ZZ-01302- DTI-Routine/Diag	Response to Positive Routine or Diagnostic In Vivo Count	22
71124.04	Procedures	HTP-ZZ-01433	Personnel Exposure Records	72
71124.04	Procedures	HTP-ZZ-04124- DTI-RAD-PRO-5- OP	Radeco Model Rad Pro 5 Personal Air Sampler Operation	3
71124.04	Procedures	HTP-ZZ-06009	Personnel Contamination Assessment and Decontamination	54
71124.04	Procedures	RP-DTI-Air Sample Dose	Intake Assessment from Air Samples	8
71124.04	Procedures	RP-DTI-EXT- DOS-DLR- Operations	DLR Operations	4
71124.04	Procedures	RP-DTI-In Vitro Bioassay	In-Vitro Bioassay Sample Collection	5
71124.04	Procedures	RP-DTI-TRU Assessment	Alpha Monitoring Facility Characterization	8
71124.04	Self-Assessments	SA 202000212- 013	NRC Pre-Inspection Self Assessment - Occupational Dose Assessment	05/20/2020
71152S	Corrective Action	Condition Reports	202306882, 202307253, 202307701, 20238879, 202309050	

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71152S	Procedures	APA-ZZ-00310	Workman's Protection Assurance	76
71153	Corrective Action Documents	Condition Reports	202200168, 202203677, 202203737, 202306050, 202306728, 202306800, 202306813, 202307766, 202307958, 202308090, 202308108, 202308132, 202308204	
71153	Drawings	M-22EJ01	Residual Heat Removal System	59
71153	Miscellaneous		Jobs 22503623, 23006728	
71153	Miscellaneous	8375D06	Swing Check Valve Mod 10001CS990000D0	10
71153	Miscellaneous	AMNPES00050-CALC-001	Loop Tolerance and Uncertainty Calculation for Instrument Tunnel Sump Level Element LFLE0079 and Containment Normal Sump East and West Level Transmitters LFLT0089 and LFLT0094	3
71153	Miscellaneous	MP 20-0012-J-24LF12-002-001	Instrument Tunnel Sump Layout Drawing	2
71153	Miscellaneous	MP 20-0012-RFR 160149	Obsol XMTR-MIN	2
71153	Miscellaneous	RFR 230309	TASM - Install Blank Flange in Place of EJF0003 to Support BB8948C Repair	0
71153	Procedures	OSP-ZZ-00001	Control Room Shift and Daily Log Readings and Channel Checks	94 and 95
71153	Procedures	OTN-EJ-00001	Residual Heat Removal System	28