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

May 4, 2023

Rod Penfield
Site Vice President
Energy Harbor Nuclear Corp.
Perry Nuclear Power Plant
10 Center Road, P.O. Box 97
Perry, OH 44081

SUBJECT: PERRY NUCLEAR POWER PLANT – INTEGRATED INSPECTION REPORT 05000440/2023001

Dear Rod Penfield:

On March 31, 2023, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Perry Nuclear Power Plant. On April 13, 2023, the NRC inspectors discussed the results of this inspection with Chris Elliott, Plant Manager, and other members of your staff. The results of this inspection are documented in the enclosed report.

Three 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 III; the Director, Office of Enforcement; and the NRC Resident Inspector at Perry Nuclear Power Plant.

If you disagree with a cross-cutting aspect assignment or a finding not associated with a regulatory requirement 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 III; and the NRC Resident Inspector at Perry Nuclear Power 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."

Sincerely,

Signed by Dickson, Billy
on 05/04/23

Billy C. Dickson, Jr., Chief
Reactor Projects Branch 2
Division of Operating Reactor Safety

Docket No. 05000440
License No. NPF-58

Enclosure:
As stated

cc w/ encl: Distribution via LISTSERV

Letter to Rod Penfield from Billy C. Dickson dated May 4, 2023.

SUBJECT: PERRY NUCLEAR POWER PLANT – INTEGRATED INSPECTION REPORT 05000440/2023001

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

| | |
|---|---|
| Docket Number: | 05000440 |
| License Number: | NPF-58 |
| Report Number: | 05000440/2023001 |
| Enterprise Identifier: | I-2023-001-0062 |
| Licensee: | Energy Harbor Nuclear Corp. |
| Facility: | Perry Nuclear Power Plant |
| Location: | Perry, OH |
| Inspection Dates: | January 01, 2023 to March 31, 2023 |
| Inspectors: | J. Beavers, Senior Resident Inspector<br>E. Fernandez, Senior Reactor Inspector<br>D. Mills, Senior Resident Inspector<br>V. Myers, Senior Health Physicist<br>J. Nance, Operations Engineer<br>T. Ospino, Resident Inspector |
| Approved By: | Billy C. Dickson, Jr., Chief<br>Reactor Projects Branch 2<br>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 Perry Nuclear Power 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.

## List of Findings and Violations

| LER 2023-001-00 for Perry Nuclear Power Plant, Manual ECCS Actuation Following Automatic Reactor Trip | | | |
|---|---|---|---|
| Cornerstone | Significance | Cross-Cutting Aspect | Report Section |
| Initiating Events | Green<br>FIN 05000440/2023001-01<br>Open/Closed | None (NPP) | 71153 |
| A self-revealed Green finding was identified when the licensee failed to ensure that components are manipulated, verified, and position checked to maintain personal safety and operational configuration as directed by NOP-OP-1014, "Plant Status Control," contributing to an unplanned automatic reactor trip. | | | |

| LER 2020-001-00 for Perry Nuclear Power Plant, Combustible Gas Mixing Compressor was Declared Inoperable due to Degraded Thermal Overloads Resulting in Technical Specification Violation | | | |
|---|---|---|---|
| Cornerstone | Significance | Cross-Cutting Aspect | Report Section |
| Barrier Integrity | Green<br>NCV 05000440/2023001-03<br>Open/Closed | None (NPP) | 71153 |
| A self-revealed Green finding and associated non-cited violation (NCV) of Technical Specification (TS) 3.6.3.3, "Combustible Gas Mixing System," was identified when the licensee failed to perform the required actions for an inoperable "B" combustible gas mixing compressor from November 1, 2019, until February 24, 2020. | | | |

| LER 2021-001-00 for Division 3 Emergency Diesel Generator Inoperability Resulting in a Condition Prohibited by Technical Specifications | | | |
|---|---|---|---|
| Cornerstone | Significance | Cross-Cutting Aspect | Report Section |
| Mitigating Systems | Green<br>NCV 05000440/2023001-02<br>Open/Closed | [H.10] - Bases for Decisions | 71153 |
| A self-revealed Green finding and associated NCV of TS 3.8.1, "AC Sources Operating," was identified when the licensee failed to perform the required surveillance and actions for an inoperable division 3 emergency diesel generator. | | | |

## Additional Tracking Items

| Type | Issue Number | Title | Report Section | Status |
|---|---|---|---|---|
| LER | 05000440/2020-001-00 | LER 2020-001-00 for Perry Nuclear Power Plant, Combustible Gas Mixing Compressor was Declared Inoperable due to Degraded Thermal Overloads Resulting in Technical Specification Violation | 71153 | Closed |
| LER | 05000440/2023-001-00 | LER 2023-001-00 for Perry Nuclear Power Plant, Manual ECCS Actuation Following Automatic Reactor Trip | 71153 | Closed |
| LER | 05000440/2020-002-01 | LER 2020-002-01 for Perry Nuclear Power Plant, Standby Liquid Control System Rendered Inoperable due to Valve Misposition | 71153 | Closed |
| LER | 05000440/2021-001-00 | LER 2021-001-00 for Perry Nuclear Power Plant, Division 3 EDG Inoperability Resulting in an Operation or Condition Prohibited by Technical Specifications | 71153 | Closed |

## PLANT STATUS

Unit 1 began the inspection period at rated thermal power. On January 5, 2023, the unit shutdown on automatic protective action. On January 9, 2023, Unit 1 restarted, incurred a loss of one of the reactor recirculation pumps, and was limited in full power restoration to 50 percent power while in single loop reactor recirculation operation. On February 26, 2023, the unit was shut down manually to perform a refueling outage 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 from impending high winds on February 15, 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) alternating current (AC) offsite power to shutdown safety busses on March 2 and 3, 2023

71111.05 - Fire Protection

Fire Area Walkdown and Inspection Sample (IP Section 03.01) (3 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) turbine building between February 27 and March 1, 2023

(2) fire protection zone related to the refuel floor, elevation 652' on March 8, 2023
(3) review of the fire zone associated with the residual heat removal "A" pump room between March 20 and 30, 2023

Fire Brigade Drill Performance Sample (IP Section 03.02) (1 Sample)

(1) The inspectors evaluated the onsite fire brigade training and performance during an unannounced fire drill on January 25, 2023.

71111.07A - Heat Exchanger/Sink Performance

Annual Review (IP Section 03.01) (1 Partial)

The inspectors evaluated readiness and performance of:

(1) (Partial)
the division 1 residual heat remover heat exchanger

71111.08G - Inservice Inspection Activities (BWR)

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

(1) The inspectors verified that the reactor coolant system boundary, reactor vessel internals, risk-significant piping system boundaries, and containment boundary were monitored for degradation and that repairs and replacements were fabricated, examined and accepted by reviewing the following activities from March 6 through March 10, 2023:

03.01.a - Nondestructive Examination and Welding Activities.

1. Ultrasonic Examination (UT) of Main Steam line weld Component ID 1B21-0085
2. Ultrasonic Examination (UT) of Main Steam line weld Component ID 1B21-0089A
3. Work Order (WO) 200779608, Replace Kalrez Insert 6" Rockwell Edwards Testable Piston Check Valve

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 power ascension after synchronizing to the grid on January 8 and 9, 2023.

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

(1) The inspectors observed and evaluated refueling outage shutdown just-in-time training on February 21, 2023.

71111.12 - Maintenance Effectiveness

Maintenance Effectiveness (IP Section 03.01) (4 Samples)

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

(1) control rod drive mechanism replacement
(2) ‘A’ reactor recirculating motor replacement
(3) ‘A’ reactor recirculating cable replacement
(4) transformer LH1A high side cable repair

Quality Control (IP Section 03.02) (1 Sample)

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

(1) safety relief valve replacement

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (9 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) emergent work due to the failure of the feedwater system from January 5 to 7, 2023
(2) emergent work related to the spike on the emergency service water (ESW) "A" D17-K604 radiation monitor activity on January 25, 2023
(3) planned work of single loop 10 percent power reduction for rod pattern adjustment on February 11, 2023
(4) emergent work generated due the issue with the RB6 thermocouple on the division 1 emergency diesel generator (EDG) on February 15, 2023
(5) planned work on electrical power during single source of credited offsite power and only 1 EDG operable from March 2 to March 6, 2023
(6) planned work on reactor coolant inventory control and decay heat removal during reduced inventory and decay heat control removal systems from March 2 to March 8, 2023
(7) emergent work related to the outboard main steam isolation valve (MSIV) "B" valve stem challenges on March 21, 2023
(8) emergent work generated for the MSIV “D” on March 23, 2023
(9) actions after challenges associated with, "A" flow control valve 1B33-F060, “did not move,” as part of a testing procedure on March 29, 2023

71111.15 - Operability Determinations and Functionality Assessments

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

(1) CR-2023-00169; ESW "A" Radiation Monitor Trip on January 26, 2023
(2) CR-2023-01057; Division 1 Emergency Diesel Generator Missing Thermocouple on February 15, 2023
(3) CR-2023-01945; CRDM 14-51 Incorrect Control Rod Position Indication Probe Removed on March 15, 2023
(4) CR-2023-01995; LH1A Doble Test Results on March 17, 2023

71111.18 - Plant Modifications

Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (4 Samples)

The inspectors evaluated the following temporary or permanent modifications:

(1) provide alternate power to uninterruptible power source (UPS) loads while Technical Support Center UPS inverter is degraded (Engineering Change 22-1098-000-001) on January 31 and February 1, 2023
(2) permanent modification of rod control and information system during system replacement
(3) permanent modification of drywell instrument air to SRVs and inboard MSIVs
(4) implementation of the hydranuts on the unified system “A” and “C”, residual heat removal (RHR) “A” heat exchanger between 28 February and March 30, 2023

71111.20 - Refueling and Other Outage Activities

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

(1) The inspectors evaluated a forced outage from January 5 through 8, 2023.
(2) (Partial)
The inspectors evaluated refueling outage 19 activities from February 27 through March 31, 2023.

71111.24 - Testing and Maintenance of Equipment Important to Risk

The inspectors evaluated the following testing and maintenance activities to verify system operability and/or functionality:

Post-Maintenance Testing (PMT) (IP Section 03.01) (6 Samples)

(1) Review of the replacement and installation of breaker ED1A03 on January 3, 2023.
(2) Replacement of one of the processors computers, Foxboro CP101, on January 6, 2022.
(3) Review of energizing/de-energizing operations and subsequent motor analysis related to the control rod drive pump “B” work on January 17, 2023.
(4) Review of the work involving the replacement of capacitors in Technical Support Center (TSC) ERIS computer power center on January 18, 2023.

(5) Repair of cable attached to the "B" intermediate range monitor while performing under vessel activities on March 20, 2023.
(6) Reactor recirculating pump "A" uncoupled run following motor and cable replacement on March 27, 2023.

Surveillance Testing (IP Section 03.01) (6 Samples)

(1) Review of surveillance and actions related to the FLEX 4160kv generators quarterly performance that ended with the explosion of one of the engines associated with the PY-1X11S0011 generator on November 30, 2022.
(2) Testing of the jacking device alarm PY-1R43N004B during the division 2 planned outage on December 11, 2022.
(3) Surveillance related to the reactor protection manual SCRAM channel functional check on December 26, 2022.
(4) SCRAM discharge volume vent and drain valves surveillance (SVI-C11-T2004) on February 6, 2022.
(5) Division 2 emergency core cooling system integrated test on March 16 and 17, 2023.
(6) Surveillance of MSIV “B” inboard and outboard valves set as part of the Local Leak-Rate Testing (LLRT) activities on March 16, 2023.

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

(1) Final LLRT related to the “D” MSIV (22D and 28D) on March 25, 2023
(2) Inservice Leak Test (ISLT) related to the RHR “A” (“C”) heat exchanger on March 30, 2023

Containment Isolation Valve (CIV) Testing (IP Section 03.01) (3 Samples)

(1) Surveillance SVI-M14T9313, LLRT 1M14 penetration V313 on January 25, 2023.
(2) Review of LLRT performed for valve E-12-F053B on March 14, 2023.
(3) Test of containment isolation valve and penetration P131 on March 10, 2023.

Diverse and Flexible Coping Strategies (FLEX) Testing (IP Section 03.02) (1 Sample)

(1) FLEX 4160 volt generator (PY-1X11S00111) following replacement on February 6, 2023.

71114.06 - Drill Evaluation

Select Emergency Preparedness Drills and/or Training for Observation (IP Section 03.01) (1 Sample)

(1) Emergency preparedness tabletop drill on February 2, 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) workers exiting the radiologically controlled area at the drywell control point
(2) workers exiting the radiologically controlled area at the balance of plant control point

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) local leak rate testing under radiation work permit (RWP) 2300414
(2) undervessel activities under RWP 2300518
(3) reactor water clean-up heat work under various RWPs

High Radiation Area and Very High Radiation Area Controls (IP Section 03.05) (4 Samples)

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

(1) fuel transfer tube
(2) residual heat removal pump "A" room
(3) reactor water clean-up heat exchanger room
(4) containment annulus

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.

71124.03 - In-Plant Airborne Radioactivity Control and Mitigation

Temporary Ventilation Systems (IP Section 03.02) (2 Samples)

The inspectors evaluated the configuration of the following temporary ventilation systems:

(1) reactor head laydown area
(2) reactor water clean-up heat exchanger room

**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) Unit 1 (January 1, 2022 through December 31, 2022)

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

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

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

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

71152S - Semiannual Trend Problem Identification and Resolution

Semiannual Trend Review (Section 03.02) (1 Sample)

(1) The inspectors performed a semiannual review of the licensee's potential adverse trend in procedure adherence, specifically job qualification, for the previous six months.

71153 - Follow Up of Events and Notices of Enforcement Discretion

Event Follow-up (IP Section 03.01) (1 Sample)

(1) Follow-up of events related to reactor recirculating pump "A" trip on January 9, 2023

Event Report (IP Section 03.02) (4 Samples)

(1) LER 05000440/2020-002-01, "Standby Liquid Control System Rendered Inoperable due to Valve Misposition," (ADAMS Accession No. ML21131A168). The inspectors reviewed the LER submittal. The previous LER submittal was reviewed in Inspection Report 050004402021001 under Inspection Results Section 71153.This LER is Closed.
(2) LER 05000440/2021-001-00, "Division 3 EDG Inoperability Resulting in an Operation or Condition Prohibited by Technical Specifications," (ADAMS Accession No. ML21209A105). The inspection conclusions associated with this LER are documented in this report under Inspection Results Section 71153. This LER is Closed.
(3) LER 05000440/2020-001-00, "Combustible Gas Mixing Compressor was declared Inoperable due to Degraded Thermal Overloads resulting in Technical Specification Violation." (ADAMS Accession No. ML20107F741). The inspection conclusions associated with this LER are documented in this report under Inspection Results Section 71153. This LER is Closed.

(4) LER 05000440/2023-001-00, "Perry Nuclear Power Plant, Manual ECCS Actuation Following Automatic Reactor Trip," (ADAMS Accession No. ML23053A083). The inspection conclusions associated with this LER are documented in this report under Inspection Results Section 71153. This LER is Closed.

## INSPECTION RESULTS

| Observation: Semiannual Sample for Potential Adverse Trend in Qualifications | 71152S |
|---|---|

The inspectors performed a semiannual review of the licensee's potential adverse trend in job ownership, where individuals understand and demonstrate personal responsibility for the behaviors and work practices that support nuclear safety. Specifically, the behavior in question is individuals ensure that they are trained and qualified to perform assigned work.

CR-2022-09845, while performing engineering qualifications, a discussion item was erroneously signed complete. A potential consequence of being signed off by an unqualified mentor would be the then unqualified mentee could have potentially performed work that led to inaccurate trending and a plant event. CR-2023-00661, while completing on-the-job training for a qualification card, the trainee and supervisor failed to validate the qualifications to perform the training. A potential consequence would be an individual could have become qualified for a task with training performed by an unqualified individual resulting in inadequate maintenance. CR-2023-01061, a licensed reactor operator, assumed the shift with expired respirator qualifications. A potential consequence would be that the operator may not have been able to perform all functions in an oxygen-deficient environment or that the operator's safety could have been compromised while attempting to do so. After these three instances, CR-2023-01266 was generated for an area of concern regarding qualification program requirements. Corrective actions included work stoppage, management-led discussions and briefs, and an overall emphasis on qualifications up and down the chain of command.

During this inspection, the inspectors completed the objectives of the inspection procedure and the inspectors trended the behavior to consider potential safety culture weaknesses and to encourage the licensee to take appropriate actions before significant performance degradation occurs, as stated in NUREG-2165, "Safety Culture Common Language." The inspectors identified no additional examples of qualification issues following the implementation of trend qualifications during the inspection period. Regarding the listed examples, the inspectors identified no more than minor performance deficiencies or violations. These examples did not adversely affect any cornerstone objective to ensure the availability, reliability, and capability of systems or personnel that respond to initiating events to prevent undesirable consequences.

| LER 2023-001-00 for Perry Nuclear Power Plant, Manual ECCS Actuation Following Automatic Reactor Trip | | | |
|---|---|---|---|
| Cornerstone | Significance | Cross-Cutting Aspect | Report Section |
| Initiating Events | Green<br>FIN 05000440/2023001-01<br>Open/Closed | None (NPP) | 71153 |

A self-revealed Green finding was identified when the licensee failed to ensure that components are manipulated, verified, and position checked to maintain personal safety and

operational configuration as directed by NOP-OP-1014, “Plant Status Control,” contributing to an unplanned automatic reactor trip.

Description:

On January 5, 2023, with the reactor in Mode 1 and at 98% rated thermal power, the licensee performed maintenance activities and repairs on a power supply regulating transformer. The reenergizing of the power source after maintenance interrupted the normal reactor water level inventory control function of the digital feedwater control system (DFWCS) and initiated an automatic reactor protection system trip on lowering water inventory and the automatic initiation of emergency core injection systems to restore reactor water inventory. Shortly after restoration of the reactor water inventory, the operators reset and returned to service the DFWCS to maintain inventory. The operators ultimately placed the unit in its lowest energy state, Mode 4 Cold Shutdown, without further complications.

The licensee attributed the direct cause of the automatic reactor trip to the failure of a DFWCS level control processor module and an intermittent power supply failure, combined with a network traffic overload. The component failures in DFWCS, and an overloaded communications network, caused the unexpected loss of additional DFWCS workstations and indications to the operators, with a DFWCS zero injection demand signal. This failure lowered reactor water inventory and resulted in an automatic reactor safety system trip. The inspectors evaluated the procedures and documentation associated with the reactor scram and supporting data to identify potential performance deficiencies related to the station’s procedures, equipment, and personnel performance. The inspectors identified no issues with the direct cause of the event or within the response of the station's procedures, equipment, or personnel performance.

A contributing cause existed in a latent configuration control issue and nonconforming condition within the media translator power supply portion of the DFWCS. During DFWCS replacement work orders in 2012-2013, a configuration control issue was introduced due to the physical differences of the plug and the spacing constraints of the power receptacles. The issue became evident with the unexpected loss of indication of the DFWCS workstations during the maintenance and increased DFWCS network communication traffic due to the loss of interface screens hindering the operator's ability to acknowledge alarms, ultimately overloading the network traffic. The impact of the configuration issue during the event was that both DFWCS communication networks were lost, and both workstations were not available to manipulate the DFWCS at the onset of the event. Hardware repairs for the transformer capacitor replacement before plant startup revealed the latent configuration control issue.

The licensee performed a Probabilistic Risk Assessment (PRA) bounding evaluation on the January 5, 2023, event. The analysis of this uncomplicated plant scram resulted in a delta core damage frequency and a delta large early release fraction well below the acceptable thresholds of 1.0E-06 per year and 1.0E-07 per year, respectively, as discussed in Regulatory Guide 1.174. The risk of this event was considered to be of very low safety significance in accordance with the Regulatory Guidance.

This event was reportable under 10 CFR 50.72(b)(2)(iv)(A) and 10 CFR 50.72(b)(2)(iv)(B) (60-day License Event Report report). The LER number is 2023-001.

Corrective Actions: On January 5, 2023, the licensee repaired and restored the hardware issues of the control processer, the degraded power supply, and the overloaded

communications network. Additionally, the latent configuration control issue with the media translator power supply were restored to conformity.

Corrective Action References: CR-2023-00100, “Reactor SCRAM due to temporary loss of Feedwater”

Performance Assessment:

Performance Deficiency: The licensee failed to ensure that components are manipulated, verified, and position checked to maintain personal safety and operational configuration as directed by NOP-OP-1014, “Plant Status Control.”

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Configuration Control 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.

Significance: The inspectors assessed the significance of the finding using IMC 0609 Appendix A, “The Significance Determination Process (SDP) for Findings At-Power.” Per Exhibit 1, Section B Transient Initiators; question 1, the inspectors determined the finding did cause a reactor trip but did not cause a loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition and screened the finding as very low safety significance (Green).

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:

Inspectors did not identify a violation of regulatory requirements associated with this finding.

LER 2021-001-00 for Division 3 Emergency Diesel Generator Inoperability Resulting in a Condition Prohibited by Technical Specifications

| Cornerstone | Significance | Cross-Cutting Aspect | Report Section |
|---|---|---|---|
| Mitigating Systems | Green<br>NCV 05000440/2023001-02<br>Open/Closed | [H.10] - Bases for Decisions | 71153 |

A self-revealed Green finding and associated NCV of TS 3.8.1, "AC Sources Operating," was identified when the licensee failed to perform the required surveillance and actions for an inoperable division 3 emergency diesel generator.

Description:

On June 1, 2021, and during the start of the division 3 emergency diesel generator for monthly operability surveillance test, voltage oscillations existed for approximately 45 seconds after the start. The operators monitored that the fluctuations subsided, and diesel field volts/amps and stator volts all remained in their respective bands. The division 3 emergency diesel generator stabilized, and the operators noted no further oscillations for the remainder of the operability surveillance test.

On June 3, 2021, the licensee performed a follow-up operability determination and determined that the division 3 emergency diesel generator could not support continued operability. The licensee declared the division 3 emergency diesel generator inoperable and unavailable. When the operators first noted oscillating output voltage for the division 3 emergency diesel generator, entry into TS 3.8.1 Condition B and the accompanying actions did not occur. Surveillance requirement 3.8.1.1 was not performed as required within one hour and subsequent action TS 3.8.1 Condition F to be in Mode 3 in 12 hours was also not met. Since completion times were not met for TS 3.8.1 Condition F, this issue was reportable under 50.73(a)(2)(i)(B) as an operation or condition prohibited by the plant's technical specifications.

Also, on June 3, 2021, the licensee performed a probabilistic risk assessment (PRA) evaluation for the division 3 emergency diesel generator voltage regulator inoperability event that resulted in delta core damage frequency and delta large early release fraction values less than 1.0E-06 per year and 1.0E-07 per year respectively as discussed in Regulatory Guide 1.174.

A review of the division 3 emergency diesel generator maintenance history revealed that the voltage regulator was replaced and passed the post maintenance test on May 15, 2021. No other failures of the division 3 emergency diesel generator or the voltage regulator could be found during the previous three years.

On June 4, 2021, the voltage regulator was replaced, tested satisfactory, and the division 3 emergency diesel generator returned to operable status.

Corrective Actions: On June 4, 2021, the licensee removed voltage regulator PY-1E22Q3004 from the division 3 diesel generator. After replacement, post maintenance testing identified no additional issues and returned the division 3 emergency diesel generator to service.

Corrective Action References:

- CR-2021-04371, “Division 3 DG Voltage Regulator Oscillations Upon Start for SVI-E22-T1319”
- CR-2021-04432, “Division 3 DG Follow-up Operability Determination (FOD) per CR 2021-0437”

Performance Assessment:

Performance Deficiency: The licensee failed to perform the required actions for an inoperable division 3 emergency diesel generator in Mode 1 on June 1, 2021. Specifically, erratic output voltage falling below the allowable band during startup of the division 3 emergency diesel generator did not result in the application of TS 3.8.1 and its required actions within the specified time.

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.

Significance: The inspectors assessed the significance of the finding using IMC 0609 Appendix A, “The Significance Determination Process (SDP) for Findings At-Power.” Per Exhibit 2 - Mitigating Systems Screen Questions, Section A Mitigating SSCs and PRA Functionality, the inspectors answered all questions no and screened the finding as Green.

Cross-Cutting Aspect: H.10 - Bases for Decisions: Leaders ensure that the bases for operational and organizational decisions are communicated in a timely manner. The timeliness of the follow up operability determination was beyond the time requirement for the limiting condition for operation action.

Enforcement:

Violation: Perry Nuclear Power Plant TS 3.8.1, AC Sources Operating, requires that while in Modes 1, 2, and 3, three diesel generators shall be operable. The TS ACTION A statement requires that with one required offsite circuit inoperable, perform SR 3.8.1.1 for OPERABLE required offsite circuit within 1 hour and once per 8 hours thereafter AND restore required offsite circuit to OPERABLE status within 72 hours. The TS ACTION F statement requires with ACTION A and associated completion time not met to be in MODE 3 in 12 hours and MODE 4 in 36 hours.

Contrary to the above, between June 1, 2021, and June 3, 2021, while the plant was in Mode 1, the division 3 emergency diesel generator was inoperable, in that erratic output voltage falling below the allowable band during startup and ACTION A was not taken to perform SR 3.8.1.1 for OPERABLE required offsite circuit within 1 hour and once per 8 hours thereafter. Between June 1, 2021, and June 3, 2021, with ACTION A not taken within the associated completion time, ACTION F was not taken to be in MODE 3 in 12 hours and MODE 4 in 36 hours.

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

LER 2020-001-00 for Perry Nuclear Power Plant, Combustible Gas Mixing Compressor was Declared Inoperable due to Degraded Thermal Overloads Resulting in Technical Specification Violation

| Cornerstone | Significance | Cross-Cutting Aspect | Report Section |
|---|---|---|---|
| Barrier Integrity | Green<br>NCV 05000440/2023001-03<br>Open/Closed | None (NPP) | 71153 |

A self-revealed Green finding and associated non-cited violation (NCV) of Technical Specification (TS) 3.6.3.3, "Combustible Gas Mixing System," was identified when the licensee failed to perform the required actions for an inoperable "B" combustible gas mixing compressor from November 1, 2019, until February 24, 2020.

Description:

On November 1, 2019, the "B" combustible gas mixing compressor tripped immediately on thermal overload during the performance of SVI-M51-T2003B. Maintenance and operations restarted the compressor and could not reproduce a trip and the licensee closed the issue.

On February 3, 2020, the "B" combustible gas mixing compressor tripped 20 seconds after starting on thermal overload during the performance of SVI-M51-T2003B. The High Motor Amp local panel alarm locked in after the trip. The licensee declared "B" combustible gas mixing subsystem inoperable under TS 3.6.3.3, Condition A. After a review of the past three years, the licensee identified a similar issue. During November 1, 2019, testing, "B" combustible gas mixing compressor tripped on thermal overload, and the licensee entered TS

3.6.3.3, Condition A. On November 1, 2019, a work order reset the overload relay, and the licensee ran the compressor successfully with normal amperages and voltages. The licensee bench-tested the overload relay on November 4, 2019, with satisfactory results and met TS 3.6.3.3.

On February 14, 2020, the licensee replaced the overload relay and completed post-maintenance testing satisfactory. The licensee returned the "B" combustible gas mixing compressor to operable status.

On March 6, 2020, the licensee determined that inadequate procedural guidance in GEI-0029, “Testing of Molded Case Circuit Breakers and Overload Heater Relays,” degraded thermal overload relay testing and caused the previous system trip in November of 2019. Based upon this new information, the licensee determined "B" combustible gas mixing compressor to be inoperable from November 1, 2019, to February 14, 2020. In addition, the combustible gas mixing system function was lost during coincidental maintenance on the "A" combustible gas mixing compressor on November 1, 2019, through November 4, 2019, and again on February 4, 2020, through February 14, 2020.

On May 4, 2020, the licensee submitted Licensee Event Report (LER) 2020-001-00 per 10 CFR 50;73(a)(2)(i)(B) as an operation or condition prohibited by the plant technical specifications, and 10 CFR 50.73(a)(2)(v)(C) as an event or condition that could have prevented the fulfillment of a safety function of the combustible gas mixing system. The licensee performed a PRA evaluation for the November 1, 2019, to February 14, 2020, "B" combustible gas mixing compressor inoperability event. The combustible gas control system is not modeled in the PRA. The combustible gas mixing system protects the reactor containment following a core damage event. As such, the inoperability of the "B" combustible gas mixing compressor does not affect core damage frequency. The combustible gas mixing compressors, hydrogen recombiners, and hydrogen igniters control hydrogen when the hydrogen concentration is below the hydrogen deflagration overpressure limit in the containment and drywell. The assessment determined that the loss of the combustible gas mixing compressor system did not impact the functions of mitigation of hydrogen and combustible gas accumulation in containment.

The inspectors identified no modeling of the combustible gas mixing system in the NRC PRA model. Also, the inspectors determined that the limited loss of the combustible gas mixing compressor system availability did not significantly impact the functions of mitigation of hydrogen and combustible gas accumulation in containment.

Corrective Actions: On February 14, 2020, the overload relay was replaced, and post maintenance testing completed satisfactory, and "B" combustible gas mixing compressor was returned to operable.

On February 18, 2020, the licensee determined the "B" combustible gas mixing compressor may not function as designed.

On March 6, 2020, the licensee investigated evidence from CR 2020-00843 “Combustible Gas Mixing Compressor “B” tripped during surveillance testing” has indicated that inadequate procedural guidance within GEI-0029 resulted in the successful testing of the thermal overloads associated with B combustible gas mixing compressor in November of 2019. The conclusion from CR 2020-00843 noted that inadequate procedural guidance within GEI-0029

is why the degraded thermal overloads passed during the previous trip in November 2019. The licensee revised the procedure by clarifying the testing this type of overload relay.

Corrective Action References:

- CR-2019-09212, “Combustible Gas Mixing Compressor B Trip on Thermal Overload”
- CR-2020-00843, “Combustible Gas Mixing Compressor B Tripped During Surveillance Testing”
- CR-2020-01274, “Post Maintenance Testing Requirements Questioned for Combustible Gas Mixing Compressor Work”
- CR-2020-01878, “Potential past operability concerns with Combustible Gas Mixing Compressor B”

Performance Assessment:

Performance Deficiency: The licensee failed to perform the required actions for an inoperable 'B' combustible gas mixing compressor from Nov 1, 2019, to February 14, 2020, as required by TS 3.6.3.3.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Equipment 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.

Significance: The inspectors assessed the significance of the finding using IMC 0609 Appendix A, “The Significance Determination Process (SDP) for Findings At-Power.” IMC 0609 Appendix A, “The Significance Determination Process (SDP) for Findings At-Power” Per Exhibit 3, Section C Reactor Containment; question 1, the inspectors determined no conditions listed applied; question 2, the inspectors determined the combustible gas mixing compressor system to not reduce the function of the hydrogen igniters in reactor containment and screened the finding as very low safety significance (Green).

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: Perry Nuclear Power Plant TS 3.6.3.3, Combustible Gas Mixing System, requires that while in Modes 1 and 2, two combustible gas mixing subsystems shall be operable. The TS ACTION A statement requires with one combustible gas mixing subsystems inoperable, restore combustible gas mixing subsystem to OPERABLE status within 30 days. The TS ACTION B statement requires with two combustible gas mixing subsystems inoperable, verify by administrative means that the hydrogen control function is maintained within 1 hour and restore one combustible gas mixing subsystem to OPERABLE status within 7 days. The TS ACTION C statement requires with ACTION A or B and associated completion time not met to be in MODE 3 in 12 hours.

Contrary to the above, between November 1, 2019, and February 14, 2020, ‘B’ combustible gas mixing compressor was inoperable, in that degraded thermal overload relay testing caused spurious trips, and that with one combustible gas mixing subsystems inoperable,

ACTION A was not taken to restore combustible gas mixing subsystem to OPERABLE status within 30 days. Between November 1, 2019, until November 4, 2019, and again on February 4, 2020, until February 14, 2020, with two combustible gas mixing subsystems inoperable, ACTION B was not taken to verify by administrative means that the hydrogen control function is maintained within 1 hour and restore one combustible gas mixing subsystem to OPERABLE status within 7 days. Between November 1, 2019, and February 14, 2020, with ACTION A and/or B not taken within the associated completion time, ACTION C was not taken to be in MODE 3 within 12 hours.

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

| Observation: Follow up of events related to reactor recirculating pump 'A' trip on January 9, 2023 | 71153 |
|---|---|

The reactor plant was in Mode 1 but at reduced power while recovering from a previous plant shutdown. During power ascension, the operators shifted the reactor recirculating pumps from slow to fast speed to support the reactor power control and decay heat removal functions. When shifting the 'A' reactor recirculating pump, an electrical protective function automatically removed the pump from service. The operators entered an off-normal operating procedure for this condition and completed all actions as required. In addition, the relevant technical specifications limiting condition for operation was addressed in the applicable reactor plant mode, Mode 1, for single loop recirculation operation. Included were maximum thermal power limitations and various thermal limits placed on the nuclear fuel. As the reactor plant was relatively low in power compared to full power operation, all limits were within the limiting condition for operation. Plant operators identified additional limitations for this condition in the operational requirement manual and validated that none of these limitations were exceeded. The inspectors reviewed the overall event response for operator and equipment performance and identified no more than minor issues.

The licensee generated and approved an operational decision-making issue document to address the unusual plant configuration while consolidating and reconciling all potential limitations with the single loop recirculating loop in operation. This document included a brief description of the system operation and all relevant procedures governing the reactor plant operation while in this condition. The inspectors reviewed the operational decision-making issue document for correctness, application, and potential risks regarding single loop recirculation operation. The plant's safety analysis report addresses single loop recirculation operation and has determined that this transient is bounded by other analyzed transients. Also included was the core operating limits report that contains guidance related to how thermal limits are impacted by single loop operation. The inspectors reviewed the generation, implementation, and adherence of the operational decision-making issue document and identified no more than minor issues.

The reactor plant was shut down for a refueling and maintenance outage. The identified cause of the reactor recirculation pump trip was the cables leading from the electrical source breaker to the pump motor. The licensee replaced all three phase cables. Samples of the impacted cable were designated for further inspection by an appropriate laboratory, but at the close of this inspection, that conclusion has not been completed. In addition, the licensee replaced the 'A' reactor recirculating pump motor as planning and preparation for the activity was complete.

## EXIT MEETINGS AND DEBRIEFS

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

- On April 13, 2023, the inspectors presented the integrated inspection results to Chris Elliott, Plant Manager, and other members of the licensee staff.
- On March 30, 2023, the inspectors presented the inservice inspection results to Rod Penfield, Site Vice President, and other members of the licensee staff.
- On April 13, 2023, the inspectors presented the radiation protection inspection results to Chris Elliott, Plant Manager, and other members of the licensee staff.

**DOCUMENTS REVIEWED**

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
|---|---|---|---|---|
| 71111.04 | Procedures | SOI-1R10(4KV) | Plant Electrical System (4KV) Unit 1 | 10/04/2022 |
| | | SOI-S11 | Power Transformers | 06/09/2022 |
| 71111.05 | Corrective Action Documents | CR-2023-02742 | Fire in Generator Exciter Breaker | 04/07/2023 |
| | Fire Plans | 1RB-1C | Drywell | 03/08/2022 |
| | | FPI-1TB | Turbine Building Unit 1 | 09/14/2018 |
| | | FZ 1AB-1B | Unit 1 – RHR A System 574’ 10” Elevation | Rev. 2018 |
| 71111.08G | Corrective Action Documents | CR-2021-01850 | Foreign Material Found in Vessel, 310 Degrees Near the Top Guide Hold Down Bolt | 03/24/2021 |
| | | CR-2021-02545 | 1R18 RPV Leak Test: CRDMs Found Leaking | 04/05/2021 |
| | Corrective Action Documents Resulting from Inspection | CR-2023-01371 | 1R19 ISI Scope Change | 02/28/2023 |
| | NDE Reports | 1R19-APR-03 | Ultrasonic Examination of Pipe to Safe End Weld No. 1N27-0034 | 03/18/2023 |
| | | 1R19-APR-05 | Ultrasonic Examination of Safe End to Nozzle Weld No. 1B13-N4C-KB | 03/20/2023 |
| | | UT-23-E002 | Ultrasonic Examination (UT) of Main Steam Line Weld Component ID 1B21-0089 | 03/10/2023 |
| | | UT-23-E004 | Ultrasonic Examination (UT) of Main Steam Line Weld Component ID 1B21-0089A | 03/10/2023 |
| | Procedures | GEH-PDI-UT-1 | PDI Generic Procedure for the Ultrasonic Examination of Ferritic Welds | 12.1 |
| | | GEH-UT-716 | Procedure for the Examination of Reactor Pressure Vessel Welds from the Outside Surface with Microtomo in Accordance with Appendix VIII | 3 |
| | | GEH-UT-718 | Procedure for the Examination of Reactor Pressure Vessel Nozzle Inside Radius Sections from the Outside Surface with Microtomo in Accordance with Appendix VIII | 3 |
| | | NOP-CC-5762 | Appendix VIII Procedure for Ultrasonic Examination of Ferritic Pipe Welds | 6 |

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
|---|---|---|---|---|
| | | NOP-CC-5763 | Appendix VIII Procedure for Ultrasonic Examination of Austenitic Pipe Welds | 6 |
| | | NOP-CC-5764 | Appendix VIII Procedure for Ultrasonic Through-Wall Sizing of Planar Flaws in Similar Metal Welds | 2 |
| | | NOP-CC-5766 | Appendix VIII Generic Procedure for Ultrasonic Detection & Sizing of Reactor Pressure Vessel Nozzle-to-Shell Welds & Nozzle Inner Radius | 3 |
| | | SMAW/GTAW Welding of P1 to P1 | WPS No. 1.1.2-002 | 3 |
| | | WPS No 8.1.2-001 | SMAW/GTAW Welding of P8 to P8 | 7 |
| 71111.11Q | Procedures | Scenario booklet | 2023 1st Quarter ERO Table-Top Drill. TSC-EOF | 02/02/2023 |
| 71111.12 | Work Orders | WO 200570496 | Repair of Transformer LH1A High Side Cable | 03/14/2023 |
| | | WO 200857370 | CRDM Replacement | Revision 0 |
| | | WO 200866718 | Safety Relief Valves Remove and Replace | Revision 0 |
| | | WO 200900234 | Replace 'A" Reactor Recirculation Pump Motor Cables | Revision 0 |
| 71111.13 | Corrective Action Documents | CR 2022-07882 | Division 1 Diesel Right Bank Cylinder 6 Low Exhaust Temperature | 10/18/2022 |
| | | CR 2023-00122 | Unexpected ESW LOOP A PRCS RAD MON HIGH Alarm Received | 01/06/2023 |
| | | CR 2023-01057 | FME: Division 1 Right Bank #6 Thermocouple Outer Sheath Found Missing During Replacement | 02/15/2023 |
| | | CR 2023-01848 | Outboard MSIV Actuator Yoke Adjustment | 03/11/2023 |
| | | CR 2023-01915 | Outboard MSIV B Valve Stem Gouged | 03/14/2023 |
| | | CR 2023-02047 | 02047 1R19 LLRT: Main Steam Line Penetrations Leakage Exceeds SVI-B21-T9000 Step 5.3.4 Acceptance Criterion | 03/17/2023 |
| | | CR 2023-02200 | 1R19 – MSIV Accumulator Supply Check Valve “D” Failed SVI-B21-T2200 Acceptance Criterion | 03/22/2023 |
| | | CR 2023-02356 | B33 A FCV,1B33-F060A, Will Not Move for PMI-115 | 03/27/2023 |
| | | CR 2023-02394 | Reactor Recirculation HPU A Valves Wired Backwards During Replacement in 1R19 | 03/29/2023 |
| | Drawings | 08-0490 | Hydraulic Schematic | 2 |
| | | B-208-015 202 | Reactor Recirculation System Functional Diagram | 03/29/2023 |

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
|---|---|---|---|---|
| | | B-208-015 A14 | Reactor Recirculation System Logic Controller Interconnection Diagram “A” | 03/29/2023 |
| | | D-209-0015 25 | Reactor Recirculation System (1833-00038) Hydraulic Power Unit | 03/29/2023 |
| | Miscellaneous | 1R19 SDDID | 1R19 Shutdown Defense-in-Depth Report | 1 |
| | Procedures | IMI-E2-0028 | Source Range Monitor/Intermediate Range Monitor Detector Installation and Removal | 03/20/2023 |
| | | NOBP-OP-02 | Reactivity Plan Evolution Specific February Single Loop Operation Pattern Adjustment | 02/11/2023 |
| | Work Orders | 200899812 | **** Emergency Plan Equipment **** Spike in Activity D17K0604/CR | 01/25/2023 |
| 71111.15 | Corrective Action Documents | CR 2023-00169 | D17K0604 Emergency Service Water Loop A Monitor Power Switch Bumped - Misposition | 01/26/2023 |
| | | CR-2023-01057 | Division 1 Emergency Diesel Generator Missing Thermocouple | 02/15/2023 |
| | | CR-2023-01057 | Control Rod Drive Mechanism 14-51 Position Indication Probe Incorrect Removal | 03/14/2023 |
| | | CR-20230-01995 | LH1A Doble Test Results | 03/17/2023 |
| 71111.18 | Engineering Changes | ECP 22-1105-000 | HydraNut Installation on the E12 RHR Exchangers with Child Packages 001 and 002 | 03/30/2023 |
| | | TXI-0461 | Rod Control and Information System Modification | Revision 7 |
| | Engineering Evaluations | 22-198-000 | Provide Alternate Power to UPS Loads While TSC UPS Inverter Is Degraded | 001 |
| 71111.24 | Corrective Action Documents | CR 2022-09157 | Flex Generator Experienced Significant Failure During Routine Testing | 11/30/2022 |
| | | CR 2022-09288 | TSC UPS A Regulator A.C. Output L1-N Reading Out of Band | 12/06/2022 |
| | | CR 2023-00100 | Reactor SCRAM Due to Temporary Loss of Feedwater | 01/05/2023 |
| | | CR 2023-01675 | OTBD FW Check Valve B Inspection Second (1N27F0825B) Can Not Be Closed | 03/07/2023 |
| | | CR 2023-02185 | RHR ‘A’ Heat Exchanger ‘As Found’ Inspection Results | 03/22/2023 |
| | | CR 2023-02260 | RHR A and C Heat Exchanger Inspection Results | 03/24/2023 |
| | | CR 2023-07961 | Incorrect Breaker Installed in ED1A03 | 10/20/2022 |
| | Corrective Action | CR 2023-000840 | Scram Discharge Volume Vent and Drain Valves Outside of | 02/06/2023 |

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
|---|---|---|---|---|
| | Documents Resulting from Inspection | | Acceptable Stroke Time Range | |
| | Drawings | 304-0628-00132 1-B | Emergency Closed Cooling System | 01/26/2023 |
| | Engineering Evaluations | 60140024 | 1R19 Freeze Seal tracking SVI-G33-T9131 | 03/23/2023 |
| | Miscellaneous | Human Performance News Flash | GREEN – AWARENESS Wrong Breaker Installed for PM | 09/30/2022 |
| | | NEI Efficiency Bulletin | NEI Efficiency Bulletin: 16-17 Optimizing FLEX Equipment Preventive Maintenance Strategies | 01/24/2023 |
| | Procedures | SVI-B21-T900 | Type C Local Leak Rate Test of 1B21 MSL Penetrations (1P22, P124, P415, and P416) | 03/25/2023 |
| | | SVI-C11-T2004 | Scram Discharge Volume Vent and Drain Valves Operability Test | 02/06/2023 |
| | | SVI-G33-T9131 | Type C Local Rate Test of 1G33 Penetration P131 | 03/10/2023 |
| | | SVI-R43-T1000-B | Division 2 ECCS Integrated Test | 13 |
| | | SVI-R43-T1318 | Diesel Generator Start and Load Division 2 | 27 |
| | | TAI-1120-1 | Total 0.6La and Secondary Containment Bypass Calculation Data Sheet | 01/25/2023 |
| | Work Orders | WO 200513171 | Cal Check Jacking Device Alarm SW (DG 14 day LCO) | 12/11/2022 |
| | | WO 200559682 | ASME OM Code Remove/Replace Relief Valve | 11/16/2022 |
| | | WO 200677375 | Reperform Operations as Required to Install Refurbed BKR BREAKER ED1A03 OVERHAUL | 01/03/2023 |
| | | WO 200709777 | SVI-G33T9131 1G33 penetration P131 LLRT | 03/22/2023 |
| | | WO 200750750 | SVI-C71T0051 (31D Reactor Protection System Manual SCRAM Channel Functional | 12/26/2022 |
| | | WO 200792483 | SVI-M14T9313 1 (184D) Type C Local Leak Rate Test of 1M14 Penetration V313 | 01/26/2023 |
| | | WO 200838720 | PY-1X11S-0011 Function Test and Inspection | 02/06/2023 |
| | | WO 200855134 | De-Energized/ Energized Motor Analysis | 11/21/2022 |
| | | WO 200864378 | SVI-E12T9414 1 (30M) Type C Local Leak Rate Test of RHR to FDW Injection Valve Injection Valve 1E12-F053B | 03/14/2023 |

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
|---|---|---|---|---|
| | | WO 200871691 | $Open/Clean/UTT RHR “A” HX | 03/30/2023 |
| | | WO 200892940 | $Open/Clean/UTT RHR “C” HX | 03/30/2023 |
| | | WO 200898168 | TSC UPS A Regulator L-1-N Out of Band | 12/06/2022 |
| | | WO 200899795 | Digital Feedwater Troubleshooting | 01/05/2023 |
| | | WO 200899801 | Replace Foxboro CP101 / CR | 01/06/2023 |
| | | WO 200900292 | Reactor Recirculating Pump 'A' Uncoupled Run Following Motor and Cable Replacement | 03/27/2023 |
| | | WO 200909694 | Connect IRM B Cable | 3/20/2023 |
| 71124.01 | Corrective Action Documents | CR-2023-01647 | Unbriefed Dose Rate Alarm | 03/07/2023 |
| | Corrective Action Documents Resulting from Inspection | CR-2023-01690 | NRC Identified a Compromised HRA Barricade | 03/07/2023 |
| | Procedures | HPI-C0018 | Radiation Protection Response to Changing Plant Conditions | 4 |
| | | NOP-OP-4101 | Access Controls for Radiologically Controlled Areas | 20 |
| | | NOP-OP-4102 | Radiological Posting and Labeling | 15 |
| | Radiation Surveys | PY-M-20230213-2 | "A" RHR Pump Room | 02/13/2023 |
| | | PY-M-20230216-7 | "A" RHR Pump Room | 02/16/2023 |
| | | PY-M-20230302-37 | Under Reactor Head | 03/02/2023 |
| | | PY-M-20230305-21 | Bio-Shield Insulation Removal | 03/05/2023 |
| | | PY-M-20230305-38 | Drywell 599 for ISI Exam | 03/05/2023 |
| | | PY-M-20230307-36 | Separator Move Dose Rates | 03/07/2023 |
| | Radiation Work Permits (RWPs) | 230414 | 1R19 - LLRT Activities | 0 |
| | | 230518 | 1R19 - Undervessel Activities | 0 |
| | | 230601 | 1R19 - RWCU System Activities - LHRA | 0 |
| | | 230602 | 1R19 - FAC Exams RWCU Heat Exchanger Room - LHRA | 0 |

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
|---|---|---|---|---|
| 71152S | Corrective Action Documents | CR-2022-09845 | Training Document Signed by Unqualified Mentor | 12/29/2022 |
| | | CR-2023-00661 | Electrician Performed OJT Without Validation of Qualifications | 01/31/2023 |
| | | CR-2023-01071 | Operator Assumed Shift with Expired Respirator Quals | 02/16/2023 |
| | | CR-2023-01266 | INPO Area of Concern: Qualification Program | 02/23/2023 |
| | Miscellaneous | Human Performance, News flash | OJT Performed Without Checking Qualifications GREEN - AWARENESS | 02/03/2023 |
| | | Human Performance. News flash | Human Performance NEWS FLASH YELLOW – EVENT | 01/26/2023 |
| | Procedures | NOPM-LP-2009 RO | Human Performance Handbook | 10/01/2020 |
| 71153 | Corrective Action Documents | CR 2023-00169 | Excessive Leakage on the Motor Feed Pump Flow Control Valve(s) During Startup | 01/08/2023 |
| | | CR-2021-04371 | Division 3 DG Voltage Regulator Oscillations Upon Start for SVI-E22-T1319 | 06/01/2021 |
| | | CR-2021-04432 | Division 3 DG Follow-up Operability Determination (FOD) per CR 2021-04371 | 06/03/2021 |
| | Drawings | 207-0040-00000 | Electrical Three Line Diagram: Standby Diesel Generator Division 3 - Metering | T |
| | | 210-0100-00155 level-2 | (1H13-P865) Feedwater Control System | |
| | | B-208-066 Sheet B103 | Electrical Elementary Diagram: HPCS Div. 3 D.G. Excitation 1E22-S001 | V |
| | Miscellaneous | 7031537 | Purchase Order / Receipt Inspection: Static Voltage Regulator; Division III Diesel Generator | 07/17/2000 |
| | | G239-061P2 SR8A Voltage Regulator | Vendor Manual: Basler Model SR4A & SR8A | R |
| | | Logs | Control Room Logs - High Pressure Core Spray Diesel Generator | 06/03/2021-06/04/2021 |
| | | Logs | Logs and Other Computer Generated Data | 01/06/2023 |
| | | NOP-ER-3001-2 | Failure Mode Analysis -Reactor SCRAM of Loss of | 00 |

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
|---|---|---|---|---|
| | | | Feedwater | |
| | | NOP-OP-1015-01 | Reactor Plant Event Notification Worksheet EN # 56298 | 01/05/2023 |
| | | PER-08816 | Functional Test: Basler Electric Voltage Regulator: Model SR8A2B15B3A; Serial H00139161 | 04/20/2021 |
| | | PER-08817 | Functional Test: Basler Electric Voltage Regulator; Model SR8A2B15B3A; Serial 24760 | 04/20/2021 |
| | | PNPP No.10187 | Post SCRAM Restart Report Perry Nuclear Power Plant – SCRAM No. 1-23-01 | 01/05/2023 |
| | Work Orders | WO 200471326 | Field Power Voltage Regulator | 05/20/2021 |
| | | WO 200856675 | Field Power Voltage Regulator | 06/04/2021 |