



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

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

February 12, 2021

Mr. Rod Penfield
Site Vice President
Energy Harbor Nuclear Corp.
Perry Nuclear Power Plant
10 Center Road,
Perry, OH 44081

SUBJECT: PERRY NUCLEAR POWER PLANT – INTEGRATED INSPECTION REPORT
05000440/2020004

Dear Mr. Penfield:

On December 31, 2020, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Perry Nuclear Power Plant. On January 28, 2021, the NRC inspectors discussed the results of this inspection with you and other members of your staff. The results of this inspection are documented in the enclosed report.

One finding of very low safety significance (Green) is documented in this report. This finding involved a violation of NRC requirements. We are treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violation or the significance or severity of the violation 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 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,

/RA/

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

Docket No. 05000440
License No. NPF-58

Enclosure:
As stated

cc: Distribution via LISTSERV®

Letter to Rod Penfield from Billy C. Dickson, Jr., dated February 12, 2021.

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05000440/2020004

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U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Number: 05000440

License Number: NPF-58

Report Number: 05000440/2020004

Enterprise Identifier: I-2020-004-0031

Licensee: Energy Harbor Nuclear Corp.

Facility: Perry Nuclear Power Plant

Location: Perry, OH

Inspection Dates: October 01, 2020 to December 31, 2020

Inspectors: S. Bell, Health Physicist
J. Nance, Operations Engineer
T. Ospino, Resident Inspector
G. Roach, Senior Operations Engineer
J. Steffes, Senior Resident Inspector

Approved By: Billy C. Dickson, Jr., Chief
Branch 2
Division of Reactor Projects

Enclosure

SUMMARY

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

Failure to Close Valve During Surveillance Procedure Causes Inoperability and Unavailability of the Standby Liquid Control System			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000440/2020004-01 Open	[H.12] - Avoid Complacency	71152
A finding of very low safety significance (Green) and associated non-cited violation of Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self-revealed for the licensee's failure to perform activities affecting quality in accordance with an approved procedure appropriate for the circumstances. Specifically, during performance of PTI-C41-P0001, "Standby Liquid Control Transfer System Pump and Valve Operability Test," Revision 10, operators failed to shut transfer line isolation valve, 1C41-F522, causing an unplanned eight-hour limiting condition for operation (LCO) entry and unavailability of both trains of the standby liquid control system.			

Additional Tracking Items

None.

PLANT STATUS

The plant began the inspection period at rated thermal power. On October 31, 2020, reactor power was lowered to 66 percent to perform a rod sequence exchange and control rod scram time testing. The unit was returned to rated thermal power on November 11, 2020. On November 14, 2020, reactor power was lowered to 65 percent to perform a rod pattern adjustment. The unit was returned to rated thermal power the same day. On December 14, 2020, reactor power was lowered to 69 percent to perform turbine control valve testing. The unit was returned to rated thermal power on December 15, 2020. The unit remained at, or near, rated thermal power until December 23, 2020, when the unit entered into coastdown operations to refueling outage 1R18. The plant was at 97 percent power on December 31, 2020.

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 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.

Starting on March 20, 2020, in response to the National Emergency declared by the President of the United States on the public health risks of the Coronavirus Disease 2019 (COVID-19), resident inspectors were directed to begin telework and to remotely access licensee information using available technology. During this time, the resident inspectors performed periodic site visits each week; conducted plant status activities as described in IMC 2515, Appendix D, "Plant Status"; observed risk-significant activities; and completed on-site portions of IPs. In addition, resident and regional baseline inspections were evaluated to determine if all or portions of the objectives and requirements stated in the IP could be performed remotely. If the inspections could be performed remotely, they were conducted per the applicable IP. In some cases, portions of an IP were completed remotely and on-site. The inspections documented below met the objectives and requirements for completion of the IP.

REACTOR SAFETY

71111.01 - Adverse Weather Protection

External Flooding Sample (IP Section 03.03) (1 Sample)

- (1) External flooding walk down inspection Service Building on December 2, 2020

71111.04 - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (4 Samples)

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

- (1) Emergency closed cooling system (ECCS) valve alignment October 18, 2020
- (2) Low pressure core spray venting and valve lineup October 22, 2020
- (3) "A" residual heat removal (RHR) system lineup verification on November 18, 2020
- (4) "A" standby liquid control (SLC) system alignment verification on December 3, 2020

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

- (1) The inspectors evaluated system configurations during a complete walkdown of the high-pressure core spray system on November 10 to 20, 2020.

71111.05 - Fire Protection

Fire Area Walkdown and Inspection Sample (IP Section 03.01) (6 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) Intermediate building, elevation 620-foot, fire zone (FZ) 0IB-3 on November 7, 2020
- (2) Fuel handling building, elevation 620-foot, FZ 0FH-3 on November 7, 2020
- (3) Diesel generator building, 620- and 646-foot elevations, FZs 1DG-1C and DG-1D on November 7, 2020
- (4) Auxiliary building, 620- and 599-foot elevations on November 7 to 10, 2020
- (5) Unit 1 Division 3 Switchgear 620'-6" FZ 1CC-3c on November 9, 2020
- (6) Emergency Service Water pump house FZ 0EW on November 10, 2020

71111.06 - Flood Protection Measures

Inspection Activities - Internal Flooding (IP Section 03.01) (2 Samples)

The inspectors evaluated internal flooding mitigation protections in the:

- (1) "C" RHR system room on December 29, 2020
- (2) ECCS system on December 30, 2020

71111.07A - Heat Sink Performance

Annual Review (IP Section 03.01) (1 Sample)

The inspectors evaluated readiness and performance of:

- (1) Division 1 emergency diesel generator (EDG) jacket water heat exchanger review on December 7 to 17, 2020

71111.11A - Licensed Operator Requalification Program and Licensed Operator Performance

Requalification Examination Results (IP Section 03.03) (1 Sample)

- (1) The inspectors reviewed and evaluated the licensed operator examination failure rates for the requalification program biennial written examination and annual operating test administered between October 26 and December 7, 2020.

71111.11B - Licensed Operator Requalification Program and Licensed Operator Performance

Licensed Operator Requalification Program (IP Section 03.04) (1 Partial)

- (1) (Partial)
Biennial Requalification Written Examinations

The inspectors evaluated the quality of the licensed operator biennial requalification written examination administered on December 10, 2020.

Annual Requalification Operating Tests

The inspectors evaluated the adequacy of the facility licensee's annual requalification operating test.

Administration of an Annual Requalification Operating Test

Due to the COVID-19 PHE, the inspectors could not by direct observation, evaluate the effectiveness of the facility licensee in administering requalification operating tests required by 10 CFR 55.59(a)(2) and that the facility licensee is effectively evaluating their licensed operators for mastery of training objectives. Specifically, the inspectors did not observe the administration of simulator scenarios and Job Performance Measures (JPM) during the conduct of an annual requalification operating test required by 10 CFR 55.59(a)(2).

Requalification Examination Security

The inspectors evaluated the ability of the facility licensee to safeguard examination material, such that the examination is not compromised.

Remedial Training and Re-examinations

The inspectors evaluated the effectiveness of remedial training conducted by the licensee and reviewed the adequacy of re-examinations for licensed operators who did not pass a required requalification examination.

Operator License Conditions

The inspectors evaluated the licensee's program for ensuring that licensed operators meet the conditions of their licenses.

Control Room Simulator

The inspectors evaluated the adequacy of the facility licensee's Control Room simulator in modeling the actual plant, and for meeting the requirements contained in 10 CFR 55.46.

Problem Identification and Resolution

The inspectors evaluated the licensee's ability to identify and resolve problems associated with licensed operator performance.

71111.11Q - Licensed Operator Regualification Program and Licensed Operator Performance

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

- (1) The inspectors observed and evaluated licensed operator performance in the Control Room during down power for rod sequence exchange and scram time testing on October 31, 2020.

Licensed Operator Regualification Training/Examinations (IP Section 03.02) (2 Samples)

- (1) The inspectors observed and evaluated licensed operator performance in the simulator on October 28, 2020.
- (2) The inspectors observed and evaluated licensed operator performance in the simulator on November 4, 2020.

71111.12 - Maintenance Effectiveness

Maintenance Effectiveness (IP Section 03.01) (6 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) SLC system unavailability due to dilution event on August 20, 2020
- (2) Emergency service water (ESW) radiation monitoring spiking on October 19 to 22, 2020
- (3) Work associated with "A" reactor protection system motor generator on November 12, 2020
- (4) Meteorological tower work after Quincy lane was down for weather-related event on November 17, 2020
- (5) Combustible gas mixing compressor "A" failure on December 22, 2020
- (6) Unit 2 startup transformer modification issues on December 22, 2020

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (4 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) Plant risk evaluation and assessment while "A" ESW, "A" ECCS system, and "A" RHR inoperable and unavailable for maintenance work window on October 20 to 22, 2020
- (2) Emergent work evaluation and risk assessment associated with reactor vessel level perturbation due to reactor feed pump "A" speed oscillations on November 5, 2020
- (3) Licensee response to feedwater system transient event on November 5, 2020
- (4) Emergent activities associated to the reactor protection system motor generator "A" work on November 12, 2020

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 03.01) (5 Samples)

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

- (1) Division 1 EDG operability determination associated with CR 2020-08482 on November 9, 2020
- (2) Meteorological tower operability check following weather-related event on November 17, 2020
- (3) Functional test of the FLEX emergency service water pump "B" based on CR 2020-09317 on December 9, 2020
- (4) Unit 2 startup transformer disconnect failure on December 16 to 17, 2020
- (5) Division 1 EDG jacket water circulating pump failure due to a blown fuse on December 31, 2020

71111.18 - Plant Modifications

Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (2 Samples)

The inspectors evaluated the following permanent modification:

- (1) Main steam line isolation valve nuclear steam supply shutoff system isolation logic "C" test jack modification on October 6, 2020
- (2) Unit 1 startup transformer modification implementation 19-0203-001 on November 12, 2020

71111.19 - Post-Maintenance Testing

Post-Maintenance Test Sample (IP Section 03.01) (8 Samples)

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

- (1) The replacement of filters on "A" hydraulic power unit recirculation system on September 17 to 21, 2020
- (2) The replacement of the cable on the "A" ESW radiation monitor on October 7, 2020
- (3) The replacement of "A" electro-hydraulic control pump discharge filter on October 8, 2020
- (4) The replacement of the ECCS pump room cooler AGASTAT E7000 TD relay on October 18, 2020
- (5) "A" ESW system loop flow and differential pressure test following maintenance work window on October 26, 2020
- (6) "A" low pressure core spray room cooler time delay relay replacement October 21, 2020
- (7) "A" RHR room cooler time delay relay replacement on October 28, 2020
- (8) "A" RHR surveillance following motor operated valve test and adjustment on October 29, 2020

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Surveillance Tests (other) (IP Section 03.01) (4 Samples)

- (1) Main steam line high flow "C" functional test on October 6, 2020
- (2) Main steam line low condenser vacuum channel "A" calibration on October 19, 2020
- (3) "A" ESW flow and differential pressure test on October 24, 2020
- (4) Channel "A" drywell high-pressure calibration for 1C71-N050A on September 21, 2020

Inservice Testing (IP Section 03.01) (1 Sample)

- (1) High-pressure core spray pump and valve operability test, work order 200771908

FLEX Testing (IP Section 03.02) (1 Sample)

- (1) Test of the FLEX lake water pumps on June 6, 2020

71114.04 - Emergency Action Level and Emergency Plan Changes

Inspection Review (IP Section 02.01-02.03) (1 Sample)

- (1) The inspectors completed an evaluation of submitted Emergency Action Level and Emergency Plan changes on December 11, 2020. This evaluation does not constitute NRC approval.

71114.06 - Drill Evaluation

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

The inspectors evaluated:

- (1) Inspectors observed and evaluated the emergency response organization tabletop drill on October 29, 2020.
- (2) Inspectors observed and evaluated simulator-based licensed operator requal training on November 4, 2020.

RADIATION SAFETY

71124.05 - Radiation Monitoring Instrumentation

Calibration and Testing Program (IP Section 03.02) (11 Samples)

- (1) Thermo Scientific PCM-3 personnel contamination monitor, serial number L70L004E, calibrated on December 13, 2019
- (2) JL Shepherd Model 89 Irradiator calibrated on January 10, 2020
- (3) Canberra Fastscan Whole Body Counter calibrated on February 5, 2020
- (4) Mirion telepole survey instrument, serial number L70L074A, calibrated on February 11, 2020
- (5) Ludlum model 12 survey instrument, serial number L70L096D, calibrated on February 26, 2020
- (6) Eberline model RM20 survey instrument, serial number L70L020K calibrated on April 1, 2020
- (7) Eberline R02 survey instrument, serial number L70L030H, calibrated on May 15, 2020
- (8) Eberline model SAC-4 survey instrument, serial number L70L003E, calibrated on July 16, 2020
- (9) Bicorn RSO-50 survey instrument, serial number L70L0045Z, calibrated on August 24, 2020
- (10) Thermo Scientific SAM9 small article monitor, serial number L70L504L, calibrated on September 9, 2020
- (11) Thermo Scientific SPM-906 portal monitor, serial number L702009L calibrated on September 25, 2020

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

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

- (1) Unit 1 Off-Gas Vent Pipe Noble Gas Calibration for 1D17-K836
- (2) Unit 1 ESW Loop "A" Radiation Monitor Channel Calibration for 1D17-K604

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

BI01: Reactor Coolant System (RCS) Specific Activity Sample (IP Section 02.10) (1 Sample)

- (1) October 1, 2019 through September 30, 2020

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

- (1) July 1, 2019 through September 30, 2020

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

- (1) October 1, 2019 through September 30, 2020

71152 - Problem Identification and Resolution

Semiannual Trend Review (IP Section 02.02) (1 Sample)

- (1) Human performance trend June through December 2020

Annual Follow-up of Selected Issues (IP Section 02.03) (3 Samples)

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

- (1) CR 2020-06561, "Standby Liquid Control Hi/Lo Level Alarm During SLC Transfer Pump and Valve"
- (2) CR 2020-06471, "Timeliness of General Emergency Classification During August 8, 2020, Dry Run Drill"
- (3) Loss of Feedwater Heating Results in Loss of Safety Function

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

Event Report (IP Section 03.02) (1 Sample)

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

- (1) LER 2019-004 and LER 2019-004-001, Loss of Feedwater Heating results in Loss of Safety Function on August 6, 2019.

The inspectors determined that the cause of the condition described in the LER was not reasonably within the licensee's ability to foresee and correct, and, therefore, was not reasonably preventable. No performance deficiency nor violation of NRC requirements was identified.

INSPECTION RESULTS

Failure to Close Valve During Surveillance Procedure Causes Inoperability and Unavailability of the Standby Liquid Control System			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000440/2020004-01 Open	[H.12] - Avoid Complacency	71152
<p>A finding of very low safety significance (Green) and associated non-cited violation of Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self-revealed for the licensee's failure to perform activities affecting quality in accordance with an approved procedure appropriate for the circumstances. Specifically, during performance of PTI-C41- P0001, "Standby Liquid Control Transfer System Pump and Valve Operability Test," Revision 10, operators failed to shut transfer line isolation valve, 1C41-F522 causing an unplanned eight-hour limiting condition for operation (LCO) entry and unavailability of both trains of the SLC system.</p>			
<p><u>Description:</u></p> <p>On August 20, 2020, during the performance of PTI-C41-P0001, "Standby Liquid Control Transfer System Pump and Valve Operability Test," Revision 10, the licensee received the SLC storage tank level HI/LO alarm shortly after starting the SLC transfer pump. The evolution resulted in the unintended addition of approximately 226 gallons of water to the SLC storage tank. The licensee reviewed system response, interviewed personnel, and reviewed procedure PTI-C41-P0001 and determined that the normally locked open transfer line isolation valve, 1C41-F522, had not been shut.</p> <p>The licensee completed Surveillance Requirement 3.1.7.5 to sample SLC storage tank concentration within 24-hours following the inadvertent water addition. Based on boron concentration, the licensee determined that both the SLC system trains were inoperable and entered LCO 3.1.7 Condition B to restore one train to operable status within eight hours. The licensee returned SLC storage tank concentration to the correct specification about three hours after the initial tank solution test.</p> <p>Corrective Actions: Immediate corrective actions included determination and correction of SLC storage tank concentration and restoring the SLC system to operable. Additionally, the licensee made procedural changes to add an independent verification step to the closure of the transfer line isolation valve, 1C41-F522.</p> <p>Corrective Action References: CR 2020-06561, "Standby Liquid Control Hi/Lo Level Alarm During SLC Transfer Pump and Valve," 08/20/2020; CR 2020-06563, "Leakby Observed Through SLC Transfer Line Isolation Valve," 08/20/2020; and CR 2020-07110, "Misposition Plant Status Control Event During SLC Transfer System Pump and Valve Operability Test," 09/11/2020.</p>			
<p><u>Performance Assessment:</u></p> <p>Performance Deficiency: The inspectors determined that the licensee's failure to implement Section 5.1.3, Step 3, of PTI-C41-P0001, "Standby Liquid Control Transfer System Pump and Valve Operability Test," Revision 10, was a performance deficiency. Specifically, the failure</p>			

to close the transfer line isolation valve 1C41-F522 in accordance with the procedure directly led to the inoperability and unavailability of the SLC system.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Human 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. The inspectors determined the performance deficiency was more than minor because it was associated with the Human 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, an operator failed to close the transfer line isolation valve 1C41-F522, which allowed water to be added to the SLC storage tank, thus negatively impacting the availability of the SLC system.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." The inspector assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." The inspectors screened the finding against the Mitigating Systems screening questions in Exhibit 2 and answered "NO" to all screening questions. Therefore, the finding screened to very low safety significance (Green).

Cross-Cutting Aspect: H.12 - Avoid Complacency: Individuals recognize and plan for the possibility of mistakes, latent issues, and inherent risk, even while expecting successful outcomes. Individuals implement appropriate error reduction tools. H.12 - Avoid Complacency: Individuals recognize and plan for the possibility of mistakes, latent issues, and inherent risks, even while expecting successful outcomes. Individuals implement appropriate error reduction tools. Specifically, the operator failed to implement error reduction tools to ensure both actions contained within the step were performed in accordance with written procedures.

Enforcement:

Violation: Title 10 CFR 50 Appendix B, Part V, "Instructions, Procedures, and Drawings," states, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings.

Contrary to the above, on August 20, 2020, while performing an activity affecting quality, operators did not accomplish a surveillance procedure in accordance with the procedure and incorrectly performed a step in surveillance procedure PTI-C41-P0001, and failed to close a valve. Specifically, operators failed to close the transfer line isolation valve 1C41-F522, resulting in an unplanned entry into Technical Specification 3.1.7, Condition B, and adversely affected the availability of the SLC system.

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

Observation: Human Performance Trend June to December 2020

71152

During the second half of 2020, while performing reviews associated with the daily corrective action program, the inspectors identified 17 corrective action documents with human

performance-related issues. Examples of human performance issues were spread across different working groups and resulted in various consequential outcomes. These examples included, but were not limited to, a chemistry department individual loss of attention to detail and dropped a glass vial containing a source resulting in a spill, electrician personal not implementing human performance tools (peer check) resulting in the miswiring during modification to the Unit 2 startup transformer and an increase in the out of service time, and the failure to close a valve between the SLC and standby liquid control transfer systems resulting in the inoperability and unavailability of the SLC system. Following their review, the inspectors concluded that the Human Performance attributes associated with the issues were associated with a lack of attention to detail, supervisors' failure to challenge performance and enforce standards and requirements, and individuals not following their processes and procedures. The inspectors engaged the licensee and expressed their observations through meetings and other methods. The inspectors expressed their concern with the upward negative trend in licensee performance and its impacts to plant safety.

Due in part to previous inspector observations, the licensee developed a "critical coaching initiative" to analyze performance gaps and perform training for the site supervisors as documented in CR 2019-09164, "2019 INPO E&A AFI LF.1: Leadership." Following the critical coaching initiative institution, the inspectors observed a temporary reduction in human performance issues. However, considering the most recent human performance issues, the inspectors have concerns about the licensee's corrective actions' effectiveness and longevity. Additionally, the inspectors noted as a consequence of the most recent supervisor coaching; the licensee wrote five condition reports for supervisors failing the "critical coaching lab in site supervisor training," as documented in CR 2020-08703, CR 2020-08696, CR 2020-08008, CR 2020-08007, and CR2020-07767. The inspectors concluded that while the licensee had begun to address human performance gaps site-wide, but as demonstrated by the most recent supervisor failures of the critical coaching lab, more work was required to ensure performance improvement.

The inspectors did not identify any findings or violations of NRC requirements in the course of their review.

Observation: Emergency Preparedness Drill General Emergency Classification Timeliness Review	71152
<p>The inspectors performed a detailed review of CR 2020-06471, "ERO-Drill: Timeliness of General Emergency Classification During August 8, 2020, Dry Run Drill." The purpose of emergency preparedness drill performance and evaluation, in part, is to determine the licensee's ability to identify and classify events based on plant conditions and communicate emergency action level declarations promptly to state and local authorities. Title 10 CFR 50 Appendix E requires, in part, that "licensees shall establish and maintain the capability to assess, classify, and declare an emergency condition within 15-minutes after the availability of indications to plant operators that an emergency action level has been exceeded and shall promptly declare the emergency conditions as soon as possible following the identification of the appropriate emergency classification level." To assess the timeliness of licensee notification, a "time zero" is identified in drill scenarios when plant conditions change, which should be recognized by plant staff followed by event classification.</p> <p>The inspectors noted that CR 2020-06471 documented a drill controller issue that the scenario "time zero" was different than what occurred during drill execution. Specifically, the scenario guide stated, "time zero" was 11:35 am, and "time zero" during drill debrief was determined to be 11:40 am. The inspectors noted this distinction to be important because</p>	

event classification occurred at 11:54 am. The inspectors noted that "Perry Emergency Response Organization Integrated Drill Scenario Guide," Revision 1, stated that at 11:35 am a catastrophic body-to-bonnet failure of the "B" main steam line isolation valve occurred resulting in the rapid increase in steam tunnel temperatures, as well as turbine building/heater bay and Unit 1 plant vent radiation monitor readings. The Perry Emergency Response Organization Integrated Drill Scenario Guide controller notes stated that, "this is the indication for a General Emergency FG 1.1, loss of any two fission product barriers and the loss or potential loss of the third barrier." For this Problem Identification and Resolution sample, the inspectors focused on the licensee's evaluation and assessment of event classification timeliness and associated corrective actions.

The inspectors noted through review of licensee evaluation that upon insertion of the body-to-bonnet failure, the simulator errantly showed flow through the off-gas system. The Perry Nuclear Power Plant construction is such that both outboard main steam isolation valves and main steam stops are contained in the steam tunnel. Therefore, an indication of off-gas flow in conjunction with the rise in steam tunnel temperatures and vent radiation monitor readings led the operations crew to believe the failure and steam leak had occurred downstream of the main steam stops. The operations crew shut the main steam stops and noted no change in steam tunnel temperature trend or turbine building/heater bay and Unit 1 plant vent radiation monitor readings. The operations crew determined that the leak was unisolable and constituted a loss of a fission product barrier. This information was not promptly communicated to the Emergency Director in the Emergency Operations Facility (EOF) due to conference bridge communications issues. The inspectors challenged the licensee as to why 11:40 am was "time zero" and not 11:35 am, as stated in the drill guide and when plant conditions first presented themselves. The inspectors reviewed PSI-0019, "Emergency Action Level (EAL) Bases Document," Revision 21, Attachment 2 fission product barrier loss/potential loss matrix and bases for an unisolable direct downstream pathway to the environment exists after containment isolation signal guidance. The inspectors noted that the threshold is considered met if the breach is not isolable from the Control Room or an attempt for isolation from the Control Room has been made and was unsuccessful. The licensee stated that based on the off-gas flow indications, even though erroneous and emergency action level basis guidance, it was reasonable for the operations crew to attempt to shut the main steam stops before declaring an unisolable leak.

The inspectors noted three contributors to the event classification almost exceeding the regulatory time frame:

1. Communication issues between the Control Room and EOF Emergency Director delayed recognition of the leak in the final fission product barrier and a General Emergency declaration. The licensee changed its process to require the Control Room and Emergency Director to maintain an open communication line rather than connecting to the bridge to relay information.
2. The EOF Emergency Director had noted and focused solely on rising Unit 1 plant vent radiation levels as the indicator to determine a General Emergency had occurred. The Director was slow to recognize the unisolable leak condition in the Emergency Action Level matrix also applied until prompted by the Control Room.
3. Recent simulator software upgrades resulted in the unintended off-gas flow indications encountered during the drill. The licensee had validated the scenario before the software upgrades going into effect and had not revalidated before the licensee performing the drill. The licensee changed its process to ensure simulator fidelity before drill execution following software upgrades.

The inspectors did not identify any findings or violations of NRC requirements in the course of their review.

Observation: Loss of Feedwater Heating results in Loss of Safety Function	71152
The inspectors reviewed the associated causal evaluation and corrective actions associated with loss of feedwater heating due to heater 5B isolation during heater alignment. The inspectors noted that the apparent cause was inadequate communication within the Perry organization associated with heater tuning strategies and implications to operating procedures. Specifically, the licensee tuned the heater normal controller for steady-state operations to dampen heater level oscillations at 100 percent power. This strategy restricts the ability to transfer level control from alternate to normal at power levels greater than 62 percent power. The inspectors noted that the operations procedure did not include mitigating actions to reduce power based on the tuning strategy and resulted in heater isolation. Corrective actions included, but were not limited to, revising IOI-0003, "Power Changes," to provide a caution note to operations about heater drain control based on power level, which would incorporate level control restrictions based on tuning strategy. The inspectors did not identify any findings or violations of NRC requirements in the course of their review.	

EXIT MEETINGS AND DEBRIEFS

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

- On January 28, 2021, the inspectors presented the integrated inspection results to Mr. R. Penfield, Site Vice President, and other members of the licensee staff.
- On December 10, 2020, the inspectors presented the radiation protection baseline inspection results to Mr. R. Penfield, Site Vice President, and other members of the licensee staff.
- On December 11, 2020, the inspectors presented the Perry Biennial Licensed Operator Requalification Program Inspection Results inspection results to Mr. R. Penfield, Site Vice President, and other members of the licensee staff.
- On December 11, 2020, the inspectors presented the emergency action level and emergency plan changes inspection results to Mr. R. Penfield, Site Vice President, and other members of the licensee staff.
- On January 28, 2021, the inspectors presented the integrated inspection results to Mr. R. Penfield, Site Vice President, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.01	Engineering Evaluations		FENOC Perry Flood Hazard Reevaluation Report	12/4/2020
71111.04	Drawings	302-0701-00000	High-Pressure Core Spray System	KK
	Procedures	SVI-C41-T2001-A	Standby Liquid Control	22
		SVI-P42-T5326	Emergency Closed Cooling System Valve Position Check	9
		VL1-E22A	High-Pressure Core Spray	10
	Work Orders	200753720	SVI-E12-T1182A RHR A PLCI Vlv L/U (31D) RHR A LPCI Valve Lineup Verification and System Venting	11/18/2020
		200754601	SVI-P42-T5326 ECCS Vlv Position Check (31D) Emergency Closed Cooling System Valve Position Check	10/18/2020
		200754975	SVI-E21-T11 LPCS Venting and Vlv L/U (31D) LPCS Venting and Valve Lineup Verification	10/22/2020
71111.05	Fire Plans	FPI-0FH	Fuel Handling Building	6
		FPI-0IB	Intermediate Building	10
		FPI-1AB	Auxiliary Building Unit 1	4
		FPI-1DG	Diesel Generator Building	9
	Procedures	FPI-0CC	Unit 1- Division 3 Switchgear 620' - 6" Elevation Fire Zone 1CC-3c	12
		FPI-0EW	Emergency Service Water Pumphouse	7
71111.06	Calculations	JL-083	Flooding Analysis of Control Complex Building, Intermediate Building, and Fuel Handling Building - Floor Elevation 574 Feet - 10 Inches	3
	Corrective Action Documents	2013-05625	Corrective Action Generated to Track Closure of Prompt Functionability Assessment for CR 2013-05625	10/23/2015
71111.07A	Calculations	R46-023	Division 1 Diesel Generator Jacket Water Heat Exchanger Performance Testing Results	4
71111.11A	Miscellaneous		Perry Nuclear Power Plant Annual LORT Exam Information	12/14/2020
71111.11B	Corrective Action Documents	CR 2019-08949	Recombiner A/B TEMP HI / LOW Alarm in the Control Room Label Does Not Match the Alarm Response Instruction or Simulator Alarm Window	10/26/2019
		CR 2019-10283	Simulator Hardware Failure During Annual Exam Job Performance Measures	12/10/2019

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Corrective Action Documents Resulting from Inspection	CR 2020-02702	Simulator Hardware Issue Caused Short Training Delay	03/27/2020
		CR 2020-09365	Inaccurate Information Provided to the NRC	12/07/2020
	Miscellaneous		2019 LORT Attendance Records	
			2020 LORT Attendance Records	
			100% Simulator Steady-State Test	08/28/2020
			75% Simulator Steady-State Test	07/27/2019
			75% Simulator Steady-State Test	08/28/2020
			43% Simulator Steady-State Test	07/27/2019
			43% Simulator Steady-State Test	08/28/2020
			Operator Remediation Plan; Various Operators	12/31/2019
			100% Simulator Steady-State Test	07/27/2019
		2019 01-05	Requalification Training Schedule	12/31/2019
		2020 06-10	Requalification Training Schedule	12/01/2020
		2020-13	RO Written Exam	Week 7
		2020-14	SRO Written Exam	Week 7
		B2.2.1.1	Transient Testing, Manual SCRAM	03/27/2019
		B2.2.1.10	Transient Testing, Main Steam Isolation Valve Closure with One Safety Relief Valve Stuck Open	07/24/2020
		B2.2.1.2	Transient Testing, Trip All Reactor Feed Pump Turbines	03/27/2019
		B2.2.1.3	Transient Testing, Main Steam Isolation Valve Closure	07/23/2020
		B2.2.1.4	Transient Testing, Simultaneous Trip of All B33 Recirc Pumps	03/27/2019
		B2.2.1.5	Transient Testing, Trip Single B33 Recirc Pump	07/24/2020
		B2.2.1.7	Transient Testing, Maximum Rate Power Ramp (100% to 75% to 100%) Using Flow Control Valves	07/24/2020
		B2.2.1.9	Transient Testing, Main Steam Line Rupture in Drywell	03/27/2019
		Credit for Position Report	BOP Operator	12/31/2019
		Credit for Position Report	ATC Operator	12/31/2019

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		Credit for Position Report	Shift Manager	12/31/2019
		Credit for Position Report	Unit Supervisor	12/31/2019
		Credit for Position Report	BOP Operator	12/01/2020
		Credit for Position Report	ATC Operator	12/01/2020
		Credit for Position Report	Unit Supervisor	12/01/2020
		Credit for Position Report	Shift Manager	12/01/2020
		Cycle 18	Real Time Annual Testing	03/26/2019
		OT-3070-PC1E	Simulator Scenario Guide PC1E	0
		OT-3070-001-PC5D	Simulator Scenario Guide PC5D	0
		OT-3070-005-RP2A	Simulator Scenario Guide RP2A	0
		OT-3070-RP1D	Simulator Scenario Guide RP1D	0
		OT-3701-ADM-025SRO	SRO Admin JPM	Week 4
		OT-3701-ADM-024SRO	SRO Admin Job Performance Measure (JPM)	Week 2
		OT-3701C11-514RO	Simulator JPM	Week 7
		OT-3701C41-008RO	In Plant JPM	Week 7
		OT-3701C61-501RO	In Plant JPM	Week 7
		OT-3701C71-003RO	Simulator JPM	Week 7
		OT-3701G43-001RO	RO Admin JPM	Week 7
71111.11B	Miscellaneous	OT-3701P57-	In Plant JPM	Week 4

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		001RO		
		OT-3701R10-302RO	In Plant JPM	Week 4
		OT-3701R43-501RO	Simulator JPM	Week 6
		OTLC-3058202006-PY-SGA	Scenario Based Testing	0
		OTLC-3058202006-PY-SGB	Scenario Based Testing	0
		OTLC-3058202006-PY-SGC1	Scenario Based Testing	0
		OTLC-3058202007-PY-SGA	Scenario Based Testing	0
		OTLC-3058202008-PY-SGA-HIT	Scenario Based Testing	0
		Simulator Post Event Testing	Turbine Valve Closure	05/28/2019
		Simulator Post Event Testing	Loss of Two Circulating Water Pumps	02/17/2020
	Procedures	NOBP-TR-1271, Attachment 2	Inactive License Retraining Program Records; Various Operators	11
		NOP-OP-1013-04	Time Critical Operator Actions Tracking Sheet	0
		NOP-TR-1240-06	Remediation Training	0
		NOP-TR-1280	Simulator Configuration Management	2
	Self-Assessments		2020 Nuclear Oversight Quality Assessment of Operations Department	03/31/2020
			2019 Nuclear Oversight Quality Assessment of Training Department	02/27/2020
		Simulator Review	Meeting Minutes	02/20/2019

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		Committee		
		Simulator Review Committee	Meeting Minutes	04/17/2019
		Simulator Review Committee	Meeting Minutes	01/30/2020
		Simulator Review Committee	Meeting Minutes	04/16/2020
		Simulator Review Committee	Meeting Minutes	08/17/2020
	Work Orders	19-0002	DFWCS Reactor Feed Pump Trip and Swap to Single Element	05/02/2019
		19-0003	ECP 04-0145 RFP Min Flow Controller Modification	02/21/2019
		19-0004	ECP 18-0081 Implement Stroke Time Changes for 1G33F0039 & 1G33F0040	02/21/2019
		19-0006	Implement Cycle 18 Core Files for All Three Exposures (BOL, MOL, EOL)	03/05/2019
		19-0007	Implement ECP 18-0274 to Eliminate Automatic High Shaft Vibration Trip from Main Turbine Protection System	03/12/2019
		19-0012	Div 2 EH12 Undervoltage ECP 16-0336-002	03/18/2019
		19-0019	Install ECP 04-0113-001 Fire Computer in Control Room	08/28/2019
		19-0030	Install ECP 12-0238 Diesel Fire Pump Switch on P970	10/01/2019
		20-0015	Install Div 3 DG RM Vent CO2 Injection Bypass Switch on P800	02/24/2020
		20-0044	Implement ECP 17-0220 in the Simulator (MSIV Bypass Jacks)	10/20/2020
		20-0045	Implement ECP 15-0517 for Div 3 in the Simulator	08/17/2020
71111.11Q	Miscellaneous	Evolution Specific Reactivity Plan	Perry Nuclear Power Plant October 2020 Pattern Adjustment	0
		OT-3070-003-RP1C	Scenario Guide	0
		OT-3070-PC1B	Scenario Guide	1
		OT-3070-RP5A	Scenario Guide	5
71111.12	Corrective Action Documents	2020-06482	Emergency Service Water Radiation Monitor Spiking	08/17/2020
		2020-08558	Reactor Protection System (RPS) MG SET a Tripped During	11/04/2020

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			PMT	
		2020-08868	MET Tower Instrumentation Not Restored Upon Restoration of Quincy Power	11/17/2020
		2020-09476	Unit 2 Startup Transformer Manual Disconnect Stuck Open	12/15/2020
		2020-09635	Combustible Gas Mixing Compressor Suction Valve Would Not Reopen Following Compressor Start	12/22/2020
	Work Orders	200840084	Replace Power Supply CR 2020-08986	11/23/2020
71111.13	Corrective Action Documents	2020-08567	Uncertainty of Proper Motor starter Overload Settings for Reactor Protection System (RPS) Motor Generator (MG) Set "A"	11/04/2020
		2020-08575	Feedback System Transient – Steamflow/Feedflow Mismatch	11/05/2020
	Procedures	NOP-ER-3001-03	Simple Troubleshooting Plan	4
		NOP-OP-1007	Risk Management	33
		PAP-1924	Risk-Informed Safety Assessment and Risk Management	9
	Work Orders	200093606	Replace Relays in RPS "A" MG set	11/27/2020
		200835639	ECP 20-0179-001 Disable LS6/7 Linkage TM	11/18/2020
71111.15	Corrective Action Documents	2008-50767	Less Than Adequate Documentation for USAR Technical Basis	12/12/2008
		2014-10996	60dpm Leak Shaft Div 2 Jacket Water Circ Pump Prompt Operability Determination Test	06/27/2014
		2020-08868	MET Tower Instrumentation not Restored upon Restoration of Quincy Power	11/17/2020
		2020-09317	Rheostat on FLEX Lake Pump for ESW "B" Doesn't Work Correctly Acts as On Off Switch	12/09/2020
		2020-09535	As Found Condition of the Unit 2 Startup Transformer Manual Disconnect 2S11-S290 Gearing	12/17/2020
		2020-09640	Division 1 Diesel Generator Jacket Water Circulation Pump Blown Fuse	12/22/2020
	Operability Evaluations	2020-07870	Plan for Actions for Operation Challenge, Degraded Division 1 D/G Circulating Jacket Water Pump/Motor	10/16/2020
	Procedures	R45-025	Division 1 and 2 Emergency Diesel Generator Jacket Water Available Net Positive Suction Head	03/09/2010
	Work Orders	200841352	Unit 2 Main Transformer Troubleshooting for Unexpected	12/18/2020

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Results Upon Installation of a Modification	
71111.18	Corrective Action Documents	2020-06562	During Development of the Open Phase Modification ECP-19-203, an Engineer Walkdown of the Startup Transformer Relay Panel (1H13P0809) was Not Performed	08/20/2020
		2020-08701	Failed PMT Unit 1 Startup OPPS Modification	11/10/2020
	Engineering Changes	ECP 17-0220-003	Main Steam Line Isolation Valve Nuclear Steam Supply Shutoff System Isolation Logic C Test Jack Installation	0
		ECP 17-0220-003	Main Steam Line Isolation Valve Nuclear Steam Supply Shutoff System Isolation Logic C Test Jack Installation	1
	Engineering Evaluations	601293470	Engineering Evaluation Request	11/11/2020
	Procedures	IP-ENG-001 Form 4	19-0203-000 Dedicated Open Phase Control Room Annunciators – Unit-1	0
		NOP-WM-1001-0	Addendum # A-4 TEST Functional WO 200803505	3
		SVI-E31-T0074-C	MSL High Flow Channel "C" Functional for 1E31-N686C and 1E31-N688C	8
	Work Orders	200737101	Implement ECP 17-0220-003	05/10/2020
		200751207	SVI-E31-T0074C (92D) MSL High Flow Channel "C" Functional for 1E31-N686C and 1E31-N688C	06/10/2020
71111.19	Corrective Action Documents	2020-07809	Steam Bypass and Pressure Regulating Pump "A" Discharge Filter Failed Post-Maintenance Testing	10/08/2020
	Work Orders	200750868	Emergency Service Water Loop "A" Flow and Differential Pressure Test	10/24/2020
		200752301	Replace 3.0 Micron Filter	10/08/2020
		200752959	Replace Fullers Earth Filters	09/12/2020
		200762832	Replace High-Pressure Filter, HPU "A"	09/17/2020
		200773294	SVI-D17-T8041 ESW Loop "A" Radiation Monitor Channel Calibration For 1D17-K604	10/07/2020
		200778768	Replace Time Delay Relay 1M39Q7004	10/21/2020
		200778768	Replace Time Delay Relay 1M39Q7004	10/22/2020
		200778769	Replace Time Delay Relay 1M39Q7008	10/22/2020
		200791518	Inspect/Replacement Filters, LPCS Room "A"	10/21/2020
		200794100	Perform Static Motor Operated Valve Test	10/22/2020
		200832456	"A" Rad Monitor Cable Replacement	09/23/2020

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.22	Miscellaneous	NEI 12-06	Diverse and Flexible Coping Strategies (FLEX) Implementation Guide	4
	Procedures	FSG 60.1	Supply ESW A Header from a FLEX Pump at the ESW	0
		PTI-P45-P0001	ESW System Loop "A" Flow Differential Pressure Test	18
		SVI-B21T0077A	MSL Low Condenser Vacuum Channel "A" Calibration For 1B21-N075A	11
		SVI-C71-T0043-A	Drywell High-Pressure Channel "A" Calibration For 1C71-NN050A	9
		SVI-R43-T1317	Diesel Generator Start and Load Division 1	25
	Work Orders	200737101	IMPLEMENT ECP 17-0220-003	10/05/2020
		200750868	PTI-P45P0001 1 (92D) EWS System Loop "A" Flow and Differential Pressure Test on	10/24/2020
		200751027	SVI-E31T0074C-1 (92D) MSL High Flow Channel "C" Functional for 1E31-N668C and 1E31-N688C	10/06/2020
		200752684	FLEX Water Pump Functional Testing	06/15/2020
		200770447	SVI-B21-T0077-A MSL Low Condenser Vacuum "A" Calibration For 1B21-N0	10/19/2020
		200773288	SVI-C71-T0043-A Drywell High-Pressure Channel "A" Calibration	09/21/2020
71114.04	Miscellaneous		Perry Station 10 CFR 50.54(q) Evaluator Qualification and Training Records Spreadsheet	05/19/2020
		NRC Letter ML19163A023	Subj: Perry Nuclear Power Plant, Unit No. 1 - Issuance of Amendment No. 186 Concerning Changes to Emergency Response Organization Staff	08/14/2019
		PY-2019-017-00	10 CFR 50.54(q)2 Analysis for Perry Nuclear Power Plant Emergency Plan Revision	08/07/2019
		PY-2019-017-00	10 CFR 50.54(q)3 Evaluation for Perry Nuclear Power Plant Emergency Plan Revision	09/06/2019
		PY-2019-039-00	10 CFR 50.54(q)2 Analysis for Perry Nuclear Power Plant Emergency Plan Revision	11/04/2019
		PY-2019-039-00	10 CFR 50.54(q)3 Evaluation for Perry Nuclear Power Plant Emergency Plan Revision	11/06/2019
		PY-2019-044-00	10 CFR 50.54(q)2 Analysis for Perry Nuclear Power Plant Emergency Plan Revision	12/17/2019

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Procedures	PY-2019-044-00	10 CFR 50.54(q)3 Evaluation for Perry Nuclear Power Plant Emergency Plan Revision	01/06/2020
			Emergency Plan for Perry Nuclear Power Plant	54
			Emergency Plan for Perry Nuclear Power Plant	55
			Emergency Plan for Perry Nuclear Power Plant	56
			Emergency Plan for Perry Nuclear Power Plant	57
		NOP-LP-5002	Evaluation of Changes to Emergency Plans and Supporting Documents 10 CFR 50.54(q)	7
71114.06	Miscellaneous		2020 4th Quarter ERO Tabletop Drill TSC-EOF	0
71124.05	Calibration Records		Abacos 2000 Whole Body Counter Calibration	02/05/2020
			JL Shepherd Irradiator Calibration and Verification	01/10/2020
		L702009L	Thermo Scientific SPM-906 Portal Monitor	09/25/2020
		L70L003E	Eberline SAC-4 Survey Instrument	07/16/2020
		L70L0045Z	Bicron RSO-50 Survey Instrument	08/24/2020
		L70L004E	Thermo Scientific PCM-2	12/13/2019
		L70L020K	Eberline RM-20 Survey Instrument	04/01/2020
		L70L030H	Eberline RO2 Survey Instrument	05/16/2020
		L70L074A	Mirion Telepole Survey Instrument	02/11/2020
		L70L096D	Ludlum Model 12 Survey Instrument	02/26/2020
		L70L504L	Thermo Scientific Small Article Monitor	09/22/2020
		WO 200773294	ESW Loop A Radiation Monitor Channel Calibration for 1D17-K604	10/07/2020
	Corrective Action Documents	CR-2020-05336	Procedure Adherence During WBC Calibration	06/29/2020
		CR-2020-05337	Input Error in Creating WBC Calibration File	06/29/2020
		CR-2020-05376	Pre NRC Assessment SA-BN-2020-1920 Identified Deficiency: Incorrect Source Information Contained in SVI-D19-T1356A	06/30/2020
	Engineering Evaluations		D19 Containment Hi Range Radiation Monitor Evaluation	4
	Procedures	HPI-J0054	Calibration of the Abacos 2000 Whole Body Counting System	4, 6
		NOP-OP-4401	Radiation Protection Instrumentation Program	3
	Work Orders	200767227	Off-Gas Vent Pipe Noble Gas Radiation Monitor Calibration	09/17/2020

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		200773294	ESW Loop A Radiation Monitor Channel Calibration for 1D17-K604	10/07/2020
71151	Corrective Action Documents	CR-2020-06028	NRC ID: Door 1P54X0202A High-Pressure Core Spray Pump Room Found Unsecured	07/29/2020
	Miscellaneous		Reactor Coolant System Dose Equivalent Iodine Determination Summary Data from 10/01/2019 Through 09/30/2020	Various
	Procedures	TSR Modes 1,2&3-19	Technical Specification Rounds Modes 1, 2, and 3	10/01/2019 - 01/19/2020
		TSR Modes 1,2&3-20	Technical Specification Rounds Modes 1, 2, and 3	01/20/2020 - 09/30/2020
71152	Corrective Action Documents	2019-06618	Entered ONI-N36 Loss of Feedwater Heating and ONI-C51 due to Heater 5B Isolation during Startup while Aligning Heater Normal Drains Unplanned Limiting Condition of Operation Entry	08/16/2019
	Drawings	302-0691-00000	Standby Liquid Control System	AA
		302-0692-00000	Standby Liquid Control Transfer System	V
	Miscellaneous	LER 2019-004	Loss of Feedwater Heating Results in Loss of Safety Function	06/08/2019
	Procedures	PTI-C41-P0001	Standby Liquid Control Transfer System Valve Test	11
71153	Miscellaneous	LER 2019-004	Loss of Feedwater Heating Results in Loss of Safety Function	06/08/2019
		LER 2019-004-01	Loss of Feedwater Heating Results in Loss of Safety Function	11/06/2019