



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

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

October 28, 2022

Mr. Q. Shane Lies  
Senior VP and Chief Nuclear Officer  
Indiana Michigan Power Company  
Nuclear Generation Group  
One Cook Place  
Bridgman, MI 49106

**SUBJECT: DONALD C. COOK NUCLEAR PLANT – INTEGRATED INSPECTION REPORT  
05000315/2022003 AND 05000316/2022003**

Dear Mr. Lies:

On September 30, 2022, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Donald C. Cook Nuclear Plant. On October 12, 2022, 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.

Three findings of very low safety significance (Green) are documented in this report. Three 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 Donald C. Cook Nuclear 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 Donald C. Cook Nuclear 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 Feliz-Adorno, Nestor  
on 10/28/22

Néstor J. Feliz Adorno, Chief  
Engineering and Reactor Projects Branch  
Division of Operating Reactor Safety

Docket Nos. 05000315 and 05000316  
License Nos. DPR-58 and DPR-74

Enclosure:  
As stated

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Letter to Q. Shane Lies from Néstor J. Félix Adorno dated October 28, 2022.

SUBJECT: DONALD C. COOK NUCLEAR PLANT – INTEGRATED INSPECTION REPORT  
05000315/2022003 AND 05000316/2022003

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

Docket Numbers: 05000315 and 05000316

License Numbers: DPR-58 and DPR-74

Report Numbers: 05000315/2022003 and 05000316/2022003

Enterprise Identifier: I-2022-003-0047

Licensee: Indiana Michigan Power Company

Facility: Donald C. Cook Nuclear Plant

Location: Bridgman, MI

Inspection Dates: July 01, 2022 to September 30, 2022

Inspectors: S. Bell, Health Physicist  
J. Mancuso, Resident Inspector  
P. Zurawski, Senior Resident Inspector

Approved By: Néstor J. Félix Adorno, Chief  
Engineering and Reactor Projects Branch  
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 Donald C. Cook Nuclear 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 Apply Design Control Measures to a Design Change Results in Loss of Auxiliary Building Barrier Integrity			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000315,05000316/2022003-01 Open/Closed	None (NPP)	71111.12
<p>A finding of very low safety significance (Green) and associated non-cited violation (NCV) of Title 10 of the <i>Code of Federal Regulations</i> (10 CFR) Part 50, Appendix B, Criterion III, “Design Control,” was self-revealed for the licensee’s failure to subject the change of the auxiliary building pyrojectors’ locking device to design control measures commensurate with those applied to its original design. As a result, the locking devices of three pyrojectors eventually failed causing the pyrojectors to open during fuel handling operations. This condition resulted in the required fuel handling area exhaust ventilation (FHAEV) train to be inoperable, which was contrary to Technical Specification (TS) Limiting Condition for Operation (LCO) 3.7.13.</p>			

Failure to Ensure Correct Operation of the Meteorological Tower			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Public Radiation Safety	Green NCV 05000315,05000316/2022003-02 Open/Closed	[P.5] - Operating Experience	71124.07
<p>An NRC identified finding of very low safety significance (Green) and associated non-cited violation (NCV) of Technical Specification (TS) 5.4.1 for the failure to implement and maintain procedures to ensure adequate operation of the meteorological tower. Specifically, the licensee failed to implement and maintain procedures that included the assessment, and when necessary, removal of vegetation to ensure correct operation of the meteorological tower.</p>			

Water Discovered on Safety Related Battery Charger			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000316/2022003-03 Open/Closed	[H.5] - Work Management	71152A
<p>A finding of very low safety significance (Green) with an associated non-cited violation (NCV) of Technical Specification (TS) 5.4, “Procedures,” was self-revealed for the licensee’s failure to implement procedure PMP-5020-LCD-001, “Control of Leak Collection Devices.” Specifically, the licensee removed a leak collection device installed over the 2-BC-B N-train</p>			

battery charger prior to installation of the permanent fix. Nothing was put in place to protect the charger in the interim, which resulted in water dripping onto the battery charger causing it to become inoperable.

### **Additional Tracking Items**

None.

## PLANT STATUS

Unit 1 began the inspection period at rated thermal power. On August 28, 2022, the unit was removed from service due to a reactor coolant pump electrical issue. After repairs, Unit 1 power was restored to rated thermal power on September 5, 2022. Unit 2 began the inspection period at rated thermal power with power reduced to approximately 90 percent power on August 16 and 31, 2022, for turbine valve testing. Power was restored on August 18 and September 3, 2022, respectively. On September 28, 2022, power was reduced to approximately 58 percent in preparation for a refueling outage. The unit was removed from service on October 1, 2022.

## 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 an impending K7/G3 strong geomagnetic storm on August 16, 2022

### 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) North/south spent fuel pool heat exchangers on August 15, 2022
- (2) 2-BC-AB1 battery charger during 2-BC-AB2 maintenance on August 15, 2022
- (3) Unit 1 & 2 emergency diesel generators (EDGs) due to supplemental diesel generator maintenance on August 18, 2022
- (4) Unit 2 Train B distributed ignition system on September 7, 2022

### 71111.05 - Fire Protection

#### Fire Area Walkdown and Inspection Sample (IP Section 03.01) (7 Samples)

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

- (1) Fire Zone 17D; east auxiliary feed pump room, Unit 1, elevation 591' on July 19, 2022
- (2) Fire Zone 46C; emergency power system motor control room, Unit 2, elevation 609' on July 19, 2022
- (3) Fire Zone 47A; 4KV AB switchgear room, elevation 609' on July 19, 2022
- (4) Fire Zone 64B; safety injection pump south, Unit 1, elevation 587' on July 21, 2022
- (5) Fire Zone 51; auxiliary building, elevation 633' on July 21, 2022
- (6) Fire Area AA 5/6; auxiliary building, elevation 587' on September 7, 2022
- (7) Fire Zones 42D & 46D; emergency power system Unit 1 & 2 AB battery rooms on September 15, 2022

### 71111.06 - Flood Protection Measures

#### Inspection Activities - Internal Flooding (IP Section 03.01) (1 Sample)

The inspectors evaluated internal flooding mitigation protections in the:

- (1) Turbine building, elevation 591' on August 11, 2022

### 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 Unit 1 Control Room during startup from a forced outage on September 4, 2022

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

- (1) The inspectors observed and evaluated licensed operator regualification RQ-S-4704-U2-T2 in the facility's simulator on August 25, 2022

### 71111.12 - Maintenance Effectiveness

#### Maintenance Effectiveness (IP Section 03.01) (1 Sample)

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

- (1) Loss of auxiliary building integrity on May 4, 2022



### 71111.13 - Maintenance Risk Assessments and Emergent Work Control

#### Risk Assessment and Management Sample (IP Section 03.01) (6 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) Unit 1 east diesel driven fire pump emergent work on July 11, 2022
- (2) Unit 2 CD EDG failed surveillance and emergent work on July 13, 2022
- (3) Work Week Cycle 123, Week 07 with supplemental diesel work window and K7/G3 geomagnetic storm predicted on August 16, 2022
- (4) Work Week Cycle 123, Week 09 with Unit 1 forced outage on August 29, 2022
- (5) 2-OME-90-RO hydraulic operator actuator leak on August 31, 2022
- (6) Work Week Cycle 123, Week 11 with Unit 2 motor driven auxiliary feedwater pump work on September 12, 2022

### 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) Action Request (AR) 2022-5752; 2CD EDG Fail Surveillance on July 13, 2022
- (2) AR 2022-5912; Unit 1 Ice Deck Door Blocked from Opening on July 20, 2022
- (3) AR 2022-6251; Gas Voids Identified in Emergency Core Cooling System on August 3, 2022
- (4) AR 2022-6432; Unit 1 'A' Lower Distributed Ignition System Failure on August 11, 2022
- (5) AR 2022-6991; Suspected Essential Service Water Leak on 1-HV-AFP-T2AC, Unit 1 Turbine Driven Auxiliary Feedwater Pump Room Cooler on September 2, 2022

### 71111.19 - Post-Maintenance Testing

#### Post-Maintenance Test Sample (IP Section 03.01) (5 Samples)

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

- (1) Unit 2 AB EDG return to service following critical maintenance project on July 21, 2022
- (2) #13 reactor coolant pump cabling following repair on September 2, 2022
- (3) 2-OME-90-RO hydraulic operator actuator leak on September 7, 2022
- (4) Unit 2 distributed ignition system following planned work on September 7, 2022
- (5) Unit 2 west motor driven auxiliary feedwater pump following planned work on September 14, 2022

71111.20 - Refueling and Other Outage Activities

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

- (1) The inspectors evaluated a Unit 1 automatic reactor trip due to the #13 reactor coolant pump cable failure from August 28 through September 5, 2022

71111.22 - Surveillance Testing

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

Inservice Testing (IP Section 03.01) (1 Sample)

- (1) Unit 2 main steam safety valve TREVI testing on September 28, 2022

71114.06 - Drill Evaluation

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

The inspectors evaluated:

- (1) Training Evaluation RQ-S-4704-U1-T2 on September 8, 2022

**RADIATION SAFETY**

71124.07 - Radiological Environmental Monitoring Program

Environmental Monitoring Equipment and Sampling (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated environmental monitoring equipment and observed collection of environmental samples

Radiological Environmental Monitoring Program (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated the implementation of the licensee's radiological environmental monitoring program

GPI Implementation (IP Section 03.03) (1 Sample)

- (1) The inspectors evaluated the licensee's implementation of the Groundwater Protection Initiative program to identify incomplete or discontinued program elements

## OTHER ACTIVITIES – BASELINE

### 71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

#### MS08: Heat Removal Systems (IP Section 02.07) (2 Samples)

- (1) Unit 1 (July 1, 2021 through June 30, 2022)
- (2) Unit 2 (July 1, 2021 through June 30, 2022)

#### MS09: Residual Heat Removal Systems (IP Section 02.08) (2 Samples)

- (1) Unit 1 (July 1, 2021 through June 30, 2022)
- (2) Unit 2 (July 1, 2021 through June 30, 2022)

#### BI01: Reactor Coolant System (RCS) Specific Activity Sample (IP Section 02.10) (2 Samples)

- (1) Unit 1 (April 1, 2021 through June 30, 2022)
- (2) Unit 2 (April 1, 2021 through June 30, 2022)

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

- (1) July 1, 2021 through June 30, 2022

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

- (1) April 1, 2021 through June 30, 2022

### 71152A - Annual Follow-up Problem Identification and Resolution

#### Annual Follow-up of Selected Issues (Section 03.03) (2 Samples)

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

- (1) AR 2022-1468; 2-BC-B-N-Train battery charger failure on July 5, 2022
- (2) Unit 1 #13 reactor coolant pump cable failure on September 2, 2022

## INSPECTION RESULTS

Failure to Apply Design Control Measures to a Design Change Results in Loss of Auxiliary Building Barrier Integrity			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000315,05000316/2022003-01 Open/Closed	None (NPP)	71111.12

A finding of very low safety significance (Green) and associated non-cited violation (NCV) of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix B, Criterion III, "Design Control," was self-revealed for the licensee's failure to subject the change of the auxiliary building pyrojectors' locking device to design control measures commensurate with those applied to its original design. As a result, the locking devices of three pyrojectors eventually failed causing the pyrojectors to open during fuel handling operations. This condition resulted in the required fuel handling area exhaust ventilation (FHAEV) train to be inoperable, which was contrary to Technical Specification (TS) Limiting Condition for Operation (LCO) 3.7.13.

Description:

The D.C. Cook auxiliary building has a series of pyrojectors that were originally intended to mitigate fires in the auxiliary building. These pyrojectors were originally held closed with a fuseable link in order to facilitate opening during times of intense heat. However, based on health physics considerations, the licensee removed the opening function of the pyrojectors during a fire by replacing the fuseable links with chains. These chains were subsequently changed to stainless-steel wiring to keep the pyrojectors closed during normal operation but allowing them to be opened in the case of fires that did not involve radiological hazards.

On May 3, 2022, individuals performing work on the spent fuel pool floor of the auxiliary building identified that rain was pooling on the floor from an opening overhead. The control room was notified, and operators immediately declared the required FHAEV train inoperable and entered Condition A of TS LCO 3.7.13. This LCO required one FHAEV train to be operable and in operation during movement of irradiated fuel assemblies in the auxiliary building. The auxiliary building boundary needed to be closed to support FHAEV operability. An LCO note stated that the auxiliary building boundary may be opened intermittently under administrative control. Because the auxiliary building was not opened under administrative control, Condition A required the licensee to immediately suspend movement of irradiated fuel assemblies in the auxiliary building.

Licensee personnel were dispatched and discovered three of the pyrojectors on the roof of the auxiliary building had broken stainless-steel wiring and opened during the inclement weather. Licensee Maintenance Rule Evaluation AR 2022-3902-5 found that the failure of the stainless-steel wiring was due to a lack of design control measures when the licensee changed the linkage on the pyrojectors from the original fuseable links to the stainless-steel wiring. The licensee determined that, "Had there been a proper design performed prior to the installation of the stainless-steel wiring the fatigue stresses would have been understood and an inspection plan could have been implemented."

Corrective Actions: The licensee's immediate corrective actions included suspending movement of irradiated fuel assemblies in the auxiliary building and sealing the pyrojectors by installing stainless-steel ties on the vents.

Corrective Action References: AR 2022-3902

Performance Assessment:

Performance Deficiency: The licensee failure to subject the change of the auxiliary building pyrojectors' locking device to design control measures commensurate with those applied to its original design was contrary to 10 CFR 50, Appendix B, Criterion III, and was a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Structure, System, or Component (SSC) and Barrier Performance attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the performance deficiency resulted in the opening of three pyrojectors causing a loss of auxiliary building integrity, a physical design barrier intended to protect the public from radionuclide releases caused by accidents or events, during fuel handling operations.

Significance: The inspectors assessed the significance of the finding using IMC 0609 Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." The finding screened as having very low safety significance (Green) because it only represented a degradation of the radiological barrier function provided for the auxiliary building.

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

Enforcement:

Violation: Title 10 CFR 50, Appendix B, Criterion III, states, in part, that design changes, including field changes, shall be subject to design control measures commensurate with those applied to the original design. It also states that the design control measures shall provide for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable testing program.

Contrary to the above, circa November 2012, the licensee failed to subject the change of the auxiliary building pyrojectors' locking device to design control measures commensurate with those applied to its original design. Specifically, the licensee changed the design of the locking devices with stainless-steel wiring without implementing design control measures to verify its adequacy. As a result, the new failure mechanism was not understood and managed causing three of the pyrojectors to open resulting in the loss of auxiliary building integrity during fuel handling operations on May 3, 2022. This condition caused the required FHAEV train to be inoperable and, thus, an unplanned entry into TS LCO 3.7.13, Condition A. The timeframe of this violation was approximated with the best available information at the time of this inspection.

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

Failure to Ensure Correct Operation of the Meteorological Tower			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Public Radiation Safety	Green NCV 05000315,05000316/2022003-02 Open/Closed	[P.5] - Operating Experience	71124.07
An NRC identified finding of very low safety significance (Green) and associated non-cited violation (NCV) of Technical Specification (TS) 5.4.1 for the failure to implement and maintain procedures to ensure adequate operation of the meteorological tower. Specifically, the licensee failed to implement and maintain procedures that included the assessment, and			

when necessary, removal of vegetation to ensure correct operation of the meteorological tower.

Description:

The inspectors performed walkdowns of the meteorological tower during the week of August 1, 2022. Meteorological data is a parameter in the calculation of radiation dose received by the public during both normal operation and during potential accident conditions. The inspectors observed the growth of trees in close proximity north of the tower. Trees may interfere with operation of the tower by changing wind conditions (wind speed and wind direction) resulting in reported data that may not be indicative of actual meteorological data. The concern is for the sensors located at 10 meters in height on the tower.

The NRC provides guidance to licensees in the form of Regulatory Guides. These Regulatory Guides provide approved method(s) but not required methods to perform various tasks. Regulatory Guide 1.23, "Meteorological Monitoring Programs for Nuclear Power Plants," Revision 1, states in part, "Whenever possible, wind measurements should be made at locations and heights that avoid airflow modifications by obstructions such as large structures, trees, and nearby terrain. The sensors should be located over level, open terrain at a distance of at least 10 times the height of any nearby obstruction if the height of the obstruction exceeds one-half the height of the wind measurement. Wind sensors should be located on top of the measurement tower or mast or extended outward on a boom to reduce airflow modification and turbulence induced by the supporting structure itself." ANSI/ANS-3.11-2015, "Determining Meteorological Information at Nuclear Facilities," also provides information on obstructions associated with meteorological towers.

The inspectors reviewed licensee procedures that governed the tower operation and maintenance. These procedures failed to address the assessment and when necessary, the removal of vegetation to ensure proper function of the meteorological instrumentation.

Corrective Actions: The licensee plans on establishing procedural guidance to include the assessment of vegetation, and, when necessary, removal of vegetation to ensure adequate meteorological tower operation.

Corrective Action References: AR 2022-6282

Performance Assessment:

Performance Deficiency: The inspectors determined that the failure to implement and maintain procedures that included the assessment and when necessary, removal of vegetation to ensure correct operation of the meteorological tower was within the licensee's ability to foresee and correct and should have been prevented.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Program & Process attribute of the Public Radiation Safety cornerstone and adversely affected the cornerstone objective to ensure adequate protection of public health and safety from exposure to radioactive materials released into the public domain as a result of routine civilian nuclear reactor operation. Specifically, the failure to ensure that obstructions do not impact the function/accuracy of meteorological sensors may impact the licensee's assessment of dose to the public from airborne radioactive releases.

Significance: The inspectors assessed the significance of the finding using IMC 0609 Appendix D, "Public Radiation Safety SDP." The violation was of very low safety significance (Green) because it was not a failure to implement the Effluent Program, nor did dose exceed Appendix I or 10 CFR 20.1301(e) criteria.

Cross-Cutting Aspect: P.5 - Operating Experience: The organization systematically and effectively collects, evaluates, and implements relevant internal and external operating experience in a timely manner. The licensee did not use industry nor externally available information on this subject.

Enforcement:

Violation: TS 5.4.1 states in part that, "Written procedures or instructions shall be established, implement and maintained covering the following activities: a. The applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978." Section 7 of this document, addresses, "Procedures for Control of Radioactivity (For limiting materials released to environment and limiting personnel exposure)," and Section 7h, addresses, "Meteorological Monitoring."

Contrary to the above, as of August 4, 2022, the licensee failed to establish a procedure to address the activities covered in Regulatory Guide 1.33, Appendix A, Section 7h. Specifically, the licensee failed to establish procedure(s) to include provisions for the assessment and when necessary, removal of vegetation to ensure the correct operation of the meteorological tower.

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

**Water Discovered on Safety Related Battery Charger**

Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000316/2022003-03 Open/Closed	[H.5] - Work Management	71152A

A finding of very low safety significance (Green) with an associated non-cited violation (NCV) of Technical Specification (TS) 5.4, "Procedures," was self-revealed for the licensee's failure to implement procedure PMP-5020-LCD-001, "Control of Leak Collection Devices." Specifically, the licensee removed a leak collection device installed over the 2-BC-B N-train battery charger prior to installation of the permanent fix. Nothing was put in place to protect the charger in the interim, which resulted in water dripping onto the battery charger causing it to become inoperable.

Description:

On February 22, 2022, the Unit 2 Control Room received an alarm for low voltage on the 2-BC-B N-train battery charger. An auxiliary operator was dispatched to the location and identified that water was dripping on to the charger from scaffolding that was constructed as part of a project to install a permanent leak catch device. The "N-train" direct current distribution system in each unit provides direct current electrical power primarily to circuits associated with the turbine driven auxiliary feedwater system. The main components of the system are the battery, two chargers, and the electrical distribution components that provide power to the loads. Visual inspection by the licensee revealed that both the exterior and

interior of the charger were wet. The charger was declared inoperable. However, the associated TS Limiting Condition for Operation (LCO) was met when the licensee swapped to the redundant 2-BC-A charger, which remained dry. The licensee took action to shield the 2-BC-B charger from the leak above and then dried it out. A surveillance test confirmed that drying the 2-BC-B charger restored it to an operable condition.

The licensee had previously identified this leak location on May 6, 2016, and documented this discovery in their corrective action program as AR 2016-5697. This AR described the leak rate as 20 drops per minute that, "could increase with more severe rain." The licensee determined that the 2-BC-B charger could remain operable, but a leak collection device was needed until completion of roof repairs. Licensee personnel installed a temporary leak collection device but failed to follow the process that provides administrative controls for leak collection devices. Specifically, procedure PMP-5020-LCD-001, "Control of Leak Collection Devices," Revision 13, requires records of leak collection device locations. In December of 2021, the temporary shield was removed during construction of scaffolding needed to complete construction of a permanent leak collection device. Nothing was put in place to protect the charger in the interim. On February 22, 2022, inclement weather caused leakage onto the charger causing it to be inoperable.

**Corrective Actions:** The initial corrective actions were to swap to the 2-BC-A N-train battery charger while the 2-BC-B N-train battery charger was repaired. At the time of this inspection period, the licensee planned to install the permanent shielding for the 2-BC-B N-train battery charger as a long-term corrective action.

**Corrective Action References:** AR 2022-1468

Performance Assessment:

**Performance Deficiency:** The removal of the leak collection device over the 2-BC-B N-train battery charger was contrary to Revision 13 of Procedure PMP-5020-LCD-001, "Control of Leak Collection Devices."

**Screening:** The inspectors determined the performance deficiency was more than minor because it was associated with the Protection Against External Factors 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, failure to properly control the leak collection device via site procedure led to the failure of the safety related N-train power subsystem and subsequent inoperability of the charger.

**Significance:** The inspectors assessed the significance of the finding using IMC 0609 Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." The finding screened as Green, or very low safety significance, because the inspectors answered 'no' to the Exhibit 2, Section 'A' questions in IMC 0609 Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated December 20, 2019.

**Cross-Cutting Aspect: H.5 - Work Management:** The organization implements a process of planning, controlling, and executing work activities such that nuclear safety is the overriding priority. The work process includes the identification and management of risk commensurate to the work and the need for coordination with different groups or job activities. Specifically, the licensee did not plan, control, and executed the installation of the scaffold such that the leak control device remained in place to reasonably protect the battery charger.



Enforcement:

Violation: TS 5.4, "Procedures," states, in part, that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, "Quality Assurance Program Requirements," Revision 2, Appendix A, February 1978. Regulatory Guide 1.33, Appendix A, Section 9, "Procedures for Performing Maintenance," requires, in part, that maintenance that can affect the performance of safety related equipment should be properly preplanned and performed in accordance with written procedures, documented instructions, or drawings appropriate to the circumstances.

Contrary to this requirement, from December 2021 to February 22, 2022, the licensee failed to implement a written procedure recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Specifically, the licensee failed to implement Revision 13 of Procedure PMP-5020-LCD-001, "Control of Leak Collection Devices." Step 3.7 of the procedure states that, "When necessary repairs are complete, then the work group responsible for the repair should verify the LCD has been removed and discarded." Licensee procedure PMP-2010-PRC-001, Revision 37, defined the term "verify" as to observe an expected condition exist and stated that the appropriate contingency was to establish the expected condition. However, the work group responsible for the repair associated with the leak removed and discarded the leak collection device protecting the 2-BC-B N-train battery charger before completing the repair. Since the charger remained unprotected from the leak, during inclement weather on February 22, 2022, the charger was soaked with water and declared inoperable. The leak collection device was removed when installing a scaffold as part of corrective maintenance activities related to the repair.

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

## **EXIT MEETINGS AND DEBRIEFS**

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

- On October 12, 2022, the inspectors presented the integrated inspection results to Mr. Q. S. Lies, Senior VP and Chief Nuclear Officer, and other members of the licensee staff.
- On August 4, 2022, the inspectors presented the radiation protection baseline inspection results to Mr. Q. S. Lies, Senior VP and Chief Nuclear Officer, and other members of the licensee staff.

## DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.01	Procedures	OHI-4000	Conduct of Operations: Standards	133
		PMI-2291	Work Control Process	025
		PRA-FIRE-OLR-BASIS	Fire Risk Significance and Risk Management Actions for 10CFR 50.65(a)(4) Online Risk Assessments	001
71111.04	Drawings	OP-2-12035	Distribution Panel Auxiliary One-Line Diagram 600V Bus 21C, 21D Engineered Safety System ("Train A")	04
	Procedures	1-OHP-4021-032-001CD	DG1CD Operation	051
		1-OHP-4021-032-008AB	Operating DG1AB Subsystems	035
		12-OHP-4021-018-002	Placing in Service and Operating the Spent Fuel Pit Cooling and Cleanup System	035
		2-OHP-4021-032-001AB	DG2AB Operation	061
		2-OHP-4021-032-001CD	DG2CD Operation	051
		2-OHP-4021-082-006	Operation of 2AB and 2CD Battery Chargers BATTERY CHARGERS	013
		OP-2-12015	Distribution Panel Auxiliary One-Line Diagram 600V Bus 21A, 21B Engineered Safety System ("Train B")	020
71111.05	Fire Plans	Fire Zones 17D, 42D, 46C, 46D, 47A, 51, 64B	Fire Pre-Plans Volume 1	42
71111.06	Calculations	MD-12-FLOOD-001-S	Externally Sourced Flooding Walkdown Report	0
		PRA-FLOOD-004	Internal Flooding - Qualitative Screening Analysis	2
		PRA-FLOOD-008	Flood Sources and the Associated Flood Mechanisms	2
	Procedures	12-OHP-4027-FSG-1501, Attachment 2	Flood Program Deployment	2
		PMP-5091-FLD-001	Flood Protection Program Implementation	10

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.11Q	Miscellaneous	RQ-S-4704-U1-T1	Period 4704 U1 Training Scenario 1	0
71111.12	Corrective Action Documents	2022-3902	Aux Building Bent on 650' Elevation Opened During Refueling	05/03/2022
		2022-5648	112-PP-145 East Diesel Fire Pump Outboard Bearing Packing Smoked During Surveillance Run	07/09/2022
71111.13	Calibration Records	2022-5752	2 CD EDG Fail Surveillance	07/12/2022
	Corrective Action Documents	AR 2022-6432	Unit 1 'A' Lower DIS Failure	08/10/2022
	Miscellaneous		Unit Risk Reports - Work Week Cycle 123, Week 07	0
			Unit Risk Reports - Work Week Cycle 123, Week 11	0
		Unit Risk Reports - Work Week Cycle 123, Week 09	0	
71111.15	Calculations	MD-12-ESW-112N	Impact of ESW Supply Header Crosstie Shutoff Valve Leakage on the ESW System	0
	Corrective Action Documents	AR 2022-5752	2CD EDG Fail Surveillance 7/12/22	07/12/2022
		AR 2022-5912	U1 ICE Deck Door Blocked from Opening	07/20/2022
		AR 2022-6251	Gas Voids Identified in WCCS	08/03/2022
		AR 2022-6290	Gas Voids Identified During ECCS Void Inspection	08/03/2022
		AR 2022-6432	Unit 1 'A' Lower DIS Failure	08/10/2022
		AR 2022-6929	2-OME-90-RO HYDRAULIC OPERATOR ACTUATOR EHC Leak	08/31/2022
		AR 2022-6991	Suspected ESW Leak on 1-HV-AFP-T2AC, U1 TDAFP Rm Cooler #2	09/02/2022
	Operability Evaluations	AR 2022-6251	Compensatory Action for ODE Associated With Gas Voids Were Identified in the Train A Emergency Core Cooling System (ECCS)	08/08/2022
	Procedures	1-IHP-4030-134-001	Train 'A' Lower Ignitor Circuit Testing	41
PMP-4030-001-001		Impact of Safety Related Ventilation on the Operability of Technical Specification Equipment	037	
71111.19	Corrective Action Documents	AR 2022-6828	Unit 1 Reactor Trip, RCP 13 Trip	08/28/2022
		AR 2022-6828-09	Maintenance Rule Evaluation AR 2022-6828 - RCP 13 Trip	09/28/2022
		AR 2022-6929	2-OME-90-RO Hydraulic Operator Actuator EHC Leak	08/31/2022

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Miscellaneous	PMP-4010-TRP-001	Unit 1 Reactor Trip Review Report (AR 2022-6828-16)	08/30/2022
	Procedures	2-IHP-4030-234-001	Unit 2 DIS Surveillance Testing	43
		2-OHP-4030-256-017W	West Motor Driven Auxiliary Feedwater System Test	09/14/2022
		OHI-6080	Emergency Diesel Generator Logs	07/21/2022
	Work Orders	10038191	2-OME-90-RO Hydraulic Operator Actuator EHC Leak	0
		C10037961033	1-1191PG-1/1-1192PG-1: Megger for Final PMT	09/02/2022
71111.20	Corrective Action Documents	AR 2022-6828	Unit 1 Reactor Trip, RCP 13 Trip	08/28/2022
		AR 2022-6828-09	Maintenance Rule Evaluation AR 2022-6828 (Unit 1 Reactor Trip - RCP 13 Trip)	09/28/2022
	Miscellaneous	PMP-4010-TRP-001	Unit 1 Reactor Trip Review Report (AR 2022-6828-16)	08/30/2022
71111.22	Procedures	12-EHP-4030-051-256	Main Steam Safety Valve Setpoint Verification with Lift Assist Device	09/29/2022
71114.06	Miscellaneous		June 28, 2022 Emergency Response Drill Scenario	0
		RQ-S-4704-U1-T2	Period 4704 U1 Training Scenario 2	0
71124.07	Corrective Action Documents	AR 2021-0996	Offsite Vendor Refurbishment of Wind Speed Sensors	01/28/2021
		AR 2022-1996	4th Quarter REMP Sampling Deviations	03/15/2022
	Corrective Action Documents Resulting from Inspection	AR 2022-6282	Failure to Implement/Maintain Procedures for the Meteorological Tower	08/04/2022
	Miscellaneous		2018 Annual Radioactive Effluent Release Report	04/29/2019
			2018 Annual Radiological Environmental Operating Report	04/29/2019
			2019 Annual Radioactive Effluent Release Report	04/29/2020
			2019 Annual Radiological Environmental Operating Report	05/14/2020
			2020 Annual Radioactive Effluent Release Report	04/28/2021
			2020 Annual Radiological Environmental Operating Report	05/12/2021
		2021 Annual Radioactive Effluent Release Report	04/29/2022	
	2021 Annual Radiological Environmental Operating Report	05/13/2022		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			ODCM Revisions 25 Through 27 Approval Documents	Various
	Procedures	12-IHP-4030-036-001	Meteorological Instrumentation Primary and Backup Towers Channel Calibration	11
		12-IHP-6030-036-001	Shoreline Weather Tower Instrument Calibration	3
		PMP-6010-OSD-001	Offsite Dose Calculation Manual	25 - 27
Work Orders	CI0002667001	12-IHP-4030-036-001, (12-ETR-400) Primary & Backup Weather Calibration	03/30/2022	
71151	Miscellaneous		Unit 1 and Unit 2 Reactor Coolant System Dose Equivalent Iodine Data April 1, 2021 Through June 30, 2022	Various
			Radiological Effluent Dose Summary Reports April 1, 2021 Through June 30, 2022	Various
			Radiation Protection Performance Indicator Reports July 1, 2021 Through June 30, 2022	Various
			MSPI Derivation Reports - Heat Removal Systems (07/01/2021 Through 06/30/2022) - Unit 1	0
			MSPI Derivation Reports - Heat Removal Systems (07/01/2021 Through 06/30/2022) - Unit 2	0
			MSPI Derivation Reports - Residual Heat Removal (07/01/2021 Through 06/30/2022) - Unit 2	0
			MSPI Derivation Reports - Residual Heat Removal (07/01/2021 Through 06/30/2022) - Unit 1	0
71152A	Corrective Action Documents	AR 2022-1468	2-BC-B-N-Train Battery Charger Failure	02/22/2022
		AR 2022-6828	Unit 1 Reactor Trip, RCP 13 Trip	08/28/2022
		AR 2022-6828-09	Maintenance Rule Evaluation AR 2022-6828 (Unit 1 Reactor Trip - RCP 13 Trip)	09/28/2022
	Miscellaneous	OMO-4010-TRP-001	Unit 1 Reactor Trip Review Report (AR 2022-6828-16)	08/30/2022