



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION I  
475 ALLENDALE RD, STE 102  
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

November 3, 2023

Brad Berryman  
Senior Vice President and Chief Nuclear Officer  
Susquehanna Nuclear, LLC  
769 Salem Blvd., NUCSB3  
Berwick, PA 18603

SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2 –  
INTEGRATED INSPECTION REPORT 05000387/2023003 AND  
05000388/2023003

Dear Brad Berryman:

On September 30, 2023, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Susquehanna Steam Electric Station, Units 1 and 2. On November 2, 2023, the NRC inspectors discussed the results of this inspection with Derek Jones, Plant Manager, and other members of your staff. The results of this inspection are documented in the enclosed report.

No NRC-identified or self-revealing findings were identified during this inspection.

Licensee-identified violations which were determined to be of very low safety significance and Severity Level IV are documented in this report. We are treating these violations as non-cited violations 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 I; the Director, Office of Enforcement; and the NRC Resident Inspector at Susquehanna Steam Electric Station, Units 1 and 2.

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* (10 CFR) 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

Sarah H. Elkhiamy, Acting Chief  
Projects Branch 4  
Division of Operating Reactor Safety

Docket Nos. 05000387 and 05000388  
License Nos. NPF-14 and NPF-22

Enclosure:  
As stated

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SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2 –  
INTEGRATED INSPECTION REPORT 05000387/2023003 AND  
05000388/2023003 DATED NOVEMBER 3, 2023

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

Docket Numbers: 05000387 and 05000388

License Numbers: NPF-14 and NPF-22

Report Numbers: 05000387/2023003 and 05000388/2023003

Enterprise Identifier: I-2023-003-0042

Licensee: Susquehanna Nuclear, LLC

Facility: Susquehanna Steam Electric Station, Units 1 and 2

Location: 769 Salem Blvd., Berwick, PA

Inspection Dates: July 1, 2023 to September 30, 2023

Inspectors: C. Highley, Senior Resident Inspector  
E. Brady, Resident Inspector  
H. Anagnostopoulos, Senior Health Physicist  
K. Mangan, Senior Reactor Inspector  
P. Ott, Operations Engineer  
J. Schoppy, Senior Reactor Inspector  
T. Setzer, Senior Operations Engineer  
N. Warnek, Senior Project Engineer

Approved By: Sarah H. Elkhiamy, Acting Chief  
Projects Branch 4  
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 Susquehanna Steam Electric Station, Units 1 and 2, 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. Licensee-identified non-cited violations are documented in report section: 71153.

### List of Findings and Violations

No findings or violations of more than minor significance were identified.

### Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
LER	05000387,05000388/ 2022-003-00	LER 2022-003-00 for Susquehanna Steam Electric Station, Units 1 and 2, Inoperable 13.8kV Startup Transformer Due to Misaligned Load Tap Charger Local/Remote Control Switch	71153	Closed
LER	05000388/2022-001-00	LER 2022-001-00 for Susquehanna Steam Electric Station, Unit 2, Inadequate Performance of Loss of Safety Determination Resulting in Both Divisions of Core Spray Being Inoperable	71153	Closed

## PLANT STATUS

Unit 1 began the inspection period at rated thermal power. On July 18, 2023, the unit was down powered to 59.6 percent due to failure of a reactor feed pump. The unit was returned to rated thermal power on July 22, 2023. On September 15, 2023, the unit was down powered to 69.8 percent for rod sequence exchange and scram time testing. The unit was returned to rated thermal power on September 17, 2023, and remained at or near rated thermal power for the remainder of the inspection period.

Unit 2 began the inspection period at rated thermal power. On July 7, 2023, the unit was down powered to 72.4 percent for a scheduled rod pattern adjustment. The unit was returned to rated thermal power on July 8, 2023. On August 2, 2023, the unit was down powered to 82.4 percent by the Transmission Control Center request due to loss of the Wescosville line. The unit was returned to rated thermal power on August 3, 2023. On September 9, 2023, the unit was down powered to 16.2 percent for a rod sequence exchange and repair of a hydraulic leak. The unit was returned to rated thermal power on September 13, 2023, and remained at or near rated thermal power for the remainder of the inspection period.

## INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors performed activities described in IMC 2515, Appendix D, "Plant Status," observed risk significant activities, and completed on-site portions of IPs. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

## REACTOR SAFETY

### 71111.01 - Adverse Weather Protection

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

- (1) The inspectors evaluated the readiness for impending severe weather for Luzerne County thunderstorm watch on July 10, 2023.

### 71111.04 - Equipment Alignment

#### Partial Walkdown (IP Section 03.01) (7 Samples)

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

- (1) Unit 1, load center 1A202, 4.16KV essential services supply auxiliary bus 1B, on July 28, 2023

- (2) Unit 1, high-pressure coolant injection system after seat leakage on August 4, 2023
- (3) Unit Common, 'B' emergency diesel generator on September 6, 2023
- (4) Unit 1, standby liquid control system on September 7, 2023
- (5) Unit 2, high-pressure coolant injection system on September 11, 2023
- (6) Unit 2, reactor core isolation cooling on September 11, 2023
- (7) Unit 1, residual heat removal system on September 13, 2023

#### 71111.05 - Fire Protection

##### Fire Area Walkdown and Inspection (IP Section 03.01) (8 Samples)

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

- (1) Unit Common, refueling floor, 818-foot elevation, fire zone (FZ) 0-6H, 0-8A, 1-6F, and 2-6F, on July 12, 2023
- (2) Unit Common, control room, 729-foot elevation, FZ 0-26A, 0-26G, 0-26H, and 0-26I, on July 24, 2023
- (3) Unit 2, upper cable spreading room, 754-foot elevation, FZ 0-27A, 0-27-B, 0-27C, and 0-27E, on August 1, 2023
- (4) Unit 1, reactor building standby liquid control system, FZ 1-5A-W, on August 2, 2023
- (5) Unit 1, turbine building at the control rod drive pumps, 656-foot elevation, FZ 1-31F, on August 7, 2023
- (6) Unit 1, reactor building, 645-foot elevation, FZ 1-1A, 1-1B, 1-1C, 1-1D, 1-1E, 1-1F, 1-1G, and 1-1J, on August 28, 2023
- (7) Unit Common, 'C' emergency diesel generator, FZ 0-41C, on September 13, 2023
- (8) Unit Common, radiation waste, FZ 0-63A, 0-63D, 0-64A, and 0-64C, on September 14, 2023

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

- (1) The inspectors evaluated the on-site fire brigade training and performance during an unannounced fire drill in the Unit 1 turbine building, at the control rod drive pump, 656-foot elevation, on August 5, 2023

#### 71111.06 - Flood Protection Measures

##### Flooding (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated external flooding mitigation protections in the Unit 2 vault 06, 'B' emergency service water pipe, on July 3, 2023.

#### 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 Common control room during rod pattern adjustment of Unit 2, per OP-AD-338, "Reactivity Manipulations Standards and Communication Requirements," Revision 36, on September 14, 2023.

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

- (1) The inspectors observed and evaluated a simulator requalification observation for Unit Common of licensed operator requalification test 23-05-SA1 based on LOR-EXM-63 of loss of battery room ventilation, loss of 'B' feedwater heater string with limiter 2 runback, fuel failure with a main steam line high radiation leading to a scram with a main steam valve closure, auxiliary buses failure to transfer, unisolable scram discharge valve drains failure to close and forcing a reduced reactor pressure, loss of high-pressure coolant injection speed control and reactor core isolation cooling valve failure to open, residual heat removal pump failure to start, and two reactor areas greater than maximum safe radiation levels leading to an emergency depressurization on July 24, 2023.

### 71111.12 - Maintenance Effectiveness

#### Maintenance Effectiveness (IP Section 03.01) (3 Samples)

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

- (1) Unit 1, high-pressure coolant injection overhaul frequency changes from 6 to 10 years on August 21, 2023
- (2) Unit Common, Title 10 of the *Code of Federal Regulations* (10 CFR) 50.65(a)(3) 14th Maintenance Rule Periodic Evaluation on September 22, 2023
- (3) Unit Common, post-maintenance frequency change for the emergency service water and residual heat removal service water pump motors from 15 to 16 years on September 25, 2023

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

#### Risk Assessment and Management (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) Unit Common, increased risk due to the simultaneous failures of the 'D' emergency diesel generator keep warm pump and the control structure computer room fan 0V115A hydramotor, CR-2023-11627, CR-2023-11628, and CR-2023-11636, on July 10, 2023
- (2) Unit 1, increased risk due to the turbine building chiller 'B' failure while 'A' chiller out of service for previous failure, CR-2023-10554, CR-2023-12017, WO 2651133-1, WO 2651133-2, WO 2651314-0, WO 26559353, and WO 3651314-1, on July 18, 2023
- (3) Units 1 and 2, increased risk due to the high-pressure coolant injection failed module during the quarterly calibration of high-pressure coolant injection steam leak detection logic B, SI-252-316, surveillance, WO 2648130 and WO 2670491-0, on September 6, 2023
- (4) Unit Common, increased risk due to the 'D' emergency diesel generator slow start, CR-2023-14782, on September 12, 2023



## 71111.15 - Operability Determinations and Functionality Assessments

### Operability Determination or Functionality Assessment (IP Section 03.01) (9 Samples)

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

- (1) Unit 2, drywell temperature rising, CR-2023-11369, on July 1, 2023
- (2) Unit Common, junction box splice for the flow instrument on the emergency service water piping, CR-2023-11434, on July 3, 2023
- (3) Unit 2, 'B' emergency service water pipe in vault 06, having water submerge the pipe and potential corrosion, CR-2023-11433, on July 3, 2023
- (4) Unit Common, clarified water storage tank through-wall leak, CR-2023-11599, on July 7, 2023
- (5) Unit 1, standby liquid control lube oil under pumps, CR-2023-12556, on July 28, 2023
- (6) Unit Common, 'E' emergency diesel generator foreign material exclusion zone 1 potential introduction point during work, CR-2023-12790, on August 2, 2023
- (7) Unit 1, cracks on top of battery 1D135 cells, CR-2023-13947, on August 28, 2023
- (8) Unit 1, closure of the prompt operability determination with no work being performed associated with the core spray loop 'A', ACT-01-CR-2022-09437, on August 30, 2023
- (9) Unit Common, 'D' emergency diesel generator slow start time, CR-2023-14782, on September 12, 2023

## 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 temporary or permanent modifications:

- (1) Unit Common, permanent modification of emergency service water flow instrument cable boxes that have extensive corrosion on July 26, 2023
- (2) Unit 2, temporary modification of permanent magnet generator on September 11, 2023

## 71111.24 - Testing and Maintenance of Equipment Important to Risk

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

### Post-Maintenance Testing (IP Section 03.01) (14 Samples)

- (1) Unit 2, 'B' residual heat removal service water pump lift, SO-216-B03, on June 13, 2023
- (2) Unit Common, 'D' emergency service water pump lift check, Plant Component Work Order (PCWO) 1738951 and SO-054-B03, on June 15, 2023
- (3) Unit 1, replacement of an electrical module for the 1C reactor feed pump due to trip, CR-2023-11993, CR-2023-12082, PCWO 2659158-1, and PCWO 2659158-2, on July 20, 2023
- (4) Unit Common, 'B' control structure chiller trip on high bearing temperature, CR-2023-12885, on August 5, 2023

- (5) Unit 2, division 1 core spray injection vent valve replacement on, PCWO 2413349-0 and RTSV 2633326. August 9, 2023
- (6) Unit Common, Blue Max fuel oil heater replacement and checks, WO 2588420, on August 22, 2023
- (7) Unit Common, 'A' emergency service water pump and discharge head replacement (including pump curve review), SO-054-A08 and WO 2055150, on August 28, 2023
- (8) Unit 2, replacement of the Reilly module on the high-pressure coolant injection instrument, CR-2023-14439, SI-252-316, and WO 2670491-0 (quarterly calibration of high-pressure coolant injection steam leak detection logic) on September 6, 2023
- (9) Unit Common, motor driven and diesel driven fire pumps maintenance, SO-013-001 and WO 2463194. on September 7, 2023
- (10) Unit 1, 'A' turbine building chiller failure, WO 2651133-1 and WO 2651133-2, on September 13, 2023
- (11) Unit 1, high-pressure coolant injection (CV15613), hydraulic actuator cleaning, and lubrication, WO 2634494-0, on September 13, 2023
- (12) Unit 1, 'B' turbine building chiller failure, WO 2651314-0, WO 2651314-1, and WO 2659353-0, on September 13, 2023
- (13) Unit 2, 'A' residual heat removal service water pump replacement, CR-2023-10874 and WO 2384310, on September 14, 2023
- (14) Unit Common, 'E' emergency diesel generator head 10R exhaust pipe misalignment and piping replacement, CR-2023-13222 and WO 2446916-0, on September 18, 2023

Inservice Testing (IP Section 03.01) (1 Sample)

- (1) Unit 2, residual heat removal system flow verification, SO-249-A02, on August 2, 2023

**RADIATION SAFETY**

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

Radioactive Material Storage (IP Section 03.01) (2 Samples)

The inspectors evaluated the licensee's performance in controlling, labeling, and securing the following radioactive materials:

- (1) Radwaste facility, 676-foot elevation, vacuum cleaner storage cage
- (2) Receiving warehouse temporary radioactive material storage cage

Radioactive Waste System Walkdown (IP Section 03.02) (2 Samples)

The inspectors walked down the following accessible portions of the solid radioactive waste systems and evaluated system configuration and functionality:

- (1) Radwaste facility, 676-foot elevation, water removal skid, with the associated Unit-1A and Unit-2B charcoal guard beds
- (2) Radwaste facility, 646-foot elevation, reactor water cleanup (RWCU) phase separator pumps and the associated 'B' tank room

### Waste Characterization and Classification (IP Section 03.03) (2 Samples)

The inspectors evaluated the following characterization and classification of radioactive waste:

- (1) RWCU filter media sent to a vendor laboratory for detailed analysis
- (2) Irradiated hardware sent to a disposal facility in Texas

### Shipment Preparation (IP Section 03.04) (1 Sample)

- (1) The inspectors observed the preparation of radioactive shipment 23-060 of irradiated hardware on September 18, 2023.

### Shipping Records (IP Section 03.05) (4 Samples)

The inspectors evaluated the following non-excepted radioactive material shipments through a record review:

- (1) Shipment 23-022, Type A package, RWCU resin sample for analysis, air transport
- (2) Shipment 23-055, Type A package, RWCU bottom head drain line coupon for analysis, exclusive use truck transport
- (3) Shipment 23-056, Type B(U) package, NRC Category 1 material, irradiated hardware for disposal, exclusive use truck transport
- (4) Shipment 23-060, Type B(U) package, NRC Category 1 material, irradiated hardware for disposal, exclusive use truck transport

## **OTHER ACTIVITIES – BASELINE**

### 71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

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

- (1) September 15, 2022 through September 15, 2023

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

- (1) September 15, 2022 through September 15, 2023

### 71152S - Semiannual Trend Problem Identification and Resolution

#### Semiannual Trend Review (Section 03.02) (1 Sample)

- (1) The inspectors reviewed the licensee's prompt investigations trend analysis associated with an increase in the number of prompt investigations on September 28, 2023.

## 71153 - Follow Up of Events and Notices of Enforcement Discretion

### Event Report (IP Section 03.02) (2 Samples)

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

- (1) LER 05000387 and 05000388/2022-003-00, Inoperable 13.8kV Startup Transformer Due to Misaligned Load Tap Changer Local/Remote Control Switch (Agencywide Documents Access and Management System (ADAMS) Accession No. ML22353A082): The inspection conclusions associated with this LER are documented in this report under the Inspection Results Section, Licensee-Identified Non-Cited Violation. This LER is closed.
- (2) LER 05000388/2022-001-00, Inadequate Performance of Loss of Safety Determination Resulting in Both Divisions of Core Spray Being Inoperable (ML23132A143): The inspection conclusions associated with this LER are documented in this report under the Inspection Results Section, Licensee-Identified Non-Cited Violation. This LER is closed.

### Reporting (IP Section 03.05) (1 Sample)

- (1) The inspectors evaluated 10 CFR 50.73 reportability requirements for the Unit 2 'B' reactor water level narrow range (LIS-B21-2N024B) micro switch 1A surveillance that occurred on November 11, 2022, under CR-2022-17237.

## **OTHER ACTIVITIES – TEMPORARY INSTRUCTIONS, INFREQUENT AND ABNORMAL**

### 71003 - Post-Approval Site Inspection for License Renewal

From July 24 to 27, 2023, the inspectors conducted a Post-Approval Site Inspection for License Renewal - Phase 2 at Unit 2, in accordance with the license renewal inspection program. This inspection took place prior to the period of extended operation for Unit 2, which will begin on March 23, 2024. Per IMC 2516, "Policy and Guidance for the License Renewal Program," the license renewal inspection program is the process used by the inspectors to verify the adequacy of aging management programs, time-limited aging analyses, and other activities associated with an applicant's request to renew an operating license of a commercial nuclear power plant beyond the initial licensing period under 10 CFR Part 54, "Requirements for the Renewal of Operating Licenses for Nuclear Power Plants." The inspectors previously conducted a Phase 2 inspection at Unit 1 documented in Susquehanna Steam Electric Station, Unit 1 – Post-Approved Site Inspection for License Renewal – Phase 2 Inspection Report 05000387/2022011 (ML22066B013) during which the inspectors reviewed licensee conditions and commitments applicable to both units. The scope of this inspection was limited to those activities not reviewed by the previous inspection.

### Post-Approval Site Inspection for License Renewal License Conditions and Commitments for License Renewal, Implementation of Aging Management Programs, and Time-Limited Aging Analyses

There are a total of 60 regulatory commitments made as part of the renewed operating license for Units 1 and 2, issued in November 2009. During the inspection, the inspectors reviewed 10 of these commitments to assess the adequacy and effectiveness of the license renewal program at Unit 2. For each commitment selected, the inspectors reviewed the applicable license renewal program documents, a sample of implementing procedures and records,

conducted interviews with licensee staff, and performed walkdowns of structures, systems, and components to verify that the licensee completed the actions necessary to comply with the conditions listed in the renewed facility operating license consistent with the license renewal application, the NRC safety evaluation report, and the updated final safety analysis report supplement.

Post-Approval Site Inspection for License Renewal (1 Sample)

- (1) The regulatory commitments selected for the inspection sample are listed below. The full description of each commitment is available in the updated final safety analysis report supplement for license renewal, as revised, and Appendix A of the “NRC Safety Evaluation Report” issued as NUREG-1931.
- Commitment #17: Develop and implement a new one-time Condensate and Refueling Water Storage Tanks Inspection. Status: Complete.
  - Commitment #19: Develop and implement a new one-time Chemistry Program Effectiveness Inspection. Status: Complete.
  - Commitment #20: Develop and implement a new one-time Cooling Units Inspection. Status: Complete.
  - Commitment #21: Develop and implement a new one-time Heat Exchanger Inspection. Status: Complete.
  - Commitment #23: Develop and implement a new one-time Monitoring and Collection System Inspection. Status: Complete.
  - Commitment #24: Develop and implement a new one-time Supplemental Piping and Tank Inspection. Status: Complete.
  - Commitment #27: Develop and implement a new one-time Small-Bore Class 1 Piping Inspection. Status: Complete.
  - Commitment #34: Enhance the existing Structures Monitoring Program. Status: Complete.
  - Commitment #40: Develop and implement a new one-time, plant-specific Area-Based non-safety affecting safety (NSAS) Inspection. Status: Complete.
  - Commitment #46: Enhance the existing Fire Water System Program. Status: Complete.
  - Commitment #49: Develop and implement a new one-time Lubricating Oil Inspection. Status: Complete.

**INSPECTION RESULTS**

Observation: Semiannual Trend Associated with the Increased Number of Prompt Investigations	71152S
<p>The inspectors performed a semiannual review of the site's issues to identify trends that might indicate the existence of more significant safety concerns. As part of this review, the inspectors included repetitive or closely related issues documented by the licensee in the corrective action program (CAP) database, trend reports, site performance indicators, major equipment problem lists, system health reports, maintenance rule assessments, and maintenance or CAP backlogs. The inspectors also reviewed how the licensee's CAP evaluated and responded to individual issues identified by the NRC inspectors during routine plant walkdowns and daily condition report reviews.</p>	
<p>The inspectors performed a review of the licensee's CAP condition reports, action reports, and the associated corrective actions associated with the prompt investigations from January to July 2023. The stations trending condition report, CR-2023-06898, identified that multiple prompt investigations have causes related to failing to recognize and adequately</p>	

mitigate risk as well as gaps in procedure use and adherence. Actions and learnings from earlier prompt investigations have not been adequate to arrest these trends, and prompt investigations are not always being completed within the LS-125-1010, "Prompt Investigations," procedural requirements. The inspectors identified that the station has developed corrective actions to assist in changing these trends associated with completion times and communications of actions and learnings from previous prompt investigations. The NRC inspectors did not identify any violations or performance deficiencies of more than minor significance during the review.

Licensee-Identified Non-Cited Violation: Condition Prohibited by Technical Specifications Due to Misaligned Load Tap Changer	71153
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This violation of very low safety significance was identified by the licensee and has been entered into the licensee's CAP and is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Violation: TS Limiting Condition for Operation (LCO) 3.8.1, "AC Sources-Operating," requires, in part, that two qualified circuits between the offsite transmission network and the on-site Class 1E Electrical Power System shall be OPERABLE. TS LCO 3.8.1, Condition A.3, specifies that with one offsite circuit inoperable, the offsite circuit shall be returned to OPERABLE status within 72 hours. TS LCO 3.8.1, Condition F, specifies, in part, that if the Required Action and Associated Completion Time of Condition A.3 is not met, the licensee shall be in MODE 3 within 12 hours and MODE 4 within 36 hours.

Contrary to the above, one of Susquehanna's Unit 2's offsite circuits was inoperable for a period greater than 72 hours, from October 10 to 22, 2022, and the licensee did not enter MODE 3 within 12 hours and MODE 4 within 36 hours.

Significance/Severity: No Performance Deficiency. Severity Level IV. The T-20 startup transformer, one of Susquehanna's two offsite power sources, was removed from service for planned maintenance on October 10, 2022. Upon the completion of maintenance, T-20 was returned to service and declared operable on October 12, 2022. Ten days later, on October 22, 2022, an equipment operator performing rounds identified that the 43S load tap changer control switch was mispositioned, rendering T-20 inoperable. The licensee determined this condition was most likely due to inadvertent bumping of the control switch during maintenance activities and had existed since October 11, 2022. The inspectors' review of this event determined that the mispositioning of the 43S control switch and resulting inoperability of the T-20 offsite power source was not reasonably within the licensee's ability to foresee and correct and therefore was not reasonably preventable. As such, there is no performance deficiency associated with this violation. This issue is considered within the traditional enforcement process because there was no performance deficiency associated with the violation of NRC requirements. The severity of the violation was determined to be Severity Level IV in accordance with Section 6.1.d.1 of the NRC Enforcement Policy which states, in part, that failure to comply with the allowances for LCO and surveillance requirement applicabilities in TS Section 3.0 is an example of a Severity Level IV violation.

The disposition of this violation closes LER 05000387 and 05000388/2022-003-00, "Inoperable 13.8kV Startup Transformer Due to Misaligned Load Tap Changer Local/Remote Control Switch."

Corrective Action References: CR-2022-15693

Licensee-Identified Non-Cited Violation: Unit 2 Failure to Enter Technical Specifications for Loss of Both Trains of Core Spray	71153
This violation of very low safety significance was identified by the licensee and has been entered into the licensee's CAP and is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.	
Violation: TS 3.5.1 requires each emergency core cooling system injection/spray subsystem and the automatic depressurization system function of six safety/relief valves shall be operable in Mode 1. TS 3.5.1, Condition I, required actions are to enter LCO 3.0.3 immediately when both divisions of core spray are inoperable.	
Contrary to the above, the licensee failed to enter TS 3.5.1, Condition I, when both core spray subsystems were declared inoperable at 2:08 p.m. on September 26, 2022, and therefore failed to enter LCO 3.0.3 when directed by TS 3.5.1, Condition I. The licensee failed to properly follow procedure NDAP-QA-0312, "Control of LCOs, Technical Requirements for Operation, and Safety Function Determination Program," and this led to a failure to identify a loss of safety function due to one supported system division (core spray room coolers - division 2) becoming inoperable due to a support system (emergency service water – division 2) being inoperable for surveillance testing, concurrent with a planned inoperability of the opposite division system (core spray - division 1). Specifically, the licensee did not enter the required TS's and LCO's as required.	
Significance/Severity: Green. The inspectors assessed the significance of the finding using IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," and determined this is a Green violation due to the performance deficiency not leading to a more significant safety concern due to being corrected in a timely manner. Specifically, the licensee was in the condition for only 9 minutes, which is well within the 7 hours required per technical specifications. Additionally, the engineering analysis determined that Unit 2 division 2 core spray could still have performed its safety function. Assuming the worst-case incident, within the 9 minutes that the emergency service water was not aligned to the core spray room coolers, the division 2 core spray pumps would have operated and not overheated.	
The disposition of this violation closes LER 05000388/2022-001-00, "Inadequate Performance of Loss of Safety Determination Resulting in Both Divisions of Core Spray Being Inoperable."	
Corrective Action References: CR-2022-14316	

## EXIT MEETINGS AND DEBRIEFS

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

- On July 27, 2023, the inspectors presented the license renewal phase 2 inspection results to Edward Causlli, Site Vice President, and other members of the licensee staff.
- On September 21, 2023, the inspectors presented the radwaste shipping and performance indicator verification inspection results to Doug LaMarca, Acting Site Vice President, and other members of the licensee staff.
- On November 2, 2023, the inspectors presented the integrated inspection results to Derek Jones, Plant Manager, and other members of the licensee staff.

**DOCUMENTS REVIEWED**

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71003	Corrective Action Documents		AR-2022-00621, CR-2017-12932, CR-2020-12701, CR-2020-13298, CR-2021-06165, CR-2021-09302, CR-2021-11893, CR-2022-01517, CR-2022-01517, CR_2022-01525, CR-2022-01525, CR-2022-15734, CR-2022-16096	
	Corrective Action Documents Resulting from Inspection		AR-2023-12506, CR-2023-12326, CR-2023-12328, CR-2023-12368, CR-2023-12450, CR-2023-12452, CR-2023-12462, CR-2023-12465, CR-2023-12466, CR-2023-12470, CR-2023-12479, CR-2023-12494, CR-2023-12506	
	Engineering Evaluations	DI-2017-17903	Refuel Water Storage Tank Inspection Evaluation	01/10/2018
		EC-STRU-2019	Structural Monitoring Program Inspections of Reactor Building	06/29/2022
		EC-STRU-2031	Structural Monitoring Program Inspections of ESSW Pumphouse	04/26/2022
		EC-STRU-2047	Structural Monitoring Program Inspections of Diesel Generator E Building	02/02/2023
		EC-STRU-2055	Structural Monitoring Program Inspections of Control Building	11/30/2022
		EC-STRU-2060	Structural Monitoring Program Inspections of Manholes and Vaults	03/06/2023
		EC-STRU-2127	Structural Monitoring Program Inspections of Primary Containment	05/17/2022
	Procedures	NDAP-QA-1163	Structures Monitoring Program	Revision 11
		NEIM-QA-1185	Pipe Corrosion Program Implementation	Revision 1
		NSE-DTG-007	License Renewal Commitments for Fire Protection Engineering	Revision 1
	Work Orders		PCWO 1224772, PCWO 1830393, PCWO 1895884, PCWO 1975507, PCWO 2090305, PCWO 2161822, PCWO 2169908, PCWO 2173600, PCWO 2179422, PCWO 2180655, PCWO 2208212, PCWO 2222337, PCWO 2245645, PCWO 2278884, PCWO 2282164, PCWO 2282165, PCWO 2283839, PCWO 2283942,	



Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			PCWO 2284277, PCWO 2285712, PCWO 2286950, PCWO 2286951, PCWO 2382988, PCWO 2385218, PCWO 2606370	
			RTPM 1828511, RTPM 1921587, RTPM 1980624, RTPM 2022411, RTPM 2088812, RTPM 2130225, RTPM 2154618	
71111.05	Fire Plans	FP-0-DG-677-A	Diesel Building-El. 677	Revision 0
		FP-0-DG-710-A	Diesel Building-El. 710-9	Revision 0
		FP-1-CS-729-A	Control Room	Revision 0
		FP-1-CS-754-A	Upper Cable Spreading Room	Revision 0
		FP-1-RB-645-0	U1 Reactor Building-EL. 645	Revision 0
		FP-1-RB-749-5	Circulation Space	Revision 0
		FP-1-RB-818-0	Reactor Building-EL. 818	Revision 0
		FP-1-RW-676-0	Rad Waste-EL. 676	Revision 0
		FP-1-RW-691-0	Rad Waste-EL. 691	Revision 0
		FP-1-TB-656-8	Fire Plan Pump Area 2	Revision 0
		FP-2-RB-818-0	U2 Reactor Building-EL. 818	Revision 0
	Miscellaneous	Fire Drill Scenario 76	Control Rod Drive Pump U1 Turbine Building, 656 FT, H-20	05/24/2018
71111.18	Corrective Action Documents		CR-2023-07616, CR-2023-11434	
71153	Corrective Action Documents	CR-2022-15693	Transformer T-20 43S Local / Remote Control Switch Found in the Remote Position	