



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION I  
2100 RENAISSANCE BOULEVARD, SUITE 100  
KING OF PRUSSIA, PENNSYLVANIA 19406-2713

February 13, 2020

Mr. Brad Berryman  
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 05000387/2019004 AND  
05000388/2019004

Dear Mr. Berryman:

On December 31, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Susquehanna Steam Electric Station, Units 1 and 2. On January 16, 2020, the NRC inspectors discussed the results of this inspection with Mr. Kevin Cimorelli and other members of your staff. The results of this inspection are documented in the enclosed report.

Two findings of very low safety significance (Green) are documented in this report. Both 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.

A licensee-identified violation which was determined to be Severity Level IV is documented in this report. 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 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.

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 I; 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* 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

X /RA/

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Signed by: Jonathan E. Greives  
Jonathan E. Greives, Chief  
Reactor Projects Branch 4  
Division of Reactor Projects

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 05000387/2019004 AND  
 05000388/2019004 DATED FEBRUARY 13, 2020

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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: 05000387/2019004 and 05000388/2019004

Enterprise Identifier: I-2019-004-0051

Licensee: Susquehanna Nuclear, LLC

Facility: Susquehanna Steam Electric Station, Units 1 and 2

Location: Berwick, PA

Inspection Dates: October 1, 2019 to December 31, 2019

Inspectors: J. Ambrosini, Senior Emergency Preparedness Inspector  
T. Fish, Senior Operations Engineer  
M. Henrion, Emergency Response Coordinator  
L. Micewski, Senior Resident Inspector  
P. Ott, Operations Engineer  
R. Rolph, Senior Health Physicist  
M. Rossi, Resident Inspector  
D. Werkheiser, Senior Reactor Inspector

Approved By: Jonathan E. Greives, Chief  
Reactor Projects Branch 4  
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 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. A licensee-identified non-cited violation is documented in report section: 71111.11B.

### List of Findings and Violations

Untimely Identification and Correction of Breaker Stab Misalignment Results In Subsequent Safety Bus Fault			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000387,05000388/2019004-01 Open/Closed	[H.14] - Conservative Bias	71152
The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action." Specifically, Susquehanna failed to identify and correct a condition adverse to quality, associated with misalignment of Class 1E breaker 0B136-044 to safety-related electrical bus 0B136, that resulted in a repeat electrical bus (0B136) fault.			

Inadequate procedural adherence for 'C' Emergency Service Water (ESW) pump flow surveillance			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000387,05000388/2019004-02 Open/Closed	[H.12] - Avoid Complacency	71153
The inspectors documented a self-revealing Green finding and associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," when the licensee failed to accomplish an activity affecting quality in accordance with procedures and a violation of Technical Specification 3.7.2, Condition C, for exceeding the allowed outage time.			

### Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
LER	05000387,05000388/2019-003-00	LER 2019-003-00 for Susquehanna, Unit 1, D Diesel Generator Inoperable due to Inadequate Post-Maintenance Test	71153	Closed
LER	05000387,05000388/2019-002-00	LER 2019-002-00 for Susquehanna Steam Electric Station, Unit 1, Inoperability of 'C' Emergency Service Water Pump	71153	Closed

LER	05000387,05000388/20 19-001-00	LER 2019-001-00 for Susquehanna, Unit 1, Loss of Both Control Structure Chillers	71153	Closed
LER	05000387,05000388/20 19-001-01	LER 2019-001-01 for Susquehanna, Unit 1, Loss of Both Control Structure Chillers due to Misaligned Breaker Stab	71153	Closed

## PLANT STATUS

Unit 1 began the inspection period at 100 percent power. On October 4, 2019, operators reduced power to approximately 75 percent for a control rod sequence exchange. Operators returned the unit to 100 percent on October 5, 2019. On November 1, 2019, operators reduced power to approximately 66 percent to perform a control rod sequence exchange. Operators returned the unit to 100 percent on November 2, 2019. On November 21, 2019, the station was notified by grid operator that due to a planned line outage, Unit 1 was requested to reduce power to approximately 1260 MWe, which corresponds to approximately 98 percent power, until further notice. On November 27, 2019, operators reduced power to approximately 68 percent to perform a control rod pattern adjustment and scram time testing. Operators returned the unit to approximately 98 percent on November 28, 2019. On December 22, 2019, operators reduced power to approximately 73 percent to perform a control rod pattern adjustment. Operators returned the unit to approximately 98 percent on December 23, 2019. On December 31, 2019, operators reduced power to approximately 73 percent to perform a control rod pattern adjustment. Operators returned the unit to approximately 98 percent later that same day and remained at or near 98 percent for the remainder of the inspection period.

Unit 2 began the inspection period at 100 percent power. On November 21, 2019, the station was notified by grid operator that due to a planned line outage, Unit 2 was requested to reduce power to approximately 1260 MWe, which corresponds to approximately 98 percent power, until further notice. On December 20, 2019, operators reduced power to approximately 73 percent for a control rod sequence exchange. On December 21, 2019, operators returned the unit to approximately 98 percent and remained at or near 98 percent 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 plant status activities described in IMC 2515, Appendix D, "Plant Status," and conducted routine reviews using IP 71152, "Problem Identification and Resolution." 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 03.03) (1 Sample)

- (1) The inspectors evaluated readiness for impending adverse weather conditions for cold weather preparations on November 21, 2019.

#### 71111.04Q - Equipment Alignment

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

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

- (1) Unit 1, division 1 core spray during division 2 flow inservice test on October 17, 2019
- (2) Unit 1, high pressure coolant injection system during reactor core isolation cooling system outage window on October 29, 2019

#### 71111.05Q - Fire Protection

##### Quarterly Inspection (IP Section 03.01) (5 Samples)

The inspectors evaluated fire protection program implementation in the following selected areas:

- (1) Unit Common, emergency diesel generator (EDG) bay 'B' (fire zone 0-41B) on October 11, 2019
- (2) Unit 1, division 1 and division 2 relay rooms (fire zones 0-27E and 0-24D) on October 21, 2019
- (3) Unit 2, general area elevation 719' (fire zone 2-4A) on November 5, 2019
- (4) Unit 2, general access area, load center room, and electrical equipment room (fire zones 2-6 A, B, C) on December 4, 2019
- (5) Unit 1, remote shutdown panel and general area elevation 670' (fire zones 1-2 B/D) on December 19, 2019

#### 71111.06 - Flood Protection Measures

##### Inspection Activities - Internal Flooding (IP Section 02.02a.) (1 Sample)

The inspectors evaluated internal flooding mitigation protections in the:

- (1) Unit 2, 645' elevation based on potential relief valve leakage on October 28, 2019

#### 71111.11A - Licensed Operator Requalification Program and Licensed Operator Performance

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

- (1) An in-office inspection of Pass/Fail results for licensed operator requalification examinations (operating test, only) was conducted by one NRC region-based inspector on December 16, 2019.



## 71111.11B - Licensed Operator Requalification Program and Licensed Operator Performance

### Licensed Operator Requalification Program (IP Section 03.04) (1 Sample)

#### (1) Biennial Requalification Written Examinations

The inspectors evaluated the quality of the licensed operator biennial requalification written examinations.

#### Annual Requalification Operating Tests

The inspectors evaluated the adequacy of the licensed operator annual requalification operating tests.

#### Administration of an Annual Requalification Operating Test

The inspectors evaluated 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.

#### 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 SCRAM time testing on October 4, 2019.

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

- (1) The inspectors observed and evaluated a simulation of a loss of coolant accident requiring emergency depressurization and low pressure injection on October 8, 2019.

## 71111.12 - Maintenance Effectiveness

### Routine Maintenance Effectiveness Inspection (IP Section 02.01) (2 Samples)

The inspectors evaluated the effectiveness of routine maintenance activities associated with the following equipment and/or safety significant functions:

- (1) 'A' control structure chiller expansion tank losing pressure on October 1, 2019
- (2) Unit 2, containment instrument gas compressor control box failure on November 4, 2019

## 71111.13 - Maintenance Risk Assessments and Emergent Work Control

### Risk Assessment and Management Sample (IP Section 03.01) (4 Samples)

The inspectors evaluated the risk assessments for the following planned and emergent work activities:

- (1) 'C' ESW pump replacement on October 1, 2019
- (2) Unit 1, elevated risk during reactor core isolation cooling planned maintenance on October 30, 2019
- (3) Unit 1, elevated risk during division 1 residual heat removal planned maintenance outage on November 6, 2019
- (4) Unit 1, yellow risk during 'B' control structure chiller maintenance on November 18, 2019

## 71111.15 - Operability Determinations and Functionality Assessments

### Operability Determination or Functionality Assessment (IP Section 02.02) (7 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

- (1) Unit Common, 'A' control structure chiller expansion tank losing pressure on October 1, 2019
- (2) Unit Common, 'D' EDG slow start due to previous work on air start system on October 13, 2019

- (3) Unit Common, off-gas chemistry gamma analyzer not calibrated for correct geometry for noble gas sampling on October 17, 2019
- (4) Unit 2, past operability determination due to leaking of PSV 21213B on October 28, 2019
- (5) Unit 1, reactor core isolation cooling static inverter out of tolerance on October 29, 2019
- (6) Unit 1, division 1 core spray out-of-tolerance hanger SP-HBD-50A1-H2015 on December 5, 2019
- (7) Unit Common, control structure vent damper HD07801A partially closed on December 9, 2019

#### 71111.19 - Post-Maintenance Testing

##### Post-Maintenance Test Sample (IP Section 03.01) (4 Samples)

The inspectors evaluated the following post maintenance tests:

- (1) 'C' ESW pump replacement on October 1, 2019
- (2) Unit 2, division 2 repair of leaking relief valve on October 7, 2019
- (3) 2A residual heat removal service water pump motor replacement on October 21, 2019
- (4) Unit 1, reactor core isolation cooling system planned maintenance on October 29, 2019

#### 71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

##### Surveillance Tests (other) (IP Section 03.01) (1 Sample)

- (1) Unit Common, ESW 'A' Loop quarterly flow surveillance, on November 27, 2019

##### Inservice Testing (IP Section 03.01) (1 Sample)

- (1) Unit 1, division 2 core spray flow inservice test on October 17, 2019

#### 71114.02 - Alert and Notification System Testing

##### Inspection Review (IP Section 02.01-02.04) (1 Sample)

- (1) The inspectors evaluated the maintenance and testing of the alert and notification system on October 21 - 24, 2019, for the period of October 2017 through September 2019.

#### 71114.03 - Emergency Response Organization Staffing and Augmentation System

##### Inspection Review (IP Section 02.01-02.02) (1 Sample)

- (1) The inspectors evaluated the readiness of the Emergency Preparedness Organization on October 21 - 24, 2019.

#### 71114.04 - Emergency Action Level and Emergency Plan Changes

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

- (1) The inspectors evaluated the following submitted Emergency Action Level and Emergency Plan changes onsite on October 21-24, 2019:
  - E2018-10-30-01, E-RPM-004, EAL Classification Bases, Revision 15
  - E2019-04-03-01 and -02, E-RPM-004, EAL Classification Bases, Revision 16

This evaluation does not constitute NRC approval.

#### 71114.05 - Maintenance of Emergency Preparedness

##### Inspection Review (IP Section 02.01 - 02.11) (1 Sample)

- (1) The inspectors evaluated the maintenance of the emergency preparedness program on October 21 - 24, 2019, for the period of October 2017 through September 2019.

### **RADIATION SAFETY**

#### 71124.01 - Radiological Hazard Assessment and Exposure Controls

##### Contamination and Radioactive Material Control (IP Section 02.03) (1 Sample)

The inspectors evaluated licensee processes for monitoring and controlling contamination and radioactive material.

- (1) The inspectors verified the following sealed sources are accounted for and are intact:
  - 1986-0119, Cs137, 400 Ci
  - 1991-0076, Cs137, 400 Ci
  - 2010-0025, Cs137, 2115 Ci
  - 2011-0088, Cs137, 1161 Ci

#### 71124.02 - Occupational ALARA Planning and Controls

##### Radiological Work Planning (IP Section 02.01) (1 Sample)

The inspectors evaluated the licensee's radiological work planning.

- (1) The inspectors reviewed the following activities:
  - RWPs:
    - 20192001, Refuel Activities
    - 20192002, Refuel Activities
    - 20192003, Refuel Activities
    - 20192009, Jet Pump Modification and Repair
    - 20192126, Reactor Water Clean-UP
    - 20192320, Drywell Scaffold Activities

## 71124.03 - In-Plant Airborne Radioactivity Control and Mitigation

### Engineering Controls (IP Section 02.01) (1 Sample)

The inspectors evaluated airborne controls and radioactive monitoring.

- (1) The inspectors reviewed the following:

#### Installed Ventilation Systems

- Reactor building Refuel Floor

#### Temporary Ventilation System Setups

- none were available during this inspection

#### Portable or Installed Monitoring Systems

- AMS-4 Unit 1 Refuel Floor #0016
- AMS-4 Unit 2 Refuel Floor # 0031

### Use of Respiratory Protection Devices (IP Section 02.02) (1 Sample)

The inspectors evaluated the licensee's use of respiratory protection devices by:

- (1) Observing in-field applications; verifying the licensee validated the level of protection provided by the devices; inspecting the material condition of devices, reviewing records and certification of devices issued for use; reviewing the qualifications of workers that use the devices; and observing workers' donning, doffing, and testing devices.

### Self-Contained Breathing Apparatus for Emergency Use (IP Section 02.03) (1 Sample)

The inspectors evaluated self-contained breathing apparatus program implementation.

- (1) The inspectors reviewed the following:

#### Status and Surveillance Records for Self-Contained Breathing Apparatus

- BOTL-0031
- FHWK-0008
- FHWK-0022
- FHWK-0044

#### Self-Contained Breathing Apparatus Fit for On-Shift Operators

- Unit 1 On-Shift Supervisor
- Unit 2 On Shift Supervisor
- Mechanical Maintenance Technician

#### Self-Contained Breathing Apparatus Maintenance Check

- BOTL-0031
- FHWK-0008
- FHWK-0022
- FHWK-0044

## **OTHER ACTIVITIES – BASELINE**

### 71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

#### EP01: Drill/Exercise Performance (IP Section 02.12) (1 Sample)

- (1) July 1, 2018 - June 30, 2019

#### EP02: ERO Drill Participation (IP Section 02.13) (1 Sample)

- (1) July 1, 2018 - June 30, 2019

#### EP03: Alert & Notification System Reliability (IP Section 02.14) (1 Sample)

- (1) July 1, 2018 - June 30, 2019

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

- (1) Unit 1 (October 1, 2018- September 30, 2019)
- (2) Unit 2 (October 1, 2018- September 30, 2019)

#### MS10: Cooling Water Support Systems (IP Section 02.09) (2 Samples)

- (1) Unit 1 (October 1, 2018- September 30, 2019)
- (2) Unit 2 (October 1, 2018- September 30, 2019)

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

- (1) 4th Quarter 2017 through 3rd Quarter 2019

#### 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) 4th Quarter 2017 through 3rd Quarter 2019

### 71152 - Problem Identification and Resolution

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

- (1) The inspectors reviewed Susquehanna's corrective action program for trends that might be indicative of a more significant safety issue.

#### Annual Follow-up of Selected Issues (IP Section 02.03) (2 Samples)

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

- (1) Unit 1, compensatory measures for post-accident sampling system out-of-service

- (2) Loss of power to essential motor control center (MCC) 0B136 on May 22 and August 3, 2019 as documented in Condition Reports (CRs) 2019-10069 and 2019-07089

### 71153 - Followup of Events and Notices of Enforcement Discretion

#### Event Report (IP Section 03.02) (4 Samples)

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

- (1) Licensee Event Report 05000387(388)/2019-003-00, D Diesel Generator Inoperable due to Inadequate Post-Maintenance Test (ADAMS Accession No. ML19345F627). The enforcement aspects of this LER are dispositioned in the results section of this report.
- (2) Licensee Event Report 05000387(388)/2019-001-00, Loss of Both Control Structure Chillers (ADAMS Accession No. ML19199A057). The enforcement aspects of this LER are dispositioned in the results section of this report.
- (3) Licensee Event Report 05000387(388)/2019-001-01, Loss of Both Control Structure Chillers due to Misaligned Breaker Stab (ADAMS Accession No. ML19345F675). The enforcement aspects of this LER are dispositioned in the results section of this report.
- (4) Licensee Event Report 05000387(388)/2019-002-00, Inoperability of C Emergency Service Water Pump (ADAMS Accession No. ML19301C145). The enforcement aspects of this LER are dispositioned in the results section of this report.

### **INSPECTION RESULTS**

Licensee-Identified Non-Cited Violation	71111.11B
This violation of very low safety significance was identified by the licensee and has been entered into the licensee corrective action program and is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.	
<p>Violation: Title 10 CFR 50.74 (c) requires that each licensee notify the appropriate NRC Regional Administrator within 30 days of a permanent disability or illness as described in 10 CFR 55.25 involving a licensed operator or senior operator.</p> <p>10 CFR 55.25 requires, in part, that if a licensed operator develops a permanent physical condition that causes the licensee to fail to meet the requirements of 10 CFR 55.21, the facility must notify the NRC within 30 days of learning of the diagnosis. For conditions where a license condition is required, the facility licensee must provide medical certification on NRC Form 396, "Certification of Medical Examination by Facility Licensee."</p> <p>10 CFR 55.21 requires, in relevant part, that licensed operators must be determined to meet the requirements of 10 CFR 55.33(a)(1), which requires that an operator's medical condition and general health will not adversely affect the performance of assigned operator job duties or cause operational errors endangering public health and safety. 10 CFR 55.33(b) states, in relevant part, that the Commission may include conditions in the license to accommodate a medical defect.</p> <p>Contrary to the above, from July 30, 2019 to November 21, 2019, Susquehanna Nuclear, LLC failed to notify the Region I Regional Administrator within 30 days of a permanent disability or illness involving a licensed operator and did not provide medical certification on</p>	

an NRC Form 396 to request a condition in the licenses to accommodate the medical defect. Specifically, on July 30, 2019, an operator informed the licensee that they had been prescribed medication for a permanent disability or illness. However, Susquehanna did not report the change in permanent medical condition to the NRC or request an amended license with conditions to account for the disqualifying medical issue until November 21, 2019.

Significance/Severity: Severity Level IV. In accordance with Section 2.2.4 of the NRC Enforcement Policy, this issue is considered within the traditional enforcement process because the failure to inform the NRC of the change in an operator's medical condition impacts the ability of the NRC to perform its regulatory oversight function.

The inspectors evaluated the violation in accordance with the NRC Enforcement Policy and determined that it is appropriately characterized at Severity Level IV (SL IV) because it is similar to the SL IV example violation 6.4.d.1(d), describing an individual operator who met ANSI/ANS 3.4, Section 5, as certified on NRC Form 396, required by 10 CFR 55.23, but failed to report a condition that would have required a license restriction to establish or maintain medical qualification based on having the undisclosed medical condition. Specifically, the licensee appropriately restricted the operator from performing licensed duties when their medical staff first identified the change in the operator's medical condition; the operator did not return to licensed duties until proper medication was prescribed; and the licensee verified the operator has since been taking the medication as prescribed.

Corrective Action References: CR-2019-14611

#### Untimely Identification and Correction of Breaker Stab Misalignment Results In Subsequent Safety Bus Fault

Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000387,05000388/2019004-01 Open/Closed	[H.14] - Conservative Bias	71152

The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action." Specifically, Susquehanna failed to identify and correct a condition adverse to quality, associated with misalignment of Class 1E breaker 0B136-044 to safety-related electrical bus 0B136, that resulted in a repeat electrical bus (0B136) fault.

Description: Motor Control Center (MCC) 0B136 is a Class 1E engineered safeguard Division I 480VAC power source for both safety and non-safety electrical loads. It powers loads that are common to both Unit 1 and Unit 2; primarily for the Control Structure (CS) heating and ventilation systems. A loss of this electrical bus affects safety loads such as CS chillers, control room emergency outside air supply and floor cooling, and other loads such as essential lighting and the CS passenger elevator.

On May 22, 2019, the 'A' CS chiller tripped due to loss of power to MCC 0B136. The cause of the loss of power was the load center feeder breaker (1B230-023) tripped on overcurrent. At the time of the trip, the 'B' CS chiller was out of service for planned maintenance. The loss of both chillers required entry into multiple technical specification limiting conditions for operation (TS LCOs) and required the commencement of a dual unit shutdown. As a result, this was reported in Licensee Event Report 05000387(388)/2019-001-00, Loss of Both Control Structure Chillers on July 19, 2019 (ADAMS Accession No. ML19199A057). The power reduction was halted upon restoration of the 'A' CS Chiller. Susquehanna conducted an as-found inspection of the MCC and associated breakers. No



apparent damage was identified to the outside of MCC 0B136. However, Susquehanna found the MCC feeder breaker (1B203-023) and an essential lighting panel breaker (0B136-033) tripped. Bus 0B136 was placed on clearance (electrically isolated) to verify integrity of the bus. Electrical phase-to-phase and phase-to-ground megger measurements were satisfactory. This reasonably indicated no active ground on the 0B136 bus after the breaker trips. However, no breakers, except lighting panel breaker 0B136-033, were removed from the MCC to visually inspect the 0B136 bus bars and individual breakers.

Susquehanna conducted an apparent cause evaluation (ACE) as documented in CR-2019-07089. In summary, Susquehanna determined the most likely direct cause for the trip of 1B23-023 was a ground fault within MCC 0B136. Their analysis and testing of breaker coordination did not support a fault located downstream of 0B136-033. Susquehanna also determined the most likely apparent cause of the ground fault on bus 0B136 was latent foreign material within MCC 0B136. Two corrective actions were established to perform a cleaning and inspection at the next available maintenance window (Spring 2020) and to update the ACE after the clean and inspection. The inspectors determined that the first opportunity to inspect MCC 0B136 and associated breakers for damage and foreign material was during the initial investigation during the May 22, 2019, event when the MCC was on clearance (isolated).

On August 3, 2019, another loss of power to MCC 0B136 occurred. The cause was an overcurrent trip of the load center feeder breaker (1B230-023); similar to the May 22, 2019, event. The loss of power to bus 0B136 resulted in the loss of 'A' Standby Gas Treatment system, 'A' CS HVAC, 'A' CS Chiller, and Division 1 Battery Room ventilation and entry into multiple TS LCOs which required restoration of the MCC within eight hours or the commencement of a dual unit shutdown.

Susquehanna's as-found inspection of the MCC identified an acrid odor at the CS Passenger Elevator breaker (0B136-044). Due to the location of breaker 44 near the bottom, the ground panels were also removed for further damage assessment. Arc flash residue and bus bar damage was observed on the MCC back panel and on the 'A' phase breaker bucket disconnect stab once the breaker was removed. Breaker 44 had been installed since December 20, 2016.

Susquehanna conducted a root cause evaluation (RCE) and documented it in CR-2019-10069. In summary, Susquehanna determined the direct cause to be the 0B136-044 'A' phase breaker stab was misaligned on the vertical bus resulting in arcing conditions which worsened over time subsequently overheating at the bus bar connection and melting the spring clamp and stab clip. This also created the conditions for a fault on the MCC bus during the May 22nd event. The current was of such high magnitude and the material was either burned clear or moved with very little indication of fault location. Since the fault was on bus-side of 0B136, plant response for feeder breaker 1B230-23 to trip on overcurrent was as designed. Though the bus was electrically tested with satisfactory results and was reenergized in May, the August event provided a direct fault location (evidence of soot and debris) at the 'A' phase of the 0B136-044 cubicle stab connection to the vertical bus and clearly identified the misalignment of the breaker stab.

Additionally, Susquehanna documented the root cause of the misalignment to be vendor design differences between original design and newer style breaker stab assemblies that affected the self-aligning capability to ensure stab engagement on the bus bar. Though the design was accepted by Susquehanna under its engineering design process, the vendor

reported a 10 CFR 21.21(a)(2) deviation under Event #54311, dated October 4, 2019. As a result of their RCE, Susquehanna submitted an updated Licensee Event Report 05000387(388)/2019-001-01, Loss of Both Control Structure Chillers Due to Misaligned Breaker Stab on December 11, 2019 (ADAMS Accession No. ML19345F675).

Inspectors reviewed the loss of electrical bus 0B136 on May 22, 2019 and August 3, 2019 as documented in CR-2019-07089 and CR-2019-10069. The actions taken during the May 22, 2019 and the timeliness of the actions taken in response to the apparent cause evaluation were inadequate to prevent the August event.

Corrective Actions: For the bus fault on May 22, 2019, the suspect breaker (0B136-033) was racked out, inspected, and reinstalled. The load center feeder breaker (1B230-023) for bus 0B136 was inspected and replaced with a spare. Electrical testing verified no active bus fault on 0B136. An ACE was conducted. Preliminary cause was determined to be a ground fault on bus 0B136.

For the bus fault on August 3, 2019, Susquehanna removed the damaged breaker (0B136-044), inspected and assessed portions of the motor control center, and verified proper breaker stab to bus engagement locally. An RCE was conducted and determined the root cause to be vendor design differences between previous Cutler-Hammer and replacement Nuclear Logistics Industries assemblies affecting the primary disconnect cubicle stab self-aligning capability. Long-term corrective actions included verifying breaker to bus-bar alignment for affected breakers, supplementing maintenance procedures to prevent misalignment, and addressing a vendor reported failure to comply with specifications (Part 21, EN 54311), dated October 4, 2019. Susquehanna documented this issue in CR-2019-10303.

Corrective Action References: CR-2019-07089, CR-2019-10069, CR-2019-10303

Performance Assessment:

Performance Deficiency: Susquehanna's failure to adequately identify and correct a condition adverse to quality associated with a misalignment of class 1E breaker 0B136044 to safety-related electrical bus 0B136 after the May 22, 2019 event is considered a performance deficiency and reasonably within Susquehanna's ability to foresee and correct.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. This issue is also informed by IMC 0612, Appendix E, Example 4.g where the issue would be more than minor if the failure to implement corrective actions had a safety impact.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." The inspectors assessed the significance of the finding using IMC 0609, Appendix A, Exhibit 2, Section A, "Mitigating SCCs and Functionality," and determined that this performance deficiency (with respect to the response after the May 22, 2019 event) represented a design deficiency affecting operability of mitigating structures, systems, or components, did not represent a loss of system and/or function, did not represent an actual loss of one or more systems greater than its technical

specification allowed outage time or a high safety-significant system greater than 24 hours. Therefore, the finding was determined to be of very low safety significance (Green).

Cross-Cutting Aspect: H.14 - Conservative Bias: Individuals use decision making-practices that emphasize prudent choices over those that are simply allowable. A proposed action is determined to be safe in order to proceed, rather than unsafe in order to stop. Specifically, though no significant cause was determined during troubleshooting and analysis after the May 22, 2019 event, conservative assumptions were not used to determine whether emergent or unscheduled work can be conducted to take timely action to identify and address a safety-significant degraded condition. Susquehanna planned to wait until a planned 2020 outage to de-energize and inspect MCC breakers until another 0B136 bus fault on August 3, 2019 occurred.

Enforcement:

Violation: 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that conditions adverse to quality, such as deficiencies, are promptly identified and corrected. Contrary to this requirement, Susquehanna failed to adequately identify and correct a condition adverse to quality related to mis-alignment of breaker 0B136-044 onto electrical bus 0B136 after a fault condition and feeder breaker (1B23-023) trip occurred on May 22, 2019. The failure to adequately identify and correct the mis-aligned breaker and degrading breaker stab resulted in a subsequent 0B136 bus fault and feeder breaker trip on August 3, 2019. This repeat loss of safety-related bus 0B136 affected both operating units and required entry into multiple unplanned TS LCOs.

This violation closes LERs 50-000387(388)/2019-001-00, 01 documented in this report.

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

Observation: Annual Follow-up of Selected Issues – Unit 1 Post-Accident  
Sampling System out-of-service

71152

The inspectors performed an in-depth review of Susquehanna's evaluations and corrective actions to address issues with the Unit 1 post-accident sampling system following discovery that the system had been out-of-service from 2014 to 2017 with no verified compensatory measures, as documented in CR-2016-13141 and CR-2017-19279. The post-accident sampling system is not safety-related, however it is categorized as "equipment important to emergency response" because obtaining and analyzing a reactor coolant sample after an accident is one method of determining whether fuel damage has occurred, and if so, an estimate of the extent of damage. On November 8, 2017, Susquehanna identified that both the large- and small-volume sample points had been out-of-service since June 18, 2014. Station procedure EP-115, "Equipment Important to Emergency Response (EITER)," requires that with both sampling points out of service, compensatory measures must be verified to be in place. The compensatory measure consists of using an alternate calculational method of fuel damage assessment and is outlined in procedure EP-PS-324, "Fuels Lead Engineer/Core Thermal Hydraulics Engineer."

The inspectors determined that due to miscommunication with Chemistry staff, from June 2014 until November 2017, the Emergency Planning staff was unaware that verification of a compensatory measure was necessary. However, had an assessment of the fuel barrier status been needed, it still could have been calculated using procedure EP-PS-324

throughout the entire time period that the post-accident sampling system had been out of service.

The post-accident sampling system was out of service due to valve degradation, requiring valve replacement. This replacement could only be performed during a refueling outage, which is scheduled every two years. Post-maintenance testing is not possible until the plant is restored to normal conditions after the outage is completed. The condition was identified in June 2014, when the next opportunity for system repair was not until the 2016 refueling outage. Post-maintenance testing determined the repair had not been successful, but since the testing was performed after the 2016 outage was complete, the station could not attempt another repair until the next refueling outage in 2018. The inspectors confirmed that the system was repaired during the 2018 refueling outage and subsequently tested with satisfactory results.

In addition to correcting the material deficiency, Susquehanna performed an investigation of the cause of the miscommunication that resulted in the station being unaware of the need to verify compensatory measures. The station determined that the communication was due to lack of awareness of the significance of the post-accident sampling system because there were multiple errors in the procedure EP-115 list of important equipment. The errors included discrepancies between the equipment listed in EP-115 and the station's computerized system for identifying and tracking work performed on the equipment. Discrepancies included transcription errors that misidentified equipment, as well as omissions of some components from the computer database, or improper flagging within the system. Susquehanna performed a complete verification of the equipment listed in EP-115 and revised the procedure with a note stating that if other equipment is added to the list, it should also be verified as coded correctly in the computerized work planning and tracking system. Inspectors determined that Susquehanna's problem identification and corrective actions for this issue were timely and appropriate.

The failure to verify that compensatory measures were in place while the post-accident sampling system was out of service from June 2014 to November 2017 in accordance with EP-115 was a performance deficiency. The inspectors determined the performance deficiency was minor because it was similar to example 4a in IMC 0612, Appendix E, "Examples of Minor Issues," in that this was a procedural error that had no safety impact. Subsequent evaluation determined that the appropriate compensatory measures would have been in place even though they had not been verified.

Observation: Semiannual Trend Review	71152
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The inspectors performed a semi-annual review of site 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 Susquehanna in the corrective action program database, trend reports, site performance indicators, major equipment problem lists, system health reports, maintenance rule assessments, and maintenance or corrective action program backlogs. The inspectors also reviewed how Susquehanna's corrective action program evaluated and responded to individual issues identified by the NRC inspectors during routine plant walkdowns and daily CR reviews.

As-Found Unsatisfactory Test Results Overlooked

The inspectors noted three examples of missed opportunities to promptly address conditions adverse to quality when test results indicated a problem with equipment.

- The inspectors reviewed the circumstances and corrective actions related to the residual heat removal service water thermal pressure relief valves PSV-11213A/B and PSV-21213A/B. In the course of this inspection, the inspectors identified that the PSVs did not meet acceptance criteria in a majority (more than 67% for each valve) of their as-found tests, and that for one particular valve, PSV-21213B, the valve failed to meet acceptance criteria for each of the prior ten as-found tests. These valves initially were on a ten-year testing frequency, which was reduced to five years, and then two years. For the last ten as-found tests, these valves have been on a two-year test frequency, coinciding with refueling outages. ASME Code specifies that valve testing frequency may decrease or increase commensurate with equipment performance; however, the code does not specify additional reduction in test frequency due to continued poor performance of equipment. These unsatisfactory results and associated trend were not identified by the Susquehanna inservice test program until 2019 (CR-2019-05779), after approximately 19 years of data collection. Corrective actions are currently being determined and implemented.
- The inspectors reviewed the circumstances related to the degradation of the 'C' ESW pump into the Alert Range, as revealed during a quarterly flow surveillance on May 30, 2019, which was not identified by plant operators and was recorded as satisfactory. Had the extent of performance degradation been noted at the time, procedural requirements would have driven an increase in surveillance frequency as well as an engineering evaluation of the pump. Additionally, after 'C' ESW pump flow was noted to be significantly lower than 'D' pump flow during a tandem ESW pump run on July 22, 2019, CR 2019-09554 was generated to document the issue. However, the response to the CR noted that the data from the most recent surveillance had all been satisfactory, and concluded that an indication issue must be causing the pump flow to appear to be unusually low. No further action was taken at the time. The 'C' ESW pump continued to degrade and ultimately failed the next surveillance test on August 28, 2019. The inspectors dispositioned this issue as a Green NCV in the Results sections of this report.
- The inspectors reviewed the circumstances documented in CR-2019-12056, in which a chemistry surveillance was incorrectly signed off as satisfactory, when it was not properly completed with the required sample analysis equipment. On September 22, 2019, after the Unit 2 offgas flow exceeded a Limit 1 value, an analysis of the main condenser noble gas radioactivity was required to be performed within 4 hours per Technical Specification 3.7.5. Technicians obtained and measured a sample, the results of which showed the noble gas radioactivity levels to be within limits, however the technicians noted the measuring instrumentation had exceeded its calibration frequency. The technicians sought guidance from Operations supervision, however a miscommunication resulted in the sample being recorded as "satisfactory" when it should have been deemed "unsatisfactory" and operators should have entered Condition A of LCO 3.7.5. Condition A of LCO 3.7.5 requires restoring radioactivity rate to within limits in 72 hours or commencing a plant shutdown. On September 23, 2019, the detector was calibrated, and the as-found values were within 2% of the previous calibration, indicating that it had been performing accurately on September 22. An additional sample was drawn on September 23, and noble gas activity levels were again verified to be below required limits. Therefore, despite the failure to initially recognize the invalid surveillance results and enter the LCO, the technical specification limits for noble gas radioactivity were never actually exceeded. The failure to recognize the issue and enter the LCO was a performance deficiency, and a violation of Technical Specification 3.7.5. The inspectors determined this issue was administrative in nature and did not adversely affect the Public Radiation Safety cornerstone objective, and is therefore minor.

Inadequate procedural adherence for 'C' Emergency Service Water (ESW) pump flow surveillance			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000387,05000388/2019004-02 Open/Closed	[H.12] - Avoid Complacency	71153
<p>The inspectors documented a self-revealing Green finding and associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," when the licensee failed to accomplish an activity affecting quality in accordance with procedures and a violation of Technical Specification 3.7.2, Condition C, for exceeding the allowed outage time.</p> <p><u>Description:</u> The ESW system is a safety-related system, which is designed to provide a reliable source of cooling water to support operation of the emergency core cooling system, reactor core isolation cooling system, EDGs, the Unit 2 direct expansion units, and control structure chillers as needed during normal plant operation, transient plant operation, and under plant accident conditions. The safety function of the ESW system is to provide cooling water to the safety-related equipment following any credible accident, including the design basis loss of coolant accident, coincident with a loss of offsite power and any active single failure. The ESW system is designed to perform this safety function for a minimum of 30 days without makeup water. In addition, the system is designed to remain functional in the event of an operating basis earthquake or safe shutdown earthquake. There are two trains of ESW; 'A' train is comprised of 'A' and 'C' ESW pumps, and 'B' train consists of 'B' and 'D' ESW pumps.</p> <p>On August 28, 2019, while performing a quarterly flow surveillance of the 'C' ESW pump, the pump failed to meet acceptance criteria for differential pressure. The differential pressure values are used to determine whether or not sufficient driving head is present within the system to provide cooling water. During the previous quarterly flow surveillance on May 30, 2019, the differential pressure was in the alert range, however, this was not identified by plant operators at the time, and instead was marked satisfactory. On July 22, 2019, during a tandem ESW run with 'C' and 'D' ESW pumps in service, the 'C' pump flow was noted to be significantly lower than 'D' pump flow, as documented by CR- 2019-09554. This discrepancy was not attributed to 'C' ESW pump degradation, using the justification that the previous surveillance on May 30, 2019, was satisfactory.</p> <p>Based on the August 2019 failure to meet acceptance criteria, Susquehanna reviewed the previous test data and recognized that the May 2019 data should have been identified via their corrective action program and evaluated by station engineering.</p> <p>Corrective Actions: The 'C' ESW pump was declared inoperable, a repair plan was initiated, and the pump was returned to operable status.</p> <p>Corrective Action References: CR-2019-11060, CR-2019-11063, CR-2019-11120</p>			

Performance Assessment:

**Performance Deficiency:** The failure to identify and evaluate the surveillance test data from May 30, 2019, was a performance deficiency because it was within Susquehanna's ability to reasonably foresee and correct. Susquehanna's procedure SO-054-A08, Attachment A, Revision 12, "Comprehensive ESW Flow Verification Loop A," defines pump differential pressure acceptance criteria. Attachment E step 1.1 of the same procedure states, in part, that if pump differential pressure and/or pump vibration are within the alert range, to generate an action request identifying parameters within the alert range for station engineering to investigate. On May 30, when SO-054-A08 was performed, the 'C' ESW pump differential pressure was within the alert range, but was not properly identified and no action request, CR, or engineering evaluation was performed. Additionally, in section ISTB-6200 of the 2006 addended version of the 2004 ASME OM Code, the revision to which Susquehanna is committed, it is stated, in part, that if measured test parameter values fall within the alert range, then the frequency of testing shall be doubled until the cause is determined and condition is corrected. Susquehanna did not change their surveillance frequency until the subsequent August 28, 2019, failure to meet acceptance criteria.

**Screening:** The inspectors determined the performance deficiency was more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. This determination was informed by IMC 0612, Appendix E, Example 2.c, which states the violation is more than minor if the subsequent tests revealed degradation into the action range after additional testing is not performed after exceeding the test procedure alert levels.

**Significance:** The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." This finding was determined to be Green because it did not involve a deficiency affecting the design or qualification of a mitigating structure, system, or component, did not represent the loss of a system and/or function, did not represent an actual loss of function of a train for longer than its technical specification allowed outage time, and did not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significant for greater than 24 hours. While the inoperable condition resulted in exceeding the technical specification allowed outage time for a train, there was sufficient margin on the system to provide flow to the heat loads such that actual loss of system function on a train as assumed in the accident analysis did not occur.

**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. The section of the SO-054-A08 procedure for identifying parameters outside the acceptable range was marked "NO" resulting in "N/A" for the applicable sections that would have required additional actions for being in the alert range. An appropriate error reduction tool, such as peer-checking, could have prevented this oversight. In addition, as documented in CR-2019-09554, there was an opportunity to identify the error, but the issue was closed without reviewing the data.

Enforcement:

**Violation:** Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," requires, in part, that activities affecting quality be prescribed with defined procedures and be accomplished in accordance with these procedures. Contrary to the

above, on May 30, 2019, Susquehanna did not accomplish an activity affecting quality in accordance with procedures. Specifically, the surveillance test of 'C' ESW pump was not accomplished with completion of all applicable sections of SO-054-A08. Subsequently, the next flow surveillance test revealed further degradation of the pump and resulted in a failure to meet acceptance criteria, inoperability of the pump, and adversely impacted its availability and capability. Additionally, the failure to recognize the degradation of the 'C' ESW pump in May resulted in a violation of Technical Specification 3.7.2, Condition C, due to the inoperable condition exceeding the allowed outage time of 7 days as described in LER 2019-002-00.

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

Minor Violation	71153
<p>Minor Violation: The inspectors determined that the cause of the condition described in LER 50-387(388)/2019-003-00 was reasonably within the licensee's ability to foresee and correct and therefore was a performance deficiency. Specifically, On September 17, 2019, Susquehanna failed to implement procedure NDAP-QA-0482, Revision 8, Post Maintenance Testing, Section 4, which specifies, in part, that station personnel shall identify and perform adequate operability testing. Contrary to this requirement, Susquehanna did not include a post-maintenance run of the 'D' EDG after performing maintenance on the air start system, which resulted in the governor remaining in a depressurized state. Subsequently, during the next scheduled monthly operability test on October 13, 2019, 'D' EDG did not meet acceptance criteria for start time due to system response of the depressurized governor.</p> <p>Screening: The inspectors determined the performance deficiency was minor. Technical Specification 3.8.1, Condition B, requires operability of the EDGs, and the associated surveillance requirement 3.8.1.7 specifies 10 seconds to start and load. With the governor depressurized on 'D' EDG, the recorded start time was 10.75 seconds. While this start time exceeded the technical specification requirement for operability, inspectors determined that this condition would not worsen or degrade further, and also that the slow start would not have an actual impact on safety when considering the margin to the 'D' EDG performing its safety-related function. Inspectors considered the exposure time of this condition (26 days), however, at no time was the actual safety-related function of the diesel challenged. Specifically, the accident analyses assume that the EDG will reach rated voltage and frequency within 25.1 seconds. Therefore, inspectors determined that this issue was not more than minor.</p> <p>Enforcement: Compliance with Technical Specification 3.8.1 was restored on October 13, 2019. Susquehanna has implemented corrective actions to address the adequacy of post-maintenance activities in the future. This failure to comply with Technical Specification 3.8.1 constitutes a minor violation that is not subject to enforcement action in accordance with the NRC's Enforcement Policy.</p>	

## EXIT MEETINGS AND DEBRIEFS

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

- On January 16, 2020, the inspectors presented the integrated inspection results to Mr. Kevin Cimorelli and other members of the licensee staff.



## DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.15	Corrective Action Documents	CR-2019-12039	Chemistry Gamma Spec Counting System Inop	09/24/2019
		CR-2019-12056	SC-243-101 for U2 Off Gas Flow Exceeding Lim 1 Value Incorrectly Signed off as Satisfactory	09/24/2019
		CR-2019-13565	Inverter ES-E51-1K603 out of as found tolerance	10/28/2019
		CR-2019-15118	'A' CS HVAC fan discharge damper HDO7801A has dual indication while fan I/S	12/02/2019
71111.22	Procedures	SO-054-A03	Quarterly ESW Flow Verification LOOP A	Revision 20
71114.04	Procedures	EP-102	Review, Revision, and Distribution of SSES Emergency Plan and 50.54(q) Evaluations	Revision 9
71114.05	Corrective Action Documents	CR-2018-14650, CR-2018-14646, CR-2018-07312, CR-2018-08102, CR-2019-06606, CR-2019-07320, CR-2019-08369, CR-2019-08288		
	Corrective Action Documents Resulting from Inspection	AR-2019-13395, AR-2019-13396, CR-2019-13356		
	Miscellaneous		Susquehanna Steam Electric Station Development of Evacuation Time Estimates	November 2012
			Susquehanna Steam Electric Station 2018 Population Update Analysis	November 2018
	Procedures	EP-115	Equipment Important to Emergency Response	Revision 13
71124.01	Corrective Action Documents Resulting from Inspection	AR-2019-14113	CR-2019-13489 did not identify cause of floor drain contamination and steps to prevent reoccurrence	
		AR-2019-14144	Lock on Shepherd Irradiator	
71124.02	Procedures	HP-AL-400	RWP, ALARA Reviews, and Evaluations	23
71124.03	Corrective Action	AR-2019-14026	Facial Hair Standard	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Documents Resulting from Inspection	AR-2019-14103	Respiratory Protection Self Assessment not Complete	
		AR-2019-14130	Properly sized respirators in control room	
	Procedures	EP-00-006	Inventory, Inspection, and Operational Testing of Emergency Equipment and Supplies	8
		HP-TP-116	Operation and Use of the Eagle Air Compressor and Safe Station Bottle Fill Station	13
		HP-TP-720	Airborne Concentration Sampling and Evaluation	44
		HP-TP-758	Inspection and Testing of Respiratory Protection Equipment	28
		HP-TP-759	Inspection and Testing of Firehawk SCBA Protective Equipment	6
		RP-151-1003	Air Sampling of Potential Release Points	5
71151	Corrective Action Documents Resulting from Inspection	CR-2019-13431		
		CR-2019-15798	NRC question on MSPI basis for ESW pump unavailability reporting	12/18/2019
	Miscellaneous		SSES mitigating System Performance Index Basis Document	Revision 9
71152	Corrective Action Documents	CR-2016-13141	Unable to obtain U1 PASS Large volume sample	05/19/2016
		CR-2017-19244	Errors found with EP-115 EITER and NIMS Flags	11/09/2017
		CR-2019-07089	Apparent Cause Evaluation	Revision 1
		CR-2019-10069	Root Cause Evaluation	Revision 2
	Corrective Action Documents Resulting from Inspection	CR-2019-10303		
		CR-2019-13278	Door-628R does not latch	10/21/2019
		CR-2019-13348	NRC Resident Questioned Storage of Ladder in the ESW Pumphouse	10/22/2019
	Engineering Changes	EC 820760	Generic ECO for 480V MCC Bucket Replacement	11/01/2007
	Engineering Evaluations	Design Considerations Applicability	Failure Modes and Effects Analysis No. 81	03/01/2007
		RIR 141232	Receipt Inspection Report 480V NLI Breakers (which includes breaker 0B136-044)	11/16/2007
	Miscellaneous	CARB Agenda		10/22/2019

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		and Minutes		
		Color Image of Breaker Stab Alignment	Example Image from Inspection Boroscope	10/22/2019
		CR-2019-07089	ICES Report	07/08/2019
		E-1116	Procurement Specification for Motor Control Center Replacement Units and Components	Revisions 3 and 6
		SSES White Paper	Loss of 0B136 on 5/22/19 and 8/3/19	08/13/2019
	Procedures	EP-115	Equipment Important to Emergency Response (EITER)	Revision 11
		EP-PS-324	Fuels Lead Engineer/Core Thermal Hydraulics Engineer	Revision 21
		LS-120	Issue Identification and Screening Process	Revision 11
		MT-GE-051	Initial Inspection, Testing, and Installation of NLI 480VAC MCC Cubicles	Revision 2
	71153	CR-2019-07089	Apparent Cause Evaluation	Revision 1
		CR-2019-09554	A Loop ESW flow is low	07/22/2019
		CR-2019-10069	Root Cause Evaluation	Revision 2
		CR-2019-11060	C ESW pump failed acceptance criteria	08/28/2019
		CR-2019-11290		
		CR-2019-11806		
		CR-2019-12905	D D/G failed start time criteria	10/13/2019
	Miscellaneous	EN 54311	Event Notification - Part 21 AZZ Nuclear Group	10/04/2019
	Procedures	NDAP-QA-0482	Post Maintenance Testing	Revision 8