



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

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

May 5, 2021

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 05000387/2021001 AND  
05000388/2021001**

Dear Mr. Berryman:

On March 31, 2021, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Susquehanna Steam Electric Station, Units 1 and 2. On April 29, 2021, the NRC inspectors discussed the results of this inspection with Mr. Derek Jones, Plant Manager, and other members of your staff. The results of this inspection are documented in the enclosed report.

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

If you contest the violation or the significance or severity of the violation documented in this inspection report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region 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/

---

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

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

Enclosure:  
As stated

cc w/ encl: Distribution via LISTSERV®

SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2 –  
 INTEGRATED INSPECTION REPORT 05000387/2021001 AND  
 05000388/2021001 DATED MAY 5, 2021

**DISTRIBUTION:**

JGreives, DORS  
 LCasey, DORS  
 ZCoffman, DORS  
 TCorcoran, DORS  
 EGarcia, DORS  
 CHighley, DORS, SRI  
 MRossi, DORS, RI  
 DHochmuth, DORS, AA  
 MHaire, RI OEDO  
 RidsNrrPMSusquehanna Resource  
 RidsNrrDorlLpl1 Resource  
 ROPreports Resource

DOCUMENT NAME: [https://usnrc.sharepoint.com/teams/Region-I-Branch-4/Shared Documents/Inspection Reports/Susquehanna/2021/1Q/SUS2021\\_001 FINAL.docx](https://usnrc.sharepoint.com/teams/Region-I-Branch-4/Shared Documents/Inspection Reports/Susquehanna/2021/1Q/SUS2021_001 FINAL.docx)

**ADAMS ACCESSION NUMBER: ML21125A253**

<input checked="" type="checkbox"/> SUNSI Review		<input checked="" type="checkbox"/> Non-Sensitive <input type="checkbox"/> Sensitive		<input checked="" type="checkbox"/> Publicly Available <input type="checkbox"/> Non-Publicly Available	
OFFICE	RI/DORS	RI/DORS	RI/DORS		
NAME	CHighley	LCasey	JGreives		
DATE	5/4/21	5/4/21	5/5/21		

OFFICIAL RECORD COPY

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

Docket Numbers: 05000387 and 05000388

License Numbers: NPF-14 and NPF-22

Report Numbers: 05000387/2021001 and 05000388/2021001

Enterprise Identifier: I-2021-001-0084

Licensee: Susquehanna Nuclear, LLC

Facility: Susquehanna Steam Electric Station, Units 1 and 2

Location: Berwick, PA 18603

Inspection Dates: January 1, 2021, to March 31, 2021

Inspectors: C. Highley, Senior Resident Inspector  
M. Rossi, Resident Inspector  
E. Eve, Senior Reactor Inspector

Approved By: Jonathan E. Greives, Chief  
Reactor 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.

### List of Findings and Violations

Criterion III, Design Control, for Failure to Install Quality Components in Battery Room Exhaust Fans			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000387, 05000388/2021001-01 Open/Closed	[H.5] - Work Management	71111.12
A Green, non-cited violation of Title 10 of the <i>Code of Federal Regulations</i> (10 CFR) Part 50, Appendix B, Criterion III, Design Control, was identified by inspectors when inspection activities revealed that a non-dedicated, non-quality controlled belt was installed on the 'B' battery room exhaust fan.			

### Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
LER	05000387/2020-001-00	LER 2020-001-00 for Susquehanna Steam Electric Station, Unit 1, Automatic Reactor Scram Due to Main Turbine Trip	71153	Closed
LER	05000387/2020-001-01	LER 2020-001-01 for Susquehanna Steam Electric Station, Unit 1, Automatic Reactor Scram Due to Main Turbine Trip Caused by an Electrical Ground Path in the B Main Transformer	71153	Closed
LER	05000387/2020-003-00	LER 2020-003-00 for Susquehanna Steam Electric Station, Unit 1, Condition Prohibited by Technical Specifications Due to Inoperable Turbine Stop Valve and Turbine Control Valve Instrumentation	71153	Closed

## **PLANT STATUS**

Unit 1 began the inspection period at or near rated thermal power. On January 8, 2021, the unit was down powered to 78.5 percent for rod sequence exchange/rod pattern adjustment. The unit was returned to 100 percent power on January 9, 2021. On February 5, 2021, the unit was down powered to 97 percent for rod pattern adjustment. The unit was returned to 100 percent power on February 5, 2021. On March 11, 2021, the unit was down powered to 78.8 percent for rod pattern adjustment supporting turbine valve testing. The unit was returned to 100 percent power on March 11, 2021. On March 18, 2021, the unit was down powered to 74.2 percent for scram testing/rod sequence exchange/rod pattern adjustment. The unit was returned to 100 percent power on March 21, 2021. On March 21, 2021, the unit was down powered to 88 percent for rod pattern adjustment. The unit was returned to 100 percent on March 21, 2021. On March 31, 2021, the unit was down powered to 97 percent for rod pattern adjustment. The unit was returned to 100 percent on March 31, 2021.

Unit 2 began the inspection period at or near rated thermal power. On January 3, 2021, the unit down powered to 82.5 percent for a rod pattern adjustment. The unit was returned to 97.5 percent power on January 3, 2021, and commenced a coast down to its next refueling outage U2RIO20. On March 21, 2021, the unit commenced a down power from 69 percent. The unit was at zero percent and shutdown on March 22, 2021, for refueling.

## **INSPECTION SCOPES**

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

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

## **REACTOR SAFETY**

### 71111.01 - Adverse Weather Protection

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

- (1) The inspectors evaluated the adequacy of the overall preparations to protect risk-significant systems from impending severe weather of a Nor Easter snowstorm on January 31, 2021.

### 71111.04 - Equipment Alignment

#### Partial Walkdown (IP Section 03.01) (6 Samples)

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

- (1) Unit 2, emergency core cooling systems during a 'B' core spray system outage window on January 12, 2021
- (2) Unit 1, high-pressure coolant injection and reactor core isolation cooling systems prior to bus 0A106 work on February 2, 2021
- (3) Unit Common, 'B' and 'D' emergency diesel generators during bus 0A106 work on February 4, 2021
- (4) Unit 1, high-pressure coolant injection during repair of reactor core isolation cooling valve F045 on February 10, 2021
- (5) Unit 2, division 2 core spray on March 16, 2021
- (6) Unit 2, division 1 residual heat removal system prior to establishment of shutdown cooling on March 21, 2021

### 71111.05 - Fire Protection

#### Fire Area Walkdown and Inspection (IP Section 03.01) (6 Samples)

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

- (1) Unit 1, control structure upper relay room, 754-foot elevation, fire zone 0-27E, on February 3, 2021
- (2) Unit 2, standby liquid control piping penetration room, 749-foot elevation, fire zone 2-5E, on March 9, 2021
- (3) Unit 1, load center room, 779-foot to 799-foot elevations, fire zone 1-6B, on March 12, 2021
- (4) Unit 2, core spray pump rooms for A and B, 645-foot elevation, fire zones 2-1A and 2-1B, on March 12, 2021
- (5) Unit 1, 4kV load center rooms, 749-foot elevation, fire zones 1-5F and 1-5G, on March 17, 2021
- (6) Unit 2, drywell, 704-foot to 779-foot elevations, fire zone 2-4F, on March 23, 2021

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

- (1) The inspectors evaluated the onsite fire brigade training and performance during an unannounced fire drill on January 30, 2021.

71111.08G - Inservice Inspection Activities (Boiling-Water Reactor)

Boiling-Water Reactor Inservice Inspection Activities - Nondestructive Examination (NDE) and Welding Activities (IP Section 03.01) (1 Sample)

- (1) The inspectors verified that the reactor coolant system boundary, reactor vessel internals, risk-significant piping system boundaries, and containment boundary were appropriately monitored for degradation and that repairs and replacements were appropriately fabricated, examined, and accepted by reviewing the following activities starting March 29, 2021:

03.01.a - NDE and Welding Activities

1. Visual Examination (VT-3) of Containment External Concrete Surfaces, NDE Report Nos. VT-21-006, VT-21-007, VT-21-008, and VT-21-009
2. Visual Examination (VT-3) of Reactor Core Isolation Cooling Turbine Internal Surface and Shaft Inspection for License Renewal, NDE Report No. BOP-VT-21-069
3. In-Vessel Visual Examination of the Steam Dryer and Top Guide Grid, NDE Report Nos. IVVI-21-03 and IVVI-21-04
4. Ultrasonic Examination of Reactor Recirculation Weld, VRRB313-10-C, NDE Report No. UT-21-004
5. Ultrasonic Examination of Reactor Water Cleanup Bottom Head Drain Expander, DBA-221-1-9652-X, NDE Report No. FAC-U2-21-058
6. Repair/Replacement Activity
  - a. Replace 250F047 Reactor Core Isolation Cooling Discharge Check Valve, Work Order 2276083

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 refueling outage U2RIO20 plant shut down on March 21, 2021.

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

- (1) The inspectors observed and evaluated a licensed operator regualification simulator exam on January 14, 2021.



## 71111.12 - Maintenance Effectiveness

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

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

- (1) Unit 1, fire protection pipe hanger corrosion on the 656-foot level sump room due to ground water intrusion on March 8, 2021

### Quality Control (IP Section 03.02) (1 Sample)

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

- (1) Unit Common, battery room exhaust fans 0V116A and 0V116B, after failure of 0V116A and subsequent identification of non-quality components being used on December 29, 2020

## 71111.13 - Maintenance Risk Assessments and Emergent Work Control

### Risk Assessment and Management (IP Section 03.01) (10 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 2, yellow risk during automatic depressurization level testing and containment instrument gas bottle bank work on January 5, 2021
- (2) Unit 1, yellow risk during bus 0A106 work commencing on February 3, 2021
- (3) Unit Common, elevated risk during 'E' emergency diesel generator swap-in on February 12, 2021
- (4) Unit 2, elevated risk during overlapping work and system outages on February 18, 2021
- (5) Units 1 and 2, yellow risk due to inoperability of 'A' emergency diesel generator while 'E' emergency diesel generator unavailable on February 23, 2021
- (6) Unit 1, moisture separator drain tank dump valve air line fretting failure temporary repair on March 3, 2021
- (7) Unit 2, residual heat removal logic functional test elevated risk activity on March 16, 2021
- (8) Unit 2, yellow risk for de-inerting the drywell 24 hours prior to planned shutdown to refueling outage U2RIO20 on March 23, 2021
- (9) Unit 2, yellow shutdown risk during design basis testing (loss of coolant and loss of offsite power) on March 24 to 25, 2021
- (10) Unit 1, yellow risk window for the division 1 emergency service water pipe replacement on March 25, 2021

### 71111.15 - Operability Determinations and Functionality Assessments

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

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

- (1) Unit Common, Blue Max station portable diesel generator engine block heater failed to maintain proper temperature on December 20, 2020
- (2) Unit 2, reactor protection system test box did not respond as expected during turbine control valve testing on December 21, 2020
- (3) Unit 1, reactor core isolation cooling steam supply valve leaking steam as referenced in CR-2021-01838 on February 3, 2021
- (4) Unit 2, Turbine Building closed cooling water to emergency service water/service water cross over pipe pinhole leak on February 23, 2021
- (5) Unit 1, high-pressure coolant injection turbine exhaust 1B vacuum breaker valve (HV-155-F079) failed stroke time on March 9, 2021

### 71111.18 - Plant Modifications

#### Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (1 Sample)

The inspectors evaluated the following temporary or permanent modifications:

- (1) Unit Common, temporary modification for battery room exhaust fans 0V116A and 0V116B using non-quality belts in lieu of quality belts

### 71111.19 - Post-Maintenance Testing

#### Post-Maintenance Test (IP Section 03.01) (7 Samples)

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

- (1) Unit Common, battery room exhaust fan 0V116A belt replacement on January 7, 2021
- (2) Unit Common, 'B' control structure chiller repair on January 12, 2021
- (3) Unit 2, core spray pump 2B system outage window flow verification test (SO-251-B02) on January 13, 2021
- (4) Unit 1, reactor core isolation cooling valve F045 repair on February 11, 2021
- (5) Unit Common, 'E' emergency diesel generator mid-cycle overhaul commencing February 12, 2021
- (6) Unit 0, 'A' emergency diesel generator forced outage due to auto shutdown when securing after performance of monthly run (SO-024-001A) on February 23, 2021
- (7) Unit 1, 1A moisture separator drain tank emergency dump valve (LV-10231A) and 3C feedwater heater emergency dump valve (HV-10444C) air line temporary pipe patch installation on March 3, 2021

#### 71111.20 - Refueling and Other Outage Activities

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

(1) (Partial)

The inspectors evaluated refueling outage U2RIO20 activities from March 21, 2021, to March 31, 2021. The inspectors completed IP Section 03.01, Sections A and B, and completed some portions of Section 03.01, Section C.

#### 71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

##### Surveillance Tests (other) (IP Section 03.01) (6 Samples)

- (1) Unit Common, 'A' emergency diesel generator 24-hour run on February 22, 2021
- (2) Unit Common, 'A' loop emergency service water quarterly flow surveillance on February 25, 2021
- (3) Unit Common, 'E' emergency diesel generator monthly surveillance on March 10, 2021
- (4) Unit 1, turbine valve cycling surveillance on March 11, 2021
- (5) Unit 2, 2-year residual heat removal logic functional test on March 16, 2021
- (6) Unit 2, 2-year high-pressure coolant injection logic functional test, SQ-252-102, on March 19, 2021

##### Inservice Testing (IP Section 03.01) (3 Samples)

- (1) Unit 2, reactor core isolation cooling quarterly flow verification on January 28, 2021
- (2) Unit 2, 'B' loop residual heat removal comprehensive flow surveillance on February 10, 2021
- (3) Unit 1, high-pressure coolant injection flow surveillance (SO-152-002, Revision 74) on March 10, 2021

#### 71114.06 - Drill Evaluation

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

- (1) The inspectors evaluated focus area drills for the technical support center/operations support center on March 2, 2021, and the emergency operations facility on March 9, 2021.

## **OTHER ACTIVITIES – BASELINE**

### 71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

#### IE01: Unplanned Scrams per 7000 Critical Hours (IP Section 03.01) (2 Samples)

- (1) Unit 1 (January 1, 2020, to December 31, 2020)
- (2) Unit 2 (January 1, 2020, to December 31, 2020)

#### IE03: Unplanned Power Changes per 7000 Critical Hours (IP Section 03.02) (2 Samples)

- (1) Unit 1 (January 1, 2020, to December 31, 2020)
- (2) Unit 2 (January 1, 2020, to December 31, 2020)

#### IE04: Unplanned Scrams with Complications (IP Section 03.03) (2 Samples)

- (1) Unit 1 (January 1, 2020, to December 31, 2020)
- (2) Unit 2 (January 1, 2020, to December 31, 2020)

### 71153 - Followup 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 05000387/2020-001-00 and LER 05000387/2020-001-01, Automatic Reactor Scram Due to Main Turbine Trip Caused by an Electrical Ground Path in the B Main Transformer (ADAMS Accession No. ML20183A146 and ML20310A258): The inspectors determined that it was not reasonable to foresee or correct the cause discussed in the LER; therefore, no performance deficiency was identified. The inspectors did not identify a violation of NRC requirements.
- (2) LER 05000387/2020-003-00, Condition Prohibited by Technical Specifications Due to Inoperable Turbine Stop Valve and Turbine Control Valve Instrumentation (ADAMS Accession No. ML20356A217): The inspectors evaluated the LER and determined that there was a violation of Technical Specification 3.0.4 on May 9, 2020, and the violation was documented in Susquehanna Steam Electric Station Integrated Inspection Report 05000387 and 05000388/2020002 (ADAMS Accession No. ML20224A179) in the Inspection Results section, Non-Cited Violation 05000387/2020002-01. No further performance deficiencies or violations of NRC regulations were determined.

## INSPECTION RESULTS

Criterion III, Design Control, for Failure to Install Quality Components in Battery Room Exhaust Fans			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000387,05000388/2021001-01 Open/Closed	[H.5] - Work Management	71111.12
<p>A Green, non-cited violation of Title 10 of the <i>Code of Federal Regulations</i> (10 CFR) Part 50, Appendix B, Criterion III, Design Control, was identified by inspectors when inspection activities revealed that a non-dedicated, non-quality controlled belt was installed on the 'B' battery room exhaust fan.</p> <p><u>Description:</u> The battery room exhaust system functions to maintain the battery room design temperature, design pressure, and hydrogen concentration within limits. The battery room exhaust system consists of two independent, redundant subsystems consisting of fans, ductwork, dampers, and instrumentation and controls. The two safety-related fans, 0V116A (A fan) and 0V116B (B fan), each can provide the required air flow and use internal quality controlled class drive belts which connect the motor to the fan. By original design, the battery room exhaust fans relied upon using AX53, the quality controlled belt designated for this application.</p> <p>In 2015, as documented in CR-2015-24859, the licensee discovered the use of non-quality controlled B52 belts in the battery room exhaust fans. At the time, the station completed a screening pursuant to 10 CFR Part 50.59, "Changes, Tests, and Experiments," due to the use of the non-quality controlled component. However, the station did not complete an engineering evaluation or engineering change document under the basis that these belts would not be used for this purpose in the future and assigned corrective actions to replace the non-quality controlled B52 belt with the appropriate quality controlled AX53 belt. In 2016, the corrective action to replace the B52 belts with the AX53 belts was completed. As part of the belt replacement, re-tensioning is required after 24 hours of run time. As documented in CR-2017-00265, the station failed to re-tension the belt in the 'A' fan; and as a result, belt replacement was required. As described in AR-2017-00266, the station reverted to the non-quality controlled B52 belts and performed a commercial dedication of the non-quality controlled belt.</p> <p>In December 2020, the 'B' fan exhibited equipment issues; and a work order (RTPM 2306756) was required for the replacement of the installed AX53 belt. During the maintenance of the 'B' fan, station planning and maintenance staff were uncertain if the non-quality controlled B52 belt was allowed to be installed. After performing a document review, they identified in 2017 that a non-quality controlled B52 belt was installed in the 'A' fan, but did not investigate further as to why, or recognize the presence of the 2016 corrective action to preclude usage of the non-quality controlled B52 belt in the battery room exhaust fans. The licensee reverted to using the non-quality controlled B52 belt.</p> <p>Shortly thereafter, as documented in CR-2020-17291, the station identified that the 'A' fan had thrown one of its installed belts. During the condition report and work order review, the NRC inspectors could not determine if the station had dedicated the non-quality controlled B52 belt installed in the 'B' fan during the December 2020 maintenance. As documented in CR-2021-00407, it was revealed that the non-quality controlled B52 belts were incorrectly</p>			

installed in both fans contrary to the 2015 decision to only use the quality controlled AX53 belts. It was revealed through subsequent discussions with the licensee that the non-quality B52 belt installed in the 0V116B fan was not dedicated.

**Corrective Actions:** The station assigned corrective actions to return the battery exhaust fans to original design by reinstalling AX53 belts, is developing an engineering evaluation to identify and ensure the proper belts are installed in future application, and is evaluating the preventative maintenance strategy.

**Corrective Action References:** CR-2021-00407, AR-2020-17299

**Performance Assessment:**

**Performance Deficiency:** The failure to ensure quality controlled components were installed in the battery room exhaust fans was a performance deficiency because it was within the licensee's ability to foresee and correct and should have been prevented. Specifically, the licensee's procedure NEPM-QA-0300, Revision 4, "Dedication of Commercial Grade Items and Services," specifies requirements for commercial grade dedication of components used in safety-related applications. The substitution of the non-quality controlled B52 belt should have resulted in the completion of a commercial grade dedication and verification that the component could meet all specified design functions; however, the inspectors identified that the licensee failed to complete the evaluation and dedication processes to ensure the function of the battery room exhaust fans could be maintained.

**Screening:** The inspectors determined the performance deficiency was more than minor because it was associated with the Design Control 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 5.c, because the non-conforming component was installed and the system was returned to service and the extent of condition revealed additional non-conformances. Specifically, the degraded condition of the 'A' fan resulted in discovery that both trains of the system had been operating with components outside the original design scope, and the maintenance shortly prior to this had resulted in installation of a non-quality controlled component that was not commercially dedicated.

**Significance:** The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process for Findings At-Power." This finding was determined to be Green because it is a deficiency affecting the design or qualification of a mitigating structure, system, and component and the system maintained its operability.

**Cross-Cutting Aspect:** H.5 - Work Management: The organization implements a process of planning, controlling, and executing work activities such that nuclear safety is the overriding priority. The failure of maintenance to coordinate and communicate belt replacement with the engineering work group in 2020 allowed a non-dedicated, non-quality belt to be installed inappropriately.

**Enforcement:**

**Violation:** 10 CFR Part 50, Appendix B, Criterion III, Design Control, requires, in part, that design changes, including field changes, shall be subject to design control measures commensurate with those applied to the original design and be approved by the organization that performed the original design unless the applicant designates another responsible

organization. Contrary to the above, the licensee did not implement approved design control measures commensurate with those applied to the original design. Specifically, in December 2020, when the licensee performed maintenance on the 'B' fan and replaced the battery room exhaust fan belt, they did not use the approved quality controlled belt and did not perform commercial grade dedication.

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

## **EXIT MEETINGS AND DEBRIEFS**

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

- On April 8, 2021, the inspectors presented the inservice inspection results to Mr. Kevin Cimorelli, Site Vice President, and other members of the licensee staff.
- On April 29, 2021, the inspectors presented the integrated inspection results to Mr. Derek Jones, Plant Manager, and other members of the licensee staff.

## DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.04	Drawings	E105952	Unit 2 P&ID Core Spray	Revision 26
71111.05	Corrective Action Documents	AR-2021-01559		
		AR-2021-01565		
		CR-2021-01557		
		CR-2021-01562		
		CR-2021-01563		
	Corrective Action Documents Resulting from Inspection	AR-2021-01563		
		CR-2021-01566		
		CR-2021-01567		
	Fire Plans	CR-2021-01568		
		FP-013-164	Unit 1 Upper Relay Room, FZ 0-27E, Control Structure, El. 754	Revision 7
		FP-113-123	Load Center Room (I-507, I-510)	Revision 4
		FP-213-100	Fire Zone 2-4F, Unit 2 Drywell	Revision 3
		FP-213-236	Fire Zone 2-1A, Core Spray Pump Room 'B'	Revision 6
		FP-213-237	Fire Zone 2-1B, Core Spray Pump Room 'A'	Revision 5
		FP-213-257	Pipe Penetration Room (II-506)	Revision 5
71111.11Q	Corrective Action Documents Resulting from Inspection	CR-2021-00800		
71111.12	Corrective Action Documents	AR-2017-00266 CR-2015-20731 CR-2015-24859 CR-2017-00265 CR-2018-06662 CR-2020-00684 CR-2020-17291 CR-2021-00407 CR-2021-00425 CR-2021-03222		
	Work Orders	PCWO 1930681 PCWO 2052696		



Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		PCWO 2141600 PCWO 2145344 PCWO 2185421 RTPM 2306756		
71111.13	Corrective Action Documents	2021-02911		
71111.15	Corrective Action Documents	CR-2020-17085 CR-2020-17117 CR-2021-02613 CR-2021-03362		
	Corrective Action Documents Resulting from Inspection	CR-2021-01838		
	Operability Evaluations	ACT-01-CR-2021-02613		
71111.19	Corrective Action Documents	CR-2021-01943 CR-2021-02275 CR-2021-02681		
	Work Orders	ERPM 2265930 PCWO 2408814 RLWO 2408825 RLWO 2410979 RTSV 2401970		
71111.22	Corrective Action Documents	2021-03737		
	Corrective Action Documents Resulting from Inspection	CR-2021-03952		
	Procedures	RTSV 2237263	SO-249-B06, RHR Comprehensive Flow Verification Loop B	Revision 17
		SO-024-A01	Diesel Generator A Integrated Surveillance Test	Revision 1
		SO-249-007	RHR Logic System Functional Test (DIV 1) Online (Partial)	Revision 6
	Work Orders	RTSV 2250012		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		RTSV 2365853 RTSV 2387144 RTSV 2387872		