



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

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

December 11, 2023

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

SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2 – FIRE  
PROTECTION TEAM INSPECTION REPORT 05000387/2023010 AND  
05000388/2023010

Dear Brad Berryman:

On November 16, 2023, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Susquehanna Steam Electric Station, Units 1 and 2 and discussed the results of this inspection with Mark Jones, Acting Site Vice President, and other members of your staff. The results of this inspection are documented in the enclosed report.

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

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

Glenn T. Dentel, Chief  
Engineering Branch 2  
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 – FIRE  
PROTECTION TEAM INSPECTION REPORT 05000387/2023010 AND  
05000388/2023010 DATED DECEMBER 11, 2023

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DOCUMENT NAME: <https://usnrc.sharepoint.com/teams/EngineeringBranch2/Shared Documents/Fire Protection/Fire Protection IRs/Susquehanna/SUS Fire Protection IR 2023010.docx>

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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: 05000387/2023010 and 05000388/2023010

Enterprise Identifier: I-2023-010-0036

Licensee: Susquehanna Nuclear, LLC

Facility: Susquehanna Steam Electric Station, Units 1 and 2

Location: Berwick, PA

Inspection Dates: October 30, 2023 to November 16, 2023

Inspectors: L. Cline, Senior Reactor Inspector  
D. Kern, Senior Reactor Inspector  
J. Tifft, Reactor Inspector

Approved By: Glenn T. Dentel, Chief  
Engineering Branch 2  
Division of Operating Reactor Safety

Enclosure

## **SUMMARY**

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting a fire protection team 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**

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

### **Additional Tracking Items**

None.

## 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.

## REACTOR SAFETY

### 71111.21N.05 - Fire Protection Team Inspection (FPTI)

#### Structures, Systems, and Components Credited for Fire Prevention, Detection, Suppression, or Post-Fire Safe Shutdown Review (IP Section 03.01) (4 Samples)

The inspectors verified that components and/or systems will function as required to support the credited functions stated for each sample. Additional inspection considerations are located in the fire hazards analysis (FHA) or safe shutdown analysis (SSA).

- (1) Fire Barrier System (NDAP-QA-0446)
- (2) Fire Detection/Alarm System
- (3) Emergency Service Water and Residual Heat Removal Service Water System
- (4) Core Spray System

#### Fire Protection Program Administrative Controls (IP Section 03.02) (2 Samples)

The inspectors verified that the selected control or process is implemented in accordance with the licensee's current licensing basis. If applicable, ensure that the licensee's FPP contains adequate procedures to implement the selected administrative control. Verify that the selected administrative control meets the requirements of all committed industry standards.

- (1) Control of Ignition Sources, and Hot Work permits (NDAP-QA-0442)
- (2) Aging Management Program (10CFR54) as it Relates to Fire Protection Components

#### Fire Protection Program Changes/Modifications (IP Section 03.03) (2 Samples)

The inspectors verified the following:

- a. Changes to the approved fire protection program (FPP) do not constitute an adverse effect on the ability to safely shutdown.
- b. The adequacy of the design modification, if applicable.
- c. Assumptions and performance capability stated in the SSA have not been degraded through changes or modifications.
- d. The FPP documents, such as the Updated Final Safety Analysis Report, fire protection report, FHA, and SSA were updated consistent with the FPP or design change.

- e. Post-fire safe shutdown operating procedures, such as abnormal operating procedures, affected by the modification were updated.
- (1) EC-2352782, Replace Heat Detectors
- (2) 86-10 Fire Hazards Analysis for Diesel Driven Fire Pump Room Fire Barrier Gap (CR 2020-13254).

## **INSPECTION RESULTS**

No findings were identified.

## **EXIT MEETINGS AND DEBRIEFS**

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

- On November 16, 2023, the inspectors presented the fire protection team inspection results to Mark Jones, Acting Site Vice President, and other members of the licensee staff.

## DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.21N.05	Calculations	EC-013-0162	Scope Review of Fire Protection Features TRM Requirements	Revision 4
		EC-013-0852	Evaluation for Identification and Disposition of Appendix R Section III.G Non-compliant Cables	Revision 1
		EC-013-0920	Assessment of Fire Detectors and Suppression Systems	Revision 12
		EC-013-1076	SSES Raceway Fire Barrier Upgrade Qualification Records for NRC Generic Letter 92-08	Revision 1
		EC-SIMU-1004	Time Critical Operator Action (TCOA) and Time Sensitive Operator Action (TSOA) Margin Evaluation	Revision 1
	Corrective Action Documents	2018-09760		
		2021-13801		
		2022-00350		
	Corrective Action Documents Resulting from Inspection	2023-17118		
		2023-17130		
		2023-17132		
		2023-17143		
		2023-17274		
		2023-17283		
		2023-17329		
		2023-17331		
		2023-17347		
		2023-17348		
		2023-17366		
		2023-17375		
		2023-17376		
		2023-17393		
		2023-17440		
		2023-17774		
		2023-17809		
		2023-17825		
		2023-17840		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		2023-17854		
		2023-17864		
		2023-17867		
		2023-17896		
		2023-17928		
		2023-17943		
		2023-17944		
		2023-17960		
	Drawings	C-1723, Sht 10	SSES U1 RB Fire zone Plan of Protected Tray Raceway Elevation 719'-1"	Revision 4
		M-111, Sht 1	SSES Common Emergency Service Water System	Revision 52
		M-112, Sht 1	SSES U1 RHR Service Water System	Revision 56
		M-112, Sht 2	SSES U1 RHR Service Water System	Revision 24
	Engineering Changes	DCP 214698	Unit 2 - Reactor Building Fire Detection System Upgrade	03/15/2000
		EC 2352782	Replace Heat Detectors	Revision 0
	Engineering Evaluations		86-10 Fire Hazards Analysis Evaluation for Diesel Driven Fire Pump Fire Barrier Gap	Revision 0
	Miscellaneous		SSES Fire Protection Review Report	Revision 13
		SNE-DTG-007	License Renewal Commitments for Fire Protection Engineering	Revision 1
	Procedures	NDAP-QA-0343	SSES Time Critical and Time Sensitive Operator Actions	Revision 6
		NDAP-QA-0409	Door, Floor Plug, and Hatch Control	Revision 23
		NDAP-QA-0442	Control of Ignition Sources, Cutting, Welding, and Hot Work Permits	Revision 20
		NSEP-QA-0002	License Renewal System Walkdown Program	Revision 1
		NSEP-QA-0433	Buried Piping Surveillance Program (AMP-16) License Renewal Program Basis Document	Revision 0
		NSEP-QA-0440	Fire Protection Program (AMP-15) License Renewal Program Basis Document	Revision 0
		NSEP-QA-0449	System Walkdown Program (AMP-28) License Renewal Program Basis Document	Revision 2
		ON-CREVAC-101	Control Room Evacuation	Revision 7



Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		OP-054-001	Emergency Service Water System	Revision 45
		OP-100-001	Remote Shutdown Panel	Revision 14
		OP-116-001	RHR Service Water	Revision 60
		SE-013-007	24 Month Inspection of Unit Common Fire Barriers	Revision 13
		SE-013-009	24 Month Inspection of Fire Windows/Fire Dampers and Associated Hardware	Revision 8
		SE-113-006	24 Month Inspection of Unit 1 Fire Rated Penetration Seals	Revision 12
		SI-013-225	Annual Functional Test of Fire Protection Smoke Detectors For Fire Zones 0-25A and 0-25E	Revision 9
		SI-213-241	Annual Functional Test of Fire Protection Ionization and Photoelectric Detectors for Fire Zones 2-5A-N, 2-5A-S, 2-5A-W, 2-5B, 2-5C and 2-5H (Preaction System PA-251)	Revision 13
		SI-213-254	Annual Functional Test of Preaction System Fire Protection Heat Detectors for Fire Zone 0-25A	Revision 7