



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, ILLINOIS 60532-4352

January 6, 2023

David Rhoades
Senior Vice President
Constellation Energy Generation, LLC
President and Chief Nuclear Officer (CNO)
Constellation Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: QUAD CITIES NUCLEAR POWER STATION – TRIENNIAL FIRE PROTECTION
INSPECTION REPORT 05000254/2022011 AND 05000265/2022011

Dear David Rhoades:

On December 15, 2022, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Quad Cities Nuclear Power Station and discussed the results of this inspection with Drew Griffiths, Plant Manager 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* 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

A handwritten signature in cursive script that reads "Richard A. Skokowski".

Signed by Skokowski, Richard
on 01/06/23

Richard A. Skokowski, Chief
Engineering Branch 2
Division of Operating Reactor Safety

Docket Nos. 05000254 and 05000265
License Nos. DPR-29 and DPR-30

Enclosure:
As stated

cc w/ encl: Distribution via LISTSERV®

Letter to David Rhoades from Richard A. Skokowski dated January 6, 2023.

SUBJECT: QUAD CITIES NUCLEAR POWER STATION – TRIENNIAL FIRE PROTECTION
INSPECTION REPORT 05000254/2022011 AND 05000265/2022011

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

Docket Numbers: 05000254 and 05000265

License Numbers: DPR-29 and DPR-30

Report Numbers: 05000254/2022011 and 05000265/2022011

Enterprise Identifier: I-2022-011-0034

Licensee: Constellation Nuclear

Facility: Quad Cities Nuclear Power Station

Location: Cordova, IL

Inspection Dates: November 28, 2022 to December 15, 2022

Inspectors: I. Hafeez, Senior Reactor Inspector
B. Jose, Senior Reactor Inspector
A. Shaikh, Senior Reactor Inspector

Approved By: Richard A. Skokowski, 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 triennial fire protection inspection at Quad Cities Nuclear Power Station, 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 (SSCs) Credited for Fire Prevention, Detection, Suppression, or Post-Fire Safe Shutdown Review (IP Section 03.01) (3 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) A and B diesel fire pumps and fire water distribution system
- (2) Unit 1 emergency diesel generator (EDG) carbon dioxide (CO₂) suppression system
- (3) Unit 2 MO-2-1301-16 reactor core isolation cooling (RCIC) inboard steam isolation valve

Fire Protection Program Administrative Controls (IP Section 03.02) (1 Sample)

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) Combustible control program

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 (SSD) operating procedures, such as abnormal operating procedures, affected by the modification were updated.

- (1) Engineering Change (EC) 618590 Evaluation of Unrated Barrier Between TB-1 and U2 TB Trackway Extension Storage Facility
- (2) EC 368863 Justification for Lack of Detection and Fixed Suppression in Fire Zone 8.2.10

INSPECTION RESULTS

No findings were identified.

EXIT MEETINGS AND DEBRIEFS

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

- On December 15, 2022, the inspectors presented the triennial fire protection inspection results to Drew Griffiths, Plant Manager, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.21N.05	Calculations	QDC-4100-M-0537	Quad Cities Design Basis Hydraulic Calculations	01/08/2020
		QDC-4100-M-0691	Combustible Loading Calculation for Crib House	8
	Corrective Action Documents	AR 00668567	Discrepancy in Fire Zone 8.2.10	09/06/2007
		AR 04165168	Light Corrosion Observed during Fire Protection Walkdown	08/17/2018
		AR 04374594	Housekeeping Issue	10/05/2020
		AR 04474552	Observed Fire Protection Non-Compliances	01/28/2022
		AR 04484533	Housekeeping Issue in the U-1 Condensate Pit	03/13/2022
		AR 04536223	C-Factor Test Complete SAT with an Incomplete Portion	11/10/2022
		AR01082089	Sprinkler Replacement- License Renewal Commitment	06/18/2010
	Corrective Action Documents Resulting from Inspection	AR 04539906	NRC FP ID: Procedure Clarification Needed MA-QC-716-026-1001	11/30/2022
		AR 04539934	NRC FP ID: Broken Robust Barriers	11/30/2022
		AR 04541535	NRC FP ID: DFP Capacity Test Pump Curves and Procedure Update	12/08/2022
		AR 04543001	NRC FP ID-U1 EDG Day Tank Room Sprinkler Heads	12/15/2022
	Drawings	4E-1063	Electrical Installation Turbine Building Plan EL 595-0 Southeast	Rev. CS
		4E-1350B	Schematic Diagram Diesel Generator No.1 Auxiliaries and Start Relays	Rev. AM
		4E-1595	Schematic Diagram Fire Protection Part 2 CO2 System	Rev. W
		4E-1678D	Wiring and Schematic Drawing Reactor Building Essential 480V MCC 19-1	Rev. AF
		4E-1841A	Wiring Diagram CO2 Fire Protection Equipment and Cabinet 2212-47	Rev. AC
		4E-2350B	Schematic Diagram Diesel Gen. 2 Auxiliaries and Start Relays	Rev. AO
		4E-2484E	Schematic Diagram RCIC System	W
		4E-6706B	Interconnection Block Fire Protection System Loops 6-3 and 6-4	Rev. W

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		4E-6731E	Wiring Diagram Junction Box 1TB-21 and 2TB-218 Fire Protection System	Rev. E
		M-813	Diagram of Diesel Generator Room Ventilation	Rev. E
		M-89	Diagram of Reactor Core Isolation Cooling (RCIC) Piping	01
	Engineering Changes	618590	Fire Protection Engineering Evaluation of Unrated Barrier Between TB-I and Unit 2 Turbine Building Trackway Extension Storage Facility	2
		EC 368863	GL 86-10 Evaluation Justification for Lack of Detection and Fixed Suppression in Fire Zone 8.2.10	Rev. 0
		EC 390767	Multiple Spurious Operation Scenario 2-NEW-1 Evaluation for MO-2-1301-16	0
	Miscellaneous	QCAN901	Fenwal Detectors	12/01/2008
	Procedures	OP-AA-201-009	Control of Transient Combustible Material	28
		QCTS 0850-05	Fire System "C" Factor Test	19
	Work Orders	01348124-01	Sprinkler Replacement- License Renewal Commitment: MM EWP	03/31/2018
		01886437-01	Fire System "C" Factor Flow Test	08/18/2017
		04893706-01	Fire System "C" Factor Flow Test	08/06/2020
		04984556-01	Diesel Fire Pump "A" Capacity Test	05/04/2021
		05005598-01	Diesel Fire Pump "B" Capacity Test	06/02/2021
		05152931-01	(NEIL) Standby Diesel Generator Cardox Fire Protection Functional Test	Rev. 1
		05178652	Perform Walkdown of Unit 1/2 Fire Protection System	01/28/2022
		05234564	Perform Walkdown of Unit 1/2 Fire Protection System	07/29/2022