



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
245 PEACHTREE CENTER AVENUE N.E., SUITE 1200  
ATLANTA, GEORGIA 30303-1200

April 23, 2021

Mr. Robert T. Simril  
Site Vice President  
Duke Energy Carolinas, LLC  
Catawba Nuclear Station  
Duke Energy  
4800 Concord Road  
York, SC 29745

SUBJECT: CATAWBA NUCLEAR STATION – TRIENNIAL FIRE PROTECTION  
INSPECTION REPORT 05000413/2021011 AND 05000414/2021011

Dear Mr. Simril:

On March 12, 2021, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Catawba Nuclear Station and discussed the results of this inspection with you 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,

*/RA/*

Scott M. Shaeffer, Chief  
Engineering Branch 2  
Division of Reactor Safety

Docket Nos. 05000413 and 05000414  
License Nos. NPF-35 and NPF-52

Enclosure:  
As stated

cc w/ encl: Distribution via LISTSERV

SUBJECT: CATAWBA NUCLEAR STATION – TRIENNIAL FIRE PROTECTION  
 INSPECTION REPORT 05000413/2021011 AND 05000414/2021011  
 Dated April 23, 2021

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DATE	4/20/2021	4/16/2021	4/23/2021	4/23/2021	4/23/2021

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

Docket Numbers: 05000413 and 05000414

License Numbers: NPF-35 and NPF-52

Report Numbers: 05000413/2021011 and 05000414/2021011

Enterprise Identifier: I-2021-011-0036

Licensee: Duke Energy

Facility: Catawba Nuclear Station

Location: South Carolina

Inspection Dates: February 22, 2021 to March 12, 2021

Inspectors: P. Braaten, Senior Reactor Inspector  
E. Coffman, Reactor Inspector  
L. Jones, Senior Reactor Inspector  
M. Singletary, Reactor Inspector

Approved By: Scott M. Shaeffer, Chief  
Engineering Branch 2  
Division of 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 Catawba Nuclear 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) (4 Samples)

The inspectors verified that the following systems credited in the approved fire protection program could perform their licensing basis function:

- (1)
  - a. Review deficiencies or open fire protection impairments for the selected system, including any temporary modifications, operator workarounds, or compensatory measures.
  - b. Verify that operator actions can be accomplished as assumed in the licensee's FHA, or as assumed in the licensee's fire probabilistic risk assessment (FPRA) analysis and SSA.
  - c. Review repetitive or similar maintenance work requests which could be an indicator of a design deficiency and could affect the ability of the components to perform their functions, when needed.
  - d. Ensure that post maintenance and/or surveillance activities are performed as scheduled.
  - e. Perform a walkdown inspection to identify equipment alignment discrepancies. Inspect for deficient conditions such as corrosion, missing fasteners, cracks, and degraded insulation.
  - f. Ensure the selected SSCs that are subject to aging management review (AMR) pursuant to 10 CFR Part 54 are being managed for aging (e.g., loss of material, cracking, reduction of heat transfer) in accordance with appropriate aging management programs. Verify that the licensee's aging management program activities (such as, Fuel Oil Analysis or Selective Leaching Aging Management Program) associated with FP equipment are being implemented.
  - g. If a review of operating experience issues will be completed for the selected inspection sample, verify that the licensee adequately reviewed and dispositioned the operating experience in accordance with their processes.

The team selected the following SSCs as samples:

- (2)
  - Automatic Sprinkler System in room
- (3)
  - Unit 2 Component Cooling Water System (KC Pumps)
  - Unit 2 4160 VAC Safe Shutdown Power System

- (4) • Unit 2 Battery

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

The inspectors verified that the following fire protection program administrative controls were implemented in accordance with the current licensing basis:

- (1) • Fire Brigade Training Program

Fire Protection Program Changes/Modifications (IP Section 03.03) (1 Sample)

The inspectors reviewed the following changes to ensure that they did not constitute an adverse effect on the ability to safely shutdown post-fire and to verify that fire protection program documents and procedures affected by the changes were updated.

- (1) • Engineering Change (EC) 410011

**INSPECTION RESULTS**

No findings were identified.

**EXIT MEETINGS AND DEBRIEFS**

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

- On March 12, 2021, the inspectors presented the triennial fire protection inspection results to Robert T. Simril and other members of the licensee staff.

**DOCUMENTS REVIEWED**

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.21N.05	Calculations 71111.21N.05	CNC-1223.04-00-0119	CNS Units 1 and 2 RCPs NFPA-805 Loss of Seal Cooling Analysis	Rev. 0
		CNC-1223.49-02-0018	Fire Protection Piping Friction Losses	Rev. 0
		CNC-1435.00-00-0080	NFPA 13 Code Conformance Review for KC Pump Sprinkler System	Rev. 0
		CNS-1599.RF-00-0001	Fire Protection System (RF/RV) Design Basis Specification	Rev. 026
	Corrective Action Documents 71111.21N.05	02364078	Site Fire Protection Engineers to Review IN 2020-04	01/06/2021
	Corrective Action Documents Resulting from Inspection 71111.21N.05	AR 02372737	NRC FP Insp - Calc date reference has editorial error	03/04/2021
		AR 02373641	EC Reference Revised	03/10/2021
		AR 02373895	NRC FP Insp. Observation from NRC Insp Team	03/12/2021
	Drawings 71111.21N.05	CN-1705 Series	125V DC VITAL INSTRUMENTATION AND CONTROL POWER SYSTEM (EPL)	13 - 17
		CN-2702-05.02	One Line Diagram Essential and Blackout Auxiliary Power Systems 4.16KV/600V	06/11/2015

		CNEE-0111-01.32-02	Elementary Diagram MCC SMXG COMPT F05C SSF PZR HTR GRP	Rev. 9
		CNEE-0211-01.32.02	Elementary Diagram MCC SMXG COMPT RO5B SSF PZR HTR GRP	Rev. 6
		CNM-2206.09-0003.001	Unit 2 Component Cooling Pump Autosprinkler System S Plans and Details	Rev. 014
	Engineering Evaluations 71111.21N.05	Circuit Analysis Report 1ILE-SSSPZRHTRD	Circuit Analysis Report	
		CNC -1381.05-00-0251	Units 1 and 2 NFPA 805 Circuit Breaker and Fuse Coordination Study	Rev. 33
		CNC-1435.00-00-0044	Fire Protection Nuclear Safety Capability Assessment	Rev. 003
		CNC-1435.00-00-0067	NFPA 805 Transition - Fire Risk Evaluation (FRE)	Rev. 004
	Miscellaneous 71111.21N.05	600V MCC Load list	600V MCC Load list	
		CNS-1465.00-00-0006	Fire Protection Design Bases Document	Rev. 28
		CNWT-1752-03.17	Wire Tabulation	09/24/2020
		DUKE-QAPD-001	Topical Report - Quality Assurance Program Description Operating Fleet	Rev. 46



		PRR-02307136	Revision Summary (and basis) for ABG/0/5500/045	Rev. 004
	Procedures 71111.21N.05	AP-0-A-5500-020	Loss of Nuclear Service Water	Rev. 049
		AP-0-A-5500-045	Plant Fire	Rev. 017
		AP-1-A-5500-017	Loss of Control Room	Rev. 061
		CNC-1435.00-00-0068	NFPA 805 Transition Recovery Action Feasibility Review	Rev. 003
		OP-0-B-6100-013	Standby Shutdown Facility Operations	Rev. 057
		PT-0-A-4400-001-J	Spray Valve Sprinkler System Functional Test	Rev. 030
		PT-0-A-4700-061	Time Critical Actions / Time Sensitive Actions	Rev. 009
	Radiation Surveys 71111.21N.05	IP/0/A/3850/023	Molded Case Circuit Breaker Inspection and Testing Procedure	Rev. 134
	Work Orders 71111.21N.05	Work Order 20170423 01	2NV - Cal Standby Makeup Discharge	05/30/2018
		Work Order Package 20189513 01	Calibration Pressurizer Instrumentation	12/01/2018