



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

April 28, 2022

Mr. Tom Simril  
Site Vice President  
Duke Energy Carolinas, LLC  
4800 Concord Road  
York, SC 29745-9635

SUBJECT: CATAWBA NUCLEAR STATION – INTEGRATED INSPECTION REPORT  
05000413/2022001 AND 05000414/2022001

Dear Mr. Simril:

On March 31, 2022, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Catawba Nuclear Station. On April 28, 2022, the NRC inspectors 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 NRC-identified or self-revealing findings were identified during this inspection.

A licensee-identified violation which was determined to be of very low safety significance 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 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 II; the Director, Office of Enforcement; and the NRC Resident Inspector at Catawba Nuclear Station.

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,

Eric J. Stamm, Chief  
Reactor Projects Branch #1  
Division of Reactor Projects

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

Enclosure:  
As stated

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SUBJECT: CATAWBA NUCLEAR STATION – INTEGRATED INSPECTION REPORT  
05000413/2022001 AND 05000414/2022001 DATED APRIL 28, 2022

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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: 05000413/2022001 and 05000414/2022001

Enterprise Identifier: I-2022-001-0020

Licensee: Duke Energy Carolinas, LLC

Facility: Catawba Nuclear Station

Location: York, South Carolina

Inspection Dates: January 01, 2022 to March 31, 2022

Inspectors: J. Austin, Senior Resident Inspector  
D. Rivard, Resident Inspector

Approved By: Eric J. Stamm, Chief  
Reactor Projects Branch #1  
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 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. A licensee-identified non-cited violation is documented in report section: 71153.

### List of Findings and Violations

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

### Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
LER	05000414/2021-003-00	LER 2021-003-00 for Catawba Nuclear Station, Unit 2 Containment Penetration Failure Resulting in Integrated Leak Rate Test Failure	71153	Closed

## PLANT STATUS

Unit 1 operated at or near 100 percent rated thermal power (RTP) for the entire inspection period.

Unit 2 operated at or near 100 percent RTP for the entire 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 activities described in IMC 2515, Appendix D, "Plant Status," conducted routine reviews using IP 71152, "Problem Identification and Resolution," observed risk significant activities, and completed on-site portions of IPs. 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

### 71111.04 - Equipment Alignment

#### Partial Walkdown Sample (IP Section 03.01) (4 Samples)

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

- (1) 1A emergency diesel generator (EDG) while the 1B EDG was out of service (OOS) for maintenance on January 24, 2022
- (2) Unit 1 outside main steam/feed penetration room on March 1, 2022
- (3) ESPS (emergency supplemental power supply) switchgear enclosure on March 3, 2022
- (4) Unit 1 and 2 service water pump structure on March 3, 2022

### 71111.05 - Fire Protection

#### Fire Area Walkdown and Inspection Sample (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) Units 1 and 2 Auxiliary Building, Elev. 554, battery rooms 340-346, 350-356, Fire Zones 9,10 on February 27, 2022
- (2) Units 1 and 2 Service Building, Elev. 554, electrical equipment room S101, Fire Zone: SRV on February 27, 2022
- (3) 2A EDG, room 306, Fire Zone 27 on March 12, 2022

- (4) 2A EDG, sequencer corridor, Fire Zone 43 on March 12, 2022
- (5) 2B EDG, room 308, Fire Zone 28 on March 12, 2022
- (6) 2B EDG, sequencer corridor, Fire Zone 44 on March 12, 2022

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

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

- (1) The inspectors observed and evaluated a recorded operator simulator evaluation on February 4, 2022. The scenario contained 1D steam generator (S/G) tube rupture, rapid down power, pressurizer pressure transmitter failure, high turbine vibration, reactor/turbine trip, manual safety injection, and a main steam isolation of train 1A.

#### 71111.12 - Maintenance Effectiveness

##### Maintenance Effectiveness (IP Section 03.01) (2 Samples)

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

- (1) NCR 2411133, 1NCPT5122 (1B reactor coolant loop hot leg wide range pressure) out of tolerance on January 7, 2022
- (2) NCR 2414825, Unit 2 rod control urgent failure alarm on February 18, 2022

#### 71111.13 - Maintenance Risk Assessments and Emergent Work Control

##### Risk Assessment and Management Sample (IP Section 03.01) (5 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 1 elevated risk while the 1B EDG OOS for maintenance, on January 24, 2022
- (2) Unit 1 elevated risk while 1CF60 inoperable (emergent) for maintenance, on January 29, 2022
- (3) 2A auxiliary feedwater pump testing, on February 8, 2022
- (4) Unit 1 elevated risk while the 1A EDG OOS for maintenance, on February 9, 2022
- (5) 2B component cooling pump testing, on February 23, 2022

#### 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) NCR 2411906, siren growl test issues on January 13, 2022
- (2) NCR 2412943, Unit 2 outside main steam penetration room heaters not functioning on January 24, 2022
- (3) NCR 2413887, 1D S/G feed isolation (1CF60) test failure on February 7, 2022

- (4) NCR 2419658, 2A pressurizer heater breaker tripped on thermal overload on March 13, 2022
- (5) NCR 2419162, 2A EDG jacket water leak on March 9, 2022

#### 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) EC 418257, install auxiliary lube oil pumps on the 1A and 1B EDGs, on February 17, 2022

#### 71111.19 - Post-Maintenance Testing

##### Post-Maintenance Test Sample (IP Section 03.01) (5 Samples)

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

- (1) WO 20215023, 1CF PT 5142 50 power differential resolved, on January 18, 2022
- (2) WO 20503389, Stroke test 2CA-52 following failure, on January 25, 2022
- (3) WO 20517943, 1CF60 stroke retest, on January 31, 2022
- (4) WO 20430664, 1A EDG voltage did not reset to expected voltage, on February 18, 2022
- (5) WR 20221356, met tower temperature element replaced, on March 9, 2022

#### 71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance testing activities to verify system operability and/or functionality:

##### Surveillance Tests (other) (IP Section 03.01) (3 Samples)

- (1) PT/1/A4350/002 A, EDG 1A operability test, on January 12, 2022
- (2) PT/2/A/43500/002 B, EDG 2B operability test, on February 22, 2022
- (3) PT/1/A/4350/002 C, available power source operability check, on March 4, 2022

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

- (1) PT/2/A/4240/003 C, turbine driven auxiliary feedwater pump 2 performance test, on February 23, 2022



## 71114.06 - Drill Evaluation

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

- (1) The inspectors observed an emergency preparedness drill on March 9, 2022. The scenario involved an automatic trip without a scram and a loss of coolant accident culminating in a site area emergency.

## **OTHER ACTIVITIES – BASELINE**

### 71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

#### IE04: Unplanned Scrams with Complications (USwC) Sample (IP Section 02.03) (2 Samples)

- (1) Unit 1 (January 1, 2021 through December 31, 2021)
- (2) Unit 2 (January 1, 2021 through December 31, 2021)

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

- (1) Unit 1 (January 1, 2021 through December 31, 2021)
- (2) Unit 2 (January 1, 2021 through December 31, 2021)

#### BI01: Reactor Coolant System (RCS) Specific Activity Sample (IP Section 02.10) (2 Samples)

- (1) Unit 1 (January 1, 2021 through December 31, 2021)
- (2) Unit 2 (January 1, 2021 through December 31, 2021)

### 71152A - Annual Follow-up Problem Identification and Resolution

#### Annual Follow-up of Selected Issues (Section 03.03) (1 Sample)

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

- (1) Unresolved cold weather deficiencies on January 24, 2022 (NCR 2413166).

### 71153 - Follow Up of Events and Notices of Enforcement Discretion

#### Event Report (IP Section 03.02) (1 Sample)

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

- (1) LER 05000414/2021-003-00, Containment Penetration Failure Resulting in Integrated Leak Rate Test Failure. (ADAMS Accession No. ML21207A238). The inspection conclusions associated with this LER are documented in this report under Inspection Results Section 71153.

## INSPECTION RESULTS

Licensee-Identified Non-Cited Violation	71153
<p>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>	
<p>Violation: Catawba Technical Specification, Limiting Condition for Operation 3.6.3 states that, "Each containment isolation valve shall be OPERABLE." Specifically, Surveillance Requirement 3.6.3.8, states, "Verify the combined leakage rate for all reactor building bypass leakage paths is &lt; 0.07 La when pressurized to &gt; 14.68 psig."</p>	
<p>Catawba Technical Specification, Limiting Condition for Operation 3.6.1 states that, "Containment shall be OPERABLE." Specifically, Surveillance Requirement 3.6.1.1 requires in part that the licensee perform required visual examinations and leakage rate testing in accordance with the Containment Leakage Rate Testing Program. The acceptance criteria for the containment Integrated Leak Rate Test, as defined by the Containment Leakage Rate Testing Program, includes the leakage measured for reactor building bypass valves.</p>	
<p>Contrary to Technical Specification requirements, on April 15, 2021, Local Leak Rate Test for containment isolation valves, 2MISV5230 and 2MISV5231 for penetration 2EMF(IN), exceeded the acceptance criteria for Technical Specification 3.6.3 and the administrative requirements of Technical Specification 3.6.1. On April 20, 2021, the licensee entered post maintenance testing data as "As-Found" rather than "As-Left" data in the CNS Leak Rate computer program. The data propagated within the computer program and resulted in the failure to identify the violation of Technical Specification 3.6.1, Containment, and Technical Specification 3.6.3, Containment Isolation Valves. The technical specification violations were identified during a licensee review of test data following the outage.</p>	
<p>Significance/Severity: Green. Using Inspection Manual Chapter 0609 Appendix H, "Containment Integrity Significance Determination Process," inspectors determined the finding was of very low safety significance (Green). Specifically, Appendix H notes that small lines, typically less than 2 inches, connecting containment atmosphere to the environment have little effect on the change in large early release frequency (LERF). The sample line diameter for penetration 2EMF(IN) is ¾ inch, and therefore has negligible effect on the LERF.</p>	
<p>Corrective Action References: Nuclear Condition Report (NCR) 02383858</p>	

## EXIT MEETINGS AND DEBRIEFS

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

- On April 28, 2022, the inspectors presented the integrated inspection results to Tom Simril and other members of the licensee staff.

**DOCUMENTS REVIEWED**

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.05	Fire Plans	CSD-CNS-PFP-AB-0560-001	Auxiliary Building Elevation 554 & 560 Pre-Fire Plan	0
		CSD-CNS-PFP-SRV-0554-001	Service Building Elevation 554 Pre-Fire Plan	0
	Miscellaneous	CNC-1435.00-00-0086	Permanent Storage Areas (PSA's) Fire Hazard Evaluation	001