



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

January 28, 2021

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

SUBJECT: CATAWBA NUCLEAR STATION – INTEGRATED INSPECTION REPORT
05000413/2020004 AND 05000414/2020004

Dear Mr. Simril:

On December 31, 2020, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Catawba Nuclear Station. On January 21, 2021, 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 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/

Margaret C. Tobin, Acting 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
05000413/2020004 AND 05000414/2020004 dated January 28, 2021

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ADAMS ACCESSION NUMBER: ML21028A345

OFFICE	RIIDRP	RIIDRP	RIIDRP	
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DATE	1/27/2021	1/28/2021	1/28/2021	

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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: 05000413/2020004 and 05000414/2020004

Enterprise Identifier: I-2020-004-0046

Licensee: Duke Energy Carolinas, LLC

Facility: Catawba Nuclear Station

Location: York, SC

Inspection Dates: October 1, 2020 to December 31, 2020

Inspectors: J. Austin, Senior Resident Inspector
C. Fontana, Emergency Preparedness Inspector
M. Meeks, Senior Operations Engineer
S. Sanchez, Senior Emergency Preparedness Insp
C. Scott, Resident Inspector
J. Tornow, Physical Security Inspector
J. Walker, Emergency Response Inspector

Approved By: Margaret C. Tobin, Acting 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.

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	05000413/2020-003-00	LER-2020-003-00 for Catawba Nuclear Station, Unit 1, Valid Actuation of the Unit 1 Reactor Protection System and Auxiliary Feedwater System	71153	Closed

PLANT STATUS

On October 24, 2020, both units reduced power to approximately 50 percent to support switchyard relay modification. Both units returned to 100 percent rated thermal power (RTP) on October 25, 2020 and have remained at or near 100 percent RTP for the remainder of the 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 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 Disease 2019 (COVID-19), resident 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; conducted plant status activities as described in IMC 2515, Appendix D, "Plant Status"; 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 portions 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

External Flooding Sample (IP Section 03.03) (1 Sample)

- (1) The inspectors evaluated that flood protection barriers, mitigation plans, procedures, and equipment are consistent with the licensee's design requirements and risk analysis assumptions for coping with external flooding in the Unit 2 diesel building.

71111.04 - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (3 Samples)

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

- (1) Emergency supplemental power system and supporting systems following maintenance on November 21, 2020
- (2) Unit 1 steam generator feed pumps on November 21, 2020

- (3) Unit 1 vital AC system on December 30, 2020

Complete Walkdown Sample (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated system configurations during a complete walkdown of the 1B EDG starting air system on December 30, 2020

71111.05 - Fire Protection

Fire Area Walkdown and Inspection Sample (IP Section 03.01) (2 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 battery rooms, fire area 9 on October 30, 2020
- (2) Unit 2 battery rooms, fire area 10 on October 30, 2020

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

- (1) The inspectors evaluated the onsite fire brigade training and performance during an announced fire drill near the spent fuel pool charcoal filter on October 9, 2020.

71111.06 - Flood Protection Measures

Inspection Activities - Internal Flooding (IP Section 03.01) (2 Samples)

The inspectors evaluated internal flooding mitigation protections in the:

- (1) Unit 1 Turbine building, Elevation 554 on December 6, 2020
- (2) Unit 2 Turbine building, Elevation 554 on December 6, 2020

71111.11A - Licensed Operator Requalification Program and Licensed Operator Performance

Requalification Examination Results (IP Section 03.03) (1 Sample)

- (1) On September 21, 2020, the licensee completed the comprehensive biennial requalification written examinations and the annual requalification operating examinations required to be administered to all licensed operators in accordance with Title 10 of the Code of Federal Regulations 55.59(a)(2), "Requalification Requirements," of the NRC's "Operator's Licenses." During the week of December 14, 2020, the inspectors performed an in-office review of the overall pass/fail results of the individual operating examinations and the crew simulator operating examinations in accordance with Inspection Procedure (IP) 71111.11, "Licensed Operator Requalification Program." These results were compared to the thresholds established in Section 3.02, "Requalification Examination Results," of IP 71111.11.

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 during work performed in the switchyard (relay modification) while both units were at approximately 50 percent power in support of maintenance on October 24, 2020.

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

- (1) The inspectors observed and evaluated a simulator scenario that included a steam generator (SG) feed regulator valve failure, pressurizer pressure instrument failure, stator liquid cooling pump failure, main turbine runback, and a small break loss of coolant accident (LOCA) and reactor trip on November 3, 2020.

71111.12 - Maintenance Effectiveness

Quality Control (IP Section 03.02) (1 Sample)

The inspectors evaluated the effectiveness of maintenance and quality control activities to ensure the following SSC remains capable of performing its intended function:

- (1) Condition Report (CR) 2358745 Nuclear Oversight finding (2020-CNS-OTSL-01-F-1) operations rounds and turnover on November 19, 2020

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (2 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) Risk mitigation plan for dual unit downpower to 48 percent on October 23,2020
- (2) Risk review when standby shutdown facility (SSF) and emergency supplemental power supply (ESPS) were out of service in conjunction with switchyard maintenance on November 11, 2020

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 03.01) (4 Samples)

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

- (1) CR 2352597, 2NV-271 Leakage rate noted increasing on October 14, 2020
- (2) CR 2355996, 2A charging oil in the 2A charging pump due to high water content on November 3,2020
- (3) CR 2356772, SSF diesel generator load fluctuations on November 9, 2020

- (4) CR 2357565, Units 1 & 2 entered abnormal operating procedure for the loss of instrument air on November 11, 2020

71111.19 - Post-Maintenance Testing

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

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

- (1) WO 20426003, Functional test following replacement of a cooling tower fan motor replacement on October 28, 2020
- (2) WO 20385949, Channel calibration following replacement of "Tavg" card for loop "C" on November 3, 2020
- (3) PT/2/A/4200/069, SG PORV nitrogen leakage test following valve positioner and nitrogen regulator replacement on November 4, 2020
- (4) PT/0/A/4200/017 A, Standby shutdown facility diesel test following 18-month preventive maintenance on November 18, 2020
- (5) WO 20436046, Instrument loop calibration check following replacement of the standby nuclear service water pond level transmitter on December 9, 2020

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

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

- (1) PT/2/A/4200/009 A, Auxiliary safeguards test cabinet periodic test on November 3, 2020
- (2) PT/2/A/4350/002 A, Diesel Generator 2A operability test on November 3, 2020
- (3) PT/2/A//4600/001, Rod control movement test on October 16, 2020

Inservice Testing (IP Section 03.01) (1 Sample)

- (1) PT/2/A/4200/005 A, Safety injection /pump 2B performance test on November 25, 2020

71114.01 - Exercise Evaluation

Inspection Review (IP Section 02.01-02.11) (1 Sample)

- (1) The inspectors evaluated the biennial emergency plan exercise during the week of October 26, 2020. The simulated scenario began with a main feedwater line break outside containment and loss of both main feedwater pumps. Both the reactor and turbine failed to automatically or manually trip from the simulator control room, thus meeting the criteria for declaration of an Alert. A short time later, two steam generator power operated relief valves failed open and the turbine driven feedwater pump started but immediately tripped off. These failures resulted in a Heat Sink Red Condition, thus meeting the conditions for declaring a Site Area Emergency. Once a containment penetration failed and started a radioactive release to the environment,

conditions for a General Emergency were met, and the Offsite Response Organizations were able to demonstrate their ability to implement emergency actions.

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

EP01: Drill/Exercise Performance (IP Section 02.12) (1 Sample)

- (1) EP01: Drill & Exercise Performance for the period January 1, 2019, through June 30, 2020.

IE01: Unplanned Scrams per 7000 Critical Hours Sample (IP Section 02.01) (2 Samples)

- (1) Unit 1 (October 1, 2019 through September 30, 2020)
- (2) Unit 2 (October 1, 2019 through September 30, 2020)

EP02: ERO Drill Participation (IP Section 02.13) (1 Sample)

- (1) EP02: Emergency Response Organization Drill Participation for the period January 1, 2019, through June 30, 2020.

EP03: Alert & Notification System Reliability (IP Section 02.14) (1 Sample)

- (1) EP03: Alert & Notification System Reliability for the period January 1, 2019, through June 30, 2020.

MS05: Safety System Functional Failures (SSFFs) Sample (IP Section 02.04) (2 Samples)

- (1) Unit 1 (October 1, 2019 through September 30, 2020)
- (2) Unit 2 (October 1, 2019 through September 30, 2020)

BI02: RCS Leak Rate Sample (IP Section 02.11) (2 Samples)

- (1) Unit 1 (October 1, 2019 through September 30, 2020)
- (2) Unit 2 (October 1, 2019 through September 30, 2020)

71152 - Problem Identification and Resolution

Semiannual Trend Review (IP Section 02.02) (1 Sample)

- (1) The inspectors reviewed the licensee's corrective action program for potential adverse trends in identification of adverse conditions that might be indicative of a more significant safety issue.

71153 - Followup 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 05000413/2020-003-00, Catawba Nuclear Station, Unit 1, Valid Actuation of the Unit 1 Reactor Protection System and Auxiliary Feedwater System (ADAMS Accession No. ML20310A151)

INSPECTION RESULTS

Minor Violation	71153
<p>Minor Violation: Technical Specification 5.4.1, "Procedures," requires that written procedures shall be established, implemented, and maintained, covering applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978. Section 8.1.1 of Appendix A of Regulatory Guide 1.33, Revision 2, February 1978, states that written procedures should be provided for reactor protection system tests and calibrations. Licensee procedure IP/1A/3240/014 H, "Power range N-41 Incore-Excore Cross calibration" contains instructions for the N-41 calibration. Contrary to this procedure, on September 8, 2020, the N-42 drawer was withdrawn resulting in a reactor trip and actuation of the auxiliary feed system.</p> <p>Screening: The inspectors determined the performance deficiency was minor. The performance deficiency was screened in accordance with Inspection Manual Chapter (IMC) 0612 Appendix B, "Additional Screening guidance", dated December 12, 2020, and was determined to be of minor significance because the finding did not meet any of the more than minor screening questions. Specifically, this violation was a result of a human performance action and considered to be an isolated occurrence.</p> <p>Enforcement: The licensee has taken actions to restore compliance under Condition Report 2347752. This failure to comply with IP/1A/3240/014 H constitutes a minor violation that is not subject to enforcement action in accordance with the NRC's Enforcement Policy.</p>	

EXIT MEETINGS AND DEBRIEFS

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

- On January 21, 2021, the inspectors presented the integrated inspection results to Tom Simril and other members of the licensee staff.
- On October 30, 2020, the inspectors presented the emergency preparedness exercise inspection results to Mr. T. Simril and other members of the licensee staff.