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

July 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
05000413/2022002 AND 05000414/2022002

Dear Mr. Simril:

On June 30, 2022, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Catawba Nuclear Station. On July 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 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,

Signed by Stamm, Eric
on 07/28/22

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

cc w/ encl: Distribution via LISTSERV

SUBJECT: CATAWBA NUCLEAR STATION – INTEGRATED INSPECTION REPORT 05000413/2022002 AND 05000414/2022002 DATED JULY 28, 2022

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ADAMS ACCESSION NUMBER: **ML22208A291**

| X SUNSI Review | | X Non-Sensitive<br>☐ Sensitive | | X Publicly Available<br>☐ Non-Publicly Available | |
|---|---|---|---|---|---|
| OFFICE | RII/DRP | RII/DRP | RII/DRP | | |
| NAME | D. Jackson | J. Austin | E. Stamm | | |
| DATE | 7/19/2022 | 7/19/2022 | 7/28/2022 | | |

**OFFICIAL RECORD COPY**

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

| | |
|---|---|
| Docket Numbers: | 05000413 and 05000414 |
| License Numbers: | NPF-35 and NPF-52 |
| Report Numbers: | 05000413/2022002 and 05000414/2022002 |
| Enterprise Identifier: | I-2022-002-0015 |
| Licensee: | Duke Energy Carolinas, LLC |
| Facility: | Catawba Nuclear Station |
| Location: | York, South Carolina |
| Inspection Dates: | April 1, 2022, to June 30, 2022 |
| Inspectors: | J. Austin, Senior Resident Inspector<br>D. Rivard, Resident Inspector<br>S. Downey, Senior Reactor Inspector |
| Approved By: | Eric J. Stamm, Chief<br>Reactor Projects Branch 1<br>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 | 05000414/2021-001-00 | Indication Identified During Reactor Pressure Vessel Head Nozzle Penetration Inspection | 71153 | Closed |

## PLANT STATUS

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

Unit 2 began the inspection period at or near 100 percent RTP. On April 23, 2022, Unit 2 was manually tripped following two dropped control rods during control rod movement testing. The unit was returned to full power operation on April 29, 2022, and 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 performed activities described in IMC 2515, Appendix D, "Plant Status," 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

71111.01 - Adverse Weather Protection

Seasonal Extreme Weather Sample (IP Section 03.01) (1 Sample)

(1) The inspectors evaluated readiness for seasonal extreme weather conditions prior to the onset of extreme high temperatures for the following systems:
- Service water pump house on June 2, 2022
- Emergency supplemental power supply diesel and switchgear on June 2, 2022
- Offsite AC power switchyard and relay house on June 22, 2022

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) Unit 1 steam generator power operated relief valves on April 12, 2022
(2) Unit 1 vital dc switchgear on April 19, 2022
(3) Unit 1 'A' emergency diesel generator (EDG) on June 2, 2022
(4) Safe shutdown facility on June 2, 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) Fire Area 22: Units 1 and 2 Auxiliary Building Elev. 594 common area (rooms 500, 560, 561, 570, 571) on May 13, 2022
(2) Fire Area 19: Unit 2 Auxiliary Building Elev. 594 and Unit 2 Electrical Penetration Room (rooms 563, 564) on May 13, 2022
(3) Fire Area 20: Unit 2 Auxiliary Building Elev. 594 and Unit 1 Electrical Penetration Room (room 576) on May 13, 2022
(4) Fire Area 21: Units 1 and 2 Auxiliary Building Elev. 594 Control Room (room 573) on June 16, 2022
(5) Fire Area 16: Units 1 and 2 Auxiliary Building Elev. 574 and Unit 2 Cable Room (room 481) on June 17, 2022
(6) Fire Area 17: Units 1 and 2 Auxiliary Building Elev. 574 and Unit 1 Cable Room (room 491) on June 17, 2022

71111.06 - Flood Protection Measures

Inspection Activities - Internal Flooding (IP Section 03.01) (1 Sample)

The inspectors evaluated internal flooding mitigation protections in the:

(1) Power house yard

71111.11Q - Licensed Operator Requalification Program and Licensed Operator Performance

Licensed Operator Performance in the Actual Plant/Main Control Room (IP Section 03.01) (2 Samples)

(1) The inspectors observed and evaluated licensed operator performance in the control room during Unit 2 reactor startup on April 26, 2022.
(2) The inspectors observed and evaluated licensed operator performance in the control room during Unit 1 main turbine testing on May 7, 2022.

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

(1) The inspectors observed and evaluated a recorded simulator requalification scenario and critique that contained 1A steam generator feed regulation valve failure, main generator load rejection, main turbine runback, trip of the 2B component cooling pump, reactor coolant system leak, reactor trip, and reactor coolant system cooldown on May 16, 2022.

71111.12 - Maintenance Effectiveness

Maintenance Effectiveness (IP Section 03.01) (3 Samples)

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

(1) Nuclear condition report (NCR) 2423946, 2A2 component cooling pump tripped on over current on April 15, 2022
(2) NCR 2424782, Failure of (2AS-2) main steam to auxiliary steam header control valve on May 16, 2022
(3) NCR 2424761, Rod control anomaly resulted in dropped control rods on May 26, 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) Safe shutdown facility out of service (OOS) for maintenance, on April 7, 2022
(2) 2B EDG slow speed test, on April 18, 2022
(3) Unit 2 solid state protection system testing, on May 5, 2022
(4) Unit 2 turbine driven auxiliary feed pump testing, on May 26, 2022
(5) 2A EDG OOS for maintenance, on June 7, 2022

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 03.01) (6 Samples)

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

(1) NCR 2422790, 2A EDG lube oil keep warm low temperature on April 6, 2022
(2) NCR 2423780, Quarterly siren test failures on April 14, 2022
(3) NCR 2425646, 1A Charging pump lube oil cooler – cooling water flange leak on May 12, 2022
(4) NCR 2426293, 1B NV [chemical and volume control system] pump oil leak on May 16, 2022
(5) NCR 2427798, Meteorological tower data recording requirements on May 23, 2022
(6) NCR 2425121, Unit 2 electrohydraulic control system fault during weekly main turbine trip testing on June 6, 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 modification:

(1) Engineering change 41799, Technical support center air conditioning upgrade on April 8, 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) Work Request (WR) 20224074, meteorological wind direction inaccuracies, on April 14, 2022
(2) PT/1/A/4200/18A, CF [feedwater] valve in-service test of valve 1CF-88 following replacement of train B control solenoid valve 1CFSV0881, Work Order (WO) 20531056
(3) WR 20224751, 2YV [containment chilled water] chiller compressor tripped, on April 22, 2022
(4) WR 20224794, main steam bypass to condenser valve position indication (2SB24), on April 23, 2022
(5) WR 20225911, feedwater heater level control valve (2HW-161) failed closed, on May 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/0/A/4150/019, 1/M approach to criticality, on April 26, 2022
(2) PT/1/A/4350/002A, 1A emergency diesel generator slow start test, on May 10, 2022
(3) PT/2/A/4250/003, ‘C’ turbine driven auxiliary feedwater pump #2 performance test, for WO 20522997

FLEX Testing (IP Section 03.02) (1 Sample)

(1) Procedure OSME GE 0002, Perform annual and quarterly FLEX PMs (Equipment List), WO 20503524, 20520591

## OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

MS06: Emergency AC Power Systems (IP Section 02.05) (2 Samples)

(1) Unit 1 (April 1, 2021, through March 31, 2022)
(2) Unit 2 (April 1, 2021, through March 31, 2022)

MS07: High Pressure Injection Systems (IP Section 02.06) (2 Samples)

(1) Unit 1 (April 1, 2021, through March 31, 2022)
(2) Unit 2 (April 1, 2021, through March 31, 2022)

MS08: Heat Removal Systems (IP Section 02.07) (2 Samples)

(1) Unit 1 (April 1, 2021, through March 31, 2022)
(2) Unit 2 (April 1, 2021, through March 31, 2022)

71152S - Semiannual Trend Problem Identification and Resolution

Semiannual Trend Review (Section 03.02) (1 Sample)

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

71153 - Follow Up of Events and Notices of Enforcement Discretion

Event Followup (IP Section 03.01) (1 Sample)

(1) The inspectors evaluated Unit 2 reactor trip and auxiliary feedwater actuation and the licensee's response on April 22, 2022.

Event Report (IP Section 03.02) (1 Sample)

The inspectors evaluated the following licensee event report (LER):

(1) LER 414/2021-001-00, "Indication Identified During Reactor Pressure Vessel Head Nozzle Penetration Inspection" (ADAMS Accession Number ML21172A302). The inspectors determined that it was not reasonable to foresee or correct the cause discussed in the LER therefore no performance deficiency was identified. The inspectors did not identify a violation of NRC requirements.

## INSPECTION RESULTS

No findings were identified.

## EXIT MEETINGS AND DEBRIEFS

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

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

## THIRD PARTY REVIEWS

The inspectors reviewed the 2022 INPO Evaluation and Assistance report issued during the inspection period.

**DOCUMENTS REVIEWED**

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
|---|---|---|---|---|
| 71153 | Corrective Action Documents | NCR 02379193 | Relevant UT Leak Path Indication confirmed on Reactor Vessel Head Penetration 74 | 04/21/2021 |