



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

January 26, 2022

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

**SUBJECT: CATAWBA NUCLEAR STATION – INTEGRATED INSPECTION REPORT
05000413/2021004 AND 05000414/2021004**

Dear Mr. Simril:

On December 31, 2021, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Catawba Nuclear Station. On January 26, 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.

One finding of very low safety significance (Green) is documented in this report. This finding involved a violation of NRC requirements. 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,

/RA/

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
05000413/2021004 AND 05000414/2021004 – DATED JANUARY 26, 2022

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DATE	1/20/2022	1/20/2022	1/20/2022	1/20/2022	1/26/2022

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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: 05000413/2021004 and 05000414/2021004

Enterprise Identifier: I-2021-004-0010

Licensee: Duke Energy Carolinas, LLC

Facility: Catawba Nuclear Station

Location: York, South Carolina

Inspection Dates: October 1, 2021 to December 31, 2021

Inspectors: J. Austin, Senior Resident Inspector
C. Scott, Resident Inspector
D. Rivard, Project Engineer
S. Downey, Senior Reactor Inspector
W. Pursley, Health Physicist
J. Rivera, Health Physicist
M. Schwieg, Senior Reactor Inspector
M. Meeks, Senior Operations Engineer

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.

List of Findings and Violations

Failure to follow Boric Acid Corrosion Control Program Procedures			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000413/2021004-01 Open/Closed	None	71111.08P
The inspectors identified a Green finding and associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to perform procedure TE-MN-PWR-0006, "Inspection, Assessment, and Cleanup of Boric Acid on Plant Materials," when required by procedure AD-EG-PWR-1611, Revision 4, entitled "Boric Acid Corrosion Control Program – Implementation." Specifically, from June 2, 2020, to September 12, 2021, there were 63 instances identified in which the licensee failed to perform procedure TE-MN-PWR-0006 after identifying boric acid residue or leakage as required by procedure AD-EG-PWR-1611.			

Additional Tracking Items

None.

PLANT STATUS

Unit 1 began the inspection period at or near 100 percent rated thermal power (RTP). On October 16, 2021, the unit was shut down for a scheduled refueling outage. The unit was returned to 100 percent RTP on November 6, 2021, and remained at or near 100 percent RTP for the remainder of the 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

71111.01 - 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 seasonal cold temperatures for the following systems on December 13, 2021:
 - Unit 1 refueling water storage tank
 - Safe shutdown facility

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

- (1) The inspectors evaluated that flood protection barriers, mitigation plans, procedures, and equipment were consistent with the licensee's design requirements and risk analysis assumptions for coping with external flooding in the Unit 2 outdoor drains on December 15, 2021.

71111.04 - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (2 Samples)

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

- (1) Unit 1 component cooling water pumps on November 2, 2021

- (2) Emergency supplemental power supply on November 16, 2021

71111.05 - Fire Protection

Fire Area Walkdown and Inspection Sample (IP Section 03.01) (5 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 lower containment on November 1, 2021
- (2) Unit 1 Auxiliary Building Elevation 577, Unit 1 electrical penetration room, and essential train A (ETA) room (rooms 494-496), on November 3, 2021
- (3) Unit 2 Auxiliary Building Elevation 577, Unit 2 electrical penetration room, and ETA room (rooms 484-486), on November 3, 2021
- (4) Protected area north, ESPS DG-1, and DG-1 diesel generator enclosures, on November 10, 2021
- (5) Safe shutdown facility, on December 15, 2021

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 for the 2B1 component cooling water pump on November 18, 2021.

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) Work request (WR) 20209964, water leak from overhead in 2B sequencer hallway on October 11, 2021

71111.07A - Heat Sink Performance

Annual Review (IP Section 03.01) (1 Sample)

The inspectors evaluated readiness and performance of:

- (1) Unit 1 component cooling water heat exchanger

71111.08P - Inservice Inspection Activities (PWR)

PWR Inservice Inspection Activities Sample (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated pressurized water reactor non-destructive testing by reviewing the following examinations from October 18 to October 29, 2021:
 1. Liquid Penetrant Examination
 - a. Weld 1NW59-13, valve to tube adapter weld, ASME Class 2. This included a review of the associated welding activities.

2. Radiographic Testing
 - a. Weld 1NV128-54, pipe to pipe weld, ASME Class 2. This included a review of the associated welding activities.
 - b. Weld 1NV128-59, pipe to pipe weld, ASME Class 2. This included a review of the associated welding activities.
3. Ultrasonic Examination
 - a. Weld 1NC51-BEND-AA, pipe bend, ASME Class 1
 - b. Weld 1NC40-5, pipe to elbow weld, ASME Class 1
 - c. Weld 1NC51-1, nozzle to pipe weld, ASME Class 1
 - d. Weld 1PZR-W8E, head to shell weld, ASME Class 1
 - e. Weld 1PZR-W9D, head to shell weld, ASME Class 1
4. Visual Examination
 - a. Bare metal visual examination of the Reactor Pressure Vessel Upper Head, ASME Class 1

The Inspectors evaluated the licensee's boric acid control program performance.

71111.11A - Licensed Operator Requalification Program and Licensed Operator Performance

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

- (1) Annual Review of Licensee Requalification Examination Results: On August 5, 2021, the facility licensee completed 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 13, 2021, 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 03.03, "Requalification Examination Results," of IP 71111.11.

71111.11Q - Licensed Operator Requalification 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 licensed operator performance during Unit 1 shutdown and cooldown for refueling outage C1R26 on October 15 and 16, 2021.

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

- (1) The inspectors observed and evaluated a recorded operator simulator requalification training on November 30, 2021. The scenario contained an issue with main turbine high vibration, loss of nuclear service water, main turbine trip, reactor trip, steam generator safety failed open and a safety injection signal.

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (9 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) Outage risk review for C1R26, on October 13, 2021
- (2) Defense in depth (DID) Yellow Risk for lowered inventory to support reactor head lift, on October 19, 2021
- (3) Protected equipment plan for planned maintenance on Unit 1 component cooling water heat exchangers, on October 26, 2021
- (4) Unplanned DID Yellow Risk due to loss of the 1B spent fuel pool cooling pump, on October 27, 2021
- (5) DID Yellow Risk for decay heat, on October 29, 2021
- (6) Units 1 and 2 main turbine generator brush inspections, on November 15, 2021
- (7) 1B residual heat removal pump testing, on November 30, 2021
- (8) Switchyard breaker maintenance, on December 2, 2021
- (9) 2A emergency diesel generator (EDG) slow speed test, on December 7, 2021

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) Nuclear condition report (NCR) 2402817, 1B auxiliary feedwater (CA) sump pump failed pump down acceptance criteria on October 25, 2021
- (2) NCR 2403965, winter readiness corrective work orders (WO) not completed by November 1, 2021
- (3) NCR 2403880, 1A and 1B reactor vessel level instrumentation system (ICCM) Inoperable – LCO 3.0.4b evaluation to support Mode 3-C1R26 on November 3, 2021
- (4) NCR 2400035, manual steam dump operation on November 23, 2021
- (5) NCR 2407850, blown fuse with no apparent cause on December 9, 2021
- (6) NCR 2408680, 1A EDG jacket cooling water pump seal leak on December 15, 2021

71111.18 - Plant Modifications

Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (2 Samples)

The inspectors evaluated the following temporary or permanent modifications:

- (1) NCR 2403601, Catawba 1 Cycle 27 (C1C27) reload core design on October 30, 2021
- (2) Engineering change (EC) 420373, data failure D/E card modification on December 17, 2021

71111.19 - Post-Maintenance Testing

Post-Maintenance Test Sample (IP Section 03.01) (7 Samples)

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

- (1) WR 20211881, 1NV491 (1B NC filter outlet isolation) spuriously closed, on October 19, 2021
- (2) WO 20426522, replace relay load shed relay "CC" in 1DGLSA-2, post maintenance test in accordance with PT/1/A/4200/009, Engineering Safety Features (ESF) Actuation Test, on October 22, 2021
- (3) WO 20444477, 1NV-11A letdown orifice 1C outlet containment isolation did not stroke open prior to the 1A ESF testing, post maintenance test in accordance with PT/1/A/4200/0213 I, NV Valve Inservice Test, on October 24, 2021
- (4) WO 20501448, 2A steam generator narrow range level indication, on November 11, 2021
- (5) WO 20503389, 2CASV0520 solenoid replacement, on November 23, 2021
- (6) WO 20490824, 1B EDG bearing connection rod inspection, on November 29, 2021
- (7) WR 20215346, Unit 2 wide range neutron power chart recorder not advancing, on December 2, 2021

71111.20 - Refueling and Other Outage Activities

Refueling/Other Outage Sample (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated Unit 1 refueling outage C1R26 activities from October 16, to November 4, 2021.

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Surveillance Tests (other) (IP Section 03.01) (4 Samples)

- (1) PT/0/A/4150/001, Controlling Procedure for Startup Physics Testing
- (2) PT/1/A/4350/002 E, CA,CF, Turbine Interlock Periodic Test, on October 16, 2021
- (3) PT/1/A/4350/02A, 1A EDG Operability Test, on November 9, 2021
- (4) PT/1/A/4600/002 A, Mode 1 Periodic Surveillance Items, on November 15, 2021

Inservice Testing (IP Section 03.01) (1 Sample)

- (1) PT/1/A/4200/10B, 1B Residual Heat Removal Pump Test, on November 30, 2021

RCS Leakage Detection Testing (IP Section 03.01) (1 Sample)

- (1) PT/1/A/4150/001 D, NC System Leakage Calculation, on November 15, 2021

Containment Isolation Valve Testing (IP Section 03.01) (1 Sample)

- (1) PT//A/4200/001 I, As Found Containment Isolation Valve Leak Rate Test, on October 23, 2021

71114.06 - Drill Evaluation

Drill/Training Evolution Observation (IP Section 03.02) (1 Sample)

The inspectors evaluated:

- (1) A recorded operator graded simulator scenario on December 2, 2021. The scenario contained a leaking fuel assembly, down power, main feedwater malfunction, control rod malfunction, loss of vital AC inverter, reactor trip, reactor coolant system leak, and safety injection.

RADIATION SAFETY

71124.01 - Radiological Hazard Assessment and Exposure Controls

Radiological Hazard Assessment (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated how the licensee identifies the magnitude and extent of radiation levels and the concentrations and quantities of radioactive materials and how the licensee assesses radiological hazards during the C1R26 refueling outage.

Instructions to Workers (IP Section 03.02) (1 Sample)

- (1) The inspectors reviewed the following:

Radiation Work Packages

- Radiation Work Permit (RWP) 1405 and 1453, Reactor Head Activities
- RWP 1635, Locked High Radiation Area U-1 Nuclear Coolant Filter Changeout (AB)
- RWP 1666, Self Brief Entry to Low Dose Open Areas of Aux Building

Electronic Alarming Dosimeter Alarms

- Unanticipated dose rate alarm, NCR 02360851
- Unanticipated dose rate alarm. NCR 02379299
- Unanticipated dose rate alarm. NCR 02377798

Labeling of Containers

- Radioactive material shipping and storage containers outside the Unit 1 equipment hatch in support of the C1R26 refueling outage.
- Radioactive material containers and toolboxes in containment
- Radioactive material shipping and storage containers in the Radwaste Building

Contamination and Radioactive Material Control (IP Section 03.03) (3 Samples)

The inspectors observed/evaluated the following licensee processes for monitoring and controlling contamination and radioactive material:

- (1) Observed licensee surveys of potentially contaminated material being removed from the radiologically controlled area during the C1R26 refueling outage.
- (2) Observed radiation protection technician oversight and survey performance of materials being removed from the Unit 1 equipment hatch during the C1R26 refueling outage.
- (3) Observed radiation protection technician oversight and surveys of workers exiting the radiological controlled area during the C1R26 refueling outage.

Radiological Hazards Control and Work Coverage (IP Section 03.04) (4 Samples)

The inspectors evaluated the licensee's control of radiological hazards by reviewing the following radiological work packages for areas with airborne radioactivity:

- (1) RWP 1405 and 1453, Reactor Head Activities
- (2) RWP 1635, Locked High Radiation Area Unit 1 Nuclear Coolant Filter Changeout
- (3) RWP 1615, Pump Maintenance Auxiliary Building
- (4) RWP 1421, Mechanical Valve Work on the Unit 1 Pressurizer cubical

High Radiation Area and Very High Radiation Area Controls (IP Section 03.05) (5 Samples)

The inspectors evaluated licensee controls of the following High Radiation Areas and Very High Radiation Areas:

- (1) Unit 1 Auxiliary Building Valve Gallery
- (2) Auxiliary Building Pipe Trench and Hall
- (3) Unit 1 Auxiliary Building KF Demineralizer Room
- (4) Unit 2 Auxiliary Building KF Demineralizer Room
- (5) Unit 2 Auxiliary Building Valve Gallery

Radiation Worker Performance and Radiation Protection Technician Proficiency (IP Section 03.06) (1 Sample)

- (1) The inspectors evaluated radiation worker and radiation protection technician performance as it pertains to radiation protection requirements during the C1R26 refueling outage.

71124.02 - Occupational ALARA Planning and Controls

Radiological Work Planning (IP Section 03.01) (5 Samples)

The inspectors evaluated the licensee's radiological work planning for the following activities:

- (1) ALARA Plan No. C1R26-21-01, Mass Shielding, Rev. 0
- (2) ALARA Plan No. C1R26-21-02, Reactor Head Activities, Rev. 0
- (3) ALARA Plan No. C1R26-21-04, Incore Detector Thimble Movement, Rev. 0

- (4) ALARA Plan No. C2R24-21-02, Reactor Head Activities, Rev. 0
- (5) ALARA Plan No. C2R24-21-04, Steam Generator Primary, Rev. 1

Verification of Dose Estimates and Exposure Tracking Systems (IP Section 03.02) (5 Samples)

The inspectors evaluated dose estimates and exposure tracking for the following activities:

- (1) Unit 1 mass shielding ALARA planning
- (2) Unit 1 reactor head activities ALARA planning
- (3) Unit 1 incore detector thimble movement ALARA planning
- (4) Unit 2 reactor head activities ALARA evaluation
- (5) Unit 2 steam generator activities ALARA evaluation

Implementation of ALARA and Radiological Work Controls (IP Section 03.03) (5 Samples)

The inspectors reviewed as low as reasonably achievable practices and radiological work controls for the following activities:

- (1) RWP 1421, Task 6, High Radiation Area Mechanical Valve Work, Rev. 23
- (2) RWP 1405, Task 10, Misc Head Crew Cavity Activities (HRA), Rev. 23
- (3) RWP 1415, Task 2, Spent Fuel Pool Movement, Rev. 32
- (4) RWP 2405, Task 6, Medium Risk Reactor Head Movement (LHRA, HCA), Rev. 24
- (5) RWP 2806, Task 1, SG High Radiation Area A/D Remove Manways (LC) Medium Risk, Rev. 32

Radiation Worker Performance (IP Section 03.04) (1 Sample)

- (1) The inspectors evaluated radiation worker performance during Unit 1 outage for upper internals lift, pressurizer valve work, and fuel movement.

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

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

- (1) Unit 1 (October 1, 2020 - September 30, 2021)
- (2) Unit 2 (October 1, 2020 - September 30, 2021)

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

- (1) Unit 1 (October 1, 2020 - September 30, 2021)
- (2) Unit 2 (October 1, 2020 - September 30, 2021)

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

- (1) Unit 1 (October 1, 2020 - September 30, 2021)
- (2) Unit 2 (October 1, 2020 - September 30, 2021)

OR01: Occupational Exposure Control Effectiveness Sample (IP Section 02.15) (1 Sample)

- (1) September 30, 2020 through September 30, 2021

71152 - Problem Identification and Resolution (PI&R)

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

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

Annual Follow-up of Selected Issues (IP Section 02.03) (3 Samples)

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

- (1) NCR 2402821, grid strap was damaged on bottom of TK44 and TK59
- (2) NCR 2399571, 1B train core exit thermocouples reading low
- (3) NCR 2399131, feedback linkage disconnected

OTHER ACTIVITIES – TEMPORARY INSTRUCTIONS, INFREQUENT AND ABNORMAL

71003 - Post-Approval Site Inspection for License Renewal

Post-Approval Site Inspection for License Renewal (1 Sample)

- (1) The inspectors observed the implementation of the following license renewal activities (listed by aging management program) from October 17, 2021, to October 28, 2021:
1. Containment Leak Rate Testing Program
 - a. Unit 1 electrical penetration sulfur hexafluoride (SF₆) gas leak rate test
 2. Divider Barrier Seal Inspection and Testing Program
 - a. Divider barrier seal inspection and coupon removal
 3. Heat Exchanger Activities
 - a. Cleaning of 1A component cooling water heat exchanger
 4. Inaccessible Non-EQ Medium-Voltage Cables Aging Management Program
 - a. Tan delta testing of the 1RN 'A' motor cables
 5. Ice Condenser Inspections
 - a. Visual inspection of ice baskets
 6. Inservice Inspection Plan
 - a. Ultrasonic examination of Weld 1NC40-5
 7. Inspection Program for Civil Engineering Structures and Components
 - a. Unit 1 station vent inspection
 8. Sump Pump Systems Inspection
 - a. Visual inspection of turbine driven auxiliary feedwater pit sump pump 1A centrifugal separator and adjacent piping
 - b. Visual inspection of turbine driven auxiliary feedwater pit sump pump 1B centrifugal separator and adjacent piping

INSPECTION RESULTS

Failure to follow Boric Acid Corrosion Control Program Procedures			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000413/2021004-01 Open/Closed	None	71111.08P
<p>The inspectors identified a Green finding and associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to perform procedure TE-MN-PWR-0006, "Inspection, Assessment, and Cleanup of Boric Acid on Plant Materials," when required by procedure AD-EG-PWR-1611, Revision 4, entitled "Boric Acid Corrosion Control Program – Implementation." Specifically, from June 2, 2020, to September 12, 2021, there were 63 instances identified in which the licensee failed to perform procedure TE-MN-PWR-0006 after identifying boric acid residue or leakage as required by procedure AD-EG-PWR-1611.</p>			
<p>Description: Procedure AD-EG-PWR-1611, Revision 4, requires all plant personnel to initiate a Work Request (WR) when boric acid is found. Section 5.3.2.a. of the same procedure states that procedure TE-MN-PWR-0006 is used to respond to and to initially document the characteristics of leaks and is implemented whenever a WR is created for identification of boric acid leakage. The procedure also states in Section 5.3.8 that procedure TE-MN-PWR-0006 is used for the cleaning and inspection of all boron deposits and leaks.</p> <p>On October 6, 2021, while reviewing the list of previously identified boric acid leaks at Catawba Unit 1, the inspector requested the completed boric acid leak assessments (per TE-MN-PWR-0006) for a sample of five boric acid leaks (WRs 20178542, 20179486, 20183042, 20183044, and 20190898). In response, the licensee provided assessments for three of the leaks (WRs 20178542, 20183042, and 20183044) and stated that the leak characterization procedure, TE-MN-PWR-0006, was not completed for the remaining two leaks requested by the inspector. The licensee also generated NCR 2401770 to capture the issue. Per NCR 02401770, the leaks were cleaned, and corrective actions taken, after which the leakage from the components could no longer be characterized per procedure TE-MN-PWR-0006. The NCR also notes that failure to complete the leak characterization procedure prevents the generation of an assignment to Engineering to evaluate corrosion concerns with the leaking SSCs.</p> <p>During an interview with licensee staff on October 18, 2021, the inspector requested that the licensee investigate all leaks identified since the previous outage in order to determine an extent of condition for the issue. In response, licensee performed an extent of condition review of all boric acid WRs completed between June 6, 2020, and September 12, 2021, and generated NCR 02402590. Per NCR 2402590, the licensee determined that procedure TE-MN-PWR-0006 was used and documented in 73 of the 136 WRs reviewed. On this basis, the inspector identified a violation of 10 CFR Part 50, Appendix B, Criterion V, for the licensee's failure to perform the procedure as required in the other 63 instances.</p> <p>Corrective Actions: The licensee plans to expand the extent of condition review to include both units. The review will be formally documented. The licensee also plans to perform procedure TE-MN-PWR-0006 on outstanding work requests and on completed work requests that are missing the procedure. Finally, the licensee will evaluate the action plan in NCR 2364647 and determine if additional actions are needed.</p>			

Corrective Action References: NCR 2402590, NCR 2364647

Performance Assessment:

Performance Deficiency: The inspector determined that the licensee's failure to perform procedure TE-MN-PWR-0006 after identifying boric acid leakage and generating a work request was a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because if left uncorrected, it would have the potential to lead to a more significant safety concern. Specifically, the repetitive failure to appropriately characterize and assess boric acid leakage when identified could lead to more significant degradation of safety-related plant components in systems that normally contain borated water, including the reactor coolant pressure boundary.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." The inspectors determined the finding to be of very low safety significance (Green) because there was no degradation present that could result in exceeding the reactor coolant system leak rate for a small LOCA or that could have likely affected other systems used to mitigate a LOCA. In addition, the finding did not involve potential non-compliance with regulatory requirements for protection of the reactor pressure vessel against fracture.

Cross-Cutting Aspect: None

Enforcement:

Violation: 10 CFR Part 50, Appendix B, Criterion V, requires that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings.

Procedure AD-EG-PWR-1611, Revision 4, Section 5.3.2.a., states that procedure TE-MN-PWR-0006 is used to respond to and to initially document the characteristics of leaks and is implemented whenever a WR is created for identification of boric acid leakage.

Contrary to the above, from June 2, 2020, to September 12, 2021, the licensee failed to perform procedure TE-MN-PWR-0006, "Inspection, Assessment, and Cleanup of Boric Acid on Plant Materials," when required by procedure AD-EG-PWR-1611, Revision 4, entitled "Boric Acid Corrosion Control Program – Implementation." Specifically, there were 63 instances identified in which the licensee failed to perform procedure TE-MN-PWR-0006 after identifying boric acid residue or leakage as required by procedure AD-EG-PWR-1611.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

EXIT MEETINGS AND DEBRIEFS

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

- On October 22, 2021, the inspectors presented the RP Occupational Baseline inspection results to Tom Simril, Site Vice President, and other members of the licensee staff.
- On October 28, 2021, the inspectors presented the Baseline ISI and Phase I License Renewal inspection results to Tom Simril, Site Vice President, and other members of the licensee staff.
- On January 26, 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	
71003	Work Orders	Work Orders (by number)	20368997-07, 20368998-07, 20409081-03, 20428968-01, 20444836-01, 20444908-01		
71111.08P	Corrective Action Documents	NCRs (by number)	2364647		
	Corrective Action Documents Resulting from Inspection	NCRs (by number)	2401770, 2402590		
	Miscellaneous			Welding Procedure Qualification Record L-138	Revision 0
				Welding Procedure Qualification Record L-110D	Revision 0
	NDE Reports	DE_C_1_1NV128-54_20200513		Radiographic Examination of Weld 1NV128-54	05/13/2020
		DE_C_1_1NV128-59_20200513		Radiographic Examination of Weld 1NV128-59	05/13/2020
		UT-21-002		Ultrasonic Examination of Weld 1NC40-5	10/23/2021
		UT-21-012		Ultrasonic Examination of Weld 1NC51-1	10/23/2021
		UT-21-013		Ultrasonic Examination of 1NC51-BEND-AA	10/23/2021
		VE-21-002		Ultrasonic Examination of Weld 1PZR-W8E	10/28/2021
		VE-21-003		Ultrasonic Examination of Weld 1PZR-W9D	10/28/2021
VT-21-036		Visual Examination of Reactor Pressure Vessel Upper Head	10/24/2021		
Work Orders	Work Orders (by Number)		02050970-01		
71124.01	Corrective Action Documents Resulting from Inspection	Action Request	02402439		
	Radiation Surveys	CNS-M-20211020-20	Room 230, Centrifugal Charging Pump 1A	10/20/2021	
71124.02	Miscellaneous	C1R26 Special ALARA Committee Meeting	C1R26 Outage Estimate Recommendation	10/20/2021	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Procedures	AD-RP-ALL-9001	ALARA Planning	Revision 5