



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
REGION II  
245 PEACHTREE CENTER AVENUE NE, SUITE 1200  
ATLANTA, GEORGIA 30303-1257

April 27, 2018

Mr. Tom Simril  
Site Vice President  
Duke Energy Corporation  
Catawba Nuclear Station  
4800 Concord Road  
York, SC 29745-9635

**SUBJECT: CATAWBA NUCLEAR STATION – NRC INTEGRATED INSPECTION REPORT  
05000413/2018001 AND 05000414/2018001**

Dear Mr. Simril:

On March 31, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Catawba Nuclear Station Units 1 and 2. On April 18, 2018, 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.

The NRC inspectors documented one finding of very low safety significance (Green) in this report. This finding involved a violation of NRC requirements. The NRC is treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2.a of the Enforcement Policy.

If you contest the violation or significance of the NCV, 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 the Catawba Nuclear Station. If you disagree with the cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region II; and the NRC resident inspector at the Catawba Nuclear Station.

T. Simril

2

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 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

***/RA/***

Frank Ehrhardt, Chief  
Reactor Projects Branch 1  
Division of Reactor Projects

Docket Nos.: 50-413, 50-414  
License Nos.: NPF-35, NPF-52

Enclosure:  
IR 05000413/2018001 AND 05000414/2018001

cc: Distribution via ListServ

T. Simril

3

SUBJECT: CATAWBA NUCLEAR STATION – NRC INTEGRATED INSPECTION REPORT  
05000413/2018001 AND 05000414/2018001 April 27, 2018

**DISTRIBUTION:**

M. Kowal, RII  
K. Sloan, RII  
OE Mail  
RIDSNRRDIRS  
PUBLIC  
RidsNrrPMCatawba Resource

**ADAMS Accession No: ML 18117A258**

OFFICE	RII:DRP	RII:DRP	RII:DRS	RII:DRP	RII:DRP	RII:DRP
NAME	JAustin	CScott /RA FJE for/	SDowney	MToth	JWorosilo	F. Ehrhardt
DATE	4/26/2018	4/27/2018	4/26/2018	4/26/2018	4/25/2018	4/27/2018

OFFICIAL RECORD COPY

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

Docket Number(s): 50-413, 50-414

License Number(s): NPF-35, NPF-52

Report Number(s): 05000413/2018001 and 05000414/2018001

Enterprise Identifier: I-2018-001-0054

Licensee: Duke Energy Carolinas, LLC

Facility: Catawba Nuclear Station, Units 1 and 2

Location: York, SC

Inspection Dates: January 1, 2018 to March 31, 2018

Inspectors: J. Austin, Senior Resident Inspector  
C. Scott, Resident Inspector  
S. Downey, Senior Reactor Inspector (Section 71111.08)

Approved By: F. Ehrhardt, Chief  
Reactor Projects Branch 1  
Division of Reactor Projects

## SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring licensee performance by conducting a quarterly baseline inspection at Catawba Units 1 and 2 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. NRC and self-revealed findings, violations, and additional items are summarized in the table below.

### List of Findings and Violations

Failure to Ensure that Conditions Adverse to Quality Managed Outside of the Corrective Action Program are Corrected			
Cornerstone	Significance	Cross-cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000413, 414/2018001-01 Closed	[P.3] - Resolution	71152 – Annual Follow-up of Selected Issues
The inspectors identified a Green non-cited violation (NCV) of Title 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," for the licensee's failure to adequately establish measures to correct conditions adverse to quality (CAQ). Specifically, the licensee failed to establish controls to ensure that CAQs managed outside of the corrective action program (CAP) are corrected.			

## 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 through March 16, 2018. On March 17, 2018, the unit commenced refueling outage 2RFO22 and remained in the outage throughout the report 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.

## REACTOR SAFETY

### 71111.04 - Equipment Alignment

#### Partial Walkdown (4 Samples)

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

- (1) Unit 1, 1A emergency diesel generator (EDG) with the 1B EDG out-of-service for pre-planned maintenance on February 1, 2018
- (2) Unit 1 and 2 service water (RN) when aligned to the service water nuclear pond on February 1, 2018
- (3) Unit 2 turbine driven auxiliary feedwater (CA) pump on February 28, 2018
- (4) Unit 2 2A EDG with the 2B EDG out of service for preplanned maintenance on March 26, 2017

### 71111.05AQ - Fire Protection Annual/Quarterly

#### Quarterly Inspection (6 Samples)

The inspectors evaluated fire protection program implementation in the following selected areas:

- (1) Fire Area 9: Unit 1 battery rooms on February 1, 2018
- (2) Fire Area 1: Unit 1 and 2 residual heat removal pump and containment spray pump areas on February 2, 2018
- (3) Fire Area 10: Unit 2 battery rooms on February 22, 2018
- (4) Fire Area 27: Unit 2 2A EDG and corridor on March 21, 2018

- (5) Fire Area RB1: Unit 2 reactor building Elev. 594' lower containment on March 22, 2018
- (6) Fire Area TB1: Unit 1 turbine building elevation 594' on March 31, 2018

71111.08 - Inservice Inspection Activities (1 Sample)

The inspectors evaluated pressurized water reactor non-destructive testing by reviewing the following examinations from March 19, 2018, to March 23, 2018:

- (1) Liquid Penetrant Examination
  - a) Weld 2SM40-8, gamma plug weld, ASME Class 2. This included a review of associated welding activities.
- (2) Radiographic Examination
  - a) Weld 2NI106-46, pipe to valve weld, ASME Class 2. This included a review of associated welding activities.
  - b) Weld 2NV606-15, pipe to valve weld, ASME Class 2. This included a review of associated welding activities.
- (3) Ultrasonic Examination
  - a) Weld 2NC140-5, pipe to pipe weld ASME Class 1.
  - b) Weld 2NC140-BEND-CC, pipe to pipe weld, ASME Class 1.
  - c) Weld 2NC51-12, pipe to pipe weld, ASME Class 1.
  - d) Weld 2NC51-13, pipe to pipe weld, ASME Class 1.
  - e) Weld 2NC51-14, pipe to pipe weld, ASME Class 1.
  - f) Weld 2RPV-W81-101-SE, nozzle to tube weld, ASME Class 1 (per Code Case N-770-2).
  - g) Weld 2RPV-W81-101, tube to tube weld, ASME Class 1 (per Code Case N-770-2)
- (4) Visual Examination
  - a) Reactor Vessel Head (per Code Case N-794-4)
  - b) Weld 2RPV-W81-101-SE, Nozzle to Tube Weld, ASME Class 1

The inspectors evaluated the licensee's boric acid control program performance. The inspectors also verified that no steam generator tube inspection activities were required for this refueling outage.

71111.11 - Licensed Operator Requalification Program and Licensed Operator Performance

Operator Requalification (1 Sample)

The inspectors observed and evaluated just-in-time training for reactor operators on March 1, 2018.

Operator Performance (1 Sample)

The inspectors observed and evaluated the reactor cooldown for Unit 2 RFO22 on March 17, 2018.

### 71111.12 - Maintenance Effectiveness

#### Routine Maintenance Effectiveness (3 Samples)

The inspectors evaluated the effectiveness of routine maintenance activities associated with the following equipment and/or safety significant functions:

- (1) Unit 2 vital battery charger 2ECD
- (2) Unit 2 2A air return fan
- (3) Unit 2 EDG engine lube oil transfer pump

### 71111.13 - Maintenance Risk Assessments and Emergent Work Control (6 Samples)

The inspectors evaluated the risk assessments for the following planned and emergent work activities:

- (1) Maintenance risk evaluation with erratic level indication for 2A containment penetration valve injection (NW) surge chamber (Action Request (AR) 2175510) on January 9, 2018
- (2) Unit 1 and 2 protected equipment plan when aligned to the service water nuclear pond on February 1, 2017
- (3) Maintenance risk evaluation with the 1A EDG and 1B auxiliary feedwater pump out of service on February 17, 2018
- (4) Maintenance risk evaluation for preventive maintenance inspection of load center 2TC discovered evidence of overheating on March 21, 2018
- (5) Unit 2 yellow risk protected equipment plan with the 2A EDG out of service for maintenance on March 23, 2018
- (6) Unit 1 protected equipment plan with the standby shutdown facility diesel non-functional due to failure of inverter 2KSI on March 27, 2018

### 71111.15 - Operability Determinations and Functionality Assessments (6 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

- (1) AR 2180950, Unit 1 and 2, RN valve stem support corrosion on February 1, 2018
- (2) AR 21853582/2186215, 1B CA unplanned limiting condition for operability (LCO) 3.7.5 Condition 'B' entry on February 17, 2018
- (3) AR 2185664, EDG voltage regulator droop on February 19, 2018
- (4) AR 2063567, 2EMX F02C tripping when transfer pump placed in service on February 27, 2018
- (5) AR 2188735, Safe shutdown battery cells found below selected license commitment limits on March 6, 2018
- (6) AR 02189178, Unexpected entry into LCO 3.7.11a due to controlled area chilled water (YC) compressor high oil level on March 6, 2018

### 71111.18 - Plant Modifications (3 Samples)

The inspectors evaluated the following temporary or permanent modifications:



- (1) Engineering Change (EC) 89963, Correct auxiliary building ventilation control circuitry to allow engineered safety feature testing on February 8, 2018
- (2) EC 409506, EDG 2A Diode replacement on February 9, 2018
- (3) EC 411218, Unit 1 and Unit 2 auxiliary feedwater condensate storage tank availability in modes 3 and 4 with low decay heat on March 15, 2018

#### 71111.19 - Post Maintenance Testing (7 Samples)

The inspectors evaluated the following post maintenance tests:

- (1) OP/0/A/6400/006, RN system after preventive maintenance on the 2B service water pump strainer, on January 22, 2018
- (2) PT/2/A/4200/027, NW valve in-service test following replacement of 2NW237B, on January 24, 2018
- (3) PT/1/A/4350/002 B, Diesel generator operability test after replacement of EDG voltage regulator excitation system diodes, on February 1, 2018
- (4) PT/0/A/4450/008 E, Control room area chillers performance test after A YC chiller rebuild, on February 25, 2018
- (5) OP/0/A/6450/011, Control room area ventilation adjustment following maintenance, on February 26, 2018
- (6) IP/0/A/3710/038, Equalizing charging procedure, depleted standby shutdown facility batteries placed on equalize charge, on March 1, 2018
- (7) IP/0/A/3112/001A, Calibration procedure for service water intake level instrument following pit level failed high, on March 29, 2018

#### 71111.20 - Refueling and Other Outage Activities (1 Sample partial)

The inspectors evaluated refueling outage 2RFO22 activities from March 17, 2018, to March 31, 2018.

#### 71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

##### Routine (4 Samples)

- (1) PT/1/A/4250/003 C, "Turbine driven auxiliary feedwater pump performance test," on January 23, 2018
- (2) PT/1/A/4600/002, "Mode 1 periodic surveillance items," on January 30, 2018
- (3) IP/2/A/3122/003 B, "ICCM Train B Analog/Digital Internal Loop Calibration and Power Supply Check Replacement," on January 31, 2018
- (4) PT/0/A/4200/086, "Ice bed analysis periodic test," on March 21, 2018

##### In-service (1 Sample)

- (1) PT/2/A/4200/007 A, centrifugal charging pump 2A test on February 9, 2018

**OTHER ACTIVITIES – BASELINE**

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below for the period from January 2017 through December 2017. (6 Samples)

- (1) Cooling water systems
- (2) Reactor coolant activity
- (3) Unplanned scrams with complications

71152 - Problem Identification and Resolution

Annual Follow-up of Selected Issues (3 Samples)

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

- (1) AR 2180950, Engineering Change for RN valve steam guides
- (2) AR 2181760, Corrective action program conditions adverse to quality work management and engineering changes
- (3) AR 2188399, Auxiliary feedwater pump 1B check valve leakage

**OTHER ACTIVITIES – TEMPORARY INSTRUCTIONS, INFREQUENT AND ABNORMAL**

60855.1 - Operation of an Independent Spent Fuel Storage Installation

The inspectors evaluated the licensee’s independent spent fuel storage installation cask loadings on February 15, 2018.

**INSPECTION RESULTS**

Failure to Ensure that Conditions Adverse to Quality Managed Outside of the Corrective Action Program are Corrected			
Cornerstone	Significance	Cross-cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000413, 414/2018001-01 Closed	[P.3] – Resolution	71152 – Annual Follow-up of Selected Issues
The inspectors identified a Green NCV of Title 10 CFR 50, Appendix B, Criterion XVI, “Corrective Actions,” for the licensee’s failure to adequately establish measures to correct CAQ. Specifically, the licensee failed to establish controls to ensure that CAQs managed outside of the CAP are corrected.			
<u>Description:</u> The inspectors identified programmatic weaknesses in Catawba’s practice of using processes outside of the CAP to correct CAQ. Licensee procedure AD-PI-ALL-0100, “Corrective Action Program,” allows other approved processes such as the work management system (WMS) and EC process to resolve CAQs via work orders or work requests. Licensee procedure AD-PI-ALL-0100 defines an approved process as a “process of high rigor viewed			

as an acceptable mechanisms for tracking resolution of actions addressing conditions adverse to quality, including corrective actions but excluding CAPRs.” Further AD-PI-ALL-0100, states in part that an approved process must be “directed by a procedure; prioritize work based on nuclear risk and equipment reliability; provide a mechanism for traceability; contain an oversight structure to assure that work is completed as intended and contain controls such that cancellations, extensions, or changes in intent of work include the same level of review that established the original action.”

In the last year, the residents identified a number of longstanding equipment deficiencies that were either initiated outside of the CAP or moved from the CAP into the WMS or EC process. Some of the deficiencies identified include the following:

- In 2004, AR 1433140 documented a design flaw in the normal auxiliary ventilation (VA) circuitry that could cause the B-train VA unfiltered exhaust and supply fans to trip off while performing surveillance testing of the A-train of VA. This could cause the B-train VA filtered exhaust fans to operate at full flow and potentially lower control room pressure below the technical specification limit. This CAQ was documented in Condition Report (CR) 1433140 and later closed to a work order that remained open at the end of this inspection.
- In 2007, the licensee identified that the manual pressurizer spray bypass valve, 2NC-30, was degraded and not able to be throttled open to allow bypass flow. The UFSAR requires the valve to be throttled open to prevent excessive cooling of the spray line piping and limit thermal stress. Work Request (WR) 1096326 was generated in 2013 to repair the valve. The WR to correct this CAQ has been rescheduled several times and remained open at the time of this inspection.
- In 2013, the licensee initiated WRs to repair an evaporator coil leak and a refrigerant leak on the 1A auxiliary shutdown panel supply unit (ASPSU) and 1B ASPSU, respectively. The ASPSUs are safety-related ventilation units that are designed to maintain habitability in the auxiliary shutdown panel room, during a loss of control room event. The repair for the 1A and 1B ASPSU was rescheduled numerous times for various reasons. The CAQ was finally corrected in 2017 when repairs were made after the inspectors raised concerns surrounding the timeliness of corrective actions.

The inspectors discovered that the work orders to address these CAQs have remained in Catawba’s work order backlog for years. In some cases, the work orders or ECs have been rescheduled multiple times and modified or cancelled without sufficient written justification. Inspectors noted that Catawba’s work order backlog is significantly larger than the backlog of open corrective actions managed by the CAP. The inspectors also found that administrative controls for the actions in the WMS and CAP were different. One difference is that the work prioritization screening tools used in the WMS are not the same tools used to schedule corrective actions in the CAP. Also the management review and approval requirements for cancellations, extensions or changes in the intent of work are not the same. Corrective actions tracked in the CAP are typically required to be completed in less than or equal to 180 days unless approved by management. Work orders in the WMS can be rescheduled automatically based on the work priority or resources available. Finally, the inspectors identified that the licensee did not have the ability to consistently track and identify the WO/WRs that were initiated to correct CAQs in the WMS.

Based on the programmatic weaknesses identified, the inspectors determined that the licensee did not establish appropriate controls to ensure that the actions addressing CAQs in approved processes were completed as intended. Further, the WMS and EC processes did not meet all the conditions of an approved process required in AD-PI-ALL-0100, "Corrective Action Program."

Corrective Actions: Corrective actions were initiated to identify CAQs managed by approved processes. Corrective actions were also initiated to establish programmatic controls to ensure that the actions were implemented in a timely manner.

Corrective Action Reference: The licensee entered these issues into their CAP as CR 2181760.

Performance Assessment:

Performance Deficiency: The licensee's failure to establish adequate controls to ensure that CAQs managed by approved processes are corrected as required by AD-PI-ALL-0100 was a performance deficiency (PD).

Screening: This PD was more than minor because the programmatic weaknesses in the licensee's CAP resulted in CAQs not being appropriately tracked, prioritized, scheduled, and corrected, which, if left uncorrected, could lead to a more significant safety concern.

Significance: In accordance with IMC 0609, Attachment 4, dated October 7, 2016, this finding affected the mitigating systems cornerstone. The inspectors assessed the significance of the finding using IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated June 19, 2012. The inspectors determined that the finding was of very low safety significance (Green) because the equipment issues discussed in this finding did not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significant in accordance with the licensee's maintenance rule program for greater than 24 hours.

Cross-cutting Aspect: The inspectors determined the finding had a cross-cutting aspect of resolution in the area of problem identification and resolution, because effective corrective actions to address conditions adverse to quality managed by an approved process were not implemented in a timely manner commensurate with their safety significance.

Enforcement:

Violation: Title 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," states that measures shall be established to ensure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformance's are promptly identified and corrected. The licensee established procedure AD-PI-ALL-0100, "Corrective Action Program," to define requirements for a corrective action program. AD-PI-ALL-0100 requires that conditions adverse to quality be corrected.

Contrary to the above until February 1, 2018, the licensee failed to adequately establish measures to ensure conditions adverse to quality were promptly identified and corrected. Specifically, AD-PI-ALL-0100 allowed closure of conditions adverse to quality, to processes outside of the CAP without establishing adequate controls to ensure that CAQs were

corrected as intended. As a result, several longstanding equipment deficiencies for safety related equipment that were managed outside of CAP were uncorrected.

Disposition: This violation is being treated as an NCV, 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.

The inspectors confirmed that proprietary information was controlled to protect from public disclosure.

- On April 18, 2018, the inspector presented the quarterly resident inspector inspection results to Mr. Thomas Simril and other members of the licensee staff.

## DOCUMENTS REVIEWED

### **71111.04 - Equipment Alignment**

OP/2/A/6250/002, Auxiliary Feedwater System, Rev.140

OP/1/A/6350/002, Diesel Generator Operation, Rev.183

OP/0/A/6400/006 C, Nuclear Service Water System, Rev. 284

### **71111.05AQ - Fire Protection Annual/Quarterly**

CSD-CNS-PFP-AB-0560-001, Auxiliary Building Elevation 554 and 560 Pre-Fire Plan, Rev. 1

CSD-CNS-PFP-AB-0522-001, Auxiliary Building Elevation 522 Pre-Fire Plan, Rev. 0

### **71111.08 - Inservice Inspection Activities**

#### Procedures

AD-MN-ALL-0006, Fluid Leak Management, Rev. 1

AD-EG-PWR-1611, Boric Acid Corrosion Control Program – Implementation, Rev. 2

PD-EG-PWR-1611, Boric Acid Corrosion Control Program, Rev. 1

NDE-NE-ALL-4101, Liquid Penetrant Examination, Rev. 1

NDE-NE-ALL-5101, Radiographic Examination, Rev. 0

NDE-NE-ALL-6101, Ultrasonic Examination of Small Bore Piping Welds and Base Materials for Thermal Fatigue Damage, Rev. 1

NDE-NE-ALL-6102, Utilization of PDI-UT-2 Generic Procedure for the Ultrasonic Examination of Austenitic Pipe Welds, Rev. 1

NDE-NE-ALL-7202, Visual Examination of PWR Reactor Pressure Vessel Upper Head Penetrations, Rev. 2

NDE-10, General Radiography Procedure, Rev. 26

MP-0-A-7650-040, Inspection, Assessment, and Cleanup of Boric Acid on Plant Materials, Rev. 22

#### Calculations

CNC-1201.01-00-0022, Determination of Periodic Inspection Requirements for the Reactor Vessel Head and Reactor Vessel Head Inspection Documentation, Rev. 26

#### Drawings:

CN-2SM-0040, Main Steam System from Steam Generator “2B”, Rev. 10

CN-2NI-0106, Safety Injection System Boron Injection Tank 2 Discharge, Rev. 9

CNM-2201-01-0052.001, Unit 2 Reactor Vessel General Arrangement Plan View, Rev. 001

CNM-2201-01-0081.001, Unit 2 RVCH Insulation Plan, Rev. 00A

#### NDE Examiner Qualifications:

Day & Zimmerman Certification Record (Saenz): Liquid Penetrant Level II(L), dated 4/17/2016

Duke Energy Certificate of Method Qualification (Sherrill): RT Level II-N, dated 9/15/15

Duke Energy Certificate of Method Qualification (Shepard): RT Level II-N, dated 7/18/2017

Sonic Systems International, Inc. Certificate of Qualification (Freeman): RT Level II, dated 8/5/2017

Sonic Systems International, Inc. Certificate of Qualification (Nahory): UT Level II-PDI, dated 9/14/2017

Sonic Systems International, Inc. Certificate of Qualification (Steinbauer): UT Level II-PDI, dated 8/15/2017

Sonic Systems International, Inc. Certificate of Qualification (Healey): MT Level III, PT Level III, UT Level III, VT Level III, dated 02/08/2018

Sonic Systems International, Inc. Certificate of Qualification (Hill): VT Level II, dated 2/06/2018

#### Condition Reports

NCRs: 02068203, 02192715, 02162335, 02144722, 02176794, 02192920, 02192881, 02079817, 01897924, 02118385, 02192967, 02175038, 02072704, 02192806, 02193120, 02193051

#### Miscellaneous Documents

AR 01985576, Boric Acid Corrosion Control Program – Implementation Procedure Effectiveness Catawba C2R22 SG Skip Inspection Assessment, Rev. 0

Framatome NDE Services Field Report: Catawba, CNS2EOC22 AHA DM Weld Examinations Inspection Report DEC2\_2NI106-46\_20160920, dated 09/20/2016

Inspection Report DEC2\_2NV606-15\_20160920, dated 09/20/2016

Inspection Report VT-18-081, dated 03/29/18

Procedure Qualification Records: L-102E, Rev. 0; L-104, Rev. 3; L-133, Rev. 1;

L-146D, Rev. 0; L-110D, Rev. 0; L-138, Rev. 0; L-148C, Rev. 0

Welder Performance Qualification Test Records for Welders: W8394, W6075, W6540

Weld Procedure Specifications: GTSM0101-01, GTOO0808-04

Weld Doc Nos: 160841, 161135

Work Orders: 20222636-01, 2092918, 2068203, 20194404

#### **7111.11 - Licensed Operator Requalification Program and Licensed Operator Performance**

Unit 2 Mode3/4 with NO Vacuum- Complex Plan, Rev. 4

OP/2/A/6250/002 Auxiliary Feedwater System

OP/2/A/6100/001 Controlling Procedure for Unit Startup

#### **7111.18 - Plant Modifications**

EC409504, D/G Voltage Regulator/Excitation System Diode Replacement, Rev. 0

CN-1577-1.2, Flow Diagram of Auxiliary Building Ventilation System (VA), Rev. 17

PT/0/A/4450/008, Control Room Area Ventilation System Performance Test, Rev. 50

#### **7111.19 - Post Maintenance Testing**

WO 20155879-01, 2B Nuclear Service Water Strainer (2RNFL0007)

MP/0/A/7150/032, Nuclear Service Water Strainer Corrective Maintenance, Rev. 28

AR 2187445, A YC Chiller Oil Temperature

WO 20111837, 0YC CH 001: Rebuild A YC Chiller

OP/0/A/6450/011, Control Room Area Ventilation / Chilled Water System

#### **7111.20 - Refueling and Other Outage Activities**

AR 2134368, Operations 1EOC23 (C1R23) critique

AR 21220391, Unexpected U1 DCS Response caused letdown isolation

AR 2120299, Emergent issue #1: Unit 1 loss of letdown

#### **7111.22 - Surveillance Testing**

MP/0/A/7300/005, Auxiliary Feedwater Turbine/Pump Preventive Maintenance

AD-EG-ALL-1450, Preconditioning of Structures, Systems and Components

WO 20193059, 1CA: Semi Annual PM Aux Feedwater PMP (CAPT#1)

PIP C-05-7429

AR 2176695, Perform new preconditioning evaluation on current PM for CAPT

AR 2195679, Ice Condenser- Light Ice Baskets

**71152 - Problem Identification and Resolution**

CNC-1223.42-00-0045, Determination of Allowable CA Pump S/G Header Check Valve

Backleakage Temperatures

AR 1434555, NRC questioned why 2A CA header had dropped and temperature remained same

AR 1432690, OAC indication of CA Discharge check valve back leakage is lower than expected

OP/2/A/6250/002, Checking Pipe Surface Temperatures

AR 2178009, Corrective Action Program Process Weaknesses

AD-WC-ALL-0210, Work Request Initiation, Screening Prioritization and Classification, Rev. 8

SAST 2086564, CNS 2017 SOER 10-2 Assessment

SAST 2180223, CNS Interim CAQ Backlog Review

CR 2180477, Review of Backlog EC revealed corrective action from 2007 NCS leak not complete

CR 2176149, No Mechanism to Consistently Identify CAW related WMS items

CR 2176144, Potential weaknesses in the WM timeliness controls

**60855.1 - Operation of an Independent Spent Fuel Storage Installation**

PT/0/A/4600/031, ISFSI Cask Surveillance Rev. 10