



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

January 28, 2013

EA-13-014

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

**SUBJECT: CATAWBA NUCLEAR STATION - NRC INTEGRATED INSPECTION REPORT
05000413/2012005, 05000414/2012005 AND EXERCISE OF ENFORCMENT
DISCRETION**

Dear Mr. Henderson:

On December 31, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Catawba Nuclear Station Units 1 and 2. The enclosed inspection report documents the inspection results which were discussed on January 16, 2013, with you and other members of your staff.

The inspection examined activities conducted under your licenses as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your licenses. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

No findings were identified. However, a licensee-identified violation, which was determined to be of very low safety significance (Green), is listed in this report. The NRC is 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 severity of this NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington DC 20555-001; with copies to the Regional Administrator Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at Catawba. If you disagree with a 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 Regional Administrator, Region II, and the NRC Resident Inspector at Catawba.

The enclosed report also documents a noncompliance for which the NRC is exercising enforcement discretion in accordance with Section 9.1 of the NRC Enforcement Policy, "Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48)." The noncompliance is associated with your implementation of the requirements and standards of your fire protection program. The noncompliance was identified by the NRC, and is a violation

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of NRC requirements. The inspectors have screened the violation and determined that it warrants enforcement discretion per the Interim Enforcement Policy Regarding Enforcement Discretion for Certain Fire Protection Issues, and Section 11.05(b) of IMC 0305.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Richard P. Croteau, Director
Division of Reactor Projects

Docket Nos.: 50-413, 50-414, 72-45
License Nos.: NPF-35, NPF-52

Enclosure: Integrated Inspection Report 05000413/2012005, 05000414/2012005
w/Attachment: Supplemental Information

cc w/encl: (See page 3)

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Letter to K. Henderson from Jonathan H. Bartley dated January 28, 2013

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05000413/2012005, 05000414/2012005 AND EXERCISE OF ENFORCMENT
DISCRETION

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.: 50-413, 50-414

License Nos.: NPF-35, NPF-52

Report Nos.: 05000413/2012005, 05000414/2012005

Licensee: Duke Energy Carolinas, LLC

Facility: Catawba Nuclear Station, Units 1 and 2

Location: York, SC 29745

Dates: October 1, 2012, through December 31, 2012

Inspectors: A. Hutto, Senior Resident Inspector
R. Cureton, Resident Inspector
M. Coursey, Reactor Inspector, (Section 1R08)
D. Jones, Senior Reactor Inspection (Section 1R05.2)
L. Lake, Senior Reactor Inspector, (Section 1R08)
J. Laughlin, EP Inspector (Section 1EP4)
W. Loo, Senior Health Physicist (Sections 2RS3, 2RS4)
G. MacDonald, Senior Reactor Analyst (Section 1R05.2)
M. Meeks, Senior Operations Engineer (Section 1R11)
A. Nielson, Senior Health Physicist (Section 2RS5)

Approved by: Jonathan H. Bartley, Chief
Reactor Projects Branch 1
Division of Reactor Projects

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SUMMARY OF FINDINGS

IR 05000413/2012-005, 05000414/2012-005; 10/1/2012 – 12/31/2012; Catawba Nuclear Station, Units 1 and 2

The report covered a three-month period of inspection by the resident inspectors and eight Region-based inspectors. No findings were identified. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy dated June 12, 2012. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process" revision 4.

One violation of very low safety significance (Green), which was identified by the licensee, has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and corrective action tracking number are listed in section 4OA7.

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REPORT DETAILS

Summary of Plant Status

Unit 1 operated at or near 100 percent Rated Thermal Power (RTP) until November 21, 2012, when the unit was shutdown for a refueling outage. Unit 1 was restarted on December 27, 2012, and reached 100 percent RTP on December 31, 2012.

Unit 2 operated at or near 100 percent RTP for the entire inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

a. Inspection Scope

Adverse Weather Preparations: The inspectors reviewed the licensee's preparations for adverse weather associated with cold ambient temperatures. This included field walkdowns to assess the material condition and operation of freeze protection equipment (e.g., heat tracing, instrument box heaters, area space heaters, etc.), as well as other preparations made to protect plant equipment from freeze conditions. Safety and/or Risk significant systems reviewed included the standby shutdown facility, nuclear service water pump house, auxiliary building and the refueling water storage tanks. In addition, the inspectors conducted discussions with operations, engineering, and maintenance personnel responsible for implementing the licensee's cold weather protection program to assess the licensee's ability to identify and resolve deficient conditions associated with cold weather protection equipment prior to cold weather events. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R04 Equipment Alignment

a. Inspection Scope

Partial Walkdowns: The inspectors performed three partial system walkdowns during the activities listed below to assess the operability of redundant or diverse trains and components when safety-related equipment was inoperable. The inspectors performed walkdowns to identify any discrepancies that could impact the function of the system and, therefore, potentially increased risk. The inspectors reviewed applicable operating procedures and walked down system components, selected breakers, valves, and support equipment to determine if they were in the correct position to support system operation. The inspectors reviewed protected equipment sheets, maintenance plans,

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and system drawings to determine if the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the corrective action program. Documents reviewed are listed in the Attachment.

- 2A Emergency Diesel Generator (EDG) while the 2B EDG was unavailable for planned maintenance
- 1A Spent Fuel Cooling (SFC) system while the 1B SFC caused a DID color of Yellow due to 1B EDG unavailability
- 1A1 component cooling (KC) pump for decay heat removal during Mode 5 while the 1A2 KC pump was unavailable for rotating element replacement

Complete System Walkdown: The inspectors conducted one detailed walkdown/review of the Unit 1 nuclear service water (RN) system. The inspectors used licensee procedures and licensing and design documents to verify that the system (i.e., pump, valve, and electrical) alignment was correct; valves and pumps did not exhibit leakage that would impact their function; major portions of the system and components were correctly labeled; hangers and supports were correctly installed and functional; and essential support systems were operational. In addition, pending design and equipment issues were reviewed to determine if the identified deficiencies significantly impacted the system's functions. Items included in this review were: the operator workaround list; the temporary modification list; and outstanding maintenance work requests/work orders. A review of open Problem Investigation Program reports (PIPs) was also performed to verify that the licensee had appropriately characterized and prioritized safety-related equipment problems for resolution in the corrective action program. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R05 Fire Protection

.1 Fire Protection – Quarterly Inspection

a. Inspection Scope

Fire Protection Walkdowns: The inspectors walked down accessible portions of the six plant areas listed below to assess the licensee's control of transient combustible material and ignition sources, fire detection and suppression capabilities, fire barriers, and any related compensatory measures. The inspectors observed the fire protection suppression and detection equipment to determine whether any conditions or deficiencies existed which could impair the operability of that equipment. The inspectors selected the areas based on a review of the licensee's safe shutdown analysis probabilistic risk assessment and sensitivity studies for fire-related core damage accident sequences. Documents reviewed are listed in the Attachment.

- Unit 1 Lower Containment
- Unit 1 Auxiliary Feedwater Pump Room and Motor Driven Pump Pits
- Unit 2 Auxiliary Feedwater Pump Room and Motor Driven Pump Pits
- A & B Control Room Ventilation and Chiller Rooms
- Fire Area 102 Service Building Elevation 568
- Unit 2A Diesel Generator Room and Sequencer Hallway

Fire Drill Observations: The inspectors observed two drills conducted by two different fire brigade shifts on November 2 and November 13, 2012 involving a simulated fire in the Unit 2 electro-hydraulic unit skid. The inspectors verified the fire brigades' use of protective gear and firefighting equipment; that fire fighting pre-plan procedures and appropriate fire fighting techniques were used; that the directions of the fire brigade leader were thorough, clear and effective; and that control room personnel responded appropriately to the simulated fire events. The inspectors also attended the subsequent drill critiques to assess whether they were appropriately critical, included discussions of drill observations and identified any areas requiring corrective actions. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified

.2 (Closed) Unresolved Item 05000413 & 414/2004007-02, Associated Circuit Issues from 2004 Triennial Fire Protection Audit:

During the 2004 Triennial Fire Protection Inspection an unresolved item was identified related to the inadequate inadequate procedural guidance for mitigating the spurious operation of the following components: pressurizer power operated relief valves (PORV) and block valves, steam generator PORVs and block valves, residual heat removal (ND) sump suction valves, and reactor coolant pump (NCP) seal bypass valves. The inspectors reviewed NRC inspection report 05000413 & 414/2004007, licensing documents, corrective action documents, drawings, design documents, Catawba's 2004 Triennial Fire Protection Audit, and interviewed licensee personnel to identify the applicable regulatory requirements and to determine if a more than minor performance deficiency existed. Additionally, the team observed simulator scenarios to identify the indications available to operators to mitigate the spurious opening of a pressurizer PORV and the ND sump suction valves. The team reviewed NFPA 0805 transition documentation, associated risk information, corrective action documents, and operating procedures to determine if the issues were eligible for enforcement discretion in accordance with the NRC Enforcement Policy.

b. Findings

.1 ND sump suction valves and NCP seal bypass valves

The inadequate procedural guidance for mitigating the spurious operation of the ND sump suction valves and NCP seal bypass valves were determined to be minor violations which are not subject to enforcement action in accordance with the NRC's Enforcement Policy. For the ND sump suction valves, the inspectors determined that 1) receipt of alarms would prompt the licensee to close the associated isolation valve in a timely manner, 2) an interlock was designed to automatically close the associated isolation valve, and 3) the spent fuel pool was the credited source of water if control room abandonment was required. The licensee documented this condition in PIP 04-04276. For reactor coolant pump seal bypass valves (1/2 NV101A), the inspectors determined that adequate seal flow would be provided during fire events mitigated from the control room, ASP and Safe Shutdown Facility (SSF). The licensee documented this condition in PIP 04-04276.

.2 PORV and Block Valves

Introduction. An NRC-identified non-compliance with License Condition 2.C(5), Fire Protection Program was identified for the licensee's failure to establish adequate procedures to operate the SSF in a timely manner to mitigate the effects of a fire-induced spurious opening of the pressurizer and steam generator PORVs and associated block valves.

Description. Calculation CNS-1435.00-00-0002, Design Basis Specification for the Post Fire Safe Shutdown, Rev 13, defined "associated circuits by spurious operation" as those that can cause safe shutdown equipment or non-safe shutdown equipment to maloperate, by fire induced failures, in a way that defeats or adversely affects the function of safe shutdown systems or equipment. Section 3.2.4, Fire Safe Shutdown Analysis Methodology, directed the licensee to identify associated circuits and cables located in areas of concern and to verify that manual operator actions, administrative controls and/or damage repair actions were specified to resolve identified separation deficiencies. The calculation documented that the pressurizer and steam generator PORVs and associated block valves as being susceptible to spurious operation because cables were routed in common fire areas. For example, a fire could result in the spurious opening of a pressurizer PORV and damage cables for closing its block valve. This failure would result in an uncontrolled depressurization of the reactor coolant system or the main steam system.

For fires in certain plant areas, the SSF would be used for achieving hot standby conditions. When dispatched to the SSF, operators would be directed to install 'shorting plugs' to prevent spurious opening of the pressurizer and steam generator PORVs. Based on the 2004 inspection, the NRC determined that the SSF would not be activated in a timely manner to provide reasonable assurance that the PORVs would be isolated if the cables for the associated block valves were also damaged. During fire events, the operators would be directed to remain in the control room until it became uninhabitable or until the operators were unable to control primary or secondary parameters. At this

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point, operators would be directed to go to the auxiliary shutdown panel (ASP). Finally, if plant control could not be maintained from the ASP, operators would be directed to control the plant from the SSF where the 'shorting plugs' would be installed. The NRC determined that the intermediate step of controlling the plant from the ASP would delay the installation of the shorting plugs which were required to prevent spurious opening of a PORV.

The licensee initiated PIPs 04-04276 and implemented a new procedure, AP 45, Plant Fire, Rev. 0 to address this issue. Additionally, Calculation 1435.00-00-0043, "NFWPA 805 Transition Expert Panel Report for Addressing Catawba Multiple Spurious Operations," Rev. 0, identified these issues as requiring analysis as part of the site's transition to NFWPA 805 in accordance with 10 CFR 50.48(c).

Analysis. The licensee's failure to establish adequate procedures to operate the SSF in a timely manner to mitigate the effects of a fire-induced spurious opening of the pressurizer and steam generator PORVs and associated block valves as required by their fire protection program requirements was a performance deficiency (PD). This PD was more than minor because it was associated with the Mitigating System cornerstone attribute of protection against external events (i.e., fire) and adversely affected the cornerstone objective in that the licensee failed to implement appropriate fire protection procedures to mitigate the inadequate protection of safe shutdown cables that were susceptible to spurious operation during fire events.

Because this finding was determined to be an existing identified fire protection noncompliance that likely would have been identified and addressed as part of the licensee's transition to NFWPA 805, it is being dispositioned in accordance with Section 9.1, "Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48)" of the NRC Enforcement Policy. In order to verify that this non-compliance was not associated with a finding of high safety significance (Red), inspectors performed a risk screening of the PD using Inspection Manual Chapter (IMC) 0609 Attachment 4 and IMC 0609 Appendix F. A detailed risk analysis was performed by a regional SRA using guidance from IMC 0609 Appendix F and NUREG/CR 6850. The major assumptions of the analysis included a one year exposure interval, a severity factor of 0.1, conditional core damage frequency data from the licensee's NFWPA 805 transition project, and hot short probability and hot short duration data from NUREG/CR6850 Revision 1. A bounding ignition frequency was used to include all fire area ignition sources for the fire areas containing the cables and equipment common to either the pressurizer PORV and associated block valve or the steam generator PORV and associated isolation valve. The dominant risk sequence was a fire that caused damage to any pressurizer PORV and its associated block valve which would remain unsuppressed long enough to impact RCS inventory control and cause a failure of the safe shutdown strategy and lead to core damage. The steam generator PORV and associated isolation valve sequence was also a fire, damaging both a steam generator PORV and its associated isolation valve, which was assumed to fail the safe shutdown strategy and lead to core damage. The result of the bounding analysis was a delta CDF for the PD of $< 1E-4/\text{year}$ which was less than a Red finding and would support enforcement discretion for this PD. The inspectors determined that no cross cutting aspect was applicable to this performance deficiency because this finding was not indicative of current licensee performance.

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Enforcement. Catawba License Condition 2.C(5), Fire Protection Program, stated, in part, that Duke Energy Carolina, LLC shall implement and maintain in effect all provisions of the approved fire protection program as described in the Updated Final Safety Analysis Report (UFSAR). UFSAR 9.5.1, Fire Protection System, stated, in part, that Catawba's original Fire Protection Program was submitted by letter as the Fire Protection Review which included a response to Branch Technical Position (BTP) APCS 9.5-1, General Guidelines for Plant Protection. The BTP stated, in part, that redundant safety-related systems that are subject to damage from a single fire hazard should be protected by a combination of fire retardant coatings and fire detection and suppression systems, or a separate system to perform the safety function be provided. NUREG 0954, "Safety Evaluation Report related to the operation of Catawba Nuclear Station, Units 1 and 2," dated February 1983, documents the NRC's acceptance of the licensee's commitment to Appendix A to Branch Technical Position ASB 9.5-1 for the fire protection program. The Fire Protection Review was documented and maintained in the Plant Design Basis Specification for Fire Protection. Contrary to the above, since initial plant operation, the licensee failed to provide a separate system to adequately perform the safety function of redundant safety-related systems subject to damage from a single fire hazard and not protected by a combination of fire retardant coatings and fire detection and suppression systems. The licensee did not have adequate procedures to operate the SSF in a timely manner to mitigate the effects of a fire-induced spurious opening of the unprotected PORVs and block valves to ensure the safety function they perform would be provided.

Because the licensee committed to adopt NFPA 805 and change their fire protection licensing bases to comply with 10 CFR 50.48(c), the NRC is exercising enforcement and reactor oversight process (ROP) discretion for these nonconformances in accordance with the NRC Enforcement Policy, Section 9.1, "Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48)" and Inspection Manual Chapter 0305. Specifically, it was likely these issues would have been identified and addressed during the licensee's transition to NFPA 805, they were entered into the licensee's corrective action program, immediate corrective action and compensatory measures were taken, they were not likely to have been previously identified by routine licensee efforts, they were not willful, and they were not associated with a finding of high safety significance (Red). Therefore, the criteria of the interim Enforcement Policy and Section 11.05(b) of IMC 0305 have been met.

1R06 Flood Protection Measures

a. Inspection Scope

The inspectors reviewed the Updated Final Safety Analysis Report (UFSAR), Individual Plant Examination, and flood analysis documentation associated with internal plant areas to determine the effect of flooding. The inspectors reviewed the licensee's internal flood protection features for the roof hatch cover seals and personnel access door flood barriers for the Unit 1 and Unit 2 Diesel Generator Buildings. The internal areas were selected and walked down based on the flood analysis calculations. Through observation and design review, the inspectors reviewed sealing of doors, degradation of

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seals, potential flooding sources, and water intrusion detection instrumentation. The inspectors reviewed corrective action program documents to verify that the licensee was identifying issues and resolving them. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R07 Heat Sink Performance

a. Inspection Scope

Annual Review: The inspectors reviewed the performance of the Unit 1 'B' Diesel Generator Jacket Water Cooling (KD) Heat Exchanger heat capacity test and evaluated the test data for acceptable performance. The inspectors reviewed the system configuration associated with the test, heat load requirements, the methodology used in calculating heat exchanger performance, and the method for tracking the status of tube plugging activities via the data logger and computer processing equipment. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R08 Inservice Inspection (ISI) Activities

a. Inspection Scope

Non-Destructive Examination Activities and Welding Activities: The inspectors conducted an on-site review of the implementation of the licensee's ISI program for monitoring degradation of the reactor coolant system, emergency feedwater systems, risk-significant piping and components, and containment systems in Unit 1. The inspectors' activities included a review of non-destructive examinations (NDEs) to evaluate compliance with the applicable edition of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (BPVC), Section XI, Rules for Inservice Inspection Requirements for Nuclear Power Plant Components (ISI Program), third 10-year inspection interval. The Section XI code of record is the 2000 Edition, with the 2000 Addenda. Those examinations conducted were scheduled to meet examinations schedule requirements for the 1st outage in the 3rd period of the ISI program. The inspectors conducted reviews to verify that indications and defects (if present) were appropriately evaluated and dispositioned in accordance with the requirements of ASME Section XI acceptance standards. The inspectors directly observed or reviewed records of the following NDE mandated by the ASME Code to evaluate compliance with the ASME Code Section XI and Section V requirements, and determine if any indications and defects were detected.

- Ultrasonic Testing (UT) of Reactor Vessel Studs
- UT of 1NI153-6 Pipe to Pipe dated 12/2/2012
- UT of 1CA70-14 Elbow to Pipe dated 12/2/2012

The inspectors reviewed the following pressure boundary welds completed for risk-significant systems during the Unit 1 refuelling outage to evaluate if the licensee applied the preservice non-destructive examinations and acceptance criteria required by the Construction Code. In addition, the inspectors reviewed the welding procedure specification, welder qualifications, welding material certification and supporting weld procedure qualification records, to evaluate if the weld procedures were qualified in accordance with the requirements of Construction Code and the ASME Code Section IX.

- Work Order (WO) 01938327-02, EC103554, 1-R-NV-1467, Remove, Modify, and Restore Support
- WO 01910730-06, EC99818, Install Hi-Point Vent VLV, 1NI-542

During non-destructive surface and volumetric examinations performed since the previous refueling outage, the licensee did not identify any relevant indications that were analytically evaluated and accepted for continued service. Therefore, no NRC review was completed for this inspection procedure attribute.

PWR Vessel Upper Head Penetration (VUHP) Inspection Activities: A bare metal visual (BMV) examination of the Unit 1 vessel head was required this outage pursuant to 10 CFR 50.55a (g)(6)(ii)(D). The inspectors reviewed records of the visual examination and ultrasonic examination conducted on the Unit 1 reactor vessel head to evaluate if the activities were conducted in accordance with the requirements of ASME Code Case N-729-1 and 10 CFR 50.55a(g)(6)(ii)(D). The inspectors evaluated if the required visual examination and ultrasonic examination scope/coverage was achieved and any limitations were recorded in accordance with procedures. Additionally, the inspectors evaluated if the licensee's criteria for visual and ultrasonic examination quality and instructions for resolving interference and masking issues were consistent with 10 CFR 50.55a.

The licensee did not identify any relevant indications that were accepted for continued service during the bare metal visual and ultrasonic exam. Additionally, the licensee did not perform any welded repairs to vessel head penetrations since the beginning of the preceding Unit 1 refueling outage. Therefore, no NRC review was completed for these inspection procedure attributes.

- The inspectors observed the volumetric examinations conducted on RPVH penetrations #38, #58, and #68
- The inspectors observed the bare metal visual examination of the Reactor Vessel Head

The inspectors reviewed visual examinations conducted on the inner radius sections of RPVH AHA penetrations #1, #3, and #4.

Boric Acid Corrosion Control (BACC) Inspection Activities: The inspectors reviewed the licensee's BACC program activities to ensure implementation with commitments made in response to NRC Generic Letter 88-05, "Boric Acid Corrosion of Carbon Steel Reactor Pressure Boundary," and applicable industry guidance documents. Specifically, the inspectors performed an on-site record review of procedures and the results of the licensee's containment walkdown inspections performed during the 2012 Unit 1 refueling outage. The inspectors also interviewed the BACC program owner, conducted an independent walkdown of containment to evaluate compliance with licensee's BACC program requirements, and verified that degraded or non-conforming conditions, such as boric acid leaks, were properly identified and corrected in accordance with the licensee's BACC and corrective action programs.

The inspectors reviewed the following evaluations and corrective actions related to evidence of boric acid leakage to evaluate if the corrective actions completed were consistent with the requirements of the ASME Code Section XI and 10 CFR Part 50, Appendix B, Criterion XVI.

- Boric acid leakage at 1KFPG5170
- Boric acid leakage at 1NVA093
- Boric acid leakage at 1-NI-VA-215

Steam Generator (SG) Inspection Activities: No SG inspections were scheduled during the 2012 Unit 1 outage. The inspectors reviewed the licensee's Degradation Assessment, Catawba 1EOC20 Skipped Inspection Cycle Outage Review, and the Steam Generator Condition Monitoring and Operational Assessment

Problem Identification and Resolution: The inspectors performed a review a sample of ISI-related deficiencies that were identified by the licensee and entered into the CAP to confirm the licensee had appropriately described the scope of the issue and had initiated corrective actions. The review also included the licensee's consideration and assessment of operating experience events applicable to the plant. The inspectors performed this review to ensure compliance with NSD 208. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification (LOR) Program and Licensed Operator Performance

a. Inspection Scope

LOR Activity Review: The inspectors observed Simulator Exercise S-70 to assess the performance of licensed operators during a license operator requalification simulator training session. The exercise included a loss of the Operator Aid Computer, loss of an RN pump and a LOCA inside containment. The inspectors assessed overall crew performance, clarity and formality of communications, use of procedures, alarm response, control board manipulations, group dynamics and supervisory oversight. The

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inspectors observed the post-exercise critique to determine whether the licensee identified deficiencies and discrepancies that occurred during the simulator training. Documents reviewed are listed in the Attachment.

Licensed Operator Performance Review: The inspectors observed operators in the main control room and assessed their performance during Unit 1 shutdown for refueling outage and Unit 1 startup and approach to criticality. Documents reviewed are listed in the Attachment.

Review of Licensee Requalification Examination Results: On August 31, 2012, 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 10 CFR 55.59(a)(2). 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 Inspection Manual Chapter (IMC) 0609, Significance Determination Process, Appendix I, Operator Requalification Human Performance Significance Determination Process dated December 6, 2011.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed the two activities listed below for items such as: (1) appropriate work practices; (2) identifying and addressing common cause failures; (3) scoping in accordance with 10 CFR 50.65(b) of the Maintenance Rule; (4) characterizing reliability issues for performance; (5) trending key parameters for condition monitoring; (6) charging unavailability for performance; (7) classification and reclassification in accordance with 10 CFR 50.65(a)(1) or (a)(2); and (8) appropriateness of performance criteria for structures, systems, and components (SSCs)/functions classified as (a)(2) and/or appropriateness and adequacy of goals and corrective actions for SSCs/functions classified as (a)(1). For each item selected, the inspectors performed a detailed review of the problem history and surrounding circumstances, evaluated the extent of condition reviews as required, and reviewed the generic implications of the equipment and/or work practice problem. Documents reviewed are listed in the Attachment.

- PIP C-12-8991, 2B diesel generator tach relay power supply failure
- PIP C-12-8353, 1RN-351 failed to open following positioned replacement

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors reviewed the following five activities to determine if the appropriate risk assessments were performed prior to removing equipment for work. When emergent work was performed, the inspectors reviewed the risk assessment to determine that the plant risk was promptly reassessed and managed. The inspectors reviewed the use of the licensee's risk assessment tool and risk categories in accordance with Nuclear System Directive (NSD) 415, Operational Risk Management (Modes 1-3), to verify there was appropriate guidance to comply with 10 CFR 50.65(a)(4). Documents reviewed are listed in the Attachment.

- PIP C-12-8353, Emergent Orange risk condition due to 1RN-351 failure to open
- Complex Activity Plan associated with the 1A Diesel unavailability due to planned maintenance
- Independent Review Team 1EOC 20 Shutdown Risk Assessment
- Equipment Protection Plan for SSF diesel generator PMs (Yellow risk condition)
- PIP C-12-10691, Emergent Unit 2 Yellow risk condition due to SSF control power transformer failure

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments

a. Inspection Scope

The inspectors evaluated the technical adequacy of the five operability evaluations or functionality assessments listed below to determine if Technical Specification (TS) operability was properly justified and the subject components and systems remained available such that no unrecognized increase in risk occurred. The inspectors reviewed the operability determinations to verify that they were made as specified by NSD 203, Operability. The inspectors reviewed the Updated Final Safety Analysis Report (UFSAR) to determine that the systems and components remained available to perform their intended function. Documents reviewed are listed in the Attachment.

- PIP C-12-8354, 1NV-188A oil leak
- PIP C-12-8774, 1A DG voltage regulator SCR failed to pass current
- PIP C-12-8991, 2B DG determined to not be able to auto start during work under W/O 02061411, "2B Diesel Engine Speed not indicating"
- PIP C-12-9415, Problems encountered during performance of W/O 2054595-01 to verify the DRU set points on the 2A EDG
- PIP C-12-11236, Received Underfrequency Bus Alert on 1C NC Pump

b. Findings

No findings were identified.

1R18 Plant Modificationsa. Inspection Scope

The inspectors reviewed the following two plant modifications to verify the adequacy of the modification package, and to evaluate the modification for adverse affects on system availability, reliability, and functional capability. Documents reviewed are listed in the Attachment.

- EC 106600, Unit 1 RN Strainer Replacement
- EC 107678, On-Line Leak Repair of 1CAFE5110

b. Findings

No findings were identified.

1R19 Post Maintenance Testinga. Inspection Scope

The inspectors reviewed the seven post-maintenance tests listed below to determine if procedures and test activities ensured system operability and functional capability. The inspectors reviewed the licensee's test procedures to determine if the procedures adequately tested the safety function(s) that may have been affected by the maintenance activities, that the acceptance criteria in the procedures were consistent with information in the applicable licensing basis and/or design basis documents, and that the procedures had been properly reviewed and approved. The inspectors also witnessed the tests and/or reviewed the test data to determine if test results adequately demonstrated restoration of the affected safety function(s). Documents reviewed are listed in the Attachment.

- Containment Spray Pump 1B following planned motor maintenance
- Auxiliary Safeguards testing following replacement of 1NW-237B
- Diesel Generator 2A operability test following scheduled maintenance
- Diesel Generator 1A operability test following scheduled maintenance and SCR replacement
- Diesel Generator 1B following turbocharger replacement
- Seal Supply Containment Isolation Check Valves for the A,B, & D NC Pumps following repair
- Unit 1 Zero Power Physics Testing following core reload

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activitiesa. Inspection Scope

The inspectors conducted reviews and observations for selected outage activities to ensure that: (1) the licensee considered risk in developing the outage plan; (2) the licensee adhered to the outage plan to control plant configuration based on risk; (3) that mitigation strategies were in place for losses of key safety functions; and (4) the licensee adhered to operating license and TS requirements. The following activities related to the refueling outage were reviewed for conformance to applicable procedures and selected activities associated with each evaluation were witnessed. Documents reviewed are listed in the Attachment.

- Outage risk management plan/assessment
- Clearance activities
- Reactor coolant system instrumentation
- Plant cooldown
- Mode changes from Mode 1 (power operation) to No Mode (defueled)
- Shutdown decay heat removal and inventory control
- Containment closure
- Refueling activities
- Plant heatup/mode changes from No Mode to Mode 1
- Core physics testing
- Power Escalation

b. Findings

No findings were identified.

1R22 Surveillance Testinga. Inspection Scope

For the five tests listed below, the inspectors witnessed testing and/or reviewed the test data to determine if the SSCs involved in these tests satisfied the requirements described in the Technical Specifications, the UFSAR, and applicable licensee procedures, and that the tests demonstrated that the SSCs were capable of performing their intended safety functions.

Surveillance Tests

- PT/1/A/4450/005 A, "Containment Air Return Fan 1A and Hydrogen Skimmer Fan 1A Performance Test," Rev. 048

Containment Isolation Valve Tests

- PT/1/A/4200/001 C, As Left Containment Isolation Valve Leak Rate Test, Enclosure 13.12, Penetration No. M235 As Left Type C Leak Rate Test, Rev. 122

Ice Condenser Tests

- MP/0/A/7150/006, Ice Condenser Lower Inlet Doors Inspection and Testing (As Left), Rev. 032

In-Service Tests

- PT/2/A/4200/005 B, Safety Injection Pump 2B Performance Test, Rev. 43

Leakage Detection Tests

- PT/2/A/4150/001 D, NC System Leakage Calculation, Rev. 79

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP4 Emergency Action Level and Emergency Plan Changesa. Inspection Scope

The NSIR headquarters staff performed an in-office review of the latest revisions of various Emergency Plan Implementing Procedures (EPIPs) and the Emergency Plan as listed in the Attachment. The licensee determined that in accordance with 10 CFR 50.54(q), the changes made in the revisions resulted in no reduction in the effectiveness of the Plan, and that the revised Plan continued to meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50. The NRC review was not documented in a safety evaluation report and did not constitute approval of licensee-generated changes; therefore, these revisions are subject to future inspection. This inspection activity satisfied one inspection sample for the emergency action level and emergency plan changes on an annual basis.

b. Findings

No findings were identified.

1EP6 Drill Evaluationa. Inspection Scope

The inspectors observed and evaluated the licensee's emergency planning performance during drills conducted on November 8, 2012. The inspectors reviewed licensee activities that occurred in the simulator and the Technical Support Center during the simulated events. The inspectors' assessment focused on the timeliness and accuracy

of the event classification, notification of offsite agencies, and the overall response of the personnel involved in the drills from an operations and emergency planning perspective. The performance of the Emergency Response Organization (ERO) was evaluated against applicable licensee procedures and regulatory requirements. The inspectors attended the post-exercise critique for the drills to evaluate the licensee's self-assessment process for identifying potential deficiencies relating to failures in classification and notification. The inspectors reviewed the completed licensee critique documenting the overall performance of the ERO.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstones: Occupational Radiation Safety and Public Radiation Safety

2RS3 In-Plant Airborne Radioactivity Control and Mitigation

a. Inspection Scope

Engineering Controls: The inspectors reviewed the use of temporary and permanent engineering controls to mitigate airborne radioactivity. The inspectors observed where high efficiency particulate air ventilation and vacuums were used to control contamination during surface disturbing work to include the Unit 1 and Unit 2 reactor coolant filter pit tents and the hot machine shop Kelly building. The inspectors evaluated the effectiveness of continuous air monitors and air samplers placed in selected work areas of the plant to provide indication of increasing airborne levels to include the Unit 1 spent fuel pool (SFP) and selected areas in the Unit 2 Auxiliary building.

Respiratory Protection Equipment: The inspectors reviewed the use of respiratory protection devices to limit the intake of radioactive material. This included review of devices used for routine tasks and devices stored for use in emergency situations. Selected Self-Contained Breathing Apparatus (SCBA) units and negative pressure respirators (NPR) staged for routine and emergency use in the Main Control Room and other plant areas were inspected for material condition, SCBA bottle air pressure, number of units, and number of spare masks and air bottles available. The inspectors reviewed maintenance records for selected SCBA units, and evaluated SCBA and NPR compliance with National Institute for Occupational Safety and Health certification requirements. The inspectors also reviewed records of air quality testing for supplied-air devices and SCBA bottles. Due to limited respirator use during the inspection, selected security guards, instrument and control, control room operators and radiation protection personnel were interviewed on the use of the devices to include SCBA bottle change-out and use of corrective lens inserts. Respirator qualification records and medical fitness cards were reviewed for selected emergency responder personnel in the Maintenance, Instrument and Controls, Operations, Security, and Radiation Protection (RP)

departments. In addition, qualifications for individuals responsible for testing and repairing SCBA vital components were evaluated through review of selected training records.

Licensee activities associated with the use of engineering controls and respiratory protection equipment was reviewed against 10 Code of Federal Regulations (CFR) Part 20; Updated Final Safety Analysis Report (UFSAR) Chapter 12; Regulatory Guide 8.15, Acceptable Programs for Respiratory Protection; and applicable licensee procedures. Documents reviewed are listed in the Attachment.

Problem Identification and Resolution: CAP documents listed in the Attachment associated with airborne radioactivity mitigation and respiratory protection were reviewed and assessed. The inspectors evaluated the licensee's ability to identify and resolve the issues in accordance with procedure NSD-208, "Problem Investigation Process (PIP)", Rev. 36.

b. Findings

No findings were identified.

2RS4 Occupational Dose Assessment

a. Inspection Scope

External Dosimetry: The inspectors reviewed and discussed RP program guidance for monitoring external and internal radiation exposures of occupational workers. The inspectors verified National Voluntary Laboratory Accreditation Program certification data and discussed program guidance for storage, processing and results for active and passive personnel dosimeters currently in use. Comparisons between electronic dosimeter and thermoluminescent dosimeter data were reviewed and discussed.

Internal Dosimetry: Program guidance, instrument detection capabilities, and select results for the internally deposited radionuclides were reviewed in detail. The inspectors reviewed declared pregnant worker and event followup in vivo (Whole Body Count) analyses for calendar year (CY) 2011 and year-to-date for CY 2012. Detection capabilities for passive monitoring equipment were reviewed and discussed. Guidance for initiating tritium monitoring and bioassay for work activities conducted within the spent fuel pool were reviewed and discussed.

Special Dosimetric Situations: The inspectors reviewed monitoring conducted and results for special dosimetric situations. The methodology and results of monitoring occupational workers within non-uniform external dose fields and assignment of effective dose equivalent results were discussed cognizant licensee representatives. In addition, the adequacy of dosimetry program guidance and its implementation for shallow dose assessments and supporting calculations for personnel involved in selected contamination events were evaluated. Guidance for neutron monitoring and implementation during 'at power' containment entries and Independent Spent Fuel Storage Installation activities were reviewed and discussed. The inspectors reviewed

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monitoring and results for four declared pregnant workers documented in licensee records since January 1, 2011. RP staff proficiency involved in conducting skin dose assessments, neutron monitoring, and whole body counting equipment operations were evaluated through direct interviews, onsite observations, and review and discussions of completed records and supporting data.

RP program occupational dose assessment guidance and activities were evaluated against the requirements of UFSAR Section 12; Technical Specification (TS) Sections 5.4, Procedures, and 5.7, High Radiation Area; 10 CFR Parts 19 and 20; and approved licensee procedures.

Problem Identification and Resolution: The inspectors reviewed and discussed CAP documents listed in the Attachment associated with occupational dose assessment. The reviewed items included PIP, self-assessments, and quality assurance audit documents. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with NSD 208, Rev. 36.

b. Findings

No findings were identified.

2RS5 Radiation Monitoring Instrumentation

a. Inspection Scope

Radiation Monitoring Instrumentation: During tours of the auxiliary building, SFP areas, and radiation control area exit point, the inspectors observed installed radiation detection equipment including the following instrument types: area radiation monitors (ARM)s, control room and auxiliary building air monitors, liquid and gaseous effluent monitors, personnel contamination monitors (PCM)s, small article monitors (SAM)s, and portal monitors. The inspectors observed the physical location of the components, noted the material condition, and compared sensitivity ranges with UFSAR requirements. The inspectors also observed response checks of various portable and fixed detection instruments, including ion chambers, telepoles, and high-purity germanium detectors. For the portable instruments, the inspectors observed the use of a high-range calibrator and discussed periodic output value testing with a health physics technician. The inspectors reviewed the last two calibration records and evaluated alarm setpoint values for selected ARMs, PCMs, portal monitors, SAMs, effluent monitors, and a whole body counter. This included instruments used for post-accident monitoring such as containment high-range ARMs. Radioactive sources used to calibrate selected ARMs and effluent monitors were evaluated for traceability to national standards. Calibration stickers on portable survey instruments and air samplers were noted during inspection of storage areas for "ready-to-use" equipment. The most recent 10 CFR Part 61 analysis for dry active waste was reviewed to determine if calibration and check sources were representative of the plant source term. The inspectors also reviewed countroom quality assurance records for gamma ray spectrometry equipment and liquid scintillation detectors.

Effectiveness and reliability of selected radiation detection instruments were reviewed against details documented in the following: 10 CFR Part 20; NUREG-0737, Clarification of TMI Action Plan Requirements; TS Sections 3.3, 3.4, and 5.4; UFSAR Chapters 11 and 12; and applicable licensee procedures. Documents reviewed are listed in the Attachment.

Problem Identification and Resolution: The inspectors reviewed the CAP documents in the area of radiological instrumentation. The inspectors evaluated the licensee's ability to identify and resolve the issues in accordance with procedure NSD-208, Rev. 36. The inspectors also reviewed recent self-assessment results. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

a. Inspection Scope

The inspectors sampled licensee data to confirm the accuracy of reported PI data for the six indicators during periods listed below. To determine the accuracy of the reported PI elements, the reviewed data was assessed against PI definitions and guidance contained in Nuclear Energy Institute 99-02, Regulatory Assessment Indicator Guideline. Documents reviewed are listed in the Attachment.

Cornerstone: Initiating Events

- Unplanned Scrams, Unit 1 & 2

Cornerstone: Mitigating Systems

- Reactor Coolant System Leakage, Unit 1 & 2
- Safety System Functional Failures, Unit 1 & 2

The inspectors reviewed the licensee's procedures and methods for compiling and reporting the PIs including the Reactor Oversight Program Mitigating Systems Performance Indicator Basis Document for Catawba. The inspectors reviewed the raw data for the PIs listed above for the period of October 1, 2011, through September 30, 2012. The inspectors also independently screened TS Action Item Logs, selected control room logs, work orders and surveillance procedures, and maintenance rule failure determinations to determine if unavailability/unreliability hours were properly reported. The inspectors compared the licensee's raw data against the graphical representations and specific values contained on the NRC's public web page for 2011-2012. The inspectors also reviewed the past history of PIPs for systems affecting the Mitigating Systems Performance Indicators listed above for any that might have affected the reported values. Documents reviewed are listed in the Attachment.

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b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution

.1 Daily Review

As required by Inspection Procedure 71152, Problem Identification and Resolution, and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed screening of items entered into the licensee's corrective action program. This was accomplished by reviewing copies of PIPs, attending selected daily Site Direction and PIP screening meetings, and accessing the licensee's computerized database.

.2 Semiannual Trend Review

a. Inspection Scope

As required by IP 71152, Problem Identification and Resolution, the inspectors performed a review of the licensee's Corrective Action Program (CAP) and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors review was focused on repetitive equipment issues, but also considered the results of daily inspector CAP item screenings discussed in Section 4OA2.1 above, licensee trending efforts, and licensee human performance results. The inspectors' review nominally considered the six month period of July 2012 through December 2012, although some examples expanded beyond those dates when the scope of the trend warranted. The review also included issues documented outside the normal CAP in major equipment problem lists, plant health team vulnerability lists, focus area reports, system health reports, self-assessment reports, maintenance rule reports, and Safety Review Group Monthly Reports. The inspectors compared and contrasted their results with the results contained in the licensee's latest quarterly trend reports. Corrective actions associated with a sample of the issues identified in the licensee's trend report were reviewed for adequacy.

b. Findings

No findings were identified. In general, the licensee has identified trends and has appropriately addressed the trends within their CAP and no new trends were identified.

.3 Annual Follow-up of Selected Issues

a. Inspection Scope

The inspectors performed an in-depth review of the following issue within the mitigating systems cornerstone entered into the licensee's corrective action program. Documents reviewed are listed in the Attachment.

- PIP C-12-8991, 2B diesel generator tach relay power supply failure

The inspectors reviewed the actions taken to determine if the licensee had adequately addressed the following attributes:

- Complete, accurate and timely identification of the problem
- Evaluation and disposition of operability and reportability issues
- Consideration of previous failures, extent of condition, generic or common cause implications
- Prioritization and resolution of the issue commensurate with safety significance
- Identification of the root cause and contributing causes of the problem
- Identification and implementation of corrective actions commensurate with the safety significance of the issue

b. Findings

No findings were identified.

4OA5 Other Activities

.1 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period, the inspectors conducted observations of security force personnel and activities to ensure that the activities were consistent with licensee security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours. These quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors' normal plant status reviews and inspection activities.

b. Findings

No findings were identified.

.2 Operation of an Independent Spent Fuel Storage Installation (ISFSI)

a. Inspection Scope

Under the guidance of IP 60855.1, the inspectors reviewed selected completed procedures for physical inspection and inventory of the ISFSI (PT/0/A/4550/015 A, Inventory of Fuel Special Nuclear Material, Enclosure 13.13, ISFSI Inventory) and completed CNEI-400s to verify that records have been established for all spent fuel in storage in the ISFSI, duplicate records are maintained by the licensee, and that an inventory has been conducted on all spent fuel stored in the ISFSI at least every 12 months. The inspectors also performed a walkdown of the ISFSI facility to verify that

cooling vents were not obstructed by debris or other material. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.3 Institute of Nuclear Power Operations (INPO) Plant Assessment Report Review

The inspectors reviewed the interim report for the Institute of Nuclear Power Operations plant assessment of Catawba Nuclear Station conducted in June 2012. The inspectors reviewed the report to ensure that issues identified were consistent with the NRC perspectives of licensee performance and to verify if any significant safety issues were identified that required further NRC follow-up. The inspectors determined that no additional NRC follow-up was required.

.4 (Discussed) NRC Temporary Instruction (TI) 2515/187, Inspection of Near-Term Task Force Recommendation 2.3 Flooding Walkdowns

a. Inspection Scope

Inspectors conducted independent walkdowns to verify that the licensee completed the actions associated with the flood protection feature specified in paragraph 03.02.a.2 of this TI. Inspectors are performing walkdowns at all sites in response to a letter from the NRC to licensees, entitled "Request for Information Pursuant to Title 10 of the *Code of Federal Regulations* 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident," dated March 12, 2012 (ADAMS Accession No. ML12053A340).

Enclosure 4 of the letter requested licensees to perform external flooding walkdowns using an NRC-endorsed walkdown methodology (ADAMS Accession No. ML12056A050). Nuclear Energy Industry (NEI) document 12-07 titled, "Guidelines for Performing Verification Walkdowns of Plant Protection Features," (ADAMS Accession No. ML12173A215) provided the NRC-endorsed methodology for assessing external flood protection and mitigation capabilities to verify that plant features, credited in the CLB for protection and mitigation from external flood events, and are available, functional, and properly maintained.

b. Findings

Findings or violations associated with the flooding , if any, will be documented in the 1st quarter integrated inspection report of 2013.

.5 (Closed) Temporary Instruction 2515/188 – Inspection of Near-Term Task Force Recommendation 2.3 Seismic Walkdowns

a. Inspection Scope

The inspectors accompanied the licensee on their seismic walkdowns of the Unit 2 auxiliary building 554 elevation, the 1B diesel room, and the 2B charging pump room. The specific components included the following:

- 2EBA Essential Battery Bank
- 2EBC Essential Battery Bank
- 2EIA Vital Battery Inverter
- 1B Diesel Annex Panel, Battery Charger, Fuel Oil Day Tank, Battery Charger, and Jacket Water Cooler
- 1B1 Diesel Starting Air Tank and Starting Air Compressor
- 1B2 Diesel Starting Air Tank
- 1RN 848A and 849A Service Water Return
- 1EADB Auctioneering Diode Assembly
- 2B Charging (NV) Pump
- 2NV 294 Charging Flow Control Valve
- 2NV 202B NV Pumps Recirc Isolation

The inspectors verified that the licensee confirmed that the following seismic features were free of potential adverse seismic conditions:

- Anchorage was free of bent, broken, missing or loose hardware; more than mild surface corrosion, and visible cracks in the concrete near the anchors
- Anchorage configuration was consistent with plant documentation.
- SSCs will not be damaged from impact by nearby equipment or structures.
- Overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls are secure and not likely to collapse onto the equipment.
- Attached lines have adequate flexibility to avoid damage.
- The area appears to be free of potentially adverse seismic interactions that could cause flooding or spray in the area; cause a fire in the area, or housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)

The inspectors independently performed a walkdown of the 1A EDG room, the control room air chiller room, and the Unit 2 component cooling water system located in the auxiliary building. The specific components were inspected against the above seismic criteria and included:

- 125 VDC Diesel Auxiliary Power Battery
- 1A EDG heat exchanger return to SNSWP and Starting Air Inlet Valve
- 1A1 EDG Starting Air Tank
- 1A EDG Charger, Train A Control Room AHU
- Control Room Area Chilled Water Pump (1CRA-P-1)

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- Control Room Air Chiller A Train
- 2B Component Cooling Water Heat Exchanger
- 2B2 Component Cooling Water Pump.

Observations made during the walkdown that could not be determined to be acceptable were entered into the licensee's corrective action program for evaluation. Additionally, inspectors verified that items that could allow the spent fuel pool to drain down rapidly were added to the Seismic Walkdown Equipment List (SWEL) and these items were walked down by the licensee.

b. Findings and Observations

No findings were identified.

4OA6 Meetings, Including Exit

Exit Meeting Summary

On January 16, 2013, the resident inspectors presented the inspection results to Mr. Kelvin Henderson and other members of licensee management. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

4OA7 Licensee-Identified Violations

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements, which met the criteria of the NRC Enforcement Policy, for being dispositioned as a Non-Cited Violation.

- 10 CFR 50 Appendix B Criterion XVI, Corrective Action, stated in part that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. Contrary to the above, on September 29, 2012, the licensee failed to correct a condition adverse to quality in a timely manner. The licensee determined that a 2B EDG speed indication malfunction did not affect operability and did not implement corrective actions at that time. Approximately 23 days later, the licensee determined that the speed indication malfunction was a result of a failed power supply that affected the automatic closure of the 2B EDG's output breakers which rendered the EDG inoperable. The resident inspectors, with the assistance of a senior risk analyst, performed a risk evaluation using the SAPHIRE 8 risk analysis software and determined the finding was of very low safety significance (Green). This issue was entered into the licensee's corrective action program as PIP C-12-8991.

ATTACHMENT: SUPPLEMENTARY INFORMATION

Enclosure

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

T. Arlow, Emergency Planning Manager
S. Batson, Station Manager
E. Benfield, Radiation Protection (RP), General Supervisor
D. Cantrell, Chemistry Manager
T. Hamilton, Engineering Manager
R. Hart, Regulatory Compliance Manager
K. Henderson, Site Vice-President
A. Henson, Boric Acid Corrosion Control Program Owner
G. Houser, NDE/ISI Supervisor
R. Hudson, ISI Coordinator
T. Jenkins, Superintendent of Maintenance
C. Kamilaris, Organizational Effectiveness Manager
T. Leitch, Engineer
A. Orton, Nuclear Training Manager
T. Pasour, Licensing Administrator
K. Phillips, Work Control Manager
P. Simbrat, Regulatory Compliance Engineer
R. Simril, Operations Superintendent
J. Smith, Radiation Protection Manager
W. Suslick, Design Support Services
D. Tollison, Site Welding Supervisor
S. West, Security Manager

LIST OF REPORT ITEMS

Closed

Temporary Instruction 2515/188	TI	NRC Temporary Instruction, "Inspection of Near-Term Task Force Recommendation 2.3 Seismic Walkdowns" (Section 4OA5.5)
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Discussed

Temporary Instruction 2515/187	TI	NRC Temporary Instruction, "Inspection of Near-Term Task Force Recommendation 2.3 Flooding Walkdowns" (Section 4OA5.4)
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LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

OP/0/B/6700/015, Weather Related Activities, Rev. 00
OP/0/B/6400/011 B, Auxiliary and Reactor Building Heating Water System, Rev. 023
PT/0/B/4700/038, Cold Weather Protection, Rev. 034
IP/0/B/3560/009, Preventative Maintenance and Operational Check of Freeze Protection Heat Trace and Instrument Box Heaters Systems, Rev. 055

Attachment

Section 1R04: Equipment Alignment

OP/0/A/6400/006 C, Nuclear Service Water System, Rev. 276
 PT/1/A/4400/002 C, Nuclear Service Water Valve Verification, Rev. 46
 CN-1574-01.01, Unit 1 and 2 Flow Diagram of Nuclear Service Water System, Rev. 58
 CN-1574-01.02, Unit 1 and 2 Flow Diagram of Nuclear Service Water System, Rev. 51
 CN-1574-02.01, Unit 1 Flow Diagram of Nuclear Service Water System, Rev. 57
 CN-1574-02.05, Unit 1 Flow Diagram of Nuclear Service Water System, Rev. 57
 CN-1573-01.00, Unit 1 Flow Diagram of Component Cooling System, Rev. 27
 CN-1570-1.0, Unit 1 Flow Diagram of Spent Fuel Cooling, Rev. 25

Section 1R05: Fire Protection

Station Fire Impairment Log
 NSD-313, Control of Combustible and Flammable Material, Rev. 7

Section 1R06: Flood Protection Measures

UFSAR Section 3.6.1, Postulated Piping Failures in Fluid Systems Inside and Outside Containment
 CNS-1465.00-00-0020, Design Basis Specification for Flooding from Internal Sources

Section 1R07: Heat Sink Performance – Annual Review

PT/1/A/4400/006 F, KD Heat Exchanger 1B Heat Capacity Test, Rev. 30

Section 1R08: Inservice Inspection (ISI) Activities**Corrective Actions**

PIPs C-12-06068, C-11-08839, C-12-02729, C-12-03097, C-12-10188, G-12-01473, C-11-06483, C-11-03615, C-12-10410, C-12-10493, C-12-10188

Procedures

NDE Procedures Manual-Volume 1-Training, Qualification and Certification of Nondestructive Examination Personnel, Rev. 33
 NDE Procedures Manual-Volume 1-NDE-70-Visual Examination of Reactor Pressure Vessel Upper Head Penetrations, Rev. 0
 NDE Procedures Manual-Volume 1-Enhanced Visual Examination (EVT-1) of Reactor Pressure Vessel Auxiliary Head Adapter Penetrations NDE-71, Rev. 00
 Areva 54-ISI-4660-004, Multi-Frequency Eddy Current Examination of Nozzle Welds and Regions, Dated 08/01/12
 Areva 54-ISI-604-011, Automated Ultrasonic Examination of Open Tube RPV Closure Head Penetrations, Dated 1/25/2012
 Areva 54-ISI-24-033, Written Practice for Personnel Qualification in Eddy Current Examination, Dated 1/9/2012
 MP-0-A-7650-040, Inspection, Evaluation and Cleanup of Boric Acid on Plant Materials, Rev. 02
 NDEMAN-NDE-600, Ultrasonic Examination of Similar Metal Welds in Ferritic and Austenitic Piping, Rev. 18
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