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

January 13, 2012

Mr. J. R. Morris
Site Vice President
Duke Energy Carolinas, LLC
Catawba Nuclear Station
4800 Concord Road
York, SC 29745-9635

SUBJECT: CATAWBA NUCLEAR STATION - NRC INTEGRATED INSPECTION REPORT 05000413/2011005, 05000414/2011005

Dear Mr. Morris:

On December 31, 2011, 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 9, 2012, 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 during this inspection.

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 Agencywide Document Access and Management 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 By C. Rapp For/

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

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

Enclosure: Integrated Inspection Report 05000413/2011005, 05000414/2011005
w/Attachment: Supplemental Information

cc w/encl: (See page 2)

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X PUBLICLY AVAILABLE ☐ NON-PUBLICLY AVAILABLE ☐ SENSITIVE X NON-SENSITIVE

ADAMS: X Yes ACCESSION NUMBER: ML12017A101 ☐ SUNSI REVIEW COMPLETE ☐ FORM 665 ATTACHED

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Letter to J. R. Morris from Jonathan H. Bartley dated January 13, 2012

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.:	50-413, 50-414, 72-45
License Nos.:	NPF-35, NPF-52
Report Nos.:	05000413/2011005, 05000414/2011005
Licensee:	Duke Energy Carolinas, LLC
Facility:	Catawba Nuclear Station, Units 1 and 2
Location:	York, SC 29745
Dates:	October 1, 2011, through December 31, 2011
Inspectors:	A. Hutto, Senior Resident Inspector R. Cureton, Resident Inspector G. Laska, Senior Operations Examiner (Section 1R11) R. Patterson, Reactor Inspector (Section 1R17) M. Endress, Reactor Inspector (Section 1R17) N. Staples, Senior Project Inspector (Section 1R17)
Approved by:	Jonathan H. Bartley, Chief Reactor Projects Branch 1 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000413/2011-005, 05000414/2011-005; 10/1/2011 – 12/31/2011; Catawba Nuclear Station, Units 1 and 2; Routine Integrated Report

The report covered a three month period of inspection by two resident inspectors and four Region-based inspectors. No findings were identified. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process."

REPORT DETAILS

Summary of Plant Status

Unit 1 operated at or near 100 percent Rated Thermal Power (RTP) until December 15, 2011, when the unit was shut down to Mode 3 to comply with Technical Specification (TS) 3.0.3 due to both trains of control room chilled water being inoperable. TS 3.0.3 was exited and the unit was returned to 100 percent RTP on December 21, 2011, where it remained for the rest of the inspection period.

Unit 2 operated at or near 100 percent RTP until October 12, 2011, when power was reduced to approximately 45 percent RTP to support replacement of the 2C1 heater drain pump. The unit was returned to 100 percent RTP on October 16, 2011, and remained there until December 15, 2011, when the unit was shut down to Mode 3 to comply with TS 3.0.3 due to both trains of control room chilled water being inoperable. TS 3.0.3 was exited and the unit was returned to 100 percent RTP on December 24, 2011, where it remained for the rest of the 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.

Adverse Weather Conditions: The inspectors reviewed the licensee's severe weather actions following a tornado watch issued on November 16, 2011. This included a review of actions required by RP/0/A/5000/007, Natural Disaster and Earthquake, enclosure 4.1 and the Hazard Barrier Control Form for the Nuclear Service Water (RN) excavation activities to verify that the design features and implementation of the licensee's procedures protected mitigating systems from adverse weather effects. Documents reviewed are listed in the Attachment

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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, 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 residual heat removal (ND) pump while the 2B ND pump was inoperable for planned maintenance
- 1B component cooling water (KC) train while the A train was inoperable for minimum recirculation flow adjustments
- 1B ND pump while the 1A ND pump was inoperable for planned maintenance

Complete System Walkdown: The inspectors conducted one detailed walkdown/review of the Unit 2 KC System. The inspectors used licensee procedures and licensing and design documents to verify 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

a. Inspection Scope

Fire Protection Walkdowns: The inspectors walked down accessible portions of the four 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 Spent Fuel Area
- Unit 2 Mechanical Penetration Room 543'
- Unit 1 Mechanical Penetration Room 577'
- Service Building 568'

Fire Drill Observation: The inspectors observed a drill conducted on November 2, 2011, involving a simulated fire in the 2A Essential Switchgear. The inspectors verified the fire brigade's 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 critique 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.

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 Unit 1 and Unit 2 diesel generator rooms. 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 and curbs, penetration seals, equipment hatch seals and potential flooding sources. 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.

1R11 Licensed Operator Requalification Program

a. Inspection Scope

Requalification Activities Reviewed by Resident Staff: The inspectors observed a requalification training scenario on November 16, 2011, to assess the performance of licensed operators during a licensed operator requalification simulator training session. The inspection focused on high-risk operator actions performed during implementation of the abnormal and emergency operating procedures, and the incorporation of lessons-learned from previous plant and industry events. The scenario consisted of a loss of letdown, a vital inverter failure, an anticipated transient without scram, and a loss of secondary heat sink. The classification and declaration of the Emergency Plan by the Shift Technical Advisor and Operations Shift Manager was also observed during the scenario. The post-scenario critique conducted by the training instructor and the crew was observed. Documents reviewed are listed in the Attachment.

Biennial Review of Licensee Requalification Examination Results by Regional Specialist: On September 27, 2011, the licensee completed the annual requalification operating tests 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 tests and the crew simulator operating tests. These results were compared to the thresholds established in Manual Chapter 609 Appendix I, Operator Requalification Human Performance Significance Determination Process.

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.

- Maintenance Rule Periodic Assessment, Catawba Nuclear Station, October 2009 – April 1, 2011
- PIP C-11-3447, Unplanned entry into SLC due to failure of Standby Shutdown Facility chart recorder

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors reviewed the following four 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.

- Emergent Yellow risk with the 1D instrument air compressor out of service for maintenance with the 1A service air compressor unavailable due to loading issues
- Critical activity plan for the Unit 2 down power to support condenser tube leak repair
- Critical activity plan for the Unit 1/2 shared 2EMXH motor control center feeder breaker replacements
- Critical activity plan for 1A diesel generator engine driven cooling water pump repairs

b. Findings

No findings were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors evaluated the technical adequacy of the five operability evaluations or functionality assessments listed below to determine if 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 UFSAR to determine that the systems and components remained available to perform their intended function. Documents reviewed are listed in the Attachment.

- PIP C-11-7902, Unit 2 Reactor Coolant Loop B narrow range T_{hot} failed high
- PIP C-11-8269, Water found in nuclear service water conduit

- PIP C-11-8337, Torque settings for 1RN-53B and 1RN54A non-conservative
- PIP C-11-8296, Duct Tape attached to control room ventilation filter test lines degraded
- PIP C-11-9407, Valve 1KD VA 005 seat damage

b. Findings

No findings were identified.

1R17 Evaluations of Changes, Tests, or Experiments and Permanent Plant Modifications

a. Inspection Scope

The inspectors reviewed the six evaluations listed in the Attachment to confirm that the licensee had appropriately considered the conditions under which changes to the facility, UFSAR, or procedures may be made, and tests conducted, without prior NRC approval. The inspectors reviewed drawings, calculations, supporting analyses, the UFSAR, and TS associated with the evaluations to confirm that the licensee appropriately concluded that the changes could be accomplished without obtaining a license amendment. The inspectors also reviewed documentation for the 20 modifications list in the Attachment to confirm that the licensee's conclusions to "screen out" these changes were correct and consistent with 10 CFR 50.59.

The inspectors reviewed the following seven engineering design change packages for material, component, and design based modifications to evaluate the modifications for adverse effects on system availability, reliability, and functional capability.

- EC 095311, CNS-2 RV Nozzle Alloy 600 Weld Mitigation, 3/20/09
- EC 093107, CMP ECCS NI/RN/NM/NV/VS System S/R Modification, 12/30/08
- EC 102396, Revise S/G PORV Control Power, 5/21/2011
- EC 095279, Resolve Breaker Coordination for 1EDF and 1EPD, 1/08/08
- EC 090981, Resolve Elec/Instr Interferences for ECCS Sump Mod, 12/30/08
- EC 096189, Isolate RN Non ESS Headers On Swap To Standby Nuclear Service Water Pond (SNSWP), 10/13/07
- EC 090980, U1 ECCS - NI Pressure Breakdown Orifices, 5/31/08

Documents reviewed are listed in the Attachment. The inspectors additionally reviewed test documentation to ensure adequacy in scope and conclusion. The inspectors review was also intended to verify that all appropriate details were incorporated in licensing and design basis documents and associated plant procedures.

The inspectors also reviewed selected PIPs and the licensee's recent self-assessment associated with modifications and screening/evaluation issues to confirm that problems were identified at an appropriate threshold, were entered into the corrective action process, and appropriate corrective actions had been initiated and tracked to completion.

b. Findings

No findings were identified.

1R18 Plant Modifications

a. Inspection Scope

The inspectors reviewed the following temporary plant modification 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 106613, Temporary Change to the Unit 1 Digital Rod Position Indicator System

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing

a. Inspection Scope

The inspectors reviewed the five 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.

- 1B diesel generator operability run following fuel injector line leak repair
- Voltage checks and thermography following 2EMXH incoming breaker replacement
- 2B safety injection pump performance test following pump PMs
- 1A diesel generator operability test following jacket water pump seal replacement
- 'A' control room area chilled water pump following shaft replacement

b. Findings

No findings were identified.

1R22 Surveillance Testing

a. 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 TS, 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/4350/002 B, Diesel Generator 1B Operability Test, Rev. 119
- PT/1/A/4200/009 H, ND Pump Suction from FWST Swapover ESF Actuation, Rev. 001

Leakage Detection Tests
- PT/2/A/4150/001 D, NC System Leakage Calculation, Rev. 75

In-Service Tests
- PT/2/A/4200/010 B, Residual Heat Removal Pump 2B Performance Test, Rev. 053
- PT/2/A/4200/004 C, Containment Spray Pump 2B Performance Test, Rev. 039

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification

a. Inspection Scope

The inspectors sampled licensee data to confirm the accuracy of reported performance indicator (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, Rev. 5. 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, 2010, through September 30, 2011. 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 2010-2011. 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. The inspectors reviewed Nuclear Energy Institute 99-02, Regulatory Assessment Performance Indicator Guideline, to verify that industry reporting guidelines were applied. Documents reviewed are listed in the Attachment.

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 Focused Review

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.

- PIP C-11-07426, Observed packing leakage on Unit 1 standby makeup pump following IWP with the pump suction valve in normal closed alignment

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

Documents reviewed are listed in the Attachment.

.3 Semi-Annual 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 2011, through December 2011, 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. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

4OA3 Followup of Events and Notices of Enforcement Discretion (NOED)

.1 Response to Plant Events

a. Inspection Scope

The inspectors evaluated the licensee's actions during a dual unit shutdown to MODE 3 required by TS 3.0.3 on December 15, 2011. As appropriate, the inspectors: (1) observed plant parameters and status, including systems required for shutdown and adherence to TS requirements; (2) determined alarms/conditions were as expected; and (3) evaluated performance of plant systems and operator actions.

b. Findings

No findings were identified.

.2 NOED Review

a. Inspection Scope

On December 11, 2011, at 9:50 p.m., the licensee declared the A train of the control room area chilled water system (CRACWS) inoperable for planned maintenance to replace a non-conforming pump shaft with a conforming material. At the time, Units 1 and 2 were at 100% power operation and TS LCO 3.7.11, Condition "A" was entered for one train of CRACWS inoperable which required the train be restored to operable within 30 days. During the fill and vent of the pump on December 13, 2011, a cooling water leak on a pump seal supply fitting was identified. Actions to tighten the fitting reduced the leakage to 5 drops per minute. At that time the decision was made by the licensee to repair the leaking fitting. This maintenance evolution was originally scheduled to be completed on December 15, 2011, at 7:00 p.m. On December 15, 2011, at 7:20 a.m., CRACWS Train B unexpectedly tripped and was declared inoperable at 7:39 a.m. TS LCO 3.7.11, Condition "E" was entered for both trains of CRACWS being inoperable which required immediate entry into TS LCO 3.0.3. TS LCO 3.0.3 required that both units be placed in MODE 3 within seven hours and MODE 4 within the following six hours. Both units were shutdown and placed in MODE 3 by 2:22 p.m.

The licensee requested a NOED from compliance with TS LCO 3.0.3, which required that both units be placed in MODE 4 by 8:39 p.m., on December 15, to allow the units to remain in MODE 3 for an additional 12 hours while the licensee completed activities to return the A Train of CRACWS to service. The NRC verbally granted the NOED at 6:00 p.m., on December 15. The licensee returned the A Train of CRACWS to an operable status on December 15 at 10:36 p.m., and exited TS LCO 3.0.3.

b. Findings

Introduction: An unresolved item (URI) was identified for NOED 11-2-004.

Description: The inspectors reviewed NOED 11-2-004 and related documents to determine the accuracy and consistency with the licensee's assertions and implementation of the licensee's compensatory measures and commitments which included deferring non-essential surveillances and other maintenance activities on the emergency diesel generators, the turbine-driven AFW pumps, the Standby Shutdown System, fire protection systems and switchyard. The inspectors also verified that the licensee briefed the oncoming operations shift on AP/0/A/5500/039, Control Room High Temperature. Additional inspection is required to conduct a review of the LER, root cause, and planned corrective actions. This URI is identified as URI 05000413, 414/2011005-01, Follow-up for NOED 11-2-004.

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/0750/015 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. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

4OA6 Meetings, Including Exit

Exit Meeting Summary

On January 9, 2012, the resident inspectors presented the inspection results to Mr. Jim Morris, Site Vice President, and other members of licensee management, who acknowledged the findings. The inspectors confirmed that any proprietary information provided or examined during the inspection period had been returned.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel
T. Arlow, Emergency Planning Manager
W. Byers, Security Manager
J. Caldwell, Work Control Manager
D. Cantrell, Chemistry Manager
J. Ferguson, Mechanical, Civil Engineering Manager
T. Hamilton, Engineering Manager
G. Hamrick, Station Manager
R. Hart, Regulatory Compliance Manager
T. Jenkins, Superintendent of Maintenance
J. Morris, Catawba Site Vice President
K. Phillips, Training Manager
S. Putnam, Safety Assurance Manager
M. Sawicki, Regulatory Compliance Engineer
R. Simril, Operations Superintendent
J. Smith, Radiation Protection Manager
W. Suslick, Modifications Engineering Manager

LIST OF REPORT ITEMS

Opened

05000413, 414/2011005-01	URI	Follow-up for NOED 11-2-004 (Section 4OA3.2)

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. 033
IP/0/B/3560/009, Preventative Maintenance and Operational Check of Freeze Protection Heat Trace and Instrument Box Heaters Systems, Rev. 055

Section 1R04: Equipment Alignment
C-11-00338, Oil in outboard seal trough of 2A2, 2B1 and 2B2 KC pumps
C-11-02690, 2A KC Surge Tank level has an increasing trend
C-11-05074, U1 entered AP 21 (Loss of Component Cooling) when the A train KC crossover valves closed
OP/2/A/6400/005, Component Cooling System, Rev. 085
KC System Health Report for Q3
CNS-1573.KC-00-0001, Design Basis Specification for the Component Cooling Water System (KC), Rev. 37

Section 1R05: Fire Protection
Station Fire Impairment Log

NSD 313, Control of Combustible and Flammable Material, Rev. 7
Fire Strategy Fire Areas B & C, Service Building 568 Level
Fire Strategy Fire Areas 24, Unit 1 Spent Fuel Pool
Fire Strategy Fire Area 4, Auxiliary Building 543 Level
Fire Strategy Fire Area 18, Auxiliary Building 577 Level

Section 1R06: Flood Protection Measures
CNS-1465.00-00-0020, Design Basis Specification for Flooding from Internal Sources, Rev. 1
CNS-1465.00-00-0011, Design Basis Specification for Flooding from External Sources, Rev. 3

Section 1R11: Licensed Operator Requalification
Simulator Exercise Guide S-07, Rev. 16

Section 1R12: Maintenance Effectiveness
PIP C-11-7653, Unit 1 and Unit 2 SSF Maintenance Rule Supersystem is A(1) based on repeat MPFF
PIP C-10-3614, Unexpected entry into SLC due to 1ENCR9005 Non-Functional
SSF System Health Report for Q3
Maintenance Rule Periodic Assessment for Maintenance Rule Implementation at Catawba Nuclear Station, October 1, 2009 – April 1, 2011

Section 1R13: Maintenance Risk Assessments and Emergent Work Control
NSD 213, Risk Management Process, Rev. 8
SOMP 02-02 Operations Roles in Risk Management, Rev 007

Section 1R15: Operability Evaluations
NSD 203, Operability/Functionality, Rev. 19
NSD 122, Temporary Configuration Changes, Rev. 00
PIP C-11-4752, Tripped breaker prevented multiple RN manhole sump pumps from operating
PIP C-01-5647, Request engineering to evaluate the operability/inoperability of HVAC units when test lines are installed to perform filter testing

Section 1R17: Evaluations of Changes, Tests, or Experiments and Permanent Plant Modifications

Full Evaluations
A/R 00291000, Evaluation of Alternative Shutdown Boron Concentrations, 11/09/2009
A/R 00220524, Assumed Outside Air Temp from 95th Percentile Low to 99th Percentile Low, 10/14/2008
A/R 00272597, Methodology Report Revision, Rev. 4A
A/R 00327003, UFSAR Changes, Overhead Heavy Load Handling System, 9/16/10
A/R 00224527, Fuel Manipulator Crane Upgrades, 11/10/08
A/R 00246408, Add Vent Lines of 1/2NI-181 and 1/2NI-176, 10/28/2008

Screened Out Items
EC 095279, Resolve Breaker Coordination for 1EDF and 1EPD, 1/08/08
EC 090981, Resolve Elec/Instr Interferences for ECCS Sump Mod, 6/11/08
EC 099412, Replace EPQ Breaker and Cable, 7/08/2010

EC 102396, Revise S/G PORV Control Power, 5/21/2011
EC 095033, Relay Replacement for TTE ITE 211B0175D, 10/14/08
EC 103988, Allowing Replacing SSPS Slave Relays with Cutler-Hammer Type D26M
EC 091333, Perform RVLIS Tubing Changes, 10/30/08
EC 097068, Relocate Valve 1KF23 and Delete Hanger 1-A-KF-3032, 4/03/08
EC 095311, CNS-2 RV Nozzle Alloy 600 Weld Mitigation, 3/20/09
EC 100680, Replace 1B NV Pump Element, 9/01/09
EC 093107, CMP ECCS NI/RN/NM/NV/VS System S/R Modification, 12/30/08
EC 078997, Replace Controllers 1KCSS4860, 4870, 4880, and 4890, 3/17/09
EC 950026, Pressurizer Level Tuning, 5/29/07
CD 201139, Replace Valve 2NI-185A With New Valve, 03/22/10
EC 096189, Isolate RN Non ESS Headers On Swap To SNSWP, 10/13/07EC 090980, U1
ECCS - NI Pressure Breakdown Orifices, 5/31/08
EC 094959, Replace MOV Operator in 1EOC17, 6/13/08
EC 095492, Pressurizer Safety Relief Valve Acoustic Monitoring Channel, 10/20/08
EC 099417, Install Valve to Relieve Press on NI Pump Discharge, 10/27/08
EC 091370, Replace CA Pressure SWS with Suitable Replacement, Rev. 0

Basis Documents
Updated Final Safety Analysis, Current
Technical Specifications, Current

Problem Identification Process (PIP) Documents Reviewed
C-08-05524, Found 27XAS (SPECIAL) Relay Inoperable (No Trip Output)
C-08-06158, Modification Impact Review WO Tasks Were Not Completed in Passport WMS
C-08-05759, Relay Obsolescence
C-02-00448, Relay Obsolescence
C-05-07405, Valve 2NI-185A Engineering Change Request Form

Procedures
CNC-1553.05-00-0537, Catawba 2 Cycle 18 Startup and Operational Report, 08/31/2010
DPND-DPC-NE-1005-PA, Nuclear Design Methodology Using CASMO-4/SIMULATE-3 MOX, Rev. 1, 11/18/08
DPC-1553-05-00-0185, Generic Simulate-3/SPOST Input Library for the Startup and Operational reports Section 8.6, Rev. 7
TN/1/A/CH100493/03M, Replace U1 Containment Recir. Sump Strainer, Rev. 0
IP/1/A/3121/013A, Calibration Procedure for Pressurizer Safety Relief Acoustic Monitoring Device, Rev. 10

Completed Procedures
PT/1/A/4400/001, ECCS Flow Balance, 5/26/08
SM/0/A/8140/001, Welding of QA & Non QA Piping, Valve & Component, 4/16/08
MP/0/A/7650/160, Control of Machining Process on QA Parts, 2/19/08
PT/1/A/4400/001, ECCS Flow Balancing, 7/29/09
PT/2/A/4200/013, RN Valve Inservice Test, 9/02/11
PT/2/A/4200/013, RN Valve Inservice Test, 7/26/11
PT/2/A/4200/013, RN Valve Inservice Test, 9/13/11
PT/2/A/4200/013, RN Valve Inservice Test, 9/30/11

MP/0/A/7650/160, Control of Machining Process on QA Parts, 2/20/08
SM/0/A/8140/001, Welding of QA and Non-QA Piping, Valves and Components, 5/27/08

Work Orders
01766314, Add NI Pressure Break Down Orifices, 5/28/2008
01855170, Replace 1B NV Pump Element in 1EOC18, 11/28/09
01800260, CD101646 Relocate Valve 1KF23 and Delete Hangar, 9/08/08
01819297, CD201489 Alloy 600 Weld Overlay for Unit 2 “A” Hot Leg, 3/31/09
01819307, CD201489 Alloy 600 Weld Overlay for Unit 2 “B” Hot Leg, 4/01/09
01819309, CD201489 Alloy 600 Weld Overlay for Unit 2 “C” Hot Leg, 4/01/09
01819310, CD201489 Alloy 600 Weld Overlay for Unit 2 “D” Hot Leg, 4/01/09
01131797, CD100938 Perform RVLIS Tubing Changes, 5/07/08
01764833, CD101413 Return Primary Channel to Service, 5/27/08
01764570, Perform Pressurizer Safety Relief Valve Signal Path, 6/06/08
01775526, CD501362 U1 “A” Isolate RN Non Essential Headers on Swap, 10/03/07
01766314, CD100870 Add NI Pressure Breakdown Orifices, 5/28/08

Calculations
CNC-1240.00-00-0009, Annulus Pressure Decay After Steady State, Rev. 2
CNC-1227.00-00-0106, Radiological Consequences of a DB LOCA at Catawba Nuclear Station, Rev. 8
CNC-1227.00-00-0103, ICCF 11F, Analysis of Post LOCA Secondary Containment Response Using CANVENT, Rev.2
CNC-1381.05-00-0235, Unit 1 D/G 125VDC Essential Diesel Auxiliary Power System (EPQ) Voltage Drop Calculation, Rev. 1
CNC-1381.05-00-0111, CNS Floor Mounted, Rev. 46b
CNC-1381.05-00-0012, 4160 Volt Essential Auxiliary Power System Switchgear Relay Settings, Rev. 15
CNC-1381.05-00-0147, ICCF 11F, U1/1 4.16kV Essential Auxiliary Power System (EPC) Diesel-Generator (EDG) LOCA/LOOP Blackout Loading Analysis, Rev.0
CNC-1125.00-00-0004, Design Compliance Evaluation, Reactor Building Cranes, 175/25 Ton Capacity, Polar Cranes S/N 11245 and 11246, Vendor Document C11245.21, Rev. 0
CNC-1201.01-02-0001, Reactor Vessel Nozzle Weld Overlay Inputs, Rev. 0
CNC-1201.01-02-0015, Determination of Potentially Affected Components Due to Weld Shrinkage Effects of the Reactor Vessel Nozzle Weld Overlays, Rev. 0
CNC-1201.01-02-0016, Reconciliation of Weld Buildup on Reactor Pressure Vessel Outlet Nozzles, Rev. 0
CNC-1206.12-22-1063, Design of Support/Restraint 1-R-NV-2201, Rev. D6
CNC-1206.12-24-1025, Design of Support/Restraint 1-R-NI-1607 & 1-R-NI-1608, Rev.01
CNC-1206.12-24-1026, Design of Support/Restraint 1-R-NI-1229, Rev. D9
CNC-1206.12-24-2023, Support/Restraint Qualification for Isometrics CN-1491-NI-006A, -016A And -049A, Rev. 23
CNC-1206.12-24-2036, Support/Restraint Qualification for ISOS N134A, N137A, N177A, Rev. 21
CNC-1206.12-26-1021, Design of Support/Restraint No. 1-R-NM-1125, Rev. 08
CNC-1206.12-26-1022, S/R Calc. for 1-R-NM-1424, Rev. 06
CNC-1206.12-29-1031, Design of Support/Restraint 1-R-NV-1424, Rev. D7
CNC-1206.12-29.1048, Design of Support/Restraint 1-R-NV-2049, Rev. D6

CNC-1206.12-34-1026, Design of Support/Restraint 1-R-RN-1046, Rev. D8
CNC-1206.12-40-2002, Qualification of S/R Design for 1-A-VS-4008, Rev. 05

Drawings
CN-1915-14, Electrical Equipment Layout RB Cable Tray Hangers Sections & Details, Rev. 1A
CN-1907-01, Electrical Equipment Layout RB Plan Below EL. 565 +3", Rev. 39B
CN-1907-01, Computer Cable Routing RB Plan Below EL. 565 +3", Rev. 20B
CN-1570-01.00, Flow Diagram of Spent Fuel Cooling System, Rev. 25
CN-1499-NC.11-01, Instrument Detail Reactor Vessel Level Instrumentation System, Rev. 12
CNM-1201.05-0566.001, RVLIS Capillary Schematic, Rev. 12CN-2491-NC.00-88, Reactor Building Reactor Coolant System (NC), Rev. 10
CN-2491-NC.00-89, Reactor Building Reactor Coolant System (NC), Rev. 11
CN-2491-NC.00-90, Reactor Building Reactor Coolant System (NC), Rev. 12
CN-2NC-0021, Reactor Coolant System from Reactor Vessel 2, Rev. 8A
CN-2NC-0022, Reactor Coolant System from Reactor Vessel 2 (Conn I), Rev. 7A
CN-2NC-0165, Reactor Coolant System from Reactor Vessel to Coolant Drain Tank, Rev. 5A
DPC-1553.05-00-0213, Certification of Engineering Calculation-Revision Log, Rev. 2a
CN-1733-01.10, Connection Diagram Component Cooling SYS (KC), Rev. 2
CN-1733-01.09, Outline Diagram Component Cooling SYS (KC) 1TBOX0489, Rev. 3
CN-2492-ND004, Valve Location Diagram, Rev. 11
CN-2561-01, Flow Diagram of Residual Heat Removal System (ND), Rev. 24
CNM 1205.00-2153, Outline drawing for new valve, Item No. 09D-237, 9/19/08
CNM 1205.00-2160 00, 18" (DN 450) Bolted Bonnet Gate Valve (Forged), 11/4/09
CNM1201.00-0039 001, NSSSS Precautions, Limitations, and Setpoints, 1/13/11
CNM 1210.06-0447 001, CN SIS Multi-Stage Pressure Break Down Orifices, Rev. D4
CNM 1210.06-0447 002, Restriction Orifices Calculation Summary, Rev. D4
CN-1491-NI.00-069, Reactor Building SI System (NI), Rev. 19
CN-1491-NI.00-073, Reactor Building SI System (NI), Rev. 10
CN-1491-NI.00-074, Reactor Building SI System (NI), Rev. 12
CN-1491-NI.00-076, Reactor Building SI System (NI), Rev. 14
CN-1NI-0184, Safety Injection System to Loop '3' Cold Leg, Rev. 8
CN-1NI-0190, Safety Injection System to Loop '2' Cold Leg, Rev. 11
CN-1NI-0248, SIS Boron Injection Tank to Loop 'C' Cold Leg, Rev. 6
TN/1/A/CH100493/03M, Replace U1 Containment Recir. Sump Strainer, Rev. 0
CNSF-1574-RN.01, Summary Flow Diagram Nuclear Service Water, Rev. 6
CNEE-0150-01.40, RCS Acoustic Leak Detection Valve Monitoring, Rev. 5

Other Documents
Request for Relief 09-CN-002, 4/02/09
NRC Response to RFR 09-CN-002, Docket No. 50-414, 8/26/09
RAI Relief Request 09-CN-002, Reactor Vessel Hot Leg Nozzles Catawba Nuclear Station Unit 2, Docket No. 50-414, 4/07/09
CD 100851, Unit 1 Reactor and Spent Fuel Manipulator Crane Upgrades, 12/17/08
CD 200852, Unit 2 Upgrade Manipulator Cranes, 10/07/09
DC-1.02 Separation-Catawba, Electrical Discipline Design Criteria Manual, Rev. 28
NRC Safety Evaluation Relating to Topical Report DPC-NE-3002, Docket No. 50-369, 50-370, 50-413, and 50-414, April 26, 1996

WCAP-15977-P, Reliability Assessment of Cutler-Hammer D26MR802A Relays Used as SSPS Slave Relays, Rev. 1

Section 1R18: Plant Modifications

EC 106613, Temporary Change to the Unit 1 Digital Rod Position Indicator System
IP/0/A/3890/032, Controlling procedure for Installation and removal of Temporary Modifications, Rev. 15
NSD 209, 10 CFR 50.59 Process, Rev. 14

Section 1R19: Post-Maintenance Testing

PT/1/A/4350/002B, Diesel Generator 1B Operability Test, Rev. 119
PT/2/A/4200/005 B, Safety Injection Pump 2B Performance Test, Rev. 41
PT/0/A/4400/007 A, Control Room Area Chilled Water Pump A Performance Test, Rev. 010

Section 4OA1: Performance Indicator Verification

NSD 225, NRC Performance Indicators, Rev. 4
NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Rev. 5
Catawba Master File CN: 854.03-02, Reactor Coolant System Leakage

Section 4OA2: Problem Identification and Resolution

NSD 208, Problem Investigation Program
PIP C-11-6970, Water leak from Unit 2 Standby makeup Pump
PIP C-11-8868, Ruptured Dampener Bellows for the Unit 1 Standby Makeup Pump is lost
MP/0/B/7150/095, NV Standby Makeup Pump Plunger/Packing Removal and Replacement, Rev.003
EC 102855/01946157, Replace U1/2 Standby Makeup pump Discharge Dampeners

Section 4OA5: Other Activities

PT/0/A/4550/015, Inventory of Fuel Special Nuclear Material, Rev. 10
CNEI 0400-233, Dry Storage Certification for Cask CNZ-046
CNEI 0400-234, Dry Storage Certification for Cask CNZ-027