



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

April 26, 2011

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  
05000413/2011002, 05000414/2011002 AND EMERGENCY PREPAREDNESS  
INSPECTION REPORT 05000413/2011501, 05000414/2011501**

Dear Mr. Morris:

On March 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 April 6, 2011, with Mr. Steve Putnam 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.

This report documents one NRC-identified finding of very low safety significance which was determined to involve a violation of NRC requirements. Additionally, a licensee-identified violation, which was determined to be of very low safety significance, is listed in this report. However, because of the very low safety significance, and because they were entered into your corrective action program, the NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the NRC Enforcement policy. If you contest any NCV in this report, you should provide a written 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, D.C. 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at the Catawba facility. In addition, if you disagree with the characterization of any finding 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 information you provide will be considered in accordance with Inspection Manual Chapter 0305.

DEC

2

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/*

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 05000413/2011002, 05000414/2011002 AND  
Emergency Preparedness Inspection Report 05000413/2011501,  
05000414/2011501  
w/Attachment: Supplemental Information

cc w/encl: (See page 3)

DEC

2

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/**

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 05000413/2011002, 05000414/2011002  
AND Emergency Preparedness Inspection Report 05000413/2011501,  
05000414/2011501  
w/Attachment: Supplemental Information

cc w/encl: (See page 3)

X PUBLICLY AVAILABLE       NON-PUBLICLY AVAILABLE       SENSITIVE      X NON-SENSITIVE  
ADAMS:  Yes      ACCESSION NUMBER: ML111160380       SUNSI REVIEW COMPLETE

OFFICE	RII:DRP	RII:DRP	RII:DRP	RII:DRP	RII:DRS	RII:DRS	
SIGNATURE	EJS /RA/	JHB /RA/	Via email	Via email	Via email	Via email	
NAME	EStamm	JBartley	AHutto	RCureton	JBeavers	MSpeck	
DATE	04/25/2011	04/26/2011	04/22/2011	04/25/2011	04/25/2011	04/25/2011	
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY      DOCUMENT NAME:  
HTTP://PORTAL.NRC.GOV/EDO/RII/DRP/BRANCH1/DOCUMENTS/CAT201102.DOC

cc w/encl:  
Division of Radiological Health  
TN Dept. of Environment & Conservation  
401 Church Street  
Nashville, TN 37243-1532

Randy D. Hart  
Regulatory Compliance Manager  
Duke Energy Carolinas, LLC  
Electronic Mail Distribution

Sandra Threatt, Manager  
Nuclear Response and Emergency  
Environmental Surveillance  
Bureau of Land and Waste Management  
Department of Health and Environmental  
Control  
Electronic Mail Distribution

Dhiaa M. Jamil  
Group Executive and Chief Nuclear Officer  
Duke Energy Carolinas, LLC  
Electronic Mail Distribution

C. Jeff Thomas  
Fleet Regulatory Compliance & Licensing  
Manager  
Duke Energy Carolinas, LLC  
Electronic Mail Distribution

Kathryn B. Nolan  
Senior Counsel  
Duke Energy Corporation  
526 South Church Street-EC07H  
Charlotte, NC 28202

Lara Nichols  
Associate General Counsel  
Duke Energy Corporation  
Electronic Mail Distribution

David A. Repka  
Winston Strawn LLP  
Electronic Mail Distribution

North Carolina MPA-1  
Suite 600  
P.O. Box 29513  
Raleigh, NC 27525-0513

Piedmont Municipal Power Agency  
Electronic Mail Distribution

Richard Haynes  
Director, Division of Waste Management  
Bureau of Land and Waste Management  
S.C. Department of Health and  
Environmental Control  
Electronic Mail Distribution

Mark Yeager  
Division of Radioactive Waste Mgmt.  
S.C. Department of Health and  
Environmental Control  
Electronic Mail Distribution

W. Lee Cox, III  
Section Chief  
Radiation Protection Section  
N.C. Department of Environmental  
Commerce & Natural Resources  
Electronic Mail Distribution

Vanessa Quinn  
Federal Emergency Management Agency  
Radiological Emergency Preparedness  
Program  
1800 S. Bell Street  
Arlington, VA 20598-3025

Steve Weatherman, Operations Analyst  
North Carolina Electric Membership  
Corporation  
Electronic Mail Distribution

County Manager of York County  
York County Courthouse  
P. O. Box 66  
York, SC 29745-0066

Peggy Force  
Assistant Attorney General  
State of North Carolina  
P.O. Box 629  
Raleigh, NC 27602

David A. Baxter  
Vice President, Nuclear Engineering  
Duke Energy Carolinas, LLC  
Electronic Mail Distribution

DEC

4

Letter to J. R. Morris from Jonathan H. Bartley dated April 26, 2077

SUBJECT: CATAWBA NUCLEAR STATION - NRC INTEGRATED INSPECTION REPORT  
05000413/2011002, 05000414/2011002 AND EMERGENCY PREPAREDNESS  
INSPECTION REPORT 05000413/2011501, 05000414/2011501

Distribution w/encl:

C. Evans, RII

L. Douglas, RII

OE Mail

RIDSNRRDIRS

PUBLIC

RidsNrrPMCatawba Resource

**U. S. NUCLEAR REGULATORY COMMISSION**

**REGION II**

Docket Nos.: 50-413, 50-414, 72-45

License Nos.: NPF-35, NPF-52

Report Nos.: 05000413/2011002, 05000414/2011002,  
05000413/2011501, 05000414/2011501

Licensee: Duke Energy Carolinas, LLC

Facility: Catawba Nuclear Station, Units 1 and 2

Location: York, SC 29745

Dates: January 1, 2011, through March 31, 2011

Inspectors: A. Hutto, Senior Resident Inspector  
R. Cureton, Resident Inspector  
J. Beavers, Emergency Preparedness Inspector (Sections 1EP2 -  
1EP5, 4OA1, 4OA5)  
M. Speck, Senior Emergency Preparedness Inspector (Sections  
1EP2 - 1EP5, 4OA1, 4OA5)

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

Enclosure

## SUMMARY OF FINDINGS

IRs 05000413/2011-002, 05000414/2011-002, 05000413/2011-501, 05000414/2011-501; 1/1/2011 - 3/31/2011; Catawba Nuclear Station, Units 1 and 2; Emergency Action Level and Emergency Plan Changes

The report covered a three month period of inspection by two resident inspectors and two region-based inspectors. One Green finding was identified which was determined to be a violation of NRC requirements. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). The cross-cutting aspects were determined using IMC 0310, "Components Within The Cross-Cutting Areas." Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process."

Cornerstone: Emergency Preparedness

- Green: An NRC-identified NCV of 10 CFR 50.54(q) with two examples was identified for failing to maintain emergency plans that meet the requirements of 10 CFR 50.47(b)(4). The licensee failed to revise the Emergency Action Level (EAL) basis which potentially impacted the licensee's ability to accurately and timely classify emergency conditions. The licensee has entered this issue into their corrective action program as Problem Investigation Program report (PIP) C-11-2304.

The failure to revise the EAL basis document as required by the Catawba Emergency Plan was a performance deficiency (PD). The PD was more than minor because if left uncorrected, the potential to incorrectly classify events associated with the fission product barrier matrix or security-event classification scheme within the brief time available would lead to a more significant safety concern. This finding was associated with the risk significant planning standard (RSPS) 10 CFR 50.47(b)(4). The finding was determined to be of very low safety significance (Green) because it did not result in a loss or degradation of a RSPS function. The cause of this finding was directly related to the cross-cutting aspect of complete and accurate procedures in the Resources component of the Human Performance area because the procedure used to evaluate EAL changes, EPFAM Section 3.10, did not include a requirement to change the EAL basis document as appropriate. [H.2(c)] (Section 1EP4)

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 of this report.

Enclosure

## REPORT DETAILS

### Summary of Plant Status

Unit 1 operated at or near 100 percent Rated Thermal Power (RTP) for the entire inspection period.

Unit 2 operated at or near 100 percent RTP until February 5, 2011, when power was reduced to 88 percent RTP for control valve movement testing. Power was returned to 100 percent RTP on February 6, 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 Conditions: The inspectors reviewed the licensee's severe weather actions following a tornado watch issued on February 28, 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.

##### 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 attempted 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.

Enclosure



- Train 'A' Controlled Area Chilled Water and Ventilation while the 'B' train was inoperable due to planned electrical configuration changes
- Unit 1 Motor driven auxiliary feedwater trains while the turbine driven auxiliary feedwater pump was inoperable due to preventive maintenance
- Unit 1 'A' Diesel Generator (DG) while the 'B' DG was inoperable due to a failed surveillance

Complete System Walkdown: The inspectors conducted one detailed walkdown/review of the Unit 2 Residual Heat Removal 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 PIP reports 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 five fire 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.

- 1A Diesel Generator Room
- Unit 2 ETB Switchgear Room
- Unit 2 Spent Fuel Purge Unit
- Unit 2 Auxiliary Feedwater Pump Room and Motor Driven Pump Pits
- Standby Shutdown Facility 594' & 611' elevations

b. Findings

No findings were identified.

1R06 Flood Protection Measures

a. Inspection Scope

Underground Cable Inspection: The inspectors observed conduit manhole (RN Conduit CMH-10B) to verify that the cables were not submerged, that the cables were not damaged or degraded, and that the sump pumps were functioning properly.

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' DG Engine Cooling Water 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.

1R11 Licensed Operator Regualification Program

a. Inspection Scope

Annual Follow-up Sample using Operating Experience Smart Sample (OpESS) FY 2010-02, Sample Selections for Reviewing Licensed Operator Examinations and Training Conducted on the Plant-Referenced Simulator: The inspectors observed Simulator Exercise S-73 to assess the performance of licensed operators during a license operator requalification simulator training session. The exercise included damage to the Standby Shutdown Facility battery charger and control panel, an overpower transient, and a small break Loss of Coolant Accident. The inspectors 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 classification and declaration of the Emergency Plan by the Shift Technical Advisor and Operations Shift Manager was also observed during the scenario. Documents reviewed are listed in the Attachment.

Enclosure

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.

- Review of unexpected gas in the Standby Makeup Pump system
- Unit 2 Steam Generator Power Operated Relief Valve failures

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors reviewed the following six 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 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.

- Unit 1 emergent inoperability of the Standby Makeup Pump with the Unit 1 Auxiliary Feedwater Pump out of service for scheduled maintenance
- Complex Plan review for the 1ATC transformer heavy lift
- Review of unexpected YELLOW risk due to overlapping Instrument and Station Air work
- Unplanned YELLOW risk due to emergent Standby Shutdown Facility unavailability

- Unplanned YELLOW risk due to emergent 1A DG governor failure
- Unplanned YELLOW risk due to emergent leak on Unit 2 Standby Makeup Pump

b. Findings

No findings were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors evaluated the technical adequacy of the five operability evaluations 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 Nuclear System Directive 203, Operability. The inspectors reviewed the Updated Final Safety Analysis Report to determine that the systems and components remained available to perform their intended function. Documents reviewed are listed in the Attachment.

- PIP C-11-0020, Unit 1 Standby Makeup Pump did not meet surveillance test acceptance criteria
- PIP C-11-0739, 1RN-37B missing mounting bolts
- PIP C-11-1073, Square Root Extractors 1(2) RNSR5800A and 1(2)RNSR5850 not Environmental Qualification related but mounted in a potentially harsh environment
- PIP C-11-1090, Potential lack of fusion on RN support
- PIP C-11-2334, Foreign material in the 2B Safety Injection pump bearing oil system

b. Findings

No findings were identified.

1R18 Plant Modifications

a. Inspection Scope

The inspectors reviewed the temporary plant modification, EC 105755, Lower Unit 1 Component Cooling Water Operational Temperature Limit, 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.

b. Findings

No findings were identified.

1R19 Post Maintenance Testinga. Inspection Scope

The inspectors reviewed the six 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.

- DG 2B operability test following scheduled preventive maintenance
- DG 1B operability test following scheduled preventive maintenance
- 2SV-13 Valve inservice test and local valve movement test following valve rebuild
- Steam Generator 1C Power Operated Relief Valve 1SV-7 nitrogen leakage test following check valve replacement
- Safety Injection Pump 2B test following replacement of the lube oil pump
- Standby Shutdown Facility DG operability test following scheduled preventative maintenance

b. Findings

No findings were identified.

1R22 Surveillance Testinga. Inspection Scope

For the six 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 Updated Final Safety Analysis Report, and applicable licensee procedures, and that the tests demonstrated that the SSCs were capable of performing their intended safety functions. Documents reviewed are listed in the Attachment.

Surveillance Tests

- PT/1/A/4450/005 B, Containment Air Return Fan 1B and Hydrogen Skimmer Fan 1B Performance Test, Rev. 53
- PT/2/A/4350/002 A, DG 2A Operability Test, Rev. 92
- PT/1/A/4350/002 A, DG 1A Operability Test, Rev. 120
- OP/2/A/6200/032, Primary Sampling Using a Rheodyne Model 7010 Valve, Rev. 014

In-Service Tests

- PT/1/A/4250/003 C, Turbine Driven Auxiliary Feedwater Pump #1 Performance Test, Rev. 100
- PT/1/A/4200/005 A, Safety Injection Pump 1A Performance Test, Rev. 53

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP2 Alert and Notification System Testinga. Inspection Scope

The inspectors evaluated the adequacy of licensee's methods for testing the Alert and Notification System (ANS) in accordance with NRC Inspection Procedure 71114, Attachment 02, Alert and Notification System Evaluation. The applicable planning standard, 10 CFR 50.47(b)(5), and its related requirements, 10 CFR 50, Appendix E, Section IV.D, were used as reference criteria. The criteria contained in NUREG-0654, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, Revision 1, was also used as a reference. Documents reviewed are listed in the Attachment. This inspection activity satisfied one sample.

b. Findings

No findings were identified.

1EP3 Emergency Preparedness Organization Staffing and Augmentation Systema. Inspection Scope

The inspectors reviewed the licensee's Emergency Response Organization (ERO) augmentation staffing requirements and process for notifying the ERO to ensure the readiness of key staff for responding to an event and timely facility activation. The qualification records of key position ERO personnel were reviewed to ensure all ERO qualifications were current. A sample of problems identified from augmentation drills or system tests performed since the last inspection were reviewed to assess the effectiveness of corrective actions. The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 03, Emergency Response Organization Staffing and Augmentation System. The applicable planning standard, 10 CFR 50.47(b)(2), and its related requirements, 10 CFR 50, Appendix E, were used as reference criteria. Documents reviewed are listed in the Attachment. This inspection activity satisfied one sample.

b. Findings

No findings were identified.

1EP4 Emergency Action Level and Emergency Plan Changes

a. Inspection Scope

No changes have been made to revision 30 of the Radiological Emergency Response Plan since the last NRC inspection of this program area. However, changes were made to the Emergency Action Levels (EALs) and other implementing procedures based on the licensee's determination, in accordance with 10 CFR 50.54(q), that there was no decrease in the effectiveness and the Plan continued to meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50 except as noted below. The inspectors conducted a review of the EAL changes and a sample of the implementing procedure changes made between March 1, 2010, and February 28, 2011, to evaluate for potential decreases in effectiveness of the Plan. However, this review was not documented in a Safety Evaluation Report and does not constitute formal NRC approval of the changes. Therefore, these changes remain subject to future NRC inspection in their entirety. The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 04, Emergency Action Level and Emergency Plan Changes. The applicable planning standard, 10 CFR 50.47(b)(4), and its related requirements, 10 CFR 50, Appendix E, were used as reference criteria. Documents reviewed are listed in the Attachment. This inspection activity satisfied one inspection sample.

b. Findings

Introduction: An NRC-identified NCV of 10 CFR 50.54(q) with two examples was identified for failing to maintain emergency plans that meet the requirements of 10 CFR 50.47(b)(4). The licensee failed to revise the EAL basis which potentially impacted the licensee's ability to accurately and timely classify emergency conditions.

Description: On March 31, 2010, and October 11, 2010, the licensee implemented revisions 22 and 24, respectively, of procedure RP/0/A/5000/001, Classification of Emergency. Revision 22 addressed containment barrier matrix EAL changes as a result of a plant modification to containment spray system operation under a NRC approved license amendment. Revision 24 incorporated changes to security event EALs per NRC Bulletin 2005-02, Emergency Preparedness and Response Actions For Security-based Events. Both revisions added or modified conditions requiring emergency classification actions. The licensee evaluated these revisions using the 10 CFR 50.54(q) process using the Emergency Planning Functional Area Manual (EPFAM), Section 3.10, 10 CFR 50.54(q) Evaluations, Rev. 11, and determined there was no decrease in plan effectiveness. Catawba Emergency Plan (CEP) section D.2 stated, in part, that initiating conditions and their corresponding EALs were contained in the basis document contained in the CEP section D.4. This basis section was not revised to address the new EAL classification scheme requirements. Using the existing basis, a potential loss of containment barrier could be inappropriately evaluated, resulting in an incorrect

Enclosure

emergency action level classification. In the case of security EALs, there was no longer a one-to-one correspondence between EALs and basis information. During an event, operators have a very short time to evaluate an unfolding situation and use the EAL tables to classify an event but do refer to the basis document if clarification is needed. Since time is of the essence, particularly early in an event, outside technical assistance may not be available to resolve the apparent differences between EAL and bases. Timely and accurate classification is critical to meet this risk significant emergency planning standard. Licensee corrective actions included changing the Emergency Plan bases document and to perform appropriate causal analysis to develop other corrective actions.

Analysis: The failure to revise the EAL basis document as required by the Catawba Emergency Plan was a PD. The PD was more than minor because if left uncorrected, the potential to incorrectly classify events associated with the fission product barrier matrix or security-event classification scheme within the brief time available would lead to a more significant safety concern. This finding was associated with the Risk Significant Planning Standard, 10 CFR 50.47(b)(4). Using Emergency Preparedness Significance Determination Process, IMC 0609, Appendix B, Sheet 1, Failure to Comply, the finding was determined to be of very low safety significance (Green) because it did not result in a loss or degradation of a RSPS function. The cause of this finding was directly related to the cross-cutting aspect of complete and accurate procedures in the Resources component of the Human Performance area because the procedure used to evaluate EAL changes, EPFAM Section 3.10, did not include a requirement to change the EAL basis document as appropriate. [H.2(c)]

Enforcement: 10 CFR 50.54(q) stated, in part, that a holder of a nuclear power reactor operating license under this part shall follow and maintain in effect emergency plans which meet the standards in 50.47(b) and the requirements in Appendix E of this part. 10 CFR 50.47(b)(4) stated, in part, that a standard emergency classification and action level scheme, the basis of which include facility system and effluent parameters, is in use by the nuclear facility licensee. Contrary to the above, since March 31, 2010, and October 11, 2010, respectively, the licensee failed to maintain in effect an emergency plan when changes were made to the emergency classification and action level schemes. Because the violation was entered into the licensee's corrective action program as PIP C-11-2304, it is being treated as a non-cited violation consistent with Section 2.3.2 of the Enforcement Policy: NCV 05000413, 414/2011002-01, Failure to Update Bases For EAL Changes.

## 1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies

### a. Inspection Scope

The inspectors reviewed the corrective actions identified through the Emergency Preparedness program to determine the significance of the issues and to determine if repeat problems were occurring. The facility's self-assessments and audits were reviewed to assess the licensee's ability to be self-critical, thus avoiding complacency and degradation of their emergency preparedness program. In addition, the inspectors reviewed licensee self-assessments and audits to assess the completeness and

Enclosure



effectiveness of all emergency preparedness-related corrective actions. The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 05, Correction of Emergency Preparedness Weaknesses. The applicable planning standard, 10 CFR 50.47(b)(14), and its related 10 CFR 50, Appendix E requirements were used as reference criteria. Documents reviewed are listed in the Attachment. This inspection activity satisfied one inspection sample for the correction of emergency preparedness weaknesses on a biennial basis.

b. Findings

No findings were identified.

1EP6 Drill Evaluation

a. Inspection Scope

The inspectors observed and evaluated the licensee's emergency planning performance during a drill conducted on February 10, 2011. The inspectors reviewed licensee activities that occurred in the Simulator and the Technical Support Center during a simulated event. 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 drill from an operations and emergency planning perspective. The performance of the Emergency Response Organization was evaluated against applicable licensee procedures and regulatory requirements. The inspectors attended the post-exercise critique for the drill to evaluate the licensee's self-assessment process for identifying potential deficiencies relating to failures in classification and notification. The inspectors reviewed the completed critique developed by the licensee documenting the overall performance of the Emergency Response Organization.

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 nine 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 with Complications, Unit 1 & 2

Cornerstone: Mitigating Systems

- Cooling Water Systems, Unit 1 & 2

Cornerstone: Barrier Integrity

- Reactor Coolant System Activity, 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 January 1, 2010, through December 31, 2010. 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. 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.

Cornerstone: Emergency Preparedness

- Emergency Response Organization Drill/Exercise Performance (DEP)
- Emergency Response Organization Readiness (ERO)
- Alert and Notification System Reliability (ANS)

The inspection was conducted in accordance with NRC IP 71151, "Performance Indicator Verification." For the specified review period, the inspectors examined data reported to the NRC, procedural guidance for reporting PI information, and records used by the licensee to identify potential PI occurrences. The inspectors verified the accuracy of the PI for ERO drill and exercise performance through review of a sample of drill and event records. The inspectors reviewed selected training records to verify the accuracy of the PI for ERO drill participation for personnel assigned to key positions in the ERO. The inspector verified the accuracy of the PI for alert and notification system reliability through review of a sample of the licensee's records of periodic system tests. The inspector also interviewed the licensee personnel who were responsible for collecting and evaluating the PI data. 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

Within the mitigating systems cornerstone, the inspectors performed an in-depth review of PIP C-10-3298, 1B DG jacket water keep warm pump tripped. Documents reviewed are listed in the Attachment.

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.

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

##### .1 Response to Plant Events

###### a. Inspection Scope

The inspectors evaluated the licensee event, "Unit 2 1A reactor coolant pump seal injection line flow element fitting leak," for plant status and mitigating actions. As appropriate, the inspectors: (1) observed plant parameters and status, including mitigating systems/trains and fission product barriers; (2) determined alarms/conditions preceding or indicating the event; and (3) evaluated performance of plant systems and licensee actions. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2 (Closed) Licensee Event Report (LER) 05000414/2010-002-0: Technical Specification Violation Involving Mode Change with Inoperable Auxiliary Feedwater System Train Due to Closed Pump Discharge Valves

On October 17, 2010, during startup following the completion of a refueling outage, Unit 2 entered Mode 4 with the required motor driven train of the Auxiliary Feedwater (AFW) system inoperable due to both the A and B train AFW pump discharge valves being closed. The discharge valves were left closed following operation of the AFW pumps while in Mode 5. TS 3.7.5 required one motor driven train of AFW with manual actuation operable for Mode 4 operation. The TS bases did not distinguish system alignment between manual and automatic actuation even though the operators had the capability and procedural guidance to manually open the discharge valves from the control room. Therefore, the discharge valves being out of their normal alignment resulted in the A and B AFW trains being inoperable, and resulted in a violation of TS 3.0.4 when the unit entered Mode 4. The discharge valves were opened approximately 12 hours after entering Mode 4. The LER and supporting documents, which included completed and planned corrective actions, were reviewed by the inspectors. Due to the fact that both motor driven trains of AFW were available for manual actuation of AFW, this failure to comply with TS 3.0.4 constituted a violation of minor safety significance that was not subject to enforcement action in accordance with the NRC's Enforcement Policy. The licensee entered this issue into their corrective action program as PIP C-10-7022.

.3 NOED Review

a. Inspection Scope

On February 23, the 1B DG was declared inoperable due to load swings observed during the TS 24-hour loaded surveillance test. TS 3.8.1, AC Sources, Action B.4 was entered which required the DG to be restored to operable in 72 hours or place the Unit in Mode 3 within 6 hours and in Mode 5 within 36 hours. Additionally, 72-hour action statements were also entered for the Nuclear Service Water System (TS 3.7.8), Auxiliary Feedwater System (TS 3.7.5), and Containment Spray System (TS 3.6.6) due to various system dependencies.

The licensee determined that the load swings were due to a defective mechanical governor; however, governor replacement and post-maintenance testing could not be completed within the TS 3.8.1 72-hour action statement. On February 25, the licensee requested enforcement discretion for an additional 48 hours for TS 3.8.1 which allowed governor replacement and post-maintenance testing to preclude a plant shutdown of Unit 1. The NRC verbally granted the NOED at 4:55 p.m., on February 25. The licensee returned the 1B DG and support systems to an operable status on February 27 at 2:54 p.m., which was within the completion time approved in the NOED.

b. Findings

Introduction: An unresolved item (URI) was identified for NOED 11-2-002.

Description: The inspectors reviewed NOED 11-2-002 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 1A DG, the turbine-driven AFW pump, the Standby Shutdown System and switchyard, and posting a dedicated operator available to throttle key AFW valves that supply flow to the steam generators. Additional inspection is required to conduct a review of the LER, root cause, and planned corrective actions. This URI is identified as URI 05000413/2011002-02, Follow-up for NOED 11-2-002.

4OA5 Other Activities.1 Quarterly Resident Inspector Observations of Security Personnel and Activitiesa. 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.

4OA6 Meetings, Including ExitExit Meeting Summary

On April 6, 2011, the resident inspectors presented the inspection results to Mr. Steve Putnam, Safety Assurance Manager, 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.

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 50.65(a)(4) states, in part, that before performing maintenance activities, the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities. Contrary to the above, on January 26, 2011, the licensee did not assess and manage an increase in risk when the "A" Station Air compressor was removed from service for eight hours while the "E" Instrument Air Dryer was tagged out of service. The resultant risk management profile with these two activities occurring simultaneously increased from Green to Yellow. The conflict was not scheduled and the Yellow risk profile was not planned; therefore, the appropriate risk management actions were not implemented. The inspectors determined that the violation was not greater than very low safety significance (Green) because the increased risk was qualitative, with no quantitative increase in the Incremental Core Damage Probability. The issue is documented in the licensee's corrective action program as PIP C-11-0627.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee Personnel

T. Arlow, Emergency Planning Manager  
M. Austin, Fleet Emergency Preparedness 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 and Closed

05000413, 414/2011002-01	NCV	Failure to Update Bases For EAL Changes (Section 1EP4)
--------------------------	-----	--

#### Closed

05000414/2010-002-0	LER	Technical Specification Violation Involving Mode Change with Inoperable Auxiliary Feedwater System Train Due to Closed Pump Discharge Valves (Section 4OA3.2)
---------------------	-----	---

#### Open

05000413/2011002-02	URI	Follow-up for NOED 11-2-002 (Section 4OA3.3)
---------------------	-----	--

### LIST OF DOCUMENTS REVIEWED

#### **Section 1R01: Adverse Weather Protection**

RP/0/A/5000/007, Natural Disaster and Earthquake, Rev. 32  
Hazard Barrier Control Form, RN to KD excavation dig #14

#### **Section 1R04: Equipment Alignment**

OP/1/A/6250/002, Auxiliary Feedwater System, Rev. 142, Encl. 4.7, Valve Checklist  
OP/2/A/6200/004, Residual Heat Removal System, Rev. 103, Encl. 4.7, Valve Checklist  
CN-1592-1.0, Unit 1 Flow Diagram of Auxiliary Feedwater System, Rev. 30  
CN-2561-1.0, Unit 2 Flow Diagram of Residual Heat Removal System, Rev. 35

Attachment

UFSAR Section 10.4.9, Auxiliary Feedwater System  
 UFSAR Section 8.3.1.4.1, Diesel Generators  
 PIP C-10-1964, AP/1(2)/A/5500/019 Criteria for establishing natural circulation  
 PIP C-10-3896, 13.2 hours of MSPI unavailability for ND train B  
 PIP C-10-6445, 2-ND-26 would not operate from the control room  
 PIP C-11-0322, 2-R-ND-0370 concrete anchors pulled out 1/4"  
 Design Basis Specification, CNS-1561.ND-00-0001, Residual Heat Removal System, Rev. 33

### **Section 1R05: Fire Protection**

Station Fire Impairment Log  
 NSD 313, Control of Combustible and Flammable Material, Rev. 7  
 Fire Strategy AX, Standby Shutdown Facility, Elev. 611'  
 Fire Strategy AW, Standby Shutdown Facility, Elev. 594'  
 Fire Strategy Area 2, Unit 2 CA Pump Room and Motor Driven CA (2A, 2B) Pump Pits  
 Fire Strategy Area 47, Unit 2 Spent Fuel Purge Unit  
 Fire Strategy Area 5, Unit 2 ETB Switchgear Room

### **Section 1R07: Heat Sink Performance - Annual Review**

PT/1/A/4400/006 F, DG Cooling Water Heat Exchanger 1B Heat Capacity Test, Rev.028

### **Section 1R11: Licensed Operator Requalification**

RP/0/A/5000/001, Classification of Emergency, Rev. 024  
 Simulator Exercise Guide S-73

### **Section 1R12: Maintenance Effectiveness**

SSF System Health Report, Q3  
 CNS-1560.SS-00-0001, Design Basis Specification for the Standby Shutdown Facility, Rev. 029  
 PIP C-11- 00225, Higher than expected amount of gas in Unit 2 Standby Makeup Pump Suction piping  
 PIP C-11-00080, Standby Makeup Pump #1 flow less than required during IWP  
 Maintenance Rule SSC Summary Report, SV System  
 Drawing CNM-1205.10-0011, Body Assembly, 6"x10" Angle, ANSI Class 900#, Rev. 1  
 PIP C-11-0847, Unit 2 SV system is Maintenance Rule Status A(1)  
 PIP C-11-0650, 2SV-13 stroke issue during PT/2/A/4200/031  
 PIP C-11-0659, 2SV-13 did not meet IWV acceptance criteria

### **Section 1R13: Maintenance Risk Assessments and Emergent Work Control**

SOMP 02-02, Operations Roles in Risk Management, Rev 007  
 NSD 415, Operational Risk Management (Modes 1-3) per 10 CFR 50.65 (a)(4), Rev. 5  
 NSD 213, Risk Management Process, Rev. 8

### **Section 1R15: Operability Evaluations**

NSD 203, Operability, Rev. 21  
 PIP C-11-0020, Unit 1 standby makeup pump did not meet surveillance test acceptance criteria  
 PIP C-11-0739, 1RN-37B missing mounting bolts  
 PIP C-11-1073, Square Root Extractors 1(2) RNSR5800A and 1(2)RNSR5850 not Environmental Qualification related but mounted in a potentially harsh environment



PIP C-11-1090, Potential lack of fusion on RN support  
 PIP C-11-2334, Foreign material in the 2B Safety Injection pump bearing oil system

**Section 1R18: Plant Modifications**

NSD 209, 10 CFR 50.59 Process, Rev. 19  
 EC 105755, Lower Unit 1 Component Cooling Water Operational Temperature Limit  
 IP/1/A/3112/011, Nuclear Service Water Outlet Control Valves for Component Cooling Heat Exchangers, Rev. 38  
 PIP C-11-2133, Increase in 1A NCP #1 seal leakoff flow

**Section 1R19: Post-Maintenance Testing**

PT/2/A/4350/002 B, DG 2B Operability Test, Rev. 92  
 PT/1/A/4350/002 B, DG 1B Operability Test, Rev. 117  
 PT/1/A/4200/069, S/G PORV Nitrogen Leak Test, Rev. 6  
 PT/2/A/4200/031, SV Valve Inservice Test, Rev. 58  
 PT/2/A/4200/005 B, Safety Injection Pump 2B Performance Test, Rev. 40  
 PT/0/A/4200/017 A, Standby Shutdown Facility Diesel Test, Rev. 5  
 OP/0/B/6350/011, Standby Shutdown Facility Diesel Operations, Rev. 041

**Section 1R22: Surveillance Testing**

PT/1/A/4450/005 B, Containment Air Return Fan 1B and Hydrogen Skimmer Fan 1B Performance Test, Rev. 53  
 PT/2/A/4350/002 A, DG 2A Operability Test, Rev. 92  
 PT/1/A/4350/002 A, DG 1A Operability Test, Rev. 120  
 OP/2/A/6200/032, Primary Sampling Using a Rheodyne Model 7010 Valve, Rev. 014  
 PT/1/A/4250/003 C, Turbine Driven Auxiliary Feedwater Pump #1 Performance Test, Rev. 100  
 PT/1/A/4200/005 A, Safety Injection Pump 1A Performance Test, Rev. 53

**Section 1EP2: Alert and Notification System Testing**

Procedures and Manual

Catawba Nuclear Station Emergency Plan, Rev. 09-01  
 EPFAM 3.3, Alert and Notification System (Siren Program), Rev. 10  
 2010 Emergency Planning Calendar  
 2011 Emergency Planning Calendar

Records and Data

Records of Silent, Full Cycle, and Growl ANS testing – July 1, 2009 to December 31, 2010  
 Selected documentation of ANS repair and annual preventative maintenance – July 1, 2009 to December 31, 2010  
 FEMA Siren Upgrade Approval Letter, June 17, 2010

**Section 1EP3: Emergency Response Organization (ERO) Augmentation**

Procedures

DPND-1551.00-0001, Emergency Planning Functional Area Manual (EPFAM), Section 3.19, Drills and Exercises, Rev.1  
 DPND-1551.00-0001, Emergency Planning Functional Area Manual (EPFAM), Section 3.20, Emergency Planner Training & Qualification, Rev. 1

EP Group Manual Guideline 5.4.1, Emergency Response Organization Training Program, Rev. 20

Addendum 7111.0, Catawba Nuclear Site Emergency Response (ER) Training Program Description, Rev. 14

#### Records and Data

Emergency Response Organization current list

PT/0/B/4600/005A, Quarterly Communications Verification, 1<sup>st</sup>-4<sup>th</sup> Qtr 2009 and 1<sup>st</sup>-4<sup>th</sup> Qtr 2010

Documentation of weekly pager tests, January 2010 – February 2011

Documentation of ERO augmentation Drill conducted October 29, 2010 at 2005 hours and December 9, 2008 at 1923 hours

#### **Section 1EP4: Emergency Action Level (EAL) and Emergency Plan Changes**

Catawba Nuclear Station Emergency Plan, Rev. 09-1

Emergency Planning Functional Area Manual (EPFAM), Section 3.1, Administration of the Emergency Plan and Emergency Plan Implementing Procedures, Rev. 9

Emergency Planning Functional Area Manual (EPFAM), Section 3.10, 10 CFR 50.54(q) Evaluations, Rev. 11

#### Change packages for Plans and Procedures

RP/0/A/5000/001, Classification of Emergency, Rev. 21

RP/0/A/5000/001, Classification of Emergency, Rev. 22

RP/0/A/5000/001, Classification of Emergency, Rev. 23

RP/0/A/5000/001, Classification of Emergency, Rev. 24

RP/0/A/5000/002, Notification of Unusual Event, Rev. 40

RP/0/A/5000/003, Alert, Rev. 43

RP/0/A/5000/004, Site Area Emergency, Rev. 45

RP/0/A/5000/005, General Emergency, Rev. 46

RP/0/A/5000/006A, Notifications to States and Counties from the Control Room, Rev. 24

RP/0/A/5000/006B, Notification to States and Counties from the Technical Support Center, Rev. 26

RP/0/A/5000/007, Natural Disaster and Earthquake, Rev. 31

RP/0/A/5000/007, Natural Disaster and Earthquake, Rev. 32

RP/0/A/5000/008, Hazardous Materials Spill Response, Rev. 32

RP/0/A/5000/009, Collision/Explosion, Rev. 11

RP/0/A/5000/020, Technical Support Center (TSC) Activation Procedure, Rev. 25

RP/0/A/5000/020, Technical Support Center (TSC) Activation Procedure, Rev. 26

RP/0/A/5000/020, Technical Support Center (TSC) Activation Procedure, Rev. 27

RP/0/A/5000/024, OSC Activation Procedure, Rev. 23

HP/0/B/1009/026, On-Shift Offsite Dose Projections, Rev. 10

SH/0/B/2005/003, Distribution of Potassium Iodide Tablets in the Event of a Radioiodine Release, Rev. 2

SR/0/B/2000/003, Activation of the Emergency Operations Facility, Rev. 20

SR/0/B/2000/004, Notification to States and Counties from The EOF (Standard Procedure for CNS, MNS, ONS), Rev. 15

SR/0/B/2000/003, Activation of the Emergency Operations Facility, Rev. 21

SR/0/B/2000/003, Activation of the Emergency Operations Facility, Rev. 22

**Section 1EP5: Correction of Emergency Preparedness Weaknesses and Deficiencies**

DPND-1551.00-0001, Emergency Planning Functional Area Manual (EPFAM), Section 3.2, Emergency Planning Business Measures, Rev. 11  
 NSD 208, Problem Investigation Process, Rev. 032  
 Nuclear Policy Manual – Volume 2, Problem Investigation Program (PIP), Rev. 32

**Audits and Self-Assessments**

2009 Emergency Planning Performance Review  
 Independent Nuclear Oversight – Audit Catawba Emergency Planning Audit 10-07 (INOS)(EP)(CNS)  
 Independent Nuclear Oversight –Audit 2011 Catawba Emergency Planning Performance Review 11-101 (INOS)(EP)(CNS)  
 C-SA6-SA-11-13, EP Program Assessment  
 2010 CNS Emergency Planning (EP) Business Measures and EP Track & Trend Reviews

**Records and Data**

Drill package documentation (Logs, timeline, notification forms, critique report, corrective actions) of ERO drills 09-3, 09-04, 09-05, 10-01, 10-02, 10-03, 10-04, 10-05, 10-06, and 11-01

**PIPs**

C-10-02984, EOF made incorrect SAE classification  
 C-10-01492, Roll-up of NRC Graded Exercise 10-02  
 C-10-01520, Insufficient KI issue  
 C-10-01523, Repeat of 2008 exercise issues  
 C-10-01482, Problem with off-site dose projection software  
 C-09-03936, Roll-up of Hostile Action based drill  
 C-09-03305, PI missed by Operations

**Section 4OA1: Performance Indicator Verification**

NSD 225, NRC Performance Indicators, Rev. 4  
 NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Rev. 5  
 MSPI Basis Document, Catawba Nuclear Station  
 Catawba Master File CN: 854.02-4, Cooling Water Systems  
 Catawba Master File CN: 854.03-1, Reactor Coolant System Activity

**Procedures**

Catawba Nuclear Station Emergency Plan, Rev. 09-01  
 EPFAM 3.7, NRC Regulatory Assessment Performance Indicator Guideline – Emergency Preparedness Cornerstone, Rev. 17

**Records and Data**

Siren System Availability Test Records, Jan 1, 2010, through December 31, 2010  
 ERO Personnel Participation, January 1, 2010, through December 31, 2010  
 DEP Opportunities, January 1, 2010, through December 31, 2010

**PIPs Resulting From Inspection**

C-10-01399, Validate EOF decision-maker plant systems training requirements  
 C-10-03460, Incorporate data for June/July 2010 PI report into folder

C-10-07452, Update submitted PI data in First Quarter 2011 PI submittal  
 C-11-02264, Reword confusing entry in EAL 4.3.U.2-3  
 C-11-02222, E-Plan EAL bases requires revision  
 C-11-02225, EAL Revision evaluations require additional information  
 C-11-02277, Learning Management System documentation issue  
 C-11-02289, Review plant secondary EP-PI's against Federal Register  
 C-11-02292, EAL 4.6.A.3-2 wording requires minor revision  
 C-11-02304, Review NRC Finding - Failure to Revise EAL Bases

**Section 40A2: Problem Identification and Resolution**

PIP C-10-3298, 1B DG jacket water keep warm pump tripped  
 PIP G-10-1494, 10CFR21 on motor control center stab assemblies  
 RP/0/B/5000/013, Event Notification Report dated 01/24/11 for 10CFR21 related to MCC stab assemblies

**Section 40A3: Followup of Events and Notices of Enforcement Discretion (NOED)**

PIP C-10-7022, 2A and 2B CA pump discharge valves discovered in the closed position  
 Licensee Event Report, 414/2010-002, Technical Specification Violation Involving Mode Change with Inoperable Auxiliary Feedwater System train due to Closed Pump Discharge Valves  
 PIP C-11-1407, 1B DG exhibited erratic control at full load during 24 hour run  
 PIP C-08-4848, During 5 hour run the 1B DG output increased to 6.1 MW  
 AP/2/A/5500/008, Reactor Coolant Pump Malfunction, Rev. 15  
 AP/2/A/5500/010, Reactor Coolant Leak, Rev. 48  
 RP/0/A/5000/001, Classification of Emergency, Rev. 024

**LIST OF ACRONYMS USED**

AFW	-	Auxiliary Feedwater
ANS	-	Alert and Notification System Reliability
CEP	-	Catawba Emergency Plan
DEP	-	Emergency Response Organization Drill/Exercise Performance
DG	-	Diesel Generator
EAL	-	Emergency Action Level
EP	-	Emergency Preparedness
EPFAM	-	Emergency Planning Functional Area Manual
ERO	-	Emergency Response Organization Readiness
LER	-	Licensee Event Report
NOED	-	Notice of Enforcement Discretion
NRC	-	Nuclear Regulatory Commission
PI	-	Performance Indicator
PIP	-	Problem Investigation Program
RN	-	Nuclear Service Water
RSPS	-	Risk Significant Planning Standard
RTP	-	Rated Thermal Power
SSC	-	Structures, Systems, and Components
TS	-	Technical Specification
URI	-	Unresolved Item