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

December 28, 2010

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 PROBLEM IDENTIFICATION AND RESOLUTION INSPECTION REPORT 05000413/2010007, 05000414/2010007

Dear Mr. Morris:

On November 19, 2010, the U. S. Nuclear Regulatory Commission (NRC) completed a team inspection at your Catawba Nuclear Station. The enclosed inspection report documents the inspection results, which were discussed on November 19, 2010, and December 16, 2010, with you and other members of the Catawba Nuclear Station staff.

The inspection was an examination of activities conducted under your licenses as they relate to the identification and resolution of problems, compliance with the Commission's rules and regulations and with the conditions of your operating license. Within these areas, the inspection involved examination of selected procedures and representative records, observations of plant equipment and activities, and interviews conducted with station personnel.

On the basis of the sample selected for review, there were no findings of significance identified during this inspection. The team concluded, in general, that problems were properly identified, evaluated, and corrected within the problem identification and resolution programs (PI&R). However, the inspectors identified two minor performance deficiencies associated with the licensee's prioritization and evaluation of issues.

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

Sincerely,

/RA by Jonathan Bartley Acting For/

George T. Hopper, Chief
Reactor Projects Branch 7
Division of Reactor Projects

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

Enclosure: Inspection Report 05000413/2010007, 05000414/2010007
w/Attachment: Supplemental Information

cc w/encl.: (See page 3)

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Letter to J. R. Morris from George Hopper dated December 28, 2010

SUBJECT: CATAWBA NUCLEAR STATION – NRC PROBLEM IDENTIFICATION AND RESOLUTION INSPECTION REPORT 05000413/2010007, 05000414/2010007

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.:	50-413, 50-414
License Nos.:	NPF-35, NPF-52
Report No.:	05000413/2010007, 05000414/2010007
Licensee:	Duke Energy Carolinas, LLC
Facility:	Catawba Nuclear Station, Units 1 and 2
Location:	Catawba Nuclear Station 4800 Concord Road York, SC 29745-9635
Dates:	November 1 – 5, 2010 November 15 – 18, 2010
Inspectors:	N. Staples, Reactor Inspector (Team Leader) R. Cureton, Resident Inspector S. Ninh, Senior Project Engineer S. Rose, Senior Project Engineer J. Wallo, Senior Physical Security Inspector S. Anderson, Reactor Inspector (Training)
Approved by:	George T. Hopper, Chief Reactor Projects Branch 7 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR05000413/2010007, IR05000414/2010007; 11/01/2010 -11/19/2010; Catawba Nuclear Station, Biennial Inspection of the Problem Identification and Resolution Program.

The inspection was conducted by two senior project engineers, a reactor inspector, a senior physical security inspector, a resident inspector, and a reactor inspector in-training. 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."

Identification and Resolution of Problems

The inspectors concluded that, in general, problems were properly identified, evaluated, prioritized, and corrected. The licensee was effective at identifying problems and entering them into the corrective action program (CAP) for resolution. The licensee maintained a low threshold for identifying problems as evidenced by the large number of Problem Investigation Program (PIPs) entered annually into the CAP. Generally, the licensee properly prioritized and evaluated issues, formal root cause evaluations for significant problems were thorough and detailed, and corrective actions specified for problems were adequate. Overall, corrective actions developed and implemented for issues were effective in correcting the problems. However, several minor observations were identified in the area of issue screening and prioritization.

The inspectors determined that audits and self-assessments were effective in identifying deficiencies and areas for improvement in the CAP, and in most cases, corrective actions were developed to address these issues. Operating experience usage was found to be generally acceptable and integrated into the licensee's processes for performing and managing work, and plant operations. However, the inspectors found one example where operating experience was not adequately addressed.

Based on interviews conducted with plant employees from various departments, the inspectors determined that personnel at the site felt free to raise safety concerns to management and use the CAP to resolve concerns.

REPORT DETAILS

4. OTHER ACTIVITIES

4OA2 Problem Identification and Resolution

.1 Assessment of the Corrective Action Program

a. Inspection Scope

The inspectors reviewed the licensee's CAP procedures which described the administrative process for initiating and resolving problems primarily through the use of Problem Identification Process (PIPs). To verify that problems were being properly identified, appropriately characterized, and entered into the CAP, the inspectors reviewed PIPs that had been issued between April 2008 and November 2010, including a detailed review of selected PIPs associated with the following risk-significant systems: Nuclear Service Water (RN), Standby Shutdown Facility (SSF), and Component Cooling Water (KC). Where possible, the inspectors independently verified that the corrective actions were implemented as intended. The inspectors also reviewed selected common causes and generic concerns associated with root cause evaluations to determine if they had been appropriately addressed. The inspectors selected a representative number of PIPs that were identified and assigned to the major plant departments, including operations, maintenance, engineering, health physics, chemistry, and security to ensure that samples were reviewed across all cornerstones of safety identified in the NRC's Reactor Oversight Process (ROP). These PIPs were reviewed to assess each department's threshold for identifying and documenting plant problems, thoroughness of evaluations, and adequacy of corrective actions. The inspectors reviewed selected PIPs, verified corrective actions were implemented, and attended meetings where PIPs were screened for significance to determine whether the licensee was identifying, accurately characterizing, and entering problems into the CAP at an appropriate threshold.

The inspectors conducted plant walkdowns of equipment associated with the selected systems and other plant areas to assess the material condition and to look for any deficiencies that had not been previously entered into the CAP. The inspectors reviewed PIPs, maintenance history, completed work orders (WOs) for the systems, and reviewed associated system health reports. These reviews were performed to verify that problems were being properly identified, appropriately characterized, and entered into the CAP. Items reviewed generally covered a two-year period; however, in accordance with the inspection procedure, a five-year review was performed for selected systems for age-dependent issues.

Control Room walk-downs were also performed to assess the main control room deficiency list and to ascertain if deficiencies were entered into the CAP and tracked to resolution. Operator Workarounds and Operator Burden screenings were reviewed, and the inspectors verified compensatory measures for deficient equipment which were being implemented in the field.

The inspectors conducted a detailed review of selected PIPs to assess the adequacy of the root-cause and apparent-cause evaluations of the problems identified. The inspectors reviewed these evaluations against the descriptions of the problem described in the PIPs and the guidance in licensee procedure NSD 212, "Cause Analysis." The inspectors assessed if the licensee had adequately determined the cause(s) of identified problems, and had adequately addressed operability, reportability, common cause, generic concerns, extent-of-condition, and extent-of-cause. The review also assessed if the licensee had appropriately identified and prioritized corrective actions to prevent recurrence.

The inspectors reviewed selected industry operating experience items, including NRC generic communications, to verify that they had been appropriately evaluated for applicability and that issues identified through these reviews had been entered into the CAP.

The inspectors reviewed site trend reports, to determine if the licensee effectively trended identified issues and initiated appropriate corrective actions when adverse trends were identified.

The inspectors attended various plant meetings to observe management oversight functions of the corrective action process.

Documents reviewed are listed in the Attachment.

b. Assessment

Identification of Issues

The inspectors determined that the licensee was generally effective in identifying problems and entering them into the CAP and there was a low threshold for entering issues into the CAP. This conclusion was based on a review of the requirements for initiating PIPs as described in licensee procedure NSD 208, "Problem Investigation Process," and management's expectation that employees were encouraged to initiate PIPs for any reason. Trending was generally effective in monitoring equipment performance. Site management was actively involved in the CAP and focused appropriate attention on significant plant issues. Based on reviews and walkdowns of accessible portions of the selected systems, the inspectors determined that system deficiencies were being identified and placed in the CAP.

Prioritization and Evaluation of Issues

Based on the review of PIPs sampled by the inspectors during the onsite period, the inspectors concluded that problems were generally prioritized and evaluated in accordance with the licensee's CAP procedures as described in the PIP categorization guidance in NSD 208. Each PIP was assigned a priority level (category) by the PIP Screening Team and adequate consideration was given to system or component operability and associated plant risk.

The inspectors determined that station personnel had conducted root cause and apparent cause analyses in compliance with the licensee's CAP procedures and assigned cause determinations were appropriate, considering the significance of the issues being evaluated. A variety of formal causal-analysis techniques were used depending on the type and complexity of the issue consistent with NSD 212.

The inspectors identified two performance deficiencies associated with the licensee's prioritization and evaluation of issues. However, because these performance deficiencies did not adversely affect any ROP cornerstone objectives, the inspectors determined the issues were of minor significance and not subject to enforcement action in accordance with the NRC's Enforcement Policy.

- The inspectors identified a performance deficiency for the licensee's failure to promptly identify the impact of the controllers for RN flow control valves RN-291/351 to sufficiently maintain the KC water outlet temperature and thereby reactivity. This issue was considered to be minor because RN flow control deficiencies did not have a significant effect on reactivity. This issue was entered into the licensee's corrective action program as PIPs C-10-07732, C-10-07691, and C-10-07698.

- The inspectors identified a performance deficiency for the licensee's failure to incorporate lessons learned from a more conservative alarm response approach at the Oconee and McGuire Nuclear stations. This issue was considered to be minor because it did not adversely affect any ROP cornerstone objectives. This issue was entered into the licensee's corrective action program as PIP C-10-07733.

Effectiveness of Corrective Actions

Based on a review of corrective action documents, interviews with licensee staff, and verification of completed corrective actions, the inspectors determined that overall, corrective actions were timely, commensurate with the safety significance of the issues, and effective, in that conditions adverse to quality were corrected and non-recurring. For significant conditions adverse to quality, the corrective actions directly addressed the cause and effectively prevented recurrence in that a review of performance indicators, PIPs, and effectiveness reviews demonstrated that the significant conditions adverse to quality had not recurred. Effectiveness reviews for corrective actions to prevent recurrence (CAPRs) were sufficient to ensure corrective actions were properly implemented and were effective.

.2 Assessment of the Use of Operating Experience (OE)

a. Inspection Scope

The inspectors examined licensee programs for reviewing industry operating experience, reviewed licensee procedure NSD 204, "Operating Experience Program," reviewed and selected PIPs to assess the effectiveness of how external and internal operating experience data was handled at the plant. In addition, the inspectors selected a sample of operating experience documents (e.g., NRC generic communications, 10 CFR Part 21 reports, licensee event reports, vendor notifications, and plant internal operating

experience items, etc.), which had been issued since March 2008, to verify whether the licensee had appropriately evaluated each notification for applicability, and whether issues identified through these reviews were entered into the CAP. Documents reviewed are listed in the Attachment.

b. Assessment

Based on a review of documentation related to review of OE issues, the inspectors determined that the licensee was generally effective in screening OE for applicability to the plant. Industry OE was evaluated and relevant information was then forwarded to the applicable department for further action or informational purposes. OE issues requiring action were entered into the CAP for tracking and closure. In addition, OE was included in all apparent cause and root cause evaluations in accordance with licensee procedure NSD 204.

c. Findings

No findings were identified.

.3 Assessment of Self-Assessments and Audits

a. Inspection Scope

The inspectors reviewed audit reports and self-assessment reports, including those which focused on problem identification and resolution, to assess the thoroughness and self-criticism of the licensee's audits and self assessments, and to verify that problems identified through those activities were appropriately prioritized and entered into the CAP for resolution in accordance with licensee procedure NSD 208. Documents reviewed are listed in the Attachment.

b. Assessment

The inspectors determined that the scopes of assessments and audits were adequate. Self-assessments were generally detailed and critical, as evidenced by findings consistent with the inspectors' independent review. The inspectors verified that PIPs were created to document all areas for improvement and findings resulting from the self-assessments, and verified that actions had been completed consistent with those recommendations. Generally, the licensee performed evaluations that were technically accurate. Site trend reports were thorough and a low threshold was established for evaluation of potential trends, as evidenced by the PIPs reviewed that were initiated as a result of adverse trends.

c. Findings

No findings were identified.

.4 Assessment of Safety-Conscious Work Environment

a. Inspection Scope

The inspectors interviewed 25 randomly selected on-site workers regarding their knowledge of the CAP and their willingness to write PIPs or raise safety concerns. During technical discussions with members of the plant staff, the inspectors conducted interviews to develop a general perspective of the safety-conscious work environment at the site. The interviews were also conducted to determine if any conditions existed that would cause employees to be reluctant to raise safety concerns. The inspectors reviewed the licensee's Employee Concerns Program (ECP). Additionally, the inspectors reviewed a sample of PIPs generated as a result of issued identified through the ECP to verify that concerns were being properly reviewed.

b. Assessment

Based on the interviews conducted and the PIPs reviewed, the inspectors determined that licensee management emphasized the need for all employees to identify and report problems using the appropriate methods established within the administrative programs, including the CAP and ECP. These methods were readily accessible to all employees. Based on discussions conducted with a sample of plant employees from various departments, the inspectors determined that employees felt free to raise issues, and that management encouraged employees to place issues into the CAP for resolution. The inspectors did not identify any reluctance on the part of the licensee staff to report safety concerns.

c. Findings

No findings were identified.

4OA6 Exit

Exit Meeting Summary

On November 18, 2010, the inspectors presented the inspection results to Mr. Jim Morris and other members of the licensee staff. The inspectors confirmed that all proprietary information that was provided and examined was returned at the conclusion of the inspection. Following completion of additional review in the Region II office, a final exit was held by telephone with Mr. Randy Hart and other members of your staff on December 16, 2010, to provide an update on changes to the preliminary inspection findings.

KEY POINTS OF CONTACT

Licensee personnel:
E. Benfield, Radiation Protection Specialist
B. Craddock, Work Control Coordinator
A. Driver, Regulatory Compliance Engineer
B. Ferguson, MCE Manager
E. Haack, Principal Engineer
T. Hamilton, Engineering Manager
G. Hamrick, Station Manager
R. Hart, Regulatory Compliance
M. Heavner, OPS OWP Manager
W. Jarman, Operations Shift manager
B. Jones, Performance Improvement Manager
R. Kayler, Engineering Supervisor
J. Lightsey, Maintenance Supervisor
G. Mitchell, Emergency Planning Operation Specialist
J. Morris, Site VP
J. Neal, Work Control Manager
K. Phillips, Training Manager
S. Pursley, CAP Lead
S. Putnam, Safety Assurance Manager
M. Sawicki, Regulatory Compliance Engineer
J. Shuping, Technical Systems Manager

NRC personnel:
A. Hutto, Senior Resident Inspector

LIST OF REPORT ITEMS

Opened and Closed

None

Closed

None

Discussed

None

Attachment

LIST OF DOCUMENTS REVIEWED

Procedures

AM/0/B/5100/008, Installation of RC Recovery Submersible Pump(s), Rev. 7
EDM-201, Engineering Support Program, Rev.13
EDM-210, Engineering Responsibilities for the Maintenance Rule, Rev. 21
EDM-411, Engineering PM Program Processes, Rev.1
NSD-120, Equipment Reliability Process, Rev. 1
NSD-125, Performance Improvement, Rev. 3
NSD 203, Operability/Functionality, Rev. 22
NSD-204, Operating Experience Program (OEP) Description, Rev. 10
NSD-208, Problem Investigation Process (PIP), Rev. 32
NSD-212, Causal Analysis, Rev. 17
NSD-223, PIP Trending Program, Rev. 6
NSD-229, Evaluation and Reporting of Potential Defects and Noncompliance per 10 CFR Part 21, Rev. 4
NSD-304, Reactivity Management, Rev. 16 and Rev. 18
NSD-310, Requirements for the Maintenance Rule, Rev. 9
NSD-411, Preventive Maintenance Program, Rev. 6
NSD-506, Operator Workarounds and Control Room Deficiencies, Rev. 5
NSD-602, Safety Conscious Work Environment (SCWE) & Employee Concerns Program (ECP), Rev. 6
MP/0/A/7550/008, Energy Solution Cask CNS 8-120A Handling, Loading and Unloading, revision 21
MP/0/A/7550/011, Energy Solution 8-120B Cask handling, Loading, and Unloading, Revisions 26 and 29
OP/1/A/6400/005, Component Cooling System, Rev. 112NSD-607, Assessments,
RP/0/B/5000/013, NRC Notification Requirements, Revision 30
SH/0/B/2004/001, Preparation and Shipment of Radioactive Material, Rev. 7 and 8
Benchmarking, and Observations, Rev. 14
Work Process Manual (WPM) 500, Planning, Revision 30
WPM 601, On-line Management, Revision 24

Self-Assessments / Audits

Catawba Quality Assurance Program Audits of Corrective Action (2008 and 2010)
08-18-INOS-SEC-ALL, August 11-12, 2008
09-02-INOS-SEC-CNS, February 9-19, 2009
Conditional Security Audit 10-29-INOS-SEC-CNS, August 2012, 2010
Independent Nuclear Oversight – Audit CNS Radiological Effluent Control Program 10-13 (INOS)(REC)(CNS)
Independent Nuclear Oversight-Audit Catawba Emergency Planning Audit - 10-07-(INOS)(EP)(CNS)
Emergency Planning Limited Scope Audit- Catawba Nuclear Station- 09-25(INOS)(LEP)(CNS)
2009 Emergency Planning Performance Review- 09-101(INOS)(EP)(CNS)
C-RPS-SA-10-05, 1EOC18 Personnel Contamination Event Common Cause Assessment

Problem Investigation Process (PIP) records

C-04-03675	C-09-00106	C-09-04345	C-09-07787	C-10-03012
C-04-01754	C-09-00195	C-09-04390	C-09-07870	C-10-04900
C-04-0745	C-09-00324	C-09-05020	C-09-1603	C-10-02623
C-07-01682	C-09-00658	C-09-05201	C-09-01415	C-10-00781
C-07-01683	C-09-00659	C-09-05896	C-09-3214	C-10-01020
C-07-03258	C-09-00719	C-09-06498	C-09-03512	C-10-06567
C-07-03766	C-09-00754	C-09-06655	C-10-01351	C-10-07403
C-07-03810	C-09-00827	C-09-07534	C-10-2815	C-10-01910
C-07-07431	C-09-00905	C-09-07585	C-10-04459	C-10-02356
C-08-00513	C-09-01069	C-09-00206	C-10-00566	C-10-01919
C-08-01920	C-09-01110	C-09-07493	C-10-0507	C-10-01308
C-08-03351	C-09-01308	C-09-00839	C-10-0444	C-10-01523
C-08-03386	C-09-01701	C-09-05319	C-10-03012	C-10-02349
C-08-04024	C-09-01851	C-09-06776	C-10-2193	C-10-02984
C-08-05273	C-09-02108	C-09-02027	C-10-0005	C-10-03551
C-08-06048	C-09-02890	C-09-02352	C-10-4486	C-10-04054
C-08-1036	C-09-03024	C-09-03881	C-10-3092	C-10-04459
C-08-06595	C-09-03305	C-09-01399	C-10-3145	C-10-05452
C-08-07140	C-09-00325	C-09-03979	C-10-01228	C-10-06567
C-08-03755	C-09-03384	C-09-04059	C-10-01026	C-10-07403
C-08-7041	C-09-03425	C-09-04344	C-10-03241	
C-08-05041	C-09-03446	C-09-00372	C-10-03901	
C-08-07137	C-09-03779	C-09-01999	C-10-01320	
C-08-07189	C-09-04326	C-09-07591	C-10-03793	

Work Orders / Work Requests

01118880	01808415	01863438	01886853	01918922
01131701	01812678	01865384	01891363	01919185
01131704	01813440	01865514	01900813	01920283
01760754	01823197	01874990	01904257	01933826
01732882	01838658	01875760	01906307	01934467
01776025	01838923	01881957	01911997	01942768
01789634	01855468	01883080	01913791	
01801150	01860409	01884180	01913793	

PIP's Generated

C-10-07715, Procedures revisions not implemented as discussed in Docutracks
C-10-07726, Air leak discovered from 2NS-60
C-10-07729, Valve 2KC-82B found with cupped gasket in flange joint
C-10-07698, Use of OE from PIP-09-01202 being include in the Pre-job briefing for the KC system operation
C-10-07697, Capability of Problem Investigation Software to generate "anonymous" PIPs.
C-10-07691, Evaluate Operations Work Around WAPR# 09-0030
C-10-07732, Untimely Corrective actions associated with RN-291/351 controller problems affecting reactivity in an uncontrolled manner.
C-10-07733, Performance Improvement Team to evaluate why a failure to have adequate corrective actions for Root Cause C-10-005

Other Documents
Root Cause Analysis User's Guide, Rev. 9
Shift Briefing Agenda (0645-1845)
KC-Component Cooling Health Report, 2009Q2, 2008Q4, 2008Q2, 2008Q1, 2007Q4, 2007Q3, and 2007Q2
Interactive Pre-Job Brief Form, Brief 437, for OP/1/A/6400/005, Component Cooling System, Encl. 4.4, Operation of Additional KC Pumps/Parallel Operation
Interactive Pre-Job Brief Form, Brief 435, for OP/1/A/6400/005, Component Cooling System, Encl. 4.3, Shifting Trains
CNS Operator Workaround List (WAPR), September/October 2010
SSF System Health Report (7/1 – 9/30/2010)
PT/1/A/4350/002B, Revision 16, Diesel Generator 1B Operability Test
PT/1/A/4350/002A, Diesel Generator Operability Test 1A, Revision 119
PT/1/A/4350/002B, Diesel generator Operability test 1B, Revision 116
PT/2/A/4350/002A, Diesel Generator Operability test 2A, Revision 91
PT/2/A/4350/002B, Diesel generator Operability Test 2B, Revision 91
PT/1/A/4700/020, WL Sump Pump Check Inservice Test
OP/1/A/6350/002, Diesel Generator Operation, Revision 147
Duke Engineering Corporate Nuclear Root Cause Analysis User's Guide
CNS Expert panel Meeting, 11/16/10

LIST OF ACRONYMS

CAP	Corrective Action Program
CARB	Corrective Action Review Board
CAPR	Corrective Action Program Recurrence
ECP	Employee Concerns Program
FIN	Finding
FD	Fuel Transfer System
IMC	Inspection Manual Chapter
INPO	Institute of Nuclear Power Operations
KC	Component Cooling Water
LER	Licensee Event Report
NCV	Non-Cited Violation
NSD	Nuclear System Directive
NRC	Nuclear Regulatory Commission
OE	Operating Experience
PARS	Public Available Records
PD	Performance Deficiency
PIP	Problem Identification Plan
PI&R	Problem Identification and Resolution
PM	Preventive Maintenance
RCE	Root Cause Evaluation
ROP	Reactor Oversight Process
RCA	Root Cause Analysis
RN	Nuclear Service Water
SDP	Significance Determination Process
SR	Service Requests
SSF	Standby Shutdown Facility
WO	Work Orders