



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET, SW, SUITE 23T85
ATLANTA, GEORGIA 30303-8931

January 27, 2009

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

**SUBJECT: CATAWBA NUCLEAR STATION - NRC INTEGRATED INSPECTION REPORT
05000413/2008005, 05000414/2008005 AND 07200045/2008001**

Dear Mr. Morris:

On December 30, 2008, 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 15, 2009, with Mr. Bill Pitesa, Station Manager, 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 (Green), which was determined to be a violation of NRC requirements. In addition, this report also documents one licensee-identified violation of very low safety significance. However, because of their 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 VI.A of the NRC Enforcement Policy. If you contest any of the non-cited violations, 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 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

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Sincerely,

/RA/

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

Docket Nos.: 50-413, 50-414, 72-045
License Nos.: NPF-35, NPF-52

Enclosure: Integrated Inspection Report 05000413/2008005, 05000414/2008005 and
07200045/2008001 w/Attachment: Supplemental Information

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5

Letter to J. R. Morris from Jonathan H. Bartley dated January 27, 2009

SUBJECT: CATAWBA NUCLEAR STATION - NRC INTEGRATED INSPECTION REPORT
05000413/2008005, 05000414/2008005 AND 07200045/2008001

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.: 50-413, 50-414, 72-045

License Nos.: NPF-35, NPF-52

Report No.: 05000413/2008005, 05000414/2008005 and 07200045/2008001

Licensee: Duke Energy Carolinas, LLC

Facility: Catawba Nuclear Station, Units 1 and 2
Catawba Nuclear Station Independent Spent Fuel
Storage Installation

Location: York, SC 29745

Dates: October 1 through December 31, 2008

Inspectors: A. Sabisch, Senior Resident Inspector
R. Cureton, Resident Inspector
E. Stamm, Project Engineer
G. Laska, Senior Operations Examiner (Section 1R11.2)

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

Enclosure

SUMMARY OF FINDINGS

IR 05000413/2008005, 05000414/2008005, 07200045/2008001; 10/1/2008 – 12/30/2008;
Catawba Nuclear Station, Units 1 and 2; Maintenance Risk Assessment

The report covered a three month period of inspection by two resident inspectors and two region based inspectors (i.e., a project engineer and a senior operations examiner). One Green non-cited violation was identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609, "Significance Determination Process." Findings for which the Significance Determination Process 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 (ROP), Revision 4, dated December 2006.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

Green: The inspectors identified a non-cited violation (NCV) of 10 CFR 50.65(a)(4) for the licensee's failure to provide sufficient details for equipment protection in the approved Critical Activity Plan. In addition, the risk mitigation actions contained in the plan intended to manage and minimize the increased plant risk associated with work on the Unit 2 A Train of Component Cooling Water (KC) were not effectively implemented.

The finding was more than minor because the risk mitigation strategies in the Critical Activity Plan were not effectively implemented. In addition, the plan lacked specific guidance on what components were to be posted to provide adequate protection of the 2B train of KC. As a result, work activities were allowed to take place that could have adversely affected the remaining train of KC. This finding was determined to be of very low safety significance because the resulting magnitude of the calculated Incremental Core Damage Probability was less than 1E-5 and the licensee's implementation of more than three Risk Management Actions. The finding directly involved the cross-cutting area of Human Performance under the "Work Activity Coordination" aspect of the "Work Control" component [H.3.b]. This issue has been entered into the licensee's corrective action program as Problem Investigation Process report (PIP) C-08-6133. (Section 1R13)

B. Licensee-Identified Violations

One violation of very low safety significance, which was identified by the licensee, has been reviewed by the inspectors. Corrective actions taken by the licensee have been entered into their corrective action program. This violation and the licensee's corrective action program tracking number are listed in Section 4OA7 of this report.

Enclosure

REPORT DETAILS

Summary of Plant Status

Unit 1 began the inspection period operating at approximately 100 percent Rated Thermal Power (RTP). Power was reduced to approximately 67 percent RTP on December 13, 2008, for troubleshooting of the main turbine trip system. The unit was returned to 100 percent RTP on December 14, 2008, and remained there for the duration of the inspection period.

Unit 2 began the inspection period operating at approximately 100 percent RTP and remained there for the duration of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness

1R01 Adverse Weather Preparation

a. Inspection Scope

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 in order to assess the licensee's ability to identify and resolve deficient conditions associated with cold weather protection equipment prior to cold weather events. Corrective action program documents related to cold weather protection equipment were reviewed to verify corrective actions were completed. The documents reviewed during this inspection are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

Enclosure

1R04 Equipment Alignment

.1 Partial Walkdowns

a. Inspection Scope

The inspectors performed partial system walkdowns during the three 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 increase risk. The inspectors reviewed applicable operating procedures and walked down control 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. The documents reviewed during this inspection are listed in the Attachment to this report.

- Protection of 2B KC train components when the 2A train of KC was removed for planned maintenance
- Protection of the “F” Instrument Air dryer and associated controls during the period the “E” dryer was out of service for valve repair
- Protection of plant equipment during the troubleshooting and repair of the Unit 1 rod control system issue related to the failure of two cards in the rod control logic cabinet

b. Findings

One finding of significance, related to the protection of the 2B train of KC while the 2A train was removed from service, was identified and documented in Section 1R13.

.2 Complete System Walkdown

a. Inspection Scope

The inspectors conducted one detailed walkdown/review involving the alignment and condition of the Unit 1 Chemical Volume and Control (NV) system. The inspectors utilized licensee procedures, as well as licensing and design documents to verify that the system (i.e., pumps, valves, and electrical) alignment was correct. During the walk down, the inspectors also verified that: valves and pumps did not exhibit leakage that could 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, System and Component Health Reports, and outstanding maintenance work requests/work orders. A review of open Problem Investigation

Process reports (PIPs) was also performed to verify that the licensee had appropriately characterized and prioritized NV-related equipment problems for resolution in the corrective action program. The documents reviewed during this inspection are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

1R05 Fire Protection Tours

a. Inspection Scope

The inspectors walked down accessible portions of the eight 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. The documents reviewed during this inspection are listed in the Attachment to this report.

- Unit 1 "A" and "B" Containment Spray pump rooms, Auxiliary Building 522 foot elevation
- Unit 1 Mechanical Penetration Room, Auxiliary Building 543 foot elevation
- Auxiliary Building 560 foot elevation, Room 300
- Unit 1 Spent Fuel Pool Cooling Heat Exchanger room, Auxiliary Building 577 foot elevation
- Unit 2 Spent Fuel Pool Cooling Heat Exchanger room, Auxiliary Building 577 foot elevation
- Unit 2 Spent Fuel Pool Purge Ventilation Room, Auxiliary Building 636 foot elevation
- Unit 1 Auxiliary Feedwater Pump Room
- Unit 1B Diesel Generator (DG) Room and Sequencer Hallway

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measure - Internal Areas

a. Inspection Scope

The inspectors reviewed the Updated Final Safety Analysis Report (UFSAR) 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 following area as part of the annual sample:

- The internal flood wall in the Turbine/Service Building basement designed to prevent water from the Turbine or Service Buildings from entering the safety-related areas of the Auxiliary Building

The internal area was selected and walked down based on the flood analysis calculations. Through observation and design review, the inspectors reviewed sealing of piping, the flood wall itself, and potential flooding sources. The documents reviewed during this inspection are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Regualification

.1 Simulator Sessions

a. Inspection Scope

The inspectors observed the performance of two licensed operator crews during simulator sessions held on October 8, 2008, and November 5, 2008. Simulator Exercise Guide S-17 was used by the training staff for both sessions. The exercise started with the plant at 45 percent power. The initial event was a lockout on the 6.9kV bus, followed by a loss of charging and letdown, failure of the #1 seal on the 1B reactor coolant pump, and ending with the loss of the remaining operating reactor coolant pumps and entry into natural circulation. The inspection focused on high-risk operator actions performed during implementation of the abnormal and emergency operating procedures, communications, procedure use and adherence, and the incorporation of lessons-learned from previous plant and industry events. The documents reviewed during this inspection are listed in the Attachment to this report

b. Findings

No findings of significance were identified.

.2 Annual Review of Licensee Regualification Examination Results

a. Inspection Scope

On September 12, 2008, the licensee completed the requalification biennial written examinations and the requalification annual operating tests; both of which are required to be given to all licensed operators by 10 CFR 55.59(a) (2). The inspectors performed an in-office review of the overall pass/fail results of the individual written examinations and operating tests, as well as the crew simulator operating tests. These results were compared to the thresholds established in Manual Chapter 609 Appendix I, Operator Regualification Human Performance Significance Determination Process.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed the two samples 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. The documents reviewed during this inspection are listed in the Attachment to this report.

- “E” Instrument Air Dryer repairs performed during Work Week 44
- Loading of Spent Fuel Cask #32 from the Unit 2 spent fuel pool

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

a. Inspection Scope

The inspectors reviewed the following six activities to determine whether 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 appropriate use of the licensee’s risk assessment tool and risk categories in accordance with Nuclear System Directive 415, Operational Risk Management (Modes 1-3), for appropriate guidance to comply with 10 CFR 50.65 (a)(4). The documents reviewed during this inspection are listed in the Attachment to this report.

- Review of the Complex Activity Plan and associated Complex Lift Plans for the removal of the old “B” Station Auxiliary Transformer (SATB) and installation of the new transformer

- Review of planned and emergent work activities during the period Unit 2 was in an Orange risk condition as a result of planned maintenance activities on the 2A train of KC on October 15 and 16, 2008
- Assessment of repair plan associated with the failed controller cards on the 2A main feedwater pump digital control circuit on October 14 and 15, 2008
- Review of planned and emergent work for Work Week 45
- Elevated fouling factor condition on the "A" Control Room Chiller (YC) resulting in an Operator Aid Computer (OAC) alarm in conjunction with planned maintenance on the "B" YC chiller
- Review of planned and emergent work during Work Week 50 which included issues related to the Unit 1 rod control system and main turbine trip system

b. Findings

Introduction: The inspectors identified a Green non-cited violation (NCV) of 10 CFR 50.65(a)(4) for the licensee's failure to provide sufficient details for equipment protection in the approved Critical Activity Plan and effectively implement the risk mitigation actions contained in the plan intended to manage and minimize the increased plant risk associated with work on the Unit 2 A Train of Component Cooling Water (KC).

Description: At 1:13 am on October 16, 2008, the A train of the Unit 2 KC system was removed from service for heat exchanger tube cleaning and other related maintenance activities. This resulted in an Orange risk condition. During this planned train outage, additional work had been bundled with the regular tube cleaning activity, which extended the out-of-service time from the usual 14 hours for tube cleaning, to a scheduled 32 hour duration. Due to the additional work planned for this outage, a revised Critical Activity Plan was developed and approved by the Plant Operations Review Committee (PORC) to manage the increased risk resulting from the additional time the train of KC would be removed from service. The Critical Activity Plan contained Risk Management Measures to be implemented to ensure the opposite train would be appropriately protected while the work was performed and to provide awareness, control and management of the risk resulting from the work.

Once the work began, the inspectors walked down the work site, as well as other plant areas containing equipment that the Critical Activity Plan had identified as requiring protection. The inspectors noted that unlike previous KC train outages, the protected train heat exchanger and associated valves located within three feet of the one being worked on were not protected. This condition was discussed with the Senior Reactor Operator (SRO), who stated that the Critical Activity Plan did not specify that these specific components were required to be protected. Several hoses had been run over the 2B heat exchanger, including two that were draped over motor-operated valves on the B train inlet and outlet piping. Welding equipment had been staged between the two heat exchangers in close proximity to drain valves for the 2B heat exchanger. Additionally, there was painting in progress on top of the 2A heat exchanger and the painters were walking on scaffolding setup between the two heat exchangers adjacent to the 2B valves.

The inspectors asked the personnel working on the 2A heat exchanger about the vulnerability of the opposite train; however, they were unaware of the need to stay clear of the B train components. In addition, they were not familiar with the protected equipment signage that the station had implemented several months earlier. When these issues were communicated to licensee management, all work was stopped and involved personnel were briefed on the importance of protecting B train components by the Maintenance supervisor. A walkdown of the area was conducted by an Operations SRO to correct any issues prior to restarting the work.

Five weeks prior to the evolution a new protected equipment posting form was developed, which identified equipment to be protected. However, it was not reviewed by a SRO as required by station procedures to ensure the equipment listed on the new form matched the list in the PORC-approved Critical Activity Plan. Three switchgear cabinets that should have been protected had been inadvertently omitted from the new protected equipment posting form.

Additionally, the PORC-approved Critical Activity Plan had simply identified the need to protect "2B KC" without defining what that entailed. As a result, only the 2B1 and 2B2 KC pumps were protected with retractable tape at the direction of an SRO. None of the valves associated with the 2B train of KC or the 2B KC heat exchanger itself were protected, as had been done for previous train outages using the standardized protected equipment form.

The Unit 2 A train of KC was returned to service and the Orange risk condition was exited at 5:35 am on October 17, 2008; for a total duration of 28.5 hours and an unavailability period of 22.9 hours.

Analysis: The performance deficiency associated with this issue was the failure to effectively manage the increased risk associated with planned maintenance activities on the Unit 2 A KC heat exchanger. The Critical Activity Plan approved to support the activity was inadequately implemented as demonstrated by:

- The Critical Activity Plan required that each maintenance crew supervisor conduct a pre-job brief that included a review of the plan prior to beginning work, emphasizing risk aspects of the evolution. Contrary to this requirement, the groups assigned to inspect the heat exchanger inlet, perform weld repairs, and paint piping in the area were not aware of the need to protect the opposite train or the level of risk associated with their activities.
- The Critical Activity Plan required minimizing work in areas that could affect redundant systems, which was implemented by having the Operations Shift Manager ensure that the opposite train's components were protected. Contrary to this:
 - Protected equipment postings were implemented using an uncontrolled form that had not received an SRO review prior to use or had been validated against the Critical Activity Plan. Subsequent changes to posted protected equipment signage were also not validated against the approved Critical Activity Plan,

resulting in equipment that had been identified as requiring protection not being posted.

- Multiple activities were allowed to proceed in the immediate vicinity of the protected train (2B KC) without proper coordination or supervision.
- The 2B KC heat exchanger and associated valves were not protected to ensure the personnel working on the 2A KC heat exchanger were appropriately aware of the risk associated with their activities.

The finding was more than minor because the Critical Activity Plan risk mitigation strategies were not effectively implemented which resulted in an elevated overall plant risk. The inspectors completed a Phase 1 screening of the finding using Appendix K of Inspection Manual Chapter 0609, "Maintenance Risk Assessment and Risk Significance Determination Process," and determined that the performance deficiency represented a finding of very low safety significance (Green). This was based on the resulting magnitude of the calculated Incremental Core Damage Probability associated with the work being performed on the 2A train of KC over the 22.9 hour duration being less than 1E-5, and the licensee's implementation of at least three Risk Management Actions.

This finding has been entered into the licensee's Corrective Action Program as PIP C-08-6133. The finding directly involved the cross-cutting area of Human Performance under the "Work Activity Coordination" aspect of the "Work Control" component, in that the licensee failed to appropriately coordinate work activities to ensure the operational impact of the planned work was controlled and the increased risk minimized in accordance with the approved Critical Activity Plan associated with work on the Unit 2 A train of KC [H.3.b].

Enforcement: 10CFR50.65(a)(4), Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants, requires in part, that prior to performing maintenance activities, the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities. Nuclear System Directive (NSD) 415, Operational Risk Management (Modes 1-3) per 10CFR50.65(a)(4), implements the requirements set forth in 10FR50.65(a)(4) during power operation. NSD 213, Risk Management Process, defines the requirements of station personnel to identify, direct, control, and manage risk-significant activities at the station, including the development of Critical Activity Plans to manage and minimize the risk resulting from the planned activity.

Contrary to the above, on October 16, 2008, the licensee failed to implement the requirements of 10CFR50.65(a)(4) by inadequately managing the increased risk associated with the work on the Unit 2 A train of KC by failing to adequately specify opposite train equipment to be protected, as well as fully implement the risk management actions contained in the approved Critical Activity Plan for the planned maintenance.

Because this finding is of very low safety significance and has been entered into the licensee's corrective action program as PIP C-08-6133, this violation is being treated as

a NCV consistent with Section VI.A of the NRC Enforcement Manual: NCV 05000414/2008005-01, Inadequate Implementation of Risk Management Actions Associated With Planned Maintenance on the Unit 2 A Train KC Heat Exchanger.

1R15 Operability Evaluations

a. Inspection Scope

For the two operability evaluations listed below, the inspectors evaluated the technical adequacy of the evaluations to determine if Technical Specification 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 its intended function. The documents reviewed during this inspection are listed in the Attachment to this report.

- PIP C-08-6326, The 2B DG was loaded to 7406 kw which exceeded the procedural limitation of 5750 kw during performance of a surveillance test
- PIP C-08-7185, Immediate Determination of Operability for the YC Chillers due to the OAC fouling factor indications exceeding Hi-Hi limits

b. Findings

No findings of significance were identified.

1R18 Plant Modifications

a. Inspection Scope

The inspectors reviewed one permanent 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. The documents reviewed during this inspection are listed in the Attachment to this report.

- CD 101519 / 201520; Replacement of the buried Diesel Generator Room Sump Pump (WN) carbon steel piping with AL6XN stainless steel piping on both units due to extensive degradation of existing piping

b. Findings

No findings of significance 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). The documents reviewed during this inspection are listed in the Attachment to this report.

- Post-maintenance testing of 2A Main Feedwater Pump Turbine (CFPT) following process card replacement
- Post-maintenance testing of 2RN-292B valve following repair
- Post-maintenance testing of SATB following replacement
- Troubleshooting and repair of the Unit1 control rod system associated with the failure of two cards in the logic cabinet
- Functional testing following maintenance activities on the Unit 1 turbine driven auxiliary feedwater pump turbine
- Functional testing following troubleshooting of the Main Turbine electrical trip system

b. Findings

No findings of significance were identified.

1R22 Surveillance Testinga. Inspection Scope

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

Surveillance Tests

- PT/0/A/4600/031; NAC-UMS Cask Surveillance, Rev. 000
- PT/1/A/4350/002B, 1B Diesel Generator Operability Test, 115
- IP/2/A/3200/001A, Solid State Protection System Train A Periodic Testing, Rev. 008

- PT/0/A/4200/017A, Standby Shutdown Facility Diesel Test, Rev. 02
- PT/2/A/4350/002 B; Diesel Generator 2B Operability Test, Rev. 090

In-Service Testing

- PT/1/A/4200/004 B, Containment Spray Pump 1A Performance Test, Rev. 060

RCS Leakage Detection

- PT/2/A/4150/001D; NC System Leakage Calculation, Rev. 067

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation

a. Inspection Scope

The inspectors observed and evaluated the licensee's emergency response organization performance during two drills conducted during the inspection period. During the drill conducted on October 2, 2008, the inspectors observed licensee activities occurring in the Technical Support Center during a simulated event. During the drill conducted on November 6, 2008, the inspectors observed licensee activities occurring in the simulator, Technical Support Center and Operations Support Center during a simulated event. The NRC's 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 was evaluated against applicable licensee procedures and regulatory requirements. The inspectors attended the post-exercise critiques for the drills to evaluate the licensee's self-assessment process for identifying potential deficiencies relating to failures in classification and notification. The inspectors reviewed the completed critiques developed by the licensee documenting the overall performance of the Emergency Response Organization. The documents reviewed during this inspection are listed in the Attachment to this report.

b. Findings

No findings of significance 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 five indicators during periods listed below. To determine the accuracy of the report PI elements, the reviewed data was assessed against PI definitions and guidance contained in Nuclear Energy Institute (NEI) 99-02, Regulatory Assessment Indicator Guideline, Rev. 5. Additional documents reviewed during this inspection are listed in the Attachment to this report.

Cornerstone: Initiating Events

Unplanned Power Changes - The inspectors reviewed the Unplanned Power Changes per 7,000 Critical Hours Performance Indicator results for the period of October 1, 2006, through September 30, 2008, for Unit 1. The inspectors reviewed operating logs, PIPs, and monthly operating reports to identify unplanned changes in reactor power of greater than 20 percent full power that occurred in that period (excluding manual and automatic scrams) and determined whether the data reported for the PI corresponded to the Unit's power profile.

- Unit 1 Unplanned Power Changes

Cornerstone: Mitigating Systems

Mitigating System Performance Indicator (MSPI) - The inspectors reviewed the licensee's procedures and methods for compiling and reporting the PIs listed below, including the Reactor Oversight Program MSPI Basis Document for Catawba. The inspectors reviewed the raw data for the PIs listed below for the period of October 1, 2006, through September 30, 2008. The inspectors also independently screened Technical Specification 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 the period of October 1, 2006, through September 30, 2008. The inspectors also reviewed the past history of PIPs for systems affecting the MSPI indicators listed below for any that might have affected the reported values.

- Unit 1 Mitigating Systems Performance Index – Residual Heat Removal
- Unit 2 Mitigating Systems Performance Index – Residual Heat Removal

Safety System Functional Failures - The inspectors reviewed the Safety System Functional Failures Performance Indicator results for the period of October 1, 2007, through September 30, 2008, for Units 1 and 2. The inspectors reviewed licensee event reports, maintenance rule reports and selected work orders to ensure that any failure

that prevented or could have prevented the fulfillment of a safety function in that period was identified and reported for the PI.

- Unit 1 Safety System Functional Failures
- Unit 2 Safety System Functional Failures

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems

.1 Daily Review

As required by Inspection Procedure 71152, Identification and Resolution of Problems, 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 some daily screening meetings, and accessing the licensee's computerized database.

.2 Semi-Annual Review to Identify Trends

a. Inspection Scope

As required by Inspection Procedure 71152, Identification and Resolution of Problems, 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 primarily considered the six-month period of July 2008 through December 2008, 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 lists, Independent Nuclear Oversight reports, system and component health reports, self-assessment reports, and maintenance rule reports. The inspectors compared and contrasted their results with the results contained in the licensee's latest quarterly trend reports. Corrective actions associated with a sample of the issues identified in the licensee's trend report were reviewed for adequacy.

b. Findings

Quality Control Inspection Trend Statement

No findings of significance were identified. In general, the licensee has identified trends and has appropriately addressed the trends with their CAP. However, the inspectors initially identified a trend during the first half of 2008 that the licensee had not previously

fully recognized. The trend was associated with the adequacy and thoroughness of inspections performed by Quality Control (QC) personnel while participating in surveillance tests, plant maintenance and installation of permanent modifications. The inspections were not consistently effective in ensuring designated hold points were performed in accordance with established station and fleet procedures or that deficient conditions were identified prior to returning equipment to service. This trend was identified based on inspector observations of major activities performed on-site as well as the review of station documents as described in the Inspection Scope section.

Previously dispositioned issues that supported the development of this trend statement included:

- Signing off hold points in surveillance procedures without physically verifying or observing the action listed in the hold point
- Deficiencies associated with the Unit 1 Emergency Core Cooling System (ECCS) containment sump modification installation that were identified by the NRC inspectors after QC inspections had been performed

The inspectors performed a review of the CAP documents generated as a result of the inspectors' observations and events that occurred at the station related to QC personnel. In addition, the inspectors met on a regular basis with QC management to discuss the status of actions being implemented to address the adverse trend.

The licensee has concurred with the NRC identified trend and recognized the need to focus additional attention on the QC inspection process to ensure the inspections are consistently done in accordance with approved procedures and departmental guidance. The QC organization has conducted a set of focused observations on the various disciplines and, through these observations, identified specific areas requiring remediation. Enhanced expectations have been communicated to the inspectors and revised training has been developed to be used as part of their annual recertification program to increase the consistency of QC inspections performed by both Duke and contract inspectors. The resident inspectors will continue to monitor this area and assess the effectiveness of planned and in-progress corrective actions particularly through the upcoming Unit 2 refueling outage in the spring of 2009. The documents reviewed and used as the basis for this trend statement are listed in the Attachment to this report.

4OA3 Event Followup

- .1 (Closed) Licensee Event Report (LER) 05000413/2008001-00: Auxiliary Feed water Pumps Declared Inoperable Due to Inadequate Design and Configuration of Floor Drain Restrictor Cover Plates

On January 30, 2008, the Auxiliary Feedwater pumps on both units were declared inoperable upon discovery of missing flow restrictors and cover plates on floor drains located in the Unit 1 and Unit 2 interior doghouses. The affected floor drains provided a direct flow path from the doghouse area to the room containing the corresponding unit's auxiliary feedwater pumps. Both units were operating at 100 percent power at the time

the deficiency was discovered and the station entered Technical Specification 3.7.5, Condition D, for three inoperable auxiliary feedwater pumps. The internal flood protection deficiencies that were identified by the licensee had existed since initial construction and were the result of inadequate design and configuration control. The condition was corrected by installing the required restrictor and blank cover plates on the floor drains. The LER was reviewed by the inspectors and verification of the installation of the plates was conducted under Inspection Procedure 71153, Follow-up of Events and Notices of Enforcement Discretion. This issue was dispositioned as a Green Licensee Identified Violation in Section 4OA7 of this report. As such, LER 05000413/2008001-00 and related Unresolved Item (URI) 05000413,414/2008004-001, Potential Loss of Auxiliary Feedwater Following a Feedwater Line Break Inside the Interior Doghouse, are considered closed.

.2 Failure of the Electrical Portion of the Unit 1 Main Turbine Trip System to Function During Weekly Testing of the Trip Circuit

On December 6, 2008, a fault indication was received while performing the electrical trip portion of the Unit 1 main turbine weekly trip test procedure, which prevented the test logic from being reset. Turbine protection remained operable via the mechanical trip system during the period that troubleshooting activities were performed. On December 13, 2008, reactor power was reduced below the P-9 setpoint (69 percent RTP) in order to perform intrusive diagnostic inspections to identify the cause of the fault indication. Despite extensive testing conducted by licensee and vendor personnel, no conclusive cause was identified. Following the successful performance of the weekly trip test, the unit was returned to 100 percent RTP. The resident inspectors observed the operators maneuvering the plant to support the troubleshooting activities, as well as the preparations made to support the work and manage the overall risk associated with power reduction and ascension. The documents reviewed during this inspection are listed in the Attachment to this report.

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 of significance were identified.

.2 World Association of Nuclear Operators (WANO) Report Review

The inspectors reviewed the interim report issued by WANO for the peer review that was conducted at the Catawba facility during August 2008. The inspectors did not note any safety issues in the WANO Peer Review report that either warranted further NRC followup or that had not already been addressed by the NRC.

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

a. Inspection Scope

The inspectors reviewed the licensee's procedures and observed operations associated with storing spent fuel in the ISFSI, in accordance with Inspection Procedure 60855. The inspectors discussed spent fuel selection with the cognizant reactor engineer to assess whether the licensee had identified each fuel assembly, recorded the parameters and characteristics of each fuel assembly, and had maintained a record of each fuel assembly as a controlled document. Selected completed procedures for physical inspection and inventory of the ISFSI were reviewed to determine whether records had been established for all spent fuel in storage in the ISFSI. The inspectors also observed selected licensee activities related to the loading of cask number 32 to verify that they performed these activities in a safe manner and in compliance with approved procedures. In addition, selected screening evaluations performed pursuant to 10 CFR 72.48 since the last inspection. There were no 72.48 evaluations performed during this period, as all document changes were screened as not requiring a 72.48 evaluation.

b. Findings

No findings of significance were identified.

40A6 Meetings, Including Exit

Exit Meeting Summary

On January 15, 2009, the resident inspectors presented the inspection results to Mr. Bill Pitesa, Station 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.

40A7 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 Section VI of the NRC Enforcement Policy, NUREG-1600, for disposition as a NCV.

- 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," requires, in part that activities affecting quality shall be prescribed by documented drawings and shall be accomplished in accordance with these drawings. Drawings shall include appropriate quantitative or qualitative acceptance criteria for

determining that important activities have been satisfactorily accomplished. Contrary to the above, on January 30, 2008, while performing field walk downs of the interior doghouses for Unit 1 and Unit 2, the licensee determined that they had failed to include appropriate quantitative or qualitative acceptance criteria for ensuring that flow restrictor and cover plates on floor drains that connected the interior doghouse area to the auxiliary feedwater pump rooms had been installed in accordance with initial construction drawings. The failure to install these plates as required by construction drawings had the potential to result in the loss of all three auxiliary feedwater pumps in the event of a feedwater line break within the interior doghouse. A Region II senior risk analyst performed a Phase 3 risk analysis for the condition. The numerical risk of this deficiency was dominated by a sequence that involves the common cause failure of the feedwater isolation switches, circuitry, and isolation valves to isolate main feedwater entering the respective unit's interior doghouse given a feedwater line break. This leads to the flooding of mitigating systems (i.e., auxiliary feedwater pumps located at lower elevations within the auxiliary building). The Phase 3 analysis results were dominated by Human Reliability Analysis assumptions, estimates of common cause failure rates, and estimates of pipe break frequencies. The analysis determined that the risk increase over the base case was less than $1E-6$ and is considered to be of very low safety significance. This issue is documented in the licensee's CAP as PIP C-08-00513. The documents reviewed during this inspection are listed in the Attachment to this report.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

T. Arlow, Emergency Planning Manager
S. Beagles, Chemistry Manager
W. Byers, Security Manager
J. Caldwell, Modifications Engineering Manager
S. Coy, Operations Training Manager
J. Ferguson, Mechanical, Civil Engineering Manager
D. Brenton, Operations Superintendent
W. Brewer, Safety Assurance Manager
J. Foster, Radiation Protection Manager
P. Gillespie, Operations Superintendent
G. Hamrick, Engineering Manager
R. Hart, Regulatory Compliance Manager
T. Jenkins, Work Control Manager
J. McConnell, Shift Operations Manager
J. Morris, Catawba Site Vice President
J. Pitesa, Station Manager
T. Ray, Maintenance Manager
M. Sawicki, Regulatory Compliance Engineer
G. Spurlin, Licensed Operator Requalification Supervisor
C. Trezise, Reactor and Electrical Systems Manager / Acting Engineering Manager
R. Weatherford, Training Manager

NRC personnel

J. Stang, Project Manager, NRR
R. Bernhard, RII, SRA
W. Rogers, RII, SRA

LIST OF ITEMS OPENED, CLOSED, AND REVIEWED

Opened and Closed

05000414/2008005-01	NCV	Inadequate Implementation of Risk Management Actions Associated With Planned Maintenance on the Unit 2 A Train KC Heat Exchanger (Section 1R13)
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Closed

05000413,414/2008004-01	URI	Potential Loss of Auxiliary Feedwater Following a Feedwater Line Break Inside the Interior Doghouse (Section 4OA3.1)
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05000413/2008001-00	LER	Auxiliary Feed water Pumps Declared Inoperable Due to Inadequate Design and Configuration of Floor Drain Restrictor Cover Plates (Section 4OA3.1)
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LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

PT/0/B/4700/038, Cold Weather Protection, Rev. 28
 PIP C-08-6848; Several issues identified following performance of the Cold Weather Surveillance Procedure
 PIP C-07-00480; Possible freeze protection issues with RW Cabinets at RN and RL RW sheds
 PIP C-07-00633; Thermostats for ventilation heaters not set correctly
 PIP C-07-00811; Cold weather curtains in exterior Doghouse not secured
 PIP C-07-06633; Procedure OP/1/A/6450/004 Enclosure 4.9: Unable to completely drain water per procedure from the Fuel Pool Ventilation System
 PIP C-07-06808; Breakers that control the Waste Solidification Building (WSF) heaters found in the "off" position.
 PIP C-07-06856; Investigation into why YH converters were not heating up. Cold Weather Protection PT is progress.
 PIP C-07-04371; Freeze Protection circuits 1CF01 and 1CF03 found failed during Summer PM
 PIP C-07-00124; Equipment Reliability concerns with Freeze Protection on Service Bldg and Aux Bldg roof.
 PIP C-07-00078; Low voltage on Freeze protection circuits in WC pit
 OAC Alarm Responses for points C1P0118 (Ambient Dry Bulb Temperature); C1P1821 (Ambient Wet Bulb Temperature), C2P0118 (Ambient Dry Bulb Temperature), and C2P1821 (Ambient Wet Bulb Temperature)
 NSD 317; Freeze Protection Program, Rev. 3

Section 1R04.1: Partial System Walkdown

SOMP 02-02; Operations Role in the Risk Management Process, Rev. 05
 PIP C-08-6133; Weaknesses in the implementation of the Critical Activity Plan associated with the 2A KC heat exchanger work
 PIP C-08-7133; Clarification needed on entry into areas marked with protected equipment signage

Section 1R04.2: Complete System Walkdown

CN-1554-1.0, "Flow Diagram of Chemical Volume Control System," Rev. 28
 CN-1554-1.1, "Flow Diagram of Chemical Volume Control System," Rev. 14
 CN-1554-1.2, "Flow Diagram of Chemical Volume Control System," Rev. 32
 CN-1554-1.3, "Flow Diagram of Chemical Volume Control System," Rev. 21
 CN-1554-1.4, "Flow Diagram of Chemical Volume Control System," Rev. 22
 CN-1554-1.5, "Flow Diagram of Chemical Volume Control System," Rev. 09

CN-1554-1.6, "Flow Diagram of Chemical Volume Control System," Rev. 20
 CN-1554-1.7, "Flow Diagram of Chemical Volume Control System," Rev. 27
 CN-1554-1.8, "Flow Diagram of Chemical Volume Control System," Rev. 08
 OP/1/A/6200/001, "Chemical and Volume Control System," Rev. 136
 NV - Chemical and Volume Control Health Report, 3rd quarter, 2008
 PIP C-07-07660; 1B NV Pump seal balance pressure differential pressure was noted to be greater than acceptable
 PIP C-08-05010; 1NV-292 was found in the throttled position
 PIP C-08-03341; During 2B NV pump IWP not all data met acceptance criteria
 PIP C-07-02463; 1NV-A34 is a valve tagged in the open position and the pipe cap was removed to allow a vent path for path draining. However, the pipe cap is now threaded onto the vent path
 PIP C-07-00916; NPAS assessment personnel did not notify Catawba OSM they had identified an issue which potentially affected operability
 PIP C-07-00859; One of the redundant trains required to maintain hot shutdown to be maintained free of fire damage and does not provide for allowance on manual action.

Section 1R05: Fire Protection

Station Fire Impairment Log

Pre-Fire Plan for Fire Strategy Area 4; Auxiliary Building 543 level, Rooms 200 - 248
 Pre-Fire Plan for Fire Strategy Area 1; Auxiliary Building 522 level, Rooms 100 - 112
 Pre-Fire Plan for Fire Strategy Area 11; Auxiliary Building 560 level
 Pre-Fire Plan for Fire Strategy Area 18; Auxiliary Building 577 level
 Pre-Fire Plan for Fire Strategy Area 47; Auxiliary Building 636 level, Room 802
 Pre-Fire Plan for Fire Strategy Area 3; Unit 1 Auxiliary Feedwater Pump Room
 Pre-Fire Plan for Fire Strategy Area 26; Diesel Generator Building Room 1B
 Pre-Fire Plan for Fire Strategy Area 42; Diesel Generator Building 1B Corridor
 SLC Section 16.9-4; Fire Hose Stations
 SLC Section 16.9-5; Fire rated Assemblies
 NSD 313, Control of Combustible and Flammable Material, Rev. 6
 NSD 314; Hot Work Authorization, Rev. 8

Section 1R06: Flood Protection

Catawba Nuclear Station 1465.00-00-0011; Internal Flooding, section 3.3.2.5, Turbine Building / Service Building Flood Wall, Rev. 03

Section 1R11: Licensed Operator Requalification

OP-CN-Licensed Operator Requalification S-17; Simulator Exercise Guide S-17, Rev. 06
 AP/1/A/5500/007; Loss of Normal Power, Rev. 56
 EP/1/A/5000/ES-0.1; Reactor Trip Response, Rev. 30
 EP/1/A/5000/ES-0.2; Natural Circulation Cooldown, Rev. 20
 EP/1/A/5000/ES-0.3; Natural Circulation Cooldown with Steam Void in Vessel. Rev. 11

Section 1R12: Maintenance Effectiveness

Work Order 01836616, OVI AD E:I/R Reason for valve malfunction on VI dryer "E"
 E Instrument Air Dryer Troubleshooting Plan
 MP/0/A/7650/181, Loading Spent Fuel Assemblies into NAC-UMS Casks, Rev. 008
 CNEI 0400-171, Catawba Nuclear Station, CNZ-032, 2-1(6), Rev. 0

Section 1R13: Maintenance Risk Assessments and Emergent Work Evaluation

Critical Activity Plan for the 2A KC Heat Exchanger tube cleaning, reach rod repairs and weld inspection and repair
 Operations Information Notice; 2A CFPT Speed Control
 Complex Evolution Plan for Unit 2 – "A" CFPT VSVO Card replacement
 Operations Written Pre-Job briefing for 2A CFPT 'T' process card replacement
 AP/2/A/5500/006; Loss of S/G Feedwater, Rev. 28
 PIP C-08-6041; CFPT 2A Slot 6 diagnostic alarm
 Weekly Risk Profile for Work Week 45; Unit 1 (Rev. 2) and Unit 2 (Rev. 1)
 PIP C-08-6820; "A" YC chiller condenser fouling factor resulting in OAC alarm
 Work Week 49 maintenance schedule and risk profile
 Complex Activity Plan for the removal of the existing SATB transformer from the Unit 2 turbine building basement and the installation of the replacement transformer
 Complex Lift Plan for the removal of the old SATB transformer and setting it on a flat bed in the railroad bay
 Complex Lift Plan to lift the new SATB transformer from the Unit 2 turbine deck, set it in the turbine building basement and move it into place
 SOMP 02-02, Attachment 14.1, Protected Equipment Plans for the removal of SATB and installation of the new transformer
 NSD 213; Risk Management Process, Rev. 7
 NSD 415; Operational Risk Management (Modes 1 - 3) per 10CFR50.65(a)(4), Rev. 5
 Critical Activity Plan for the 2B KC Heat Exchanger Tube Cleaning approved 7/22/08
 PIP C-08-6133; Weaknesses in the implementation of the Critical Maintenance Plan associated with the 2A KC heat exchanger work
 PIP C-08-6201; Issues identified in the 2A KC Heat Exchanger risk management actions critique
 TSAIL entry C2-08-02778; KC Train 2A inoperability
 SOMP 02-02; Operations Roles in the Risk Management Process, Rev. 005
 Pre-job brief conducted prior to the removal of the old SATB transformer and installation of the new transformer

Section 1R15: Operability Assessments

PT/2/A/4250/002B; Diesel Generator 2B Operability Test, Rev. 090
 PIP C-08-1028; The kilowatt meter on the local control panel went from 5750 kw to 4900 kw without any manipulation
 Work Request 966121; Troubleshoot and repair kw indication on 2B DG control panel

Section 1R18: Plant Modifications

Modification Package CD 101519; Abandon / Replace buried WN piping; Unit 1
 Modification Package CD 201520; Abandon / Replace buried WN piping; Unit 2
 PIP C-05-6064; Visible oil sheen observed on Lake Wylie due to leakage from buried WN piping
 leak
 PIP C-06-0254; Oil discovered in yard collection sump

Section 1R19: Post-Maintenance Testing

PT/2/A/4200/013C, RN Valve Inservice Test, Rev. 051
 Operations Written Pre-Job Briefing, 2A CFPT process card replacement at 97% power
 Operations Information Notice, "2A CFPT Speed Control," 10/13/2008
 Work Order 01835880
 AP/2/A/5500/003, "Load Rejection," Rev. 30
 AP/2/A/5500/006, "Loss of S/G Feedwater," Rev. 28
 Complex Evolution Plan, Unit 2- "A" CFPT VSVO Card replacement
 PT/1/A/4250/0003C; Turbine Driven Auxiliary Feedwater Pump Turbine #1 Performance test,
 Rev. 097
 PT/1/A/4600/001; RCCA Movement Test, Rev. 044
 PT/0/A/4150/030, RCCA Bank Repositioning, Rev. 024
 Troubleshooting plan associated with the failure of Unit 1 Shutdown bank A to move on demand
 during testing
 PT/1/B/4250/002 A; Main Turbine Weekly Trip Test, Rev. 080
 PT/1/A/4250/002 B; Main Turbine Valve Movement, Rev. 047
 PT/1/A/4250/002 C; Turbine Control Valve Movement, Rev. 043

Section 1R22: Surveillance Testing

MP/0/A/7650/184; Spent Fuel Dry Cask Troubleshooting, Rev. 001

Section 1EP6: Drill Evaluation

Catawba Nuclear Site Critique Summary Report for Drill 08-05
 Catawba Nuclear Site Critique Summary Report for Drill 08-06
 Emergency Response Organization Drill 08-05 Scenario Guide
 Emergency Response Organization Drill 08-06 Scenario Guide
 RP/0/A/5000/001, Classification of an Emergency, Rev. 19

Section 4OA1: Performance Indicator Verification

NSD 225, NRC Performance Indicators, Rev. 4
 NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Rev. 5

Section 40A2.2: Semi-Annual Review to Identify Trends

PIP C-08-02546, Observation of QC work practices while performing testing of Main Steam Vent valves in the Unit 1 exterior doghouse.

PIP C-08-02965, Did not obtain Mechanical QC signature on grout pad installation prior to pouring pad

PIP C-08-03190, QC Inspection of ECCS sump plenum bolts

PIP C-08-03362, Random inspections by QC identified 12 anchor bolts installed without washers

PIP C-08-03385, Craft requested that night shift QC to re-inspect a fit-up that had been signed off by Welding QC on day shift.

PIP C-08-03577, Mechanical joints on the ECCS sump were fitted without being torqued.

PIP C-08-03644, Cable tray installed without VN or drawing revision.

PIP C-08-4208, QA/QC self assessment needed to review inspection programs and practices

Section 40A3: Event Follow-up

Unit 1 Electrical Trip Test Troubleshooting Plan

PIP C-08-6930; Sequence fault received during the performance of the weekly turbine trip test on Unit 1

Unit 1 Main Turbine Electrical Trip Test Failure Critical Activity plan

Plant Engineering troubleshooting plan for Unit 1 Main Turbine Trip System issue

Reactor Engineering power maneuvering plan for Unit 1 power reduction and ascension

Section 40A5: Other Activities

Procedure 60855; Operation of an Independent Spent Fuel Storage Installation

MP/0/A/7650/181; Loading Spent Fuel Assemblies into NAC-UMS Casks

PIP C-08-6287; Readiness review of ISFSI processes and procedures to ensure a successful loading campaign out of the Unit 2 Spent Fuel Building

PIP C-08-5859; Damaged cable trench underneath metal cover in the path of the cask transporter

Section 40A7: Licensee-Identified Violations

Calculation CNC-1535.00-00-0092; Additional Analysis to support the NRC SDP for the AFW doghouse drain issue

LER 05000413/2008-001; Auxiliary Feedwater Pumps Declared Inoperable due to Improper Installation and Inadequate Configuration Control

Control Room annunciator panel response manual OP/1/B/6100/010F for Panel 1AD-5, annunciators H/1, H/2 and H/3

Control Room annunciator panel response manual OP/2/B/6100/010F for Panel 2AD-5, annunciators H/1, H/2 and H/3

AP/0/A/5500/030; Plant Flooding, Rev. 007

PIP C-08-0513; Interior doghouse floor drains to not match WL flow diagrams

PIP C-08-0557; PIP documenting conservative actions taken due to AFW pump inoperability

LIST OF ACRONYMS USED

CAP	-	Corrective Action Program
CFPT	-	Main Feedwater Pump Turbine
CFR	-	Code of Federal Regulations
CVIWS	-	Containment Valve Injection Water System
DG	-	Diesel Generator
ECCS	-	Emergency Core Cooling System
ISFSI	-	Independent Spent Fuel Storage Installation
KC	-	Component Cooling Water
KW	-	Kilowatt
LER	-	Licensee Event Report
MSPI	-	Mitigating System Performance Indicator
NCV	-	Non-Cited Violation
NEI	-	Nuclear Energy Institute
NRC	-	Nuclear Regulatory Commission
NSD	-	Nuclear System Directive
NV	-	Chemical/Volume Control
OAC	-	Operator Aid Computer
PI	-	Performance Indicator
PIP	-	Problem Investigation Process report
PORC	-	Plant Operations Review Committee
QC	-	Quality Control
RTP	-	Rated Thermal Power
SATB	-	"B" Station Auxiliary Transformer
SRO	-	Senior Reactor Operator
SSC	-	Structures, Systems, and Components
UFSAR	-	Updated Final Safety Analysis Report
URI	-	Unresolved Item
WANO	-	World Association of Nuclear Operators
WN	-	Diesel Generator Room Sump Pump
YC	-	Control Room Chilled Water