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

July 27, 2011

Mr. William Jefferson, Jr.
Vice President
Carolina Power and Light Company
Shearon Harris Nuclear Power Plant
P. O. Box 165, Mail Code: Zone 1
New Hill, North Carolina 27562-0165

SUBJECT: SHEARON HARRIS NUCLEAR POWER PLANT - NRC INTEGRATED INSPECTION REPORT 05000400/2011003

Dear Mr. Jefferson:

On June 30, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Shearon Harris reactor facility. The enclosed integrated inspection report documents the inspection results, which were discussed on July 19, 2011, with you and other members of your staff.

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

This report documents one NRC-identified findings of very low safety significance (Green). This finding was determined to involve a violation of NRC requirements. However, because of the very low safety significance and because it is entered into your corrective action program (CAP), the NRC is treating the violation as a non-cited violation (NCV) consistent with Section 2.3.2 of the NRC Enforcement Policy. If you contest any NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Senior Resident Inspector at the Shearon Harris facility. In addition, if you disagree with the cross-cutting aspect assigned to 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 Senior Resident Inspector at the Shearon Harris facility.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and 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 Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Randall A. Musser, Chief
Reactor Projects Branch 4
Division of Reactor Projects

Docket Nos.: 50-400
License No.: NPF-63

Enclosure: NRC Inspection Report 05000400/2011003
w/Attachment: Supplemental Information

cc w/encl: (See page 3)

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Letter to William Jefferson, Jr. from Randall A. Musser dated July 27, 2011

SUBJECT: SHEARON HARRIS NUCLEAR PLANT - NRC INTEGRATED INSPECTION REPORT 05000400/2011

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.:	50-400
License No.:	NPF-63
Report No.:	05000400/2011003
Licensee:	Carolina Power and Light Company
Facility:	Shearon Harris Nuclear Power Plant, Unit 1
Location:	5413 Shearon Harris Road New Hill, NC 27562
Dates:	April 1, 2011 through June 30, 2011
Inspectors:	J. Austin, Senior Resident Inspector P. Lessard, Resident Inspector J. Eargle, Reactor Inspector (Section 4OA5) A. Alen, Reactor Inspector (Section 4OA5)
Approved by:	Randall A. Musser, Chief Reactor Projects Branch 4 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000400/2011003; April 1, 2011, – June 30, 2011; Shearon Harris Nuclear Power Plant, Unit 1; Other Activities

The report covers a three month period of inspection by resident inspectors and announced baseline inspection by regional inspectors. One NRC-identified finding of very low safety significance (Green) was identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Cross-cutting aspects are 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.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified a Green non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to establish adequate instructions to identify accumulated gas in Emergency Core Cooling Systems (ECCS). Specifically, the operations surveillance test procedure, OST-1107, "ECCS flow path and piping filled verification monthly interval – Modes 1-2-3-4-5," Rev 29, could allow accumulated gases inside ECCS to be vented without being quantified and evaluated for potential adverse impacts on system operability. The licensee entered this in their corrective action program (CAP) as ARs #459683 and #459572. The corrective actions included the performance of UTs at 100% of the vented locations prior to venting the system to quantify and evaluate the effects of any gas discovered by the UTs.

  The inspectors determined that licensee's failure to establish adequate instructions to identify accumulated gas in ECCS was a performance deficiency. The finding was more than minor because if left uncorrected, the performance deficiency had the potential to lead to a more significant safety concern. Specifically, if left uncorrected the potential existed for an unacceptable void that could affect ECCS operability to remain undetected. The inspectors screened this finding in accordance with Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," Attachment 4, "Phase 1 - Initial Screening and Characterization of Findings," and determined the finding was of very low safety significance (Green) since it was a deficiency determined not to have resulted in the loss of operability or functionality as determined by the review of UTs performed by the licensee through the PM program. While the PM UTs were performed at a lower frequency, the results provided reasonable assurance regarding operability of the ECCS. The inspectors determined that the finding has a cross-cutting aspect in the area of problem identification and resolution because the licensee failed to implement operating experience from GL 2008-01 into station procedures (P.2(b)). Specifically, GL 2008-01 stated, in part, that "Volumes that are close to impacting operability may require more sophisticated measurement." (Section 4OA5.4)

B. Licensee-Identified Violations

None

REPORT DETAILS

Summary of Plant Status

Unit 1 reduced power to 80 percent on May 1, 2011, to perform Main Turbine Generator Valve Testing. Power was restored to Rated Thermal Power (RTP) the same day. With that exception, Unit 1 operated at or near RTP for the entire inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection

.1 Offsite and Alternate AC Power Readiness

a. Inspection Scope

The inspectors performed a review of the licensee's preparations for summer weather for selected systems, including conditions that could lead to an extended drought as a result of high temperatures.

During the inspection, the inspectors focused on plant specific design features and the licensee's procedures used to mitigate or respond to adverse weather conditions. Additionally, the inspectors reviewed the Updated Final Safety Analysis Report (UFSAR) and performance requirements for systems selected for inspection, and reviewed that the operator actions were appropriate as specified by plant specific procedures. Specific documents reviewed during this inspection are listed in the Attachment. The inspectors also reviewed corrective action program items to verify that the licensee was identifying adverse weather issues at an appropriate threshold and entering them into their corrective action program in accordance with station corrective action procedures. The inspectors' reviews focused specifically on the following plant systems:

- Offsite AC Power (Switchyard)
- Emergency Diesel Generators (EDG)

The inspectors reviewed the following ARs associated with this area to verify that the licensee identified and implemented appropriate corrective actions:

- AR #401800, Degrading Operation of Unit Auxiliary Transformer 'A' Cooling Fan;
- AR #417271, Crane Operation near Transformer Yard;
- AR #427883, Switchyard Startup Transformer (SUT) 'B', Phase 'A' Oil Filled Cable;
- AR #455851, High Risk Activity For Switchyard Breaker 52-2 Work Delayed;
- AR #460477, Switchyard - Loss Of Erwin Line;
- AR #397519, EDG Chart Recorder MW Channel Scaling Error;

- AR #400303, Grounding Strap To ‘A’ EDG Starting Air Compressor Is Not Connected;
- AR #400371, Unexpected Alarm During 'A' EDG Run;
- AR #406555, ‘A’ EDG Trouble Alarm Due To Low Lube Oil Temp;
- AR #300180, Ensure that 230 kV Offsite Power Cables are Protected from being Submerged;
- AR #470705, 230kV Oil Filled Cable Trenches Ground Water; and
- AR #393456, Wetted Underground Medium Voltage Cables for Circulating Water Pump

b. Findings

Introduction: The inspectors identified an unresolved item (URI) associated with the submergence of non-safety related cables in an underground bunker. This item is unresolved pending further review and evaluation of the licensee’s environmental qualifications of submerged 230kV cabling.

Description: The inspectors identified the offsite power supply cables, connecting the switchyard to the startup transformers, were submerged in standing water in their underground bunkers. Additional inspection activities are needed to determine if the offsite power supply cables are suitable for operation while submerged in water. Pending the results of this additional inspection, an URI will be opened and designated as URI 05000400/2011003-01, Offsite Power Supply Cables Submerged in Water.

.2 External Flooding

a. Inspection Scope

The inspectors evaluated the design, material condition, and procedures for coping with the design basis probable maximum flood. The evaluation included a review to check for deviations from the descriptions provided in the UFSAR for features intended to mitigate the potential for flooding from external factors. As part of this evaluation, the inspectors checked for obstructions that could prevent draining, checked that the roofs did not contain obvious loose items that could clog drains in the event of heavy precipitation, and evaluated whether barriers required to mitigate a flood were in place and operable. Additionally, the inspectors performed a walkdown of the protected area to identify any modification to the site which would inhibit site drainage during a probable maximum precipitation event or allow water ingress past a barrier. The inspectors also reviewed the abnormal operating procedure (AOP) for mitigating the design basis flood to ensure it could be implemented as written.

The inspectors reviewed the following AR associated with this area to verify that the licensee identified and implemented appropriate corrective actions:

- AR #458651, Errors in Flooding Analysis Calculation

b. Findings

No findings were identified.

.3 Readiness for Impending Adverse Weather Condition

a. Inspection Scope

On April 16, 2011, a tornado warning was issued for the plant area and inspectors reviewed the licensee's overall preparations/protection for impending adverse weather conditions. The inspectors evaluated the licensee staff's preparations against the site's procedures to determine if the staff's actions were adequate. During the inspection, the inspectors focused on plant specific design features and the licensee's procedures used to respond to specified adverse weather conditions. The inspectors' evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant. Additionally, the inspectors reviewed the UFSAR and performance requirements for the Emergency Diesel Generator and Emergency Service Water systems selected for inspection, and verified that operator actions were appropriate as specified by plant specific procedures. The inspectors also reviewed a sample of corrective action program items to verify that the licensee identified adverse weather issues at an appropriate threshold and dispositioned them through the corrective action program in accordance with station corrective action procedures. Specific documents reviewed during this inspection are listed in the Attachment.

The inspectors reviewed the following AR associated with this area to verify that the licensee identified and implemented appropriate corrective actions:

- AR #460110, Severe Weather Affects Plant Equipment

b. Findings

No findings were identified.

1R04 Equipment Alignment

.1 Quarterly Partial System Walkdowns

a. Inspection Scope

The inspectors performed three partial system walkdowns of the following risk-significant systems:

- The Turbine Driven Auxiliary Feedwater (TDAFW) and 'B' Motor Driven Auxiliary Feedwater (MDAFW) pumps while the 'A' MDAFW pump was inoperable for planned maintenance on May 5, 2011;

- The ‘A’ Essential Services Chilled Water (ESCW) system while the ‘B’ ESCW system was inoperable for a maintenance outage on May 11, 2011; and
- The ‘A’ Emergency Service Water (ESW) after a potential water hammer was observed during testing on June 29, 2011.

The inspectors selected these systems based on their risk-significance relative to the reactor safety cornerstones at the time they were inspected. 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, system diagrams, applicable portions of the UFSAR, Technical Specification (TS) requirements, outstanding work orders, condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems incapable of performing their intended functions. The inspectors also walked down accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors also verified that 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 with the appropriate significance characterization. Documents reviewed are listed in the Attachment.

The inspectors reviewed the following AR associated with this area to verify that the licensee identified and implemented appropriate corrective actions:

- AR #474032, Potential Water Hammer During 'A' ESW Pump Start

b. Findings

No findings were identified.

.2 Semi-Annual Complete System Walkdown

a. Inspection Scope

On May 9, 2011, the inspectors performed a complete system alignment inspection of the ‘B’ EDG system to verify the functional capability of the system. This system was selected because it was considered risk significant in the licensee’s probabilistic risk assessment. The inspectors walked down the system to review mechanical and electrical equipment line ups, electrical power availability, system pressure and temperature indications, component labeling, component lubrication, component and equipment cooling, hangers and supports, operability of support systems, and to ensure that auxiliary equipment or debris did not interfere with equipment operation. A review of a sample of past and outstanding work orders (WOs) was performed to determine whether any deficiencies significantly affected the system function. In addition, the

inspectors reviewed the CAP database to ensure that system equipment alignment problems were being identified and appropriately resolved. The documents used for the walkdown and issue review are listed in the Attachment.

The inspectors reviewed the following ARs associated with this area to verify that the licensee identified and implemented appropriate corrective actions:

- AR #380543, Unplanned Inoperability of 'B' EDG
- AR #380725, 'A' EDG Turbo Drip Leg Found with no Steady Stream
- AR #385739, 'B' EDG Starting Air Compressor 'D' Low Capacity
- AR #387281, EDG Instrument Tags Deficiency
- AR #403012, 'B' EDG Starting Air Compressor 'D' Low Capacity Trend
- AR #454203, 'B' EDG Air Start Valve Torque Movement And Cover Vibration

b. Findings

No findings were identified.

1R05 Fire Protection

.1 Quarterly Resident Inspector Tours

a. Inspection Scope

The inspectors conducted seven fire protection walkdowns which were focused on availability, accessibility, and the condition of firefighting equipment in the following risk-significant plant areas:

- Fuel Handling Building (FHB), 236' Elevation
- FHB, 261' Elevation
- FHB, 286' Elevation
- 'A' Train Electrical Penetration Area
- 'B' Train Electrical Penetration Area
- 'A' Switchgear Ventilation Room
- 'B' Switchgear Ventilation Room

The inspectors reviewed areas to assess if the licensee had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant, effectively maintained fire detection and suppression capability, maintained passive fire protection features in good material condition, and had implemented adequate compensatory measures for out of service, degraded or inoperable fire protection equipment, systems, or features in accordance with the licensee's fire plan. The inspectors selected fire areas based on their overall contribution to fire risk as documented in the plant's Individual Plant Examination of External Events with later additional insights, their potential to impact equipment which could initiate or mitigate a

plant transient, or their impact on the plant's ability to respond to a security event. Using the documents listed in the Attachment, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed, that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's corrective action program.

The inspectors reviewed the following ARs associated with this area to verify that the licensee identified and implemented appropriate corrective actions:

- AR #462105, Unplanned Fire Detection System Fire Alarm
- AR #464685, Incipient Fire Detection System Alert Received

b. Findings

No findings were identified.

1R06 Flood Protection Measures

.1 Review of Areas Susceptible to Internal Flooding

a. Inspection Scope

The inspectors reviewed selected risk important plant design features and licensee procedures intended to protect the plant and its safety related equipment from internal flooding events. The inspectors reviewed flood analyses and design documents, including the UFSAR, engineering calculations, and abnormal operating procedures for licensee commitments. The specific documents reviewed are listed in the Attachment. In addition, the inspectors reviewed licensee drawings to identify areas and equipment that may be affected by internal flooding caused by the failure or misalignment of nearby sources of water, such as the fire suppression or the circulating water systems. The inspectors also reviewed the licensee's corrective action documents with respect to past flood-related items identified in the corrective action program to verify the adequacy of the corrective actions. The inspectors performed a walkdown of the following plant area to assess the adequacy of watertight doors and verify drains and sumps were clear of debris and were operable, and that the licensee complied with its commitments:

- 261' Elevation of the Reactor Auxiliary Building (RAB) near the Essential Services Chillers (Flood Area F-261-4)

The inspectors reviewed the following ARs associated with this area to verify that the licensee identified and implemented appropriate corrective actions:

- AR #461904, Basis for Allowable Flooding Depths in Plant Areas
- AR #457330, Unit 2 Penetration Emergency Service Water Strainer Pit and Pump Bay Closed
- AR #454705, Unsealed Flood Barrier Penetrations (Fort Calhoun Operating Experience)

b. Findings

No findings were identified.

.2 Annual Review of Cables Located in Underground Bunkers

a. Inspection Scope

The inspectors conducted an inspection of underground bunkers subject to flooding that contain cables whose failure could disable risk-significant equipment. The inspectors performed walkdowns of risk-significant areas, including bunkers M72A-SA and M512C-SA, to verify that the cables were not submerged in water, that cables and/or splices appear intact and to observe the condition of cable support structures. The inspectors ensured the bunkers were pumped frequently enough to maintain the cables dry where dewatering devices were not installed.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program

.1 Quarterly Review

a. Inspection Scope

On May 26, 2011, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator training to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems and training was being conducted in accordance with licensee procedures. The simulator scenario tested the operators' ability to address a loss of main and auxiliary feed water accident due to the loss of feed pumps. The inspectors evaluated the following areas:

- Licensed operator performance
- Crew's clarity and formality of communications
- Ability to take timely actions in the conservative direction
- Prioritization, interpretation, and verification of annunciator alarms
- Correct use and implementation of abnormal and emergency procedures
- Control board manipulations

- Oversight and direction from supervisors
- Ability to identify and implement appropriate TS actions and Emergency Plan actions and notifications

The crew's performance in these areas was compared to pre-established operator action expectations and successful critical task completion requirements.

In addition, during this quarter, a review of OPESS, FY2010-02 "Sample Selections for Reviewing Licensed Operator Examinations and Training conducted on the Plant-Referenced Simulator" was performed."

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance effectiveness issues were entered into the corrective action program with the appropriate significance characterization. Documents reviewed are listed in the Attachment.

The inspectors evaluated degraded performance issues involving the following risk significant components:

- AR #461334**,** Failure of 60kVA Inverter;
- AR #460710, 'A' Normal Service Water Pump Unavailable due to Loss of Erwin (230 kV Switchyard) line; and
- AR #460540, Extended Limiting Condition for Operation Time for ICC-167 (Component cooling Water from Residual Heat Removal Heat Exchanger 'B' Outlet Isolation Valve).
- Preventive Maintenance Practices: Operating Experience Smart Sample (OPESS) FY 2010-01, "Recent Inspection Experience for Components Installed Beyond Vendor Recommended Service Life"

The inspectors focused on the following attributes:

- Implementing appropriate work practices;
- Identifying and addressing common cause failures;
- Scoping of systems in accordance with 10 CFR 50.65(b) of the maintenance rule;
- Characterizing system reliability issues for performance;
- Charging unavailability for performance;
- Trending key parameters for condition monitoring;

- Ensuring 10 CFR 50.65(a)(1) or (a)(2) classification or re-classification;

- Verifying appropriate performance criteria for structures, systems, and components (SSCs)/functions classified as (a)(2) or appropriate and adequate goals and corrective actions for systems classified as (a)(1).

Additionally, for the OPESS FY 2010-01, the inspectors selected three components to evaluate the licensees preventive maintenance practices compared to vendor recommended preventive maintenance practices.

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

For the four samples listed below, the inspectors reviewed the licensee's evaluation and management of plant risk for the maintenance and emergent work activities affecting risk-significant equipment listed below to verify that the appropriate risk assessments were performed prior to removing equipment for work:

- Unintended entry into yellow risk configuration due to the Demineralized Water Pump tripping on April 19, 2011;
- Plant risk evaluated following trip of 'B' Plant Compressor on June 2, 2011. Risk remained green;
- Plant risk evaluated for the failure of the uninterruptable power supply inverter on April 21, 2011. Risk remained green; and
- Plant risk evaluated for failure of TREF (temperature reference) circuitry on April 24, 2011. Risk remained green.

These activities were selected based on their potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors verified that risk assessments were performed as required by 10 CFR 50.65(a)(4) and were accurate and complete. When emergent work was performed, the inspectors verified that the plant risk was promptly reassessed and managed. The inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed TS requirements and walked down portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met.

The inspectors reviewed the following AR associated with this area to verify that the licensee identified and implemented appropriate corrective actions:

- AR #460705, Demineralized Water Pump Tripped due to Operator Action

b. Findings

No findings were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors selected the following four potential operability issues to evaluate based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure that TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the TS and UFSAR to the licensee's evaluations, to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors also reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Documents reviewed are listed in the Attachment.

- AR #452477, Past Operability Evaluation Needed for Feedwater Flow Venturi Calorimetric Accuracy;
- AR #463689, Leak on Balance Line Union Coupling on 'A' MDAFW Pump;
- AR #469890, Operability Evaluation of the Alternate Seal Injection (ASI) System due to High Temperature in Hot Machine Shop and;
- AR #459372, Tornado Damper CB-Z2SN-1 (Outside Air Intake, Train B) Limit Switch Wired Incorrectly.

b. Findings

No findings were identified.

1R18 Plant Modifications

a. Inspection Scope

The following engineering design package was reviewed and selected aspects were discussed with engineering personnel:

- Engineering Change (EC) #80037, Isolation of Leaking Coil Bank on Containment Air Handler #3 (AH-3)

This document and related documentation were reviewed for adequacy of the associated 10 CFR 50.59 safety evaluation screening, consideration of design parameters, implementation of the modification, post-modification testing, and relevant procedures, design, and licensing documents were properly updated. The inspectors observed ongoing and completed work activities to verify that installation was consistent with the design control documents. This temporary modification isolates a leaking coil bank on AH-3 until the coil can be replaced during the next planned outage.

The inspectors reviewed the following ARs associated with this area to verify that the licensee identified and implemented appropriate corrective actions:

- AR #447426, EC #80037 AH-3 50.59 Requirements
- AR #368589, Containment Cooling System Performance
- AR #471963, AH-3 Cooling Coils Leaking

b. Findings

No findings were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

The inspectors reviewed the following five post-maintenance (PM) activities to verify that procedures and test activities were adequate to ensure system operability and functional capability:

Test Procedure	Title	Related Maintenance Activity	Date Inspected
OST-1211	'A' Auxiliary Feedwater (AFW) Pump Operability Test Quarterly Interval Modes 1-4	Work Order (WO) #1874272, 'A' AFW Pump Balance Line Coupling Leak	May 5, 2011
OPT-1512	Essential Chilled Water Turbopak Units Quarterly Inspection/Checks Modes 1-6	WO #1767823, Replace Listed Chiller Control Panel Relays	May 11, 2011
OST-1216	Component Cooling Water (CCW) System Operability ('A' and 'B' Pumps in Service) Quarterly Interval Modes 1-4	WO #1517715, Limitorque Inspection and Lubrication On 1CC-147 (CCW from 'A' Residual Heat Removal Heat Exchanger Isolation Valve)	June 1, 2011

OST-1074	Motor Operated Valves Thermal Overload and Torque Switch Protection Bypass Test 18 Month Interval Modes 1 -6	WO #1511395, The Bypass Relays Test Switch at Breaker 1A31-SA-14A did not Stay Locked in	June 6, 2011
OST-1085	'A' Emergency Diesel Generator (EDG) Operability Test Semiannual Interval Modes 1-6	WO #1639068, 'A' EDG Governor Oil Change	June 10, 2011

These activities were selected based upon the structure, system, or component's ability to impact risk. The inspectors evaluated these activities for the following: the effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed; acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate; tests were performed as written in accordance with properly reviewed and approved procedures; equipment was returned to its operational status following testing, and test documentation was properly evaluated. The inspectors evaluated the activities against TS and the UFSAR to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with post-maintenance tests to determine whether the licensee was identifying problems and entering them in the corrective action program and that the problems were being corrected commensurate with their importance to safety. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R22 Surveillance Testing

.1 Routine Surveillance Testing

a. Inspection Scope

For the three surveillance tests below, the inspectors observed the surveillance tests and/or reviewed the test results for the following activities to verify the tests met TS surveillance requirements, UFSAR commitments, inservice testing requirements, and licensee procedural requirements. The inspectors assessed the effectiveness of the tests in demonstrating that the SSCs were operationally capable of performing their intended safety functions.

- OPT-1530, Dedicated Shutdown Diesel Generator Operability Test Monthly Interval All Modes on June 14, 2011;
- MST-I0040, Refueling Water Storage Tank Level Calibration on May 27, 2011; and
- OST-1021, Daily Surveillance Requirements, Daily Interval Modes 1 and 2 on

May 31, 2011.

The inspectors reviewed the following AR associated with this area to verify that the licensee identified and implemented appropriate corrective actions:

- AR #461594, Questionable Data Taken during OST-1040 Essential Service Chilled Water System Operability Quarterly Interval Modes 1-6

b. Findings

No findings were identified.

.2 In service Testing (IST) Surveillance

a. Inspection Scope

The inspectors reviewed the performance of OST-1119, Containment Spray Operability Train 'B' Quarterly Interval Modes 1-4 on May 12, 2011, to evaluate the effectiveness of the licensee's American Society of Mechanical Engineers (ASME) Section XI testing program for determining equipment availability and reliability. This surveillance satisfies the IST requirements for the following components:

- 'B' Containment Spray Pump
- 1CT-65, Eductor 'B' Supply Line Check Valve
- 1CT-95, 'B' Containment Spray Pump Recirculation Isolation Valve
- 1CT-25, 'B' Containment Spray Eductor Test Isolation Valve
- 1CT-71, 'B' Containment Spray Pump Suction Isolation Valve
- 1CT-88, 'B' Containment Spray Pump Discharge Isolation Valve
- 1CT-72, 'B' Containment Spray Pump Suction Check Valve

The inspectors evaluated selected portions of the following areas:

- Testing procedures and methods
- Acceptance criteria
- Compliance with the licensee's IST program, TS, selected licensee commitments, and code requirements
- Range and accuracy of test instruments
- Required corrective actions

b. Findings

No findings were identified.

.3 Reactor Coolant System Leak Detection Inspection Surveillance

a. Inspection Scope

The inspectors observed and reviewed the test results for reactor coolant system leak detection surveillance, OST-1026, Reactor Coolant System Leakage Evaluation, Computer Calculation, Daily Interval, Modes 1-4 on May 11, 2011. The inspectors observed in plant activities and reviewed procedures and associated records to determine whether: effects of the testing were adequately addressed by control room personnel or engineers prior to the commencement of the testing; acceptance criteria were clearly stated, demonstrated operational readiness, and were consistent with the system design basis; plant equipment calibration was correct, accurate, and properly documented; and the calibration frequency were in accordance with TSs, the UFSAR, procedures, and applicable commitments; applicable prerequisites described in the test procedures were satisfied; test frequencies met TS requirements to demonstrate operability and reliability; tests were performed in accordance with the test procedures and other applicable procedures; test data and results were accurate, complete, within limits, and valid; equipment was returned to a position or status required to support the performance of its safety functions; and all problems identified during the testing were appropriately documented and dispositioned in the corrective action program. Documents reviewed are listed in the Attachment.

The inspectors reviewed the following AR associated with this area to verify that the licensee identified and implemented appropriate corrective actions:

- AR #464859, Increased OST-1026 Unidentified Leakage

b. Findings

No findings were identified.

1EP6 Emergency Planning Drill Evaluation

a. Inspection Scope

The inspectors observed an Emergency Preparedness Drill conducted on June 28, 2011, to verify licensee self-assessment of classification, notification, and protective action recommendation development in accordance with 10 CFR 50, Appendix E.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

a. Inspection Scope

To verify the accuracy of the PI data reported to the NRC, the inspectors compared the licensee's basis in reporting each data element to the PI definitions and guidance contained in Nuclear Energy Institute (NEI) Document 99-02, Regulatory Assessment Performance Indicator Guideline.

Mitigating Systems Cornerstone

- Safety System Functional Failures

The inspectors reviewed licensee submittals for the Safety System Functional Failures performance indicator for the period from the second quarter 2010 through the first quarter 2011. The inspectors reviewed the licensee's operator narrative logs, operability assessments, maintenance rule records, maintenance work orders, issue reports, event reports and NRC Integrated Inspection reports for the period to validate the accuracy of the submittals. Specific documents reviewed are described in the Attachment.

Barrier Integrity Cornerstone

- Reactor Coolant System (RCS) Specific Activity

The inspectors reviewed licensee submittals for the Reactor Coolant System Specific Activity performance indicator for the period from the second quarter 2010 through the first quarter 2011. The inspectors reviewed the licensee's RCS chemistry samples, TS requirements, issue reports, and event reports for the period to validate the accuracy of the submittals. In addition to record reviews, the inspectors observed a chemistry technician obtain and analyze a reactor coolant system sample. Specific documents reviewed are described in the Attachment.

- Reactor Coolant System Leakage

The inspectors sampled licensee submittals for the Reactor Coolant System Leakage performance indicator for the period from the second quarter 2010 through the first quarter 2011. The inspectors reviewed the licensee's operator logs, RCS leakage tracking data, issue reports, and event reports for the period to validate the accuracy of the submittals. Specific documents reviewed are described in the Attachment.

b. Findings

No findings were identified.

4OA2 Identification and Resolution of Problems

.1 Routine Review of items Entered Into the Corrective Action Program

a. Inspection Scope

To aid in the identification of repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed frequent screenings of items entered into the licensee's corrective action program. The review was accomplished by reviewing daily action request reports.

b. Findings

No findings were identified.

.2 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's 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 screening discussed in Section 4OA2.1 above, licensee trending efforts, and licensee human performance results. The inspectors' review nominally considered the six month period of January 1, 2011, through June 30, 2011, although some examples expanded beyond those dates where the scope of the trend warranted. The review also included issues documented outside the normal CAP in major equipment problem lists, repetitive and/or reworks maintenance lists, departmental problem/challenges lists, system health reports, quality assurance audit/surveillance reports, self assessment reports, and Maintenance Rule assessments. The inspectors compared and contrasted their results with the results contained in the licensee's CAP trending reports. Corrective actions associated with a sample of the issues identified in the licensee's trending reports were reviewed for adequacy.

b. Findings and Observations

No findings were identified. The inspectors observed that the licensee performed adequate trending reviews. The licensee routinely reviewed cause codes, involved organizations, key words, and system links to identify potential trends in the CAP data. The inspectors compared the licensee process results with the results of the inspectors' daily screening.

The inspectors identified that the adverse trend in the area of Human Error prevention previously identified in NRC Integrated Inspection Report 05000400/2010005 continues. Specifically, the failure to adequately implement maintenance activities has resulted in

the inadvertent actuation of safety related systems. The following issues illustrate the continued presence of this trend:

- AR #446658, Control Room Isolation Signal Received Inadvertently; and
- AR #472616, Inadvertent Start of the Turbine Driven Auxiliary Feedwater Pump.

This issue was entered into the licensee's CAP as AR #441282 and AR #454069 to address the need for increased management attention.

.3 Selected Issue Follow-up Inspection: Design Basis Question for EDG Control Air follow-up

a. Inspection Scope

The inspectors selected AR #412546, Design basis question for EDG control air follow-up, for detailed review. This AR was associated with control air pressure during EDG operation. The inspectors reviewed this report to verify that the licensee identified the full extent of the issue, performed an appropriate evaluation, and specified and prioritized appropriate corrective actions. The inspectors evaluated the report against the requirements of the licensee's corrective action program as delineated in corporate procedure CAP-NGGC-0200, Corrective Action Program, and 10 CFR 50, Appendix B.

The inspectors reviewed the following ARs associated with this area to verify that the licensee identified and implemented appropriate corrective actions:

- AR #382543, 1B-SB EDG Starting Air Compressor 1D-NNS, Low Capacity
- AR #382359, Design Basis Question for EDG Control Air

b. Findings

No findings were identified.

4OA5 Other Activities

.1 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period, the inspectors conducted observations of security force personnel and activities to ensure that the activities were consistent with licensee security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours.

These quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors' normal plant status reviews and inspection activities.

b. Findings

No findings were identified.

.2 (Closed) NRC Temporary Instruction 2515/183, "Follow-up to the Fukushima Daiichi Nuclear Station Fuel Damage Event"

a. Inspection Scope

The inspectors assessed the activities and actions taken by the licensee to assess its readiness to respond to an event similar to the Fukushima Daiichi nuclear plant fuel damage event. This included: (1) an assessment of the licensee's capability to mitigate conditions that may result from beyond design basis events, with a particular emphasis on strategies related to the spent fuel pool, as required by NRC Security Order Section B.5.b issued February 25, 2002, as committed to in severe accident management guidelines, and as required by 10 CFR 50.54(hh); (2) an assessment of the licensee's capability to mitigate station blackout (SBO) conditions, as required by 10 CFR 50.63 and station design bases; (3) an assessment of the licensee's capability to mitigate internal and external flooding events, as required by station design bases; and (4) an assessment of the thoroughness of the walkdowns and inspections of important equipment needed to mitigate fire and flood events, which were performed by the licensee to identify any potential loss of function of this equipment during seismic events possible for the site.

b. Findings

Inspection Report 05000400/2011010 (ML111330088) documented detailed results of this inspection activity. Following issuance of the report, the inspectors conducted detailed follow-up on selected issues. No findings were identified during this follow-up inspection.

.3 (Closed) NRC Temporary Instruction 2515/184, "Availability and Readiness Inspection of Severe Accident Management Guidelines (SAMGs)"

On May 27, 2011, the inspectors completed a review of the licensee's severe accident management guidelines (SAMGs), implemented as a voluntary industry initiative in the 1990's, to determine: (1) whether the SAMGs were available and updated, (2) whether the licensee had procedures and processes in place to control and update its SAMGs, (3) the nature and extent of the licensee's training of personnel on the use of SAMGs, and (4) licensee personnel's familiarity with SAMG implementation.

The results of this review were provided to the NRC task force chartered by the Executive Director for Operations to conduct a near-term evaluation of the need for agency actions following the Fukushima Daiichi fuel damage event in Japan. Plant-specific results for the Harris Nuclear Power Plant were provided as an Enclosure to a

memorandum to the Chief, Reactor Inspection Branch, Division of Inspection and Regional Support, dated June 02, 2011 (ML111530328).

b. Findings

No findings were identified.

.4 (Discussed) NRC Temporary Instruction (TI) 2515/177, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems (NRC Generic Letter (GL) 2008-01)"

a. Inspection Scope

The inspectors reviewed the implementation of the licensee's actions in response to GL 2008-01, Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems. The systems reviewed included the emergency core cooling system (ECCS), residual heat removal system (RHR), and the containment spray system (CSS).

The inspectors reviewed the licensing basis of the facility to verify that actions to address gas accumulation were consistent with the operability requirements of the subject systems.

The inspectors reviewed the design of the subject systems to verify that the licensee's actions taken to address gas accumulation were appropriate given the specifics of the functions, configurations, and capabilities. The inspectors reviewed the design and operation of the RHR system to determine if flashing in RHR suction lines would challenge system operability. The inspectors reviewed selected analyses performed by the licensee to verify that methodologies for predicting gas void accumulation, movement, and impact were appropriate. The inspectors verified that the licensee's void acceptance criteria were consistent with NRR's void acceptance criteria. The inspectors performed walkdowns of selected subject systems to verify that the reviews and design verifications conducted by the licensee had drawn appropriate conclusions with respect to piping configurations and pipe slope which could result in gas accumulation.

The inspectors also reviewed testing implemented by the licensee to address gas accumulation. Selected test procedures and completed test results were reviewed to verify that they were appropriate to detect gas accumulations that could challenge subject systems. The inspectors reviewed the specified testing frequencies to verify that the testing intervals had appropriately taken historical gas accumulation events as well as susceptibility to gas accumulation into account. The inspectors reviewed selected procedures used for filling and venting following conditions which may have introduced voids into the subject systems to verify that the procedures addressed testing for such voids and provided processes for their reduction or elimination.

The inspectors reviewed selected licensee's assessment reports, CAP documents, and trending data to assess the effectiveness of the licensee's CAP when addressing the issues associated with GL 2008-01. In addition, the inspectors verified that selected corrective actions identified in the licensee's 9-month and supplemental reports were documented. The inspectors also verified that commitments were included in the CAP.

b. Findings:

Introduction: The inspectors identified a Green non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to establish adequate instructions to identify accumulated gas in Emergency Core Cooling Systems (ECCS). Specifically, the operations surveillance test procedure, OST-1107, "ECCS flow path and piping filled verification monthly interval – Modes 1-2-3-4-5," Rev 29, could allow accumulated gases inside ECCS to be vented without being quantified and evaluated for potential adverse impacts on system operability.

Description: GL 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems" states, in part, that "the surveillance requirement should reasonably ensure that gas has not affected operability and will not likely accumulate in sufficient quantity to jeopardize operability before the next surveillance". The licensee performs procedure OST-1107, "ECCS flow path and piping filled verification – Monthly Interval – Modes 1-2-3-4-5," Rev 29, to meet Technical Specifications (TS) Surveillance Requirement (SR) 4.5.2.b.1 which verifies that ECCS piping is full of water by venting system piping high points. Procedure OST-1107 does not have location specific acceptance criteria for voids found; hence, any gas found has to be properly quantified, identified, and evaluated in context of its location to determine the impact on the system. Because Harris Nuclear Plant does not have location specific acceptance criteria when performing OST-1107, the inspectors determined that sensitive identification and accurate determination of void volumes in the system is critical to determining the source and impact of gas on the system.

OST-1107 utilizes a vent rig to ensure that the high pressure fluid released during the venting process is safely collected. The vent rig consists of a vented clear plastic container that is connected to the vent path via a clear tube. The procedure directs the operators to confirm ECCS piping completely filled with water by opening designated vent valves and observing a steady stream of water from each vent point. OST-1107 states that if any gas is observed during the venting sequence, then the operator is to shut the vent valve. If gas was detected, the procedure directs the initiation of an NCR and the performance of an ultrasonic test (UT) to determine the size of the void. The inspectors noted that the vent rig does not utilize a measuring device to quantify the void.

The inspectors determined that while slowly opening the vent valve, it would be difficult for the operator to know at what point the vent path was open to the vent rig. Without a measuring device to determine gas flow before water flow, the operator needs to know the instance at which the vent path is open to the vent rig. The inspectors also

determined that OST-1107 is mostly performed inside the auxiliary building where elevated background noise levels exist from normally operating equipment. This background noise could lead to the operator not being unable to recognize the presence of gas while opening the vent valve. The inspectors noted that OST-1107 has never identified a void through venting, even though UT, performed as part of the PM program, has identified voids on multiple instances at locations tested by OST-1107.

The inspectors concluded that OST-1107 was not adequate to detect amounts of gas that could reasonably challenge the operability of ECCS and therefore adversely impact the licensee's ability to evaluate the as-found condition as a basis for continued system operability. The licensee entered the issue into their corrective action program as NCRs 459683 and 459572. The corrective actions included the performance of UTs at 100% of the vented locations prior to venting the system to quantify and evaluate the effects of any gas discovered by the UTs.

Analysis: The inspectors determined that licensee's failure to establish adequate instructions to identify accumulated gas in ECCS was a performance deficiency. The finding was more than minor because if left uncorrected, the performance deficiency had the potential to lead to a more significant safety concern. Specifically, if left uncorrected the potential existed for an unacceptable void that could affect ECCS operability to remain undetected. The inspectors screened this finding in accordance with Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," Attachment 4, "Phase 1 - Initial Screening and Characterization of Findings," and determined the finding was of very low safety significance (Green) since it was a deficiency determined not to have resulted in the loss of operability or functionality as determined by the review of UTs performed by the licensee through the PM program. While the PM UTs were performed at a lower frequency, the results provided reasonable assurance regarding operability of the ECCS. The inspectors determined that the finding has a cross-cutting aspect in the area of problem identification and resolution because the licensee failed to implement operating experience from GL 2008-01 into station procedures (P.2(b)). Specifically, GL 2008-01 stated, in part, that "Volumes that are close to impacting operability may require more sophisticated measurement."

Enforcement: 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that "activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances." Contrary to the above, since August 02, 2010, the licensee failed to prescribe instructions for a TS required procedure that was appropriate for the circumstances. Specifically, procedure OST-1107 was not adequate to detect amounts of gas that could reasonably challenge the operability of ECCS. Because this violation was of very low safety significance and it was entered into the licensee's CAP as NCRs 459683 and 459572, this violation is being treated as an NCV, consistent with the Enforcement Policy and is identified as NCV 05000400/2011003-02, Inadequate Procedure for Identifying Accumulated Gas in ECCS systems.

c. Observations:

The licensee is conducting a reanalysis of calculation 3-E-8-012 (Water Hammer Analysis on Containment Spray Piping, Rev. 0) due to the inspectors' concerns with the opening times of containment isolation valves. The licensee has performed a preliminary calculation and determined that there are no concerns with the operability of the CSS. TI-2515/177 will be left open pending the inspectors' review of the reanalysis of calculation 3-E-8-012.

4OA6 Management Meetings

.1 Exit Meeting Summary

On July 19, 2011, the inspectors presented the inspection results to Mr. Jefferson, and other members of the licensee staff. The inspectors confirmed that proprietary information was not provided or examined during the inspection period.

Additionally, an interim exit with licensee management and staff was conducted on April 15, 2011, to discuss the results of the TI-2515/177 inspection.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel

R. Andrews, System Engineer
K. Bass, Licensing Engineer
J. Caves, Supervisor, Licensing/Regulatory Programs (Acting)
J. Cook, Outage and Scheduling (Acting)
D. Corlett, Manager, Support Services (Acting)
J. Doorhy, Licensing Specialist
J. Dufner, Manager, Engineering
D. Griffith, Training Manager
B. Jefferson, Vice President Harris Plant
E. Kapopoulos, Plant General Manager
B. McCabe, Manager, Nuclear Oversight
M. Parker, Superintendent, Radiation Protection
J. Robinson, Superintendent, Environmental and Chemistry
T. Slake, Manager, Security
J. Warner, Manager, Operations (Acting)

NRC personnel

R. Musser, Chief, Reactor Projects Branch 4, Division of Reactor Projects, Region II

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000400/2011003-02	NCV	Inadequate Procedure for Identifying Accumulated Gas in ECCS Systems (Section 4OA5.4)

Opened

05000400/2011003-01	URI	Offsite Power Supply Cables Submerged in Water (Section 1R01)

Closed

05000400/2515/183	TI	Follow-up to the Fukushima Daiichi Nuclear Station Fuel Damage Event (Section 4OA5.2)
05000400/2515/184	TI	Availability and Readiness Inspection of Severe Accident Management Guidelines (SAMGs) (Section 4OA5.3)

Discussed

05000400/2515/177	TI	Managing Gas Accumulation in Emergency Core and Containment Spray Systems (NRC Generic Letter (GL) 2008-01) (Section 4OA5.4)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures

SORMC-NUC-040, Harris Plant Voltage Support and Coordination, Rev 15
OMM-001, Operations Administrative Requirements
AOP-028, Grid Instability
NGGM-IA-0003, Transmission Interface Agreement For Operation, Maintenance, And Engineering Activities At Nuclear Plants, Rev.9
SORMC-VAR-010, Generator Operation for Maintaining Network Voltage Schedules, Rev. 20
AP-300, Severe Weather
AP-301, Seasonal Weather Preparations and Monitoring
EGR-NGGC-0108, Fleet Engineering Program: Cable Aging Management
EGR-NGGC-0507, Cable Aging Management Program
Okonite FO-02-8776, 230kV Oil-Filled Cable System
Instruction Bulletin P-588, 230-kV Cable Termination

Work Orders

WO #1461990, Test Integrity of Cable Jacket for the Oil Filled Cable
WO #1461991, Test Integrity of Cable Jacket for the Oil Filled Cable

Section 1R04: Equipment Alignment

Partial System Walkdown

Auxiliary Feedwater system:
Procedure OP-137, Auxiliary Feedwater System,
Drawing 2165-S-0544, Simplified Flow Diagram Auxiliary Feedwater System

ESCW system:
Procedure OP-148, ESCW System,
Drawing 2165-S-0996, Simplified Flow Diagram ESCW System

Complete System Walkdown

Procedure OP-155, Diesel Generator Emergency Power System
Design Basis Document-201, Emergency Diesel Generator System
Drawing 5-S-0633-S02, Simplified Flow Diagram Emergency Diesel Generator System
FSAR section 9.5.5, Emergency Diesel Generator System
WR #471805, Cylinder L-8 Kiene Valve Has A Whisping Leak
WR #459998, ‘B’ EDG On-Engine Start Air Valve Re-Torque

WO #1852042, 'B' EDG On-Engine Start Air Valve Re-Torque
WO #1865551, Refill 'B' EDG Jacket Water
WO #1346114, 'B' EDG Control Air Pressure Needs To Be Adjusted To 60 PSIG

Section 1R05: Fire Protection
FPP-001 Fire Protection Program Manual
FIR-NGGC-0009, NFPA 805 Transient Combustibles And Ignition Source Controls Program
FPP-013, Fire Protection – Minimum Requirements, Mitigating Actions and Surveillance Requirements
FPP-012-02-RAB261, Reactor Auxiliary Building Elevation 261 Fire Pre-Plan
FPP-012-03-FHB, Fuel Handling Building Fire Pre-Plan
FPP-012-02-RAB305-324, Reactor Auxiliary Building Elevations 305 and 324 Fire Pre-Plan

Section 1R06: Flood Protection Measures
UFSAR Sections
2.4.10, Flooding Protection Requirements
3.6A.6, Flooding Analysis

Calculations
Calculation #PRA-F/E-6, RAB Unit 1Elevation 261 Compartment Flood Analysis

Procedures
AOP-022, Loss of Service Water
OP-139, Service Water System
WO #1816607-07, M512C-SA Repair/Replace Ground Connections
WO #1816607-04, M72A-SA Repair/Replace Ground Connections

Section 1R12: Maintenance Effectiveness
NUMARC 93-01, Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants
ADM-NGGC-0101, Maintenance Rule Program

Section 1R13: Maintenance Risk Assessments and Emergent Work Evaluation
OMP-003, Outage Shutdown Risk Management
OMM-001, Conduct of Operations
WCP-NGGC-1000, Conduct of On-Line Work Management
OPS-NGGC-1311, Protected Equipment
WCM-001, On-line Maintenance
OP-134, Condensate System
OP-143.03, Demineralized Water System
Standing Instruction 11-010, Operations during DWST Bladder Replacement
ADM-NGGC-0006, Online Equipment Out of Service (EOOS) Models for Risk Assessment

Section 1R15: Operability Evaluations
OPS-NGGC-1305, Operability Determinations

Section 1R18: Plant Modifications
Design Basis Document DBD-136, Containment Ventilation and Cooling Systems
EGR-NGGC-0005, Engineering Change
ADM-NGGC-0106, Configuration Management Program Implementation

Section 4OA1: Performance Indicator Verification
NEI 99-02, Regulatory Assessment Performance Indicator Guideline
Calculation HNP-F/PSA-0068, NRC Mitigating System Performance Index Basis Document for Harris Nuclear Plant

Section 4OA2: Identification and Resolution of Problems
CAP-NGGC-0200, Corrective Action Program
CAP-NGGC-0205, Condition Evaluation and Corrective Action Process
CAP-NGGC-0206, Performance Assessment and Trending

Section 4OA5: Other
Licensing Basis Documents
ML081360497, Shearon Harris Nuclear Plant, Unit No. 1 - Three Month Response to NRC Generic Letter 2008-01, Managing Gas Accumulation in Emergency Core Cooling; Decay Heat Removal, and Containment Spray Systems, May 9, 2008
ML082910295, Shearon Harris Nuclear Plant, Unit No. 1 - Nine Month Response to NRC Generic Letter 2008-01, Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems, October 14, 2008
ML092250226, Shearon Harris Nuclear Plant, Unit No. 1 – Nine-Month Supplemental (Post-Outage) Response to NRC Generic Letter 2008-01, Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems, August 10, 2009
ML100430444, Shearon Harris Nuclear Plant, Unit No. 1 - Response to Request for Additional Information Regarding Generic Letter 2008-01, January 28, 2010
ML1005503980, Closure Letter for Shearon Harris Nuclear Plant Unit No. 1 response to Generic Letter 2008-01, Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems, March 1, 2010

Procedures
APP-ALB-001, Main Control Board, Rev. 16
GP-002, Normal Plant Heat-up from Cold Solid to Hot Subcritical - MODE 5 to 3 -
OP-111, Residual Het Removal System, Rev. 52
OP-112, Containment Spray System, Rev. 36
OPS-NGGC-1305, Operability Determinations, Rev 4
OPS-NGGC-1309, System Drain, Fill and Vent Procedure, Rev. 0
OST-1107, ECCS Flow Path And Piping Filled Verification Monthly Interval Modes 1-2-3-4-5, Rev. 29
PLP-400, Post Maintenance Testing, Rev. 49

Drawings
CAR-2165-G-0050, Flow Diagram Containment Spray System Unit 1, Rev. 26
CAR-2165-G-116, Containment Spray Piping – Reactor Auxiliary Building - Plan EL. 190.00' – Unit 1, Rev. 13

CAR-2165-G-117, Containment Spray Piping – Reactor Auxiliary Building – Plan EL. 236.00' – Unit 1, Rev. 12
CAR-2165-G-118, Containment Spray Piping – Reactor Auxiliary Building - Partial Plan & Sections - Unit 1, Rev. 15
CAR-2165-G-119, Containment Spray Piping – Containment Building Plan & Sections, Unit 1, Rev. 14
CPL-2165-S-0550, Simplified Flow Diagram Containment Spray System Unit 1, Rev. 17
CPL-2165-S-1300, Simplified Flow Diagram Reactor Coolant System Unit 1 (Sheet 1), Rev. 23
CPL-2165-S-1305, Simplified Flow Diagram Chemical & Volume Control Sys Unit 1 (Sheet 3), Rev. 23
CPL-2165-S-1308, Simplified Flow Diagram Safety Injection System Unit 1, Rev. 12
CPL-2165-S-1310, Simplified Flow Diagram Safety Injection System Unit 1 (Sheet 3), Rev. 12
CPL-2165-S-1324, Simplified Flow Diagram Residual Heat Removal Unit 1, Rev. 11
D-74-49, Containment Spray Additive Tank, Rev. 8

Completed Procedures
GP-002, Normal Plant Heat-up from Cold Solid to Hot Subcritical - MODE 5 to 3 -, Rev. 49 (Completed 11/7/2010)

Completed Surveillance Procedures
OST-1107, ECCS Flow Path And Piping Filled Verification Monthly Interval Modes 1-2-3-4-5, (Completed 4/10/10, 5/08/10, 6/05/10, 7/03/10, 7/31/10, 8/28/10, 9/26/10, 11/07/10, 11/20/10, 12/18/10, 1/15/11, 2/13/11, 3/19/11)

Calculations
3-E-8-012, Water Hammer Analysis on Containment Spray Piping, Rev. 0
CT-0063, Void Size Acceptance Criteria for Presence of Air within the Containment Spray Additive System, Rev. 0
FAI/08-78, Methodology for evaluating water hammer in the containment spray header and hot leg piping during switchover piping, Rev. 0
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