



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

October 24, 2012

Mr. George T. Hamrick  
Vice President  
Shearon Harris Nuclear Power Plant  
Carolina Power and Light Company  
P.O. Box 165, Mail Code: Zone 1  
New Hill, NC 27562-0165

**SUBJECT: SHEARON HARRIS NUCLEAR POWER PLANT - NRC INTEGRATED  
INSPECTION REPORT 05000400/2012004 AND 05000400/2012502**

Dear Mr. Hamrick:

On September 30, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Shearon Harris reactor facility Unit 1. The enclosed inspection report documents the inspection results which were discussed on October 17, 2012, with you and other members of your staff.

The inspection 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.

One self-revealing finding and one NRC identified finding of very low safety significance (Green) were identified during this inspection. These findings were determined to involve a violation of NRC requirements. Further, a licensee-identified violation which was determined to be of very low safety significance is listed in this report. The NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violations or significance of these NCVs, 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 Resident Inspector at Shearon Harris facility.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region II; and the NRC Resident Inspector at Shearon Harris facility.

G. Hamrick

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

Sincerely,

*/R/*

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

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

Enclosure: NRC Inspection Report 05000400/2012004 and 05000400/2012502  
w/Attachment: Supplemental Information

cc w/encl: (See page 3)

G. Hamrick

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cc w/encl:  
Brian Bernard  
Manager, Nuclear Services and EP  
Nuclear Protective Services  
Shearon Harris Nuclear Power Plant  
Electronic Mail Distribution

Brian C. McCabe  
Manager, Nuclear Oversight  
Shearon Harris Nuclear Power Plant  
Progress Energy  
Electronic Mail Distribution

George T. Hamrick  
Vice President  
Carolina Power and Light Company  
Shearon Harris Nuclear Power Plant  
Electronic Mail Distribution

Lara S. Nichols  
Deputy General Counsel  
Duke Energy Corporation  
Electronic Mail Distribution

M. Christopher Nolan  
Director - Regulatory Affairs  
General Office  
Duke Energy Corporation  
Electronic Mail Distribution

Robert J. Duncan II  
Senior Vice President  
Progress Energy  
Electronic Mail Distribution

Sean T. O'Connor  
Manager, Support Services  
Shearon Harris Nuclear Power Plant  
Electronic Mail Distribution

Donald L. Griffith  
Training Manager  
Shearon Harris Nuclear Power Plant  
Progress Energy  
Electronic Mail Distribution

R. Keith Holbrook  
Manager, Support Services  
Shearon Harris Nuclear Power Plant  
Electronic Mail Distribution

David H. Corlett  
Supervisor  
Licensing/Regulatory Programs  
Progress Energy  
Electronic Mail Distribution

David T. Conley  
Senior Counsel  
Legal Department  
Progress Energy  
Electronic Mail Distribution

Donna B. Alexander  
Manager, Nuclear Regulatory Affairs  
(interim)  
Progress Energy  
Electronic Mail Distribution

John H. O'Neill, Jr.  
Shaw, Pittman, Potts & Trowbridge  
2300 N. Street, NW  
Washington, DC 20037-1128

Joseph W. Donahue  
Vice President  
Nuclear Oversight  
Progress Energy  
Electronic Mail Distribution

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

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G. Hamrick

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(cc w/encl continued)  
Public Service Commission  
State of South Carolina  
P.O. Box 11649  
Columbia, SC 29211

Chairman  
North Carolina Utilities Commission  
Electronic Mail Distribution

Terrence E. Slake  
Manager  
Nuclear Plant Security  
Shearon Harris Nuclear Power Plant  
Electronic Mail Distribution

Robert P. Gruber  
Executive Director  
Public Staff - NCUC  
4326 Mail Service Center  
Raleigh, NC 27699-4326

Chair  
Board of County Commissioners of Wake  
County  
P.O. Box 550  
Raleigh, NC 27602

Ernest J. Kapopoulos Jr.  
Plant General Manager  
Carolina Power and Light Company  
Shearon Harris Nuclear Power Plant  
Electronic Mail Distribution

Chair  
Board of County Commissioners of  
Chatham County  
P.O. Box 1809  
Pittsboro, NC 27312

G. Hamrick

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Letter to George T. Hamrick from Randall A. Musser dated October 24, 2012

SUBJECT: SHEARON HARRIS NUCLEAR POWER PLANT - NRC INTEGRATED  
INSPECTION REPORT 05000400/2012004 AND 05000400/2012502

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C. Evans, RII

L. Douglas, RII

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**U. S. NUCLEAR REGULATORY COMMISSION**

**REGION II**

Docket No.: 50-400

License No.: NPF-63

Report No.: 05000400/2012004, 05000400/2012502

Licensee: Carolina Power and Light Company

Facility: Shearon Harris Nuclear Power Plant, Unit 1

Location: 5413 Shearon Harris Road  
New Hill, NC 27562

Dates: July 1, 2012 through September 30, 2012

Inspectors: J. Austin, Senior Resident Inspector  
P. Lessard, Resident Inspector  
J. Worosilo, Project Engineer (Section 4OA2)  
M. Speck, Senior Emergency Preparedness Inspector (Section 1EP2,  
1EP3, 1EP5, 4OA1, 4OA6)  
W. Loo, Senior Health Physicist (Section 1EP2, 1EP3, 1EP5, 4OA1,  
4OA6)  
D. Berkshire, Emergency Preparedness Inspector (Section 1EP2, 1EP3,  
1EP5, 4OA1, 4OA6)

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

Enclosure

## SUMMARY OF FINDINGS

IR 05000400/2012004, 05000400/2012502: Carolina Power and Light Company; on July 1, 2012 – September 30, 2012; Shearon Harris Nuclear Power Plant, Unit 1; Plant Modifications, Identification and Resolution of Problems.

The report covered a three month period of inspection by resident inspectors, two emergency preparedness inspectors, one senior health physicist, and a project engineer. One self-revealing finding and one NRC identified finding of very low safety significance (Green) were 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 NCV of 10 CFR Part 50, Appendix B, Criterion XVI, Corrective Action, when the licensee failed to adequately correct a previously identified issue associated with the performance of OST-1081, "Containment Visual Inspection when Containment Integrity is Required." Specifically, on June 3, 2012 during an independent containment closeout inspection by the NRC resident inspectors, cables were identified as not having been analyzed for the impact on the operation of the containment sumps. The licensee did not identify or reconcile the unanalyzed cables in containment during the performance of OST-1081. The licensee removed a large portion of the cabling and then completed an operability evaluation, while in mode 3, on June 6, 2012 for the cables that remained. The evaluation concluded that the containment sump was fully operable, but with reduced margin because of the cables. The cables were further analyzed and recorded in Engineering Change 87249, with a similar conclusion. The issue was placed into the corrective action program (CAP) as action request (AR) #566201.

The licensee's failure to adequately identify and take prompt corrective actions to evaluate temporary cables in containment during OST-1081, which had not been previously analyzed was identified as a performance deficiency. The performance deficiency was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems Cornerstone and it adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, it could potentially cause one or more Residual Heat Removal (RHR), Containment Spray (CT) pumps, and associated Emergency Core Cooling Systems (ECCS) trains to be inoperable in the event that the containment sump became clogged and lost the required Net Positive Suction Head (NPSH) to the pump, during certain accidents. Using IMC 0609, Significance Determination Process, this finding was determined to be of very low safety significance because it was not a design or qualification deficiency, did not

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represent an actual loss of function of at least a single train for greater than the Allowed Out-of-service Time (AOT) or two separate safety systems out-of-service for greater than the AOT, did not result in a loss of safety function of one or more non-Technical Specification (TS) trains of equipment designated as risk significant for greater than 24 hours, and did not involve the loss or degradation of equipment or function specifically designed to mitigate a seismic, flooding, or severe weather initiating event (e.g., seismic snubbers, flooding barriers, tornado doors). The finding had a cross-cutting aspect of Evaluation of Identified Problems, as described in the Corrective Action component of the Problem Identification and Resolution cross-cutting area, because the licensee did not implement adequate corrective actions to prevent recurrence of unanalyzed material left in containment following the performance of OST-1081 (P.1(c)). (Section 1R18)

Green: A self-revealing Green NCV of Technical Specification (TS) 6.8.1, Procedures, was identified for the licensee's failure to develop an adequate procedure for maintenance on an oil filled cable. Specifically, the licensee failed to provide adequate instructions to prevent causing additional damage to the cable which resulted in the lockout of the "B" Startup Transformer (SUT) on June 25, 2012. This also resulted in unavailability of the preferred power source for the "B" safety related equipment for over two days. As corrective actions, the licensee repaired the cable, restored oil pressure and returned the "B" SUT to its normal standby configuration. Additionally, the licensee performed an investigation which concluded that the cable had been damaged at the site of a previous repair when it was handled during maintenance. The issue was placed into the CAP as AR #545920.

The licensee's failure to develop an adequate procedure to ensure proper handling of the cable and prevent inadvertently causing damage was a performance deficiency. The performance deficiency was more than minor because it was associated with the Procedure Quality attribute of the Mitigating Systems cornerstone, and it affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, it resulted in the lockout of the "B" SUT and unavailability of the preferred power source for the "B" safety related equipment for over two days. Using IMC 0609, Significance Determination Process, this finding was determined to be of very low safety significance because it was not a design or qualification deficiency, did not represent an actual loss of function of at least a single train for greater than the TS AOT or two separate safety systems out-of-service for greater than the AOT, did not result in a loss of safety function of one or more non-TS trains of equipment designated as risk significant for greater than 24 hours, and did not involve the loss or degradation of equipment or function specifically designed to mitigate a seismic, flooding, or severe weather initiating event (e.g., seismic snubbers, flooding barriers, tornado doors). The finding had a cross-cutting aspect of Human Error Prevention, as described in the Resources component of the Human Performance cross-cutting area, because the licensee did not develop adequate procedures to prevent further damage while performing maintenance on the SUT cables (H.2(c)). (Section 4OA2)

B. Licensee-Identified Violations

A violation of very low safety significance which was identified by the licensee was reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's CAP. That violation and corrective action tracking number are listed in Section 40A7 of this report.

## REPORT DETAILS

### Summary of Plant Status

Unit 1 operated at or near Rated Thermal Power (RTP) for the entire inspection period, with the following exception; on July 13, 2012, the unit reduced power to 75 percent to repair the main turbine governor valve number three which was oscillating. After the repair, the unit returned to RTP later that same day.

#### 1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

#### 1R01 Adverse Weather Protection

##### .1 Readiness For Impending Adverse Weather Condition

###### a. Inspection Scope

On September 18, 2012, a tornado watch was issued for the plant area and inspectors reviewed the licensee's overall preparations/protection for impending adverse weather conditions. The inspectors walked down areas of the plant susceptible to high winds, including the licensee's emergency alternating current (AC) power systems. 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 also toured the plant grounds to look for any loose debris that could become missiles during a tornado. The inspectors evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant. Additionally, the inspectors reviewed the Updated Final Safety Analysis Report (UFSAR) and performance requirements for systems selected for inspection, and verified that operator actions were appropriate as specified by plant specific procedures. The inspectors also reviewed a sample of CAP items to verify that the licensee identified adverse weather issues at an appropriate threshold and dispositioned them through the CAP in accordance with station corrective action procedures.

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

- AR #561945, Tornado Warning Plan is Unclear

###### b. Findings

No findings were identified.

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## 1R04 Equipment Alignment

### .1 Quarterly Partial System Walkdowns

#### a. Inspection Scope

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

- “A” Emergency Diesel Generator (EDG) while the “B” EDG was unavailable due to maintenance on July 20, 2012;
- “A” Spent Fuel Pool Cooling (SFPC) system while the “B” SFPC system was unavailable due to maintenance on September 18, 2012; and
- “B” Safety Related Switchgear system while the “A” EDG was in a maintenance outage on September 26, 2012.

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, 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 CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment.

#### b. Findings

No findings were identified.

## 1R05 Fire Protection

### .1 Quarterly Resident Inspector Tours

#### a. Inspection Scope

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

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- “A” Diesel, 261’ Elevation
- “B” Diesel, 261’ Elevation
- Diesel Fuel Oil (DFO) Transfer Pump Area
- DFO Storage Building Yard Area
- Rod Control Cabinet Room
- Main Control Room, Auxiliary Relay Room and Computer 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.

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program

.1 Quarterly Review

a. Inspection Scope

On July 31, 2012, the inspectors observed a crew of licensed operators in the plant’s simulator during licensed operator regualification examinations 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 respond to a loss of coolant casualty. 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.

b. Findings

No findings were identified.

.2 Licensed Operator Performance in the Actual Plant/Main Control Room

a. Inspection Scope

On, July 13, 2012, the inspectors observed operators in the plant's main control room during power ascension from 75 percent following Main Turbine Governor Valve 3 repair. The inspectors evaluated the following areas:

- Operator compliance and use of plant procedures, including procedure entry and exit, performing procedure steps in the proper sequence, procedure place-keeping, and technical specification entry and exit;
- Control board/in-plant component manipulations;
- Communications between crew members;
- Use and interpretation of plant instruments, indications, and alarms; diagnosis of plant conditions based on instruments, indications, and alarms;
- Use of human error prevention techniques, such as pre-job briefs and peer checking;
- Documentation of activities, including initials and sign-offs in procedures, control room logs, technical specification entry and exit, entry into out-of-service logs; and
- Management and supervision of activities, including risk management and reactivity management.

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 CAP 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 #548218, Evaluate “C” Plant Air Compressor Starting Circuitry
- AR #551640, Component Cooling Water Isolation Valve will not Open
- AR #552433, “A” EDG Lube Oil Heater Remained Energized

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;
- Counting unavailability for performance of maintenance;
- 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) are appropriate and adequate goals and corrective actions for systems classified as (a)(1).

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors reviewed the licensee's evaluation and management of plant risk for the six 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:

- Yellow risk activity while reducing power to 75 percent to repair Main Turbine Governor Valve number three on July 13, 2012;
- Emergent risk assessment for the trip of “B” EDG on July 18, 2012. Risk remained green;
- Yellow risk activity for scheduled work on the Chemical Volume Control System on July 30, 2012;
- Elevated green risk activity due to drilling in the switchyard to support future installation of a plant modification on August 29, 2012;
- Qualitative yellow risk condition when the plant was operated with the “A” feed regulating valve in manual due to testing on September 4, 2012; and
- Elevated risk evolution due to maintenance on a SFPC pipe on September 18, 2012.

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.

b. Findings

No findings were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors selected the following five potential operability issues 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 #561532, "A" Chiller Oil Leak
- AR #559790, Main Steam Piping Snubber has Oil Leak
- AR #563956, Clogged Orifice in a Pneumatic Control Line of the "A" EDG
- AR #559788, Inadequate Thread Engagement on Four Bolts for a Safety Injection Pressure relief Valve (1SI-330)
- AR #550278, "B" Pressurizer Heater Backup Group Breaker Tripped

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

- AR #562556, Operability Determination for AR #561532 Needed Revision to Account for Freon Leakage
- AR #564728, Two Operability Evaluations on the "A" EDG had Different Results

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:

- EC #87249, Permanent Modification, Coaxial Cables in Containmentment

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. The modification analyzed the impact of the cables on the emergency core cooling sumps and determined why the cables were acceptable to remain in containment. The function of the cables is to support monitoring for thermal stratification of the reactor coolant system.

b. Findings

Introduction: The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XVI, Corrective Action, when the licensee failed to correct a previously identified issue associated with the performance of containment visual inspection when containment integrity is required (OST-1081). Specifically, on June 3, 2012, during an independent containment closeout inspection by the NRC resident inspectors, cables were identified as not having been analyzed for the impact on the operation of the containment sumps. The licensee did not identify or reconcile the unanalyzed cables in containment during the performance of OST-1081.

Description: At the conclusion of Refueling Outage 17 (RFO-17), while in Mode 5 on June 3, 2012, the NRC resident inspectors performed an independent visual closeout inspection of the containment. During this walk down, the inspectors identified hundreds of feet of cable that were not in conduit or trays and appeared to be temporary, to support testing. The inspectors provided the general locations of the cables to the licensee and they entered the issue into their CAP (AR# 541170). When the licensee performed OST-1081 in preparations for mode change, they did not identify the cables as an issue or exception to their surveillance test. After the inspectors identified the issue, the licensee performed an initial evaluation of the cables and determined they were not temporary. However, subsequent review by the inspectors and the licensee identified that the cables were temporary and had not been evaluated relative to their potential impact on the containment sump during certain accident conditions and had been in containment since the 1990s. The licensee removed a large portion of the cabling and then completed an operability evaluation, while in mode 3, on June 6, 2012, for the cables that remained. The evaluation concluded that the containment sump was fully operable, but with reduced margin because of the cables. The cables were further analyzed and recorded in Engineering Change 87249, with a similar conclusion.

OST 1081 performs a visual inspection, prior to establishing containment integrity, to verify that no loose debris is present in containment that could be transported to the containment sump and cause restriction of emergency core cooling systems pump

suctions during certain accident conditions. A similar instance was identified (AR# 432131) at the conclusion of RFO-16, when the NRC walk down revealed items, after the performance of OST-1081, that were not within the design basis to remain in containment following certain accidents.

Analysis: Failure to adequately identify (OST-1081) and take prompt corrective actions to evaluate temporary cables in containment, which had not been previously analyzed was identified as a performance deficiency. The performance deficiency was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems Cornerstone and it adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, it could potentially cause one or more RHR, CT pumps, and associated ECCS trains to be inoperable in the event that the containment sump became clogged and lost the required NPSH to the pump, during certain accidents. Using IMC 0609, Significance Determination Process, this finding was determined to be of very low safety significance because it was not a design or qualification deficiency, did not represent an actual loss of function of at least a single train for greater than the AOT or two separate safety systems out-of-service for greater than the AOT, did not result in a loss of safety function of one or more non-TS trains of equipment designated as risk significant for greater than 24 hours, and did not involve the loss or degradation of equipment or function specifically designed to mitigate a seismic, flooding, or severe weather initiating event (e.g., seismic snubbers, flooding barriers, tornado doors). The finding had a cross-cutting aspect of Evaluation of Identified Problems, as described in the Corrective Action component of the Problem Identification and Resolution cross-cutting area, because the licensee did not implement adequate corrective actions to prevent recurrence of unanalyzed material left in containment following the performance of OST-1081 (P.1(c)).

Enforcement: 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that conditions adverse to quality shall be promptly identified and corrected. Contrary to this requirement, on June 3, 2012, during the performance of OST-1081, the licensee did not identify or reconcile the unanalyzed cables in containment.. The licensee took corrective action by removing a large portion of the cables and performing an Engineering Change for those that remained. Because the finding is of very low safety significance and has been entered into the licensee's CAP as AR #566201, this violation is being treated as an NCV consistent with the Enforcement Policy and is designated as NCV 05000400/2012004-01, "Failure to Adequately Perform Containment Visual Inspection when Containment Integrity is Required."

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:

<u>Procedure</u>	<u>Title</u>	<u>Related Maintenance Activity</u>	<u>Date</u>

OP-155	Emergency Diesel Generator System	WO #2113523, #5 Cylinder Head and Push Rod Replacement	July 21, 2012
OP-112	Containment Spray System	Work Order (WO) #1870967, Stem Lube of "A" Containment Spray Pump Suction Valve from Refueling Water Storage Tank (1CT-26)	August 1, 2012
OP-139	Emergency Service Water (ESW) System	WO #2047598, ESW Auxiliary Reservoir Traveling Screen Motor Bearing Replacement	September 11, 2012
OST-1215	Train "B" ESW Operability Test, Quarterly Interval, Modes 1-6	WO #2038836 Solenoid Replacement for Containment Fan Cooler Return (1SW-118)	September 13, 2012
OST-1007	Safety Injection System Operability Test, Quarterly Interval, Modes 1-4	WO #1935763, "C" Charging Safety Injection Pump Recirculation Isolation Valve (1CS-210) Inspection	September 19, 2012

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 four 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, in-service 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.

- OST-1095, Sequencer Block Circuit and Containment Fan Cooler Testing Train “B” Quarterly Interval, All Modes on July 9, 2012;
- OST-1013, “A” Emergency Diesel Generator Operability Test Monthly Interval, Modes 1-6 on August 30, 2012;
- MST-I0320, “B” Solid State Protection System Actuation Logic and Master Relay Test on August 8, 2012; and
- MST-0031, “C” Steam Generator Narrow Range Level Calibration on September 4, 2012.

b. Findings

No findings were identified.

2. In service Testing (IST) Surveillance

a. Inspection Scope

The inspectors reviewed the performance of OST-1411, Turbine Driven Auxiliary Feedwater (TDAFW) Pump Operability Test Quarterly Interval Mode 1, 2, 3 on September 17, 2012 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 throughout the AFW system:

- 1CE-56, Suction Check Valve to TDAFW pump
- 1MS-71, Main Steam Line B to TDAFW pump check valve
- 1MS-73, Main Steam Line C to TDAFW pump check valve
- 1AF-110, TDAFW pump recirculation check valve
- 1AF-204 and 1AF-136 (Check Valves TDAFW to SG A)
- 1AF-205 and 1AF-142 (Check Valves TDAFW to SG B)
- 1AF-206 and 1AF-148 (Check Valves TDAFW to SG C)
- TDAFW Governor Valve and the Trip/Throttle 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.

Cornerstone: Emergency Preparedness

1EP2 Alert and Notification System Evaluation

a. Inspection Scope

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

The inspectors reviewed various documents which are listed in the Attachment. This inspection activity satisfied one inspection sample for the alert and notification system on a biennial basis.

b. Findings

No findings were identified.

1EP3 Emergency Response Organization Staffing and Augmentation System

a. Inspection Scope

The inspectors reviewed the licensee's Emergency Response Organization (ERO) augmentation staffing requirements and process for notifying the ERO to ensure the readiness of key staff for responding to an event and timely facility activation. The qualification records of key position ERO personnel were reviewed to ensure all ERO qualifications were current. A sample of problems identified from augmentation drills or system tests performed since the last inspection was reviewed to assess the effectiveness of corrective actions.

The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 03, Emergency Response Organization Staffing and Augmentation System. The applicable planning standard, 10 CFR 50.47(b)(2), and its related 10 CFR 50, Appendix E requirements were used as reference criteria.

The inspectors reviewed various documents which are listed in the Attachment. This inspection activity satisfied one inspection sample for the ERO staffing and augmentation system on a biennial basis.

b. Findings

No findings were identified.

#### 1EP5 Maintenance of Emergency Preparedness

##### a. Inspection Scope

The inspectors reviewed the corrective actions identified through the Emergency Preparedness program to determine the significance of the issues, the completeness and effectiveness of corrective actions, and to determine if issues were recurring. The licensee's post-event after action reports, self-assessments, and audits were reviewed to assess the licensee's ability to be self-critical, thus avoiding complacency and degradation of their emergency preparedness program. The inspectors toured facilities and reviewed equipment and facility maintenance records to assess licensee's adequacy in maintaining them and observed a station Emergency Response Oversight Committee meeting. In addition, the inspectors reviewed licensee procedures and training for the evaluation of changes to the emergency plans.

The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 05, Maintenance of Emergency Preparedness. The applicable 10 CFR 50.47(b) planning standards and related 10 CFR 50, Appendix E requirements were used as reference criteria.

The inspectors reviewed various documents which are listed in the Attachment. This inspection activity satisfied one inspection sample for the maintenance of emergency preparedness on a biennial basis.

##### b. Findings

No findings were identified.

#### 1EP6 Emergency Planning Drill Evaluation

##### a. Inspection Scope

The inspectors observed an emergency preparedness drill conducted on July 24, 2012, to verify licensee self-assessment of classification, notification, and protective action recommendation development in accordance with 10 CFR 50, Appendix E. This drill tested the licensee's ability to respond to a loss of all three fission product barriers. The inspectors observed an additional emergency preparedness drill conducted on September 11, 2012, to verify licensee self-assessment of classification, notification, and protective action recommendation development in accordance with 10 CFR 50, Appendix E. This drill tested the licensee's ability to respond to a loss of the auxiliary reservoir and an anticipated transient without scram (ATWS).

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

- AR #551011, Event Classification Opportunity Missed during Drill
- AR #551315, Inaccurate Protective Action Recommendation during Drill

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

40A1 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.

.1 Mitigating Systems Cornerstone

- Mitigating Systems Performance Index (MSPI), Emergency AC Power
- MSPI, Heat Removal System
- MSPI, High Pressure Injection Systems

The inspectors sampled licensee submittals for the MSPI performance indicators listed above for the period from the third quarter 2011 through the second quarter 2012. The inspectors reviewed the licensee's operator narrative logs, issue reports, MSPI derivation reports, event reports and NRC Integrated Inspection reports for the period to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the Attachment.

b. Findings

No findings were identified.

.2 Emergency Preparedness Performance Indicators

a. Inspection Scope

The inspectors sampled licensee submittals relative to the PIs listed below for the period October 1, 2011, and June 30, 2012. To verify the accuracy of the PI data reported during that period, PI definitions and guidance contained in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, was used to confirm the reporting basis for each data element.

Emergency Preparedness Cornerstone

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

For the specified review period, the inspector examined data reported to the NRC, procedural guidance for reporting PI information, and records used by the licensee to identify potential PI occurrences. The inspectors verified the accuracy of the PI for ERO drill and exercise performance through review of a sample of drill and event records. The inspectors reviewed selected training records to verify the accuracy of the PI for ERO drill participation for personnel assigned to key positions in the ERO. The inspectors verified the accuracy of the PI for alert and notification system reliability through review of a sample of the licensee's records of periodic system tests. The inspectors also interviewed the licensee personnel who were responsible for collecting and evaluating the PI data. Licensee procedures, records, and other documents reviewed within this inspection area are listed in the Attachment. This inspection satisfied three inspection samples for PI verification on an annual basis.

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 Selected Issue Follow-up Inspection: During "B" EDG Bar Water Issued from #5L Cylinder

a. Inspection Scope

The inspectors selected AR #550419, During "B" EDG Bar Water Issued from #5L Cylinder, for detailed review. This AR was associated with a crack that was found in the "B" EDG #5L cylinder head exhaust port. The inspectors reviewed the licensee's



apparent cause evaluation report and the Metallurgy Services Technical Report. The inspectors reviewed these reports 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 reports against regulatory requirements and the requirements of the licensee's CAP as delineated in corporate procedures CAP-NGGC-0200, Condition Identification and Screening Process and CAP-NGGC-0205, Condition Evaluation and Corrective Action Process.

b. Findings

No findings were identified.

3. Selected Issue Follow-up Inspection: Pushrod for Left Bank #5 Cylinder Found Broken

a. Inspection Scope

The inspectors selected AR #550496, Pushrod for Left Bank #5 Cylinder Found Broken, for detailed review. This AR was associated with the discovery of a broken pushrod on the east intake valve in the "B" EDG. 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 regulatory requirements and the requirements of the licensee's CAP as delineated in corporate procedures CAP-NGGC-0200, Condition Identification and Screening Process and CAP-NGGC-0205, Condition Evaluation and Corrective Action Process.

b. Findings

No findings were identified.

4. Selected Issue Follow-up Inspection: "B" Startup Transformer Lockout due to Loss of Oil Filled cable Pressure

a. Inspection Scope

The inspectors selected AR #545920, "B" SUT Lockout due to Loss of Oil Filled Cable Pressure, for detailed review. This AR was associated with the failure of an oil filled cable resulting in the lockout of the "B" SUT on June 25, 2012. 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 regulatory requirements and the requirements of the licensee's CAP as delineated in corporate procedures CAP-NGGC-0200, Condition Identification and Screening Process and CAP-NGGC-0205, Condition Evaluation and Corrective Action Process.

b. Findings

Introduction: A self-revealing Green NCV of TS 6.8.1, Procedures, was identified for the licensee's failure to develop an adequate procedure for maintenance on an oil filled

cable. Specifically, the licensee failed to provide adequate instructions to prevent causing additional damage to the cable which resulted in the lockout of the "B" SUT on June 25, 2012.

Description: While the reactor is shutdown, offsite power is normally supplied to the site's emergency buses by two SUTs, one for each train of safety related equipment. Each SUT has three pressurized oil filled cables, one for each electric phase, to supply power from the switchyard to the SUTs. Offsite power is the preferred power source during shutdown operations and is required by TS 3.8.1, A.C. Sources-Operating, to ensure safe shutdown and accident mitigation if needed. If one of the offsite power sources failed during an accident, the associated EDG would have to supply power to that train of safety related equipment. This would represent a reduction of defense in depth.

Maintenance performed on equipment in the switchyard is governed by licensee procedure NGGM-IA-0003, Transmission Interface Agreement for Operation, Maintenance, and Engineering Activities at Nuclear Plants. After observing indications of a small oil leak on one of the pressurized oil filled cables, the licensee developed WO #2015394-11 in accordance with NGGM-IA-0003 to search for the leak. However, this WO did not outline detailed precautions or instructions for how to properly handle a cable of this design.

Starting on June 19, 2012, the licensee used WO #2015394-11 to manually lift the "A" phase cable of the "B" SUT from its cable trench to search for and repair the oil leak. Once the leak was located, the licensee used clamps to contain and limit the leakage. The licensee then manually lowered the cable back into the trench. While lowering this cable, the licensee inadvertently allowed a small kink to develop in the cable in the area of a previous repair. After noticing the kink, the licensee again lifted and lowered the cable back into the trench to straighten it. At the time, the licensee did not realize that the kink had significantly weakened the cable in the area of a previous repair.

On June 20, 2012, the licensee restored the "B" SUT to service. On June 25, the "B" SUT electrically locked out and was unavailable due to low oil pressure in the "A" phase cable. After further investigation, the licensee identified that a previous repair had been damaged when they kinked the cable while replacing it in the trench. As corrective actions, the licensee repaired the cable, restored oil pressure and returned the "B" SUT to its normal standby configuration. Additionally, the licensee performed an investigation which concluded that the cable had been damaged at the site of a previous repair. The issue was placed into the CAP as AR #545920.

Analysis: The licensee's failure to develop an adequate WO in accordance with NGGM-IA-0003 to ensure proper handling of the cable and prevent inadvertently causing damage was a performance deficiency. The performance deficiency was more than minor because it was associated with the Procedure Quality attribute of the Mitigating System cornerstone, and it affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, it resulted in the lockout of the "B" SUT and unavailability of the preferred power source for the "B" safety related equipment for over

two days. Using IMC 0609, Significance Determination Process, this finding was determined to be of very low safety significance because it was not a design or qualification deficiency, did not represent an actual loss of function of at least a single train for greater than the AOT or two separate safety systems out-of-service for greater than the AOT, did not result in a loss of safety function of one or more non-TS trains of equipment designated as risk significant for greater than 24 hours, and did not involve the loss or degradation of equipment or function specifically designed to mitigate a seismic, flooding, or severe weather initiating event (e.g., seismic snubbers, flooding barriers, tornado doors). The finding had a cross-cutting aspect of Human Error Prevention, as described in the Resources component of the Human Performance cross-cutting area, because the licensee did not develop adequate procedures to prevent further damage while performing maintenance on the SUT cables (H.2(c)).

Enforcement: TS 6.8.1, Procedures, requires that written procedures shall be established, implemented, and maintained, covering applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978. Section 9 of Appendix A of Regulatory Guide 1.33 requires procedures for maintenance that can affect the performance of safety related systems. In order to perform work in the switchyard, the licensee uses NGGM-IA-0003 to develop work orders. NGGM-IA-0003 requires, in part, that work packages to support scheduled transmission maintenance activities contain sufficient technical information and guidance to reduce the potential for errors. Contrary to this requirement, the licensee failed to establish an adequate procedure for maintenance on the "A" phase cable for the "B" SUT, in that WO #2015394-11 failed to provide any guidance on the proper handling of this unique type of cable and resulted in inadvertent damage. This caused the cable to fail less than one week later resulting in the lockout of the "B" SUT and unavailability of the preferred power source for the "B" safety related equipment for over two days. As corrective actions, the licensee repaired the cable, restored oil pressure and returned the "B" SUT to its normal standby configuration. Additionally, the licensee performed an investigation which concluded that the cable had been damaged at the site of a previous repair when it was kinked while performing WO #2015394-11. Because the finding is of very low safety significance and has been entered into the CAP as AR #545920, this violation is being treated as a Green NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000400/2012004-02, "B" Startup Transformer Lockout due to Loss of Oil Filled Cable Pressure."

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

##### .1 Notice of Enforcement Discretion

###### a. Inspection Scope

On July 19, 2012, at 4:00 a.m., "B" EDG was removed from service for routine maintenance. TS 3.8.1, "A.C. Sources - Operating" Action b.3, was entered which requires the inoperable EDG to be restored to operable status within 72 hours (i.e., on July 22, 2012, at 4:00 a.m.). On July 19, 2012, the "B" EDG was being barred locally as part of post-maintenance testing. During the barring, water was observed issuing from the 5L cylinder. Licensee investigation determined that the cause of the water intrusion was a cracked cylinder head of the 5L cylinder.

Repair efforts were completed by the licensee, however, the time needed to complete the operability testing associated with the planned and emergent maintenance may not have been sufficient to preclude exceeding the existing AOT. On July 21, the licensee requested enforcement discretion for an additional 12 hours for TS 3.8.1 which allowed completion of the operability testing to preclude a plant shutdown. The NRC verbally granted the NOED at 5:00 p.m., on July 21. A follow-up letter to the licensee formally granting this NOED was issued on July 26, 2012. (ADAMS ML# 12208A344)

The condition which prompted the request for the NOED was corrected allowing the licensee to exit from the TS action listed above at 1:50 a.m. on July 22, 2012. Because the AOT was not exceeded, the NOED was not needed in order to comply with the existing TS.

b. Findings

Because the NOED was not needed due to the licensee correcting the condition and exiting the TS action statement without exceeding the AOT, the opening of an Unresolved Item was not required.

No findings were identified.

.2 (Closed) Licensee Event Report (LER) 05000400/2012-002), Missed Surveillance Resulting in Inoperable Containment Penetration Overcurrent Protection Devices

In May 2012, the licensee discovered that they had failed to perform surveillance tests for containment penetration overcurrent protection devices. The items with missed surveillances were tested over the next several weeks. On May 31, 2012, the breaker for the "C" Pressurizer Heater Bank failed the surveillance due to a broken breaker handle. On June 2, 2012, the "B" Reactor Coolant Pump overcurrent protection timing relay failed to meet the surveillance test acceptance criteria. Both of these failures constitute conditions prohibited by TS. The inspectors determined that the root cause evaluation was conducted to a level of detail commensurate with the significance of the problem. Additionally, they determined that the investigation reached reasonable conclusions as to the causes of the events. The inspectors also concluded that the licensee identified reasonable and appropriate corrective actions for the causes and that the corrective actions appeared to be prioritized commensurate with the safety significance of the issues. One licensee identified violation is documented in Section 4OA7 of this report. This LER is closed.

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 (Discussed) NRC Temporary Instruction (TI) 2515/187, Inspection of Near-Term Task Force Recommendation 2.3 Flooding Walkdowns, and NRC TI 2515/188, Inspection of Near-Term Task Force Recommendation 2.3 Seismic Walkdowns

a. Inspection Scope

Inspectors accompanied the licensee on a sampling basis, during their flooding and seismic walkdowns, to verify that the licensee's walkdown activities were conducted using the methodology endorsed by the NRC. These walkdowns are being performed at all sites in response to a letter from the NRC to licensees, entitled "Request for Information Pursuant to Title 10 of the *Code of Federal Regulations* 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident," dated March 12, 2012 (ADAMS Accession No. ML12053A340).

Enclosure three of the March 12, 2012, letter requested licensees to perform seismic walkdowns using an NRC-endorsed walkdown methodology. Electric Power Research Institute (EPRI) document 1025286 titled, "Seismic Walkdown Guidance," (ADAMS Accession No. ML12188A031) provided the NRC-endorsed methodology for performing seismic walkdowns to verify that plant features, credited in the current licensing basis (CLB) for seismic events, are available, functional, and properly maintained.

Enclosure four of the letter requested licensees to perform external flooding walkdowns using an NRC-endorsed walkdown methodology (ADAMS Accession No. ML12056A050). Nuclear Energy Industry (NEI) document 12-07 titled, "Guidelines for Performing Verification Walkdowns of Plant Protection Features," (ADAMS Accession No. ML12173A215) provided the NRC-endorsed methodology for assessing external flood protection and mitigation capabilities to verify that plant features, credited in the CLB for protection and mitigation from external flood events, and are available, functional, and properly maintained.

b. Findings

Findings or violations associated with the flooding and seismic walkdowns, if any, will be documented in future reports.

.3 (Closed) URI 05000400/2011003-01: Offsite Power Cables Submerged in Water

a. Inspection Scope

As described in Unresolved Item (URI) 05000400/2011003-01, the inspectors identified that the offsite power supply cables, connecting the switchyard to the SUTs, were submerged in standing water in their underground bunkers. At the time this issue was identified, the licensee could not provide documentation that the cables were rated to operate in submerged conditions. Subsequently, the licensee worked with the vendor to provide documentation to demonstrate that the cables were rated to operate in those conditions.

The inspectors interviewed station personnel and performed an extensive review of the licensee's documents associated with the offsite power supply system and corrective action program documents regarding this issue. This URI is closed.

b. Findings

No findings were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

On October 17, 2012, the inspector presented the inspection results to Mr. George Hamrick, and other members of the licensee staff. The inspectors confirmed that proprietary information was not provided or examined during the inspection period.

On August 23, 2012, the lead inspector presented the Emergency Preparedness inspection results to Mr. Hamrick, and other members of the staff. The inspector confirmed that proprietary information was not provided or reviewed during the inspection.

4OA7 Licensee-Identified Violations

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which meet the criteria of the NRC Enforcement Policy, for being disposition as a Non-Cited Violation.

The licensee identified during an investigation in May 2012 that surveillance test for containment penetration over current protection devices had not been properly scheduled and had not been performed as required by TS 4.8.4.1. Testing was performed on components that were not tested over the next several weeks. TS 4.8.4.1 states, in part, that each containment penetration conductor over current devices shall be demonstrated operable at least once per 18 months. Contrary to these requirements, two component failures were identified. On May 31, 2012, while in Mode 5, the licensee discovered that the breaker for Pressurizer heater bank "C" could not be tested because of a broken handle which precluded demonstration of acceptable performance. On June 2, 2012, the "B" Reactor Coolant Pump over current protection timing relay did not meet acceptance criteria for its surveillance test. The failure of the two over current devices to pass their test resulted in a missed surveillance. The licensee entered this issue into

their CAP as AR#537337 and both components were replaced and tested. Using IMC 0609, Significance Determination Process, this finding was determined to be of very low safety significance because the finding did not represent an actual loss of function of one or more non-Technical Specification Trains of equipment designated as high safety-significant in accordance with the licensee's maintenance rule program for greater than 24 hours.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### **Licensee personnel**

M. Austin, Emergency Preparedness Corporate Functional Area Manager  
D. Corlett, Supervisor, Licensing/Regulatory Programs  
J. Dufner, Director, Engineering  
S. Fischer, EP Specialist  
D. Griffith, Training Manager  
G. Hamrick, Vice President Harris Plant  
D. Haslauer, Radiation Monitor System Engineer  
E. Kapopoulos, Plant General Manager  
B. McCabe, Manager, Nuclear Oversight  
T. McDowell, EP Specialist  
S. O'Connor, Manager, Support Services  
M. Parker, Superintendent, Radiation Control  
M. Robinson, Superintendent, Environmental and Chemistry  
G. Simmons, EP Supervisor  
T. Slake, Manager, Security  
J. Stephenson, Fleet Emergency Preparedness Manager  
D. Stih, EP Specialist  
M. Wallace, Senior Licensing Specialist  
J. Warner, Manager, Outage and Scheduling  
J. White, EP Specialist  
F. Womack, Manager, Operations

#### **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

05000400/2012004-01	NCV	Failure to Adequately Perform Containment Visual Inspection when Containment Integrity is Required (Section 1R18)
05000400/2012004-02	NCV	"B" Startup Transformer Lockout due to Loss of Oil Filled Cable Pressure (Section 4OA2.4)

### Closed

05000400/2012-002	LER	Missed Surveillance Resulting in Inoperable Containment Penetration Overcurrent Protection Devices (Section 4OA3.2)
05000400/2011003-01	URI	Offsite Power Cables Submerged in Water (Section 4OA5.3)

### Discussed

Temporary Instruction (TI) 2515/187	TI	Inspection of Near-Term Task Force Recommendation 2.3 Flooding Walkdowns (Section 4OA5.2)
Temporary Instruction (TI) 2515/188	TI	Inspection of Near-Term Task Force Recommendation 2.3 Seismic Walkdowns (Section 4OA5.2)

## LIST OF DOCUMENTS REVIEWED

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

AP-300, Severe Weather

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

Partial System Walkdown

Emergency Diesel Generator system:

Procedure OP-155, Emergency Diesel Generator System,

Spent Fuel Pool Cooling system:

Procedure OP-116, Fuel Pool Cooling System,

Drawing 2165-S-0805, Simplified Flow Diagram Fuel Pool Cooling System

6.9 kV Switchgear System system:

Procedure OP- 156.02 AC Electrical Distribution System

FSAR 8 3 1 Onsite Power

### **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-012-04-DBG, Diesel Generator Building Fire Pre-Plan

FPP-012-01-CNMT, Containment Building Fire Pre-Plan

FPP-012-03-FHB, Fuel Handling Building Fire Pre-Plan

FPP-012-07-TB, Turbine Building Fire Pre-Plan

FPP-012-06-WPB, Waste Processing Building Fire Pre-Plan

FPP-012-08-SEC, Out Building Fire Pre-Plan

FPP-012-09-LAF, Large Area Fire Pre-Plan

FPP-012-02-RAB 236, Reactor Auxiliary Building Elevation 236 Fire Pre-Plan

FPP-012-02-190-216, Reactor Auxiliary Building Elevations 190 and 216 Fire Pre-Plan

FPP-012-02-RAB286, Reactor Auxiliary Building Elevation 286 Fire Pre-Plan

FPP-012-02-RAB305-324, Reactor Auxiliary Building Elevations 305 and 324 Fire Pre-Plan

### **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

ADM-NGGC-0006, Online Equipment Out of Service (EOOS) Models for Risk Assessment

Attachment

**Section 1R15: Operability Evaluations**

OPS-NGGC-1305, Operability Determinations

**Section 1EP2: Alert and Notification System Evaluation**Procedures

EPM-400, Public Notification and Alerting System, Rev. 15

EPM-500, Public Education and Information Program, Rev. 1

Annual Alert and Notification System Operability and Test Results, Annual letter to FEMA, dated 1/19/2012

Records and Data

2011 Annual Tone Alert Radio Test Survey

Second Quarter 2012, Quarterly Tone Alert Radio List Review

June 2012 Harris Tone Alert Radio Receivers printout

EPZ Siren Acoustic Study Addendum, by SAFER Services Corporation, 10/12/2011

EPZ Newsletters, Harris View, Summer-Fall 2011 and Summer-Fall 2012

Harris Nuclear Plant Safety Information, Public Mailer for 2011 and 2012

Student Brochure, Student Safety Information, School Years 2011-2012 and 2012-2013

Corrective Actions – Condition Reports (CR)

475170 – Siren C-19 Failed During Bi-Weekly Silent Test

554070 – Some Siren Maintenance Documentation Missing

498292 – Siren Interrogation Test Anomaly

505730 – ANS Siren Failed During Bi-Weekly Silent Test

530320 – Wake County Warning Point Siren Computer Communication Problem

**Section 1EP3: Emergency Response Organization Staffing and Augmentation System**Procedures

EMG-NGGC-1000, Fleet Conduct of Emergency Preparedness, Rev. 4

EPL-001, Emergency Phone List, Harris Plant, Rev. 80

EPM-200, ERO Training Program, Rev. 12

EPM-201 EP Staff Training Program, Rev. 7

EPM-602, Routine Maintenance and Testing of the Dialogic System, Rev. 1

PEP-230, Control Room Operations, Rev. 19

PEP-240, Activation and Operation of the Technical Support Center, Rev. 15

PEP-260, Activation and Operation of the Operations Support Center, Rev. 12

PEP-270, Activation and Operation of the Emergency Operations Facility, Rev. 23

PEP-310, Notifications and Communications, Rev. 27

Records and Data

Selected Qualification Records for Key Position ERO Personnel

Unannounced ERO Response Reports for 2011 and 2012

Assessment No. 518423, REG-NGGC-0121- Directed Assessment Preparation for NRC Inspection

Corrective Actions – Condition Reports (CRs)

453515; TSC/EOF activation not activated within time requirements

458784; Alternate EOF knowledge gaps

**Section 1EP5: Maintenance of Emergency Preparedness**Procedures

EMG-NGGC-0010, Emergency Plan Change Screening and Evaluation – 10 CFR 50.54(q)(3), Rev. 3

CAP-NGGC-0200, Condition Identification and Screening Process, Rev. 35

CAP-NGGC-1000, Conduct of Performance Improvement, Rev. 7

CAP-NGGC-0201, Self-Assessment/Benchmark Programs, Rev. 17

CAP-NGGC-0205, Condition Evaluation and Corrective Action Process, Rev. 16

OP-180, Plant Communication Systems, Rev 18

OPT-1524, Site Alarms and Paging System Test, Rev. 2

PRO-NGGC-0201, NGG Procedure Writer's Guide, Rev. 26

REG-NGGC-0010, 10CFR50.59 and Selected Regulatory Reviews, Rev. 18

SP-015, Emergency Plan Support, Rev. 23

EPM-100, EP Program Administration, Rev. 9

EPM-201, EP Staff Training Program Rev. 7

EPM-420, Emergency Equipment Inventory, Rev. 10

EPM-500, Public Education and Information Program, Rev. 1

EPM-601, Core Damage Assessment Technical Basis, Rev. 2

Records and Data

Emergency Plan Activation Summary and Critique, Unusual Event dated 6/1/12

Drill critiques for 2010 through July 24, 2012

H-EP-10-01, Harris Nuclear Plant Emergency Preparedness Assessment, 03/25/10

H-EP-12-02, Harris Nuclear Plant Emergency Preparedness Assessment, 03/29/12

H-EP-11-01, Harris NOS Emergency Preparedness Mid-Cycle Review, 2/8/11

H-EP-12-01, Harris NOS Emergency Preparedness Mid-Cycle Review, 2/2/12

Assessment 497013, Quick Hit Self Assessment, 11/08/11 – 12/14/11

Assessment 518423, Quick Hit Self Assessment, 07/30/12 – 08/03/12

Assessment 530660, Quick Hit Self Assessment, 04/17/12 – 04/24/12

Assessment 504587, Quick Hit Self Assessment, 12/01/11 - 01/31/12

10 CFR 50.54(q) Change package 531436 - EOF Ventilation

10 CFR 50.54(q) Change package 537206 - TSC Ventilation

10 CFR 50.54(q) Change package 547691 – Emergency Plan, Rev. 58

Corrective Actions –Condition Reports (CR)

461144; Clarify EAL thresholds for radiation monitors

484042; Virginia earthquake NOUE seismic monitor indication

486913; Unplanned SAE declaration in drill

522361; Error in EOF ventilation system operating procedure

531633; PA cannot be heard in outage temporary trailers

545765; PA cannot be heard in trailers at north and south ends of turbine building

545766; Develop process to provide PA speakers in temporary trailers

556140; Siren computer shutdown due to loss of power

**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

Procedures

PLP-201, Emergency Plan, Rev. 58  
EPM-210, EP Drill and Exercise Program, Rev. 15  
REG-NGGC-0009, NRC Performance Indicators and Monthly Operating Report Data, Rev. 11

Records and Data

DEP opportunities documentation for 4<sup>th</sup> quarter 2011 through 2<sup>nd</sup> quarter 2012  
Drill and exercise participation records of ERO personnel 4<sup>th</sup> quarter 2011 through 2<sup>nd</sup> quarter  
2012  
Siren test data for 4<sup>th</sup> quarter 2011 through 2<sup>nd</sup> quarter 2012

Corrective Actions –Condition Reports (CRs)

449266 – Adverse Trend, EAL DEP Opportunities SEC Control Room  
495777 – EP Drill 11-10 DEP Missed Opportunity  
551011 – DEP Opportunity Missed During 12/7/2011 EP Drill

**Section 4OA2: Identification and Resolution of Problems**

CAP-NGGC-0200, Condition Identification and Screening Process  
CAP-NGGC-0205, Condition Evaluation and Corrective Action Process  
CAP-NGGC-0206, Performance Assessment and Trending