



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

April 27, 2011

Mr. Christopher L. Burton
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 05000400/2011002**

Dear Mr. Burton:

On March 31, 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 April 14, 2011, 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.

Based on the results of this inspection, no findings were identified.

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

CP&L

2

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 05000400/2011002
w/Attachment: Supplemental Information

cc w/encl: (See page 3)

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 05000400/2011002
w/Attachment: Supplemental Information

cc w/encl: (See page 3)

X PUBLICLY AVAILABLE NON-PUBLICLY AVAILABLE SENSITIVE X NON-SENSITIVE
ADAMS: X Yes ACCESSION NUMBER: ML111170443 X SUNSI REVIEW COMPLETE RAM 4/27/2011

OFFICE	RII:DRP	RII:DRP	RII:DRP	RII:DRP	RII:DRP	RII:DRP	RII: DRS
SIGNATURE	JGW1	GJW	JDA by email	JAH5 by email	PBL1 by email	RAM	EXL2 by email
NAME	JWorosilo	GWilson	JAustin	JHickey	PLessard	RMusser	ELea
DATE	04/20/2011	04/20/2011	04/21/2011	04/21/2011	04/21/2011	04/27/2011	04/19/2011
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO
OFFICE	RII:DRS						
SIGNATURE	KDS3 by email						
NAME	KSchaaf						
DATE	04/25/2011						
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY

DOCUMENT NAME: G:\DRPI\RPB4\HARRIS\REPORT\2011 REPORTS\IR 11-02.DOCX

cc w/encl:
Brian C. McCabe
Manager, Nuclear Oversight
Shearon Harris Nuclear Power Plant
Progress Energy
Electronic Mail Distribution

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

LaQuisha M. Parks, 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

Public Service Commission
State of South Carolina
P.O. Box 11649
Columbia, SC 29211

Chairman
North Carolina Utilities Commission
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

Senior Resident Inspector
U.S. Nuclear Regulatory Commission
Shearon Harris Nuclear Power Plant
U.S. NRC
5421 Shearon Harris Rd
New Hill, NC 27562-9998

CP&L

4

Letter to Christopher L. Burton from Randall A. Musser dated April 27, 2011

SUBJECT: SHEARON HARRIS NUCLEAR POWER PLANT - NRC INTEGRATED
INSPECTION REPORT 05000400/2011002

Distribution w/encl:

C. Evans, RII EICS

L. Douglas, RII EICS

OE Mail

RIDSNRRDIRS

PUBLIC

RidsNrrPMShearonHarris Resource

U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.: 50-400

License No.: NPF-63

Report No.: 05000400/2011002

Licensee: Carolina Power and Light Company

Facility: Shearon Harris Nuclear Power Plant, Unit 1

Location: 5413 Shearon Harris Road
New Hill, NC 27562

Dates: January 1, 2011 through March 31, 2011

Inspectors: J. Austin, Senior Resident Inspector
J. Hickey, Senior Resident Inspector
P. Lessard, Resident Inspector
E. Lea, Senior Operations Engineer (Section 1R11.2)
K. Schaaf, Operations Engineer (Section 1R11.2)

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

Enclosure

SUMMARY OF FINDINGS

IR 05000400/2011002; January 1, 2011 – March 31, 2011; Shearon Harris Nuclear Power Plant, Unit 1; Integrated Inspection Report

The report covered a three month period of inspection by resident inspectors and announced baseline inspection by regional inspectors. No findings were identified during this inspection period.

A. NRC-Identified and Self-Revealing Findings

None

B. Licensee-Identified Violations

None

Enclosure

REPORT DETAILS

Summary of Plant Status

Unit 1 reduced power to 60 percent on February 17, 2011, to complete repairs to Air Handler-3 (AH-3) inside containment. Power was restored to Rated Thermal Power (RTP) on February 18, 2011. 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 Readiness For Impending Adverse Weather Condition

a. Inspection Scope

On March 10, 2011, a severe thunderstorm 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 severe weather, 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 evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant. The inspectors also reviewed a sample of Corrective Action Program (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. Specific documents reviewed during this inspection are listed in the attachment.

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:

Enclosure

- “A” Emergency Diesel Generator (EDG) while the “B” EDG was inoperable for a planned maintenance outage on February 9, 2011;
- The Alternate Seal Injection system while the “A” EDG and “A” Emergency Service Water systems were inoperable for a planned maintenance outage on March 1, 2011; and
- The “A” and “B” Diesel Fuel Oil System while both EDGs were protected because the “A” Startup transformer was unavailable due to work in the switchyard on March 28, 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 Updated Final Safety Analysis Report (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 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:

- Turbine Building, 240’ Elevation
- Turbine Building, 261’ Elevation
- “A” Train ESW Pump Room
- “B” Train ESW Pump Room

Enclosure

- “A” Diesel Oil Transfer Pump Room
- “B” Diesel Oil Transfer Pump 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 CAP.

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

- AR #450235, Turbine Building Transient Combustible Load Exceeded
- AR #441520, Lube Oil Reservoir Level Low
- AR #446245, Increased Turbine Lube Oil Leakage
- AR #454766, Fire Brigade Response to Generator Relay Failure

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program

.1 Quarterly Review

a. Inspection Scope

On February 14, 2011, the inspectors observed a crew of licensed operators in the plant’s simulator during licensed operator requalification 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 address a small break loss of coolant accident due to seal failure on a reactor coolant pump. The inspectors evaluated the following areas:

Enclosure

- 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; and
- 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 Biennial Review

a. Inspection Scope

The inspectors reviewed the facility operating history and associated documents in preparation for this inspection. During the week of March 21, 2011, the inspectors reviewed documentation, interviewed licensee personnel, and observed the administration of operating tests associated with the licensee's operator requalification program. Each of the activities performed by the inspectors was done to assess the effectiveness of the facility licensee in implementing requalification requirements identified in 10 CFR Part 55, "Operators' Licenses." The evaluations were also performed to determine if the licensee effectively implemented operator requalification guidelines established in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," and Inspection Procedure 71111.11, "Licensed Operator Requalification Program." The inspectors also evaluated the licensee's simulation facility for adequacy for use in operator licensing examinations using ANSI/ANS-3.5-1998, "American National Standard for Nuclear Power Plant Simulators for use in Operator Training and Examination." The inspectors observed one crew during the performance of the operating tests. Documentation reviewed included written examinations, Job Performance Measures (JPMs), simulator scenarios, licensee procedures, on-shift records, simulator modification request records, simulator performance test records, operator feedback records, licensed operator qualification records, remediation plans, watchstanding records, and medical records. The records were inspected using the criteria listed in Inspection Procedure 71111.11. Documents reviewed during the inspection are documented in the List of Documents Reviewed.

b. Findings

No findings were identified.

Enclosure

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 three risk significant components:

- AR #424399, Main Transfer Panel Relay 43T-22SA/1081 Needed Assistance Transferring Back To Normal;
- AR #429933, Test Isolation Valve to B Accumulator Failed to Fully Open During Remote Position Indication; and
- AR #440042, Erratic Valve Indication of Spray Additive Tank Outlet Isolation Valve.

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).

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

- AR #469031, Feeder Breaker to Non-Safety Bus Would not Open

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

Enclosure

five 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:

- Unplanned Inoperability of the Fuel Handling Building Emergency Exhaust System on January 1, 2011; Risk remained green;
- Elevated Green Risk Condition during the “A” Essential Services Chilled Water System Outage and the Resultant Unavailability of the “A” Charging Safety Injection Pump on January 27, 2011;
- During the “B” EDG outage which resulted in an elevated green risk condition on February 9, 2011;
- Yellow risk condition which resulted from changing power to 60 percent and back to 100 percent with the “A” ESW header depressurized to support repairs to AH-3 on February 17, 2011; and
- During “A” Startup Transformer (SUT) Modification work which resulted in a Yellow Risk Condition on March 7, 2011.

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

- AR #440403, The Electric Heating Coil for Exhaust Fan #12 in the Fuel Handling Building Tripped
- AR #452261, Manhole 108 Work While the “A” SUT was Out of Service for Fault Pressure Modification
- AR #441720, A Heater Drain Pump (HDP) Net Positive Suction Head Behavior not Understood
- AR #440479, AOP-010 Entry Due to A-HDP Trip

b. Findings

No findings were identified.

1R15 Operability Evaluationsa. 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.

- AR #442042, "B" Sequencer Relay Failed to Actuate during Surveillance Testing;
- AR #440969, Pressurizer Power Operated Relief Valve Common Discharge Temperature Response;
- AR #446760, "A" Residual Heat Removal (RHR) Heat Exchanger Outlet Flow Greater Than Acceptance Criteria;
- AR #444322, Rod Control System Supervisory Logic I Card Non-Urgent Alarm; and
- AR #446515, Leakby 1SW-3 AND 1SW-4 ("A" and "B" Emergency Service Water Main Reservoir Intake Isolation Valves) not Accounted for in Ultimate Heat Sink Calculation.

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

- AR #443121, Missed VT-2 Inspection of "C" Steam Generator Manway
- AR #446058, Personnel Air Lock Hydraulic Skid Not Properly Secured
- AR #446197, Boron Thermal Regeneration System Breaker Found Mispositioned
- AR #449493, Degraded/Cracked Indicating Light Resistors in "B" Sequencer
- AR #449495, Foreign/Fallen Washers Located in "B" Sequencer
- AR #449496, Loose Screw Lying on Top of Switch near Live Terminals in "B" Sequencer

b. Findings

No findings were identified.

Enclosure

1R18 Plant Modifications

a. Inspection Scope

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

- Engineering Change (EC) #79029, Pressurizer Heater Back-Up Group B, Heater #41 Deenergized
- EC #76072, Install Sudden Fault Pressure Device for Both Startup Transformers

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.

EC #79029 is a temporary modification that places the bank that contains Pressurizer heater #41 into long term shutdown by placing the circuit breaker in Power Panel 1B Circuit #7 to the OFF position, and removing the associated fuses.

EC #76072 is a permanent modification to improve the design of the fault pressure relay protection scheme in order to reduce the potential for spurious tripping (single point vulnerability) of the 230kV supply breakers that supply the startup transformers.

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:

<u>Test Procedure</u>	<u>Title</u>	<u>Related Maintenance Activity</u>	<u>Date Inspected</u>
OST-1005	Control Rod and Rod Position Indicator Exercise Quarterly Interval Modes 1-3	Work Order (WO) #1863262, Modify Mounting Hardware on Installed Rod Control Cards	February 4, 2011

Enclosure

MPT-I0491	Diesel Generator 1A-SA Engine Control Cabinet Inspection, Pneumatic Logic Device Replacement and Thermostat Calibration	WO #1882486, Replace Leaking A EDG Overspeed Pressure Regulator	February 7, 2011
MST-I0370	Main Control Room Emergency Outside Air Intake Radiation Monitor Operational Test	WO #1822154, Perform MST-I0370 Radiation Monitoring System Monitor	February 10, 2011
OST-1824	"B" Emergency Diesel Generator Operability Test 18 Month Interval Modes 1 Through 6 And Defueled	WO #1560891, 1DFO-191 , "B" Diesel Fuel Oil Day Tank Isolation Valve, Will Not Remain Shut With Pump Running	February 11, 2011
OST-1010	Containment Cooling System Operability Test Monthly Interval Modes 1 - 4	WO #1888117, AH-3, "A" Containment Air Handler, Cooling Coils Leaking, Implement Temporary Engineering Change #80037 To Blank Off	February 17, 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 CAP and that the problems were being corrected commensurate with their importance to safety. Documents reviewed 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 #446586, Procedural Improvements to MPT-I0491,
- AR #446227, Inadvertent Main Control Room Isolation,
- AR #448542, Containment Sump Level Increasing Since AH-3 Repairs

b. Findings

No findings were identified.

Enclosure

1R22 Surveillance Testing.1 Routine Surveillance Testinga. 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, 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.

- MST-I0320, Train “B” Solid State Protection System Actuation Logic and Master Relay Test on February 8, 2011;
- OST-1010, Containment Cooling System Operability Test Monthly Interval Modes 1 – 4 on February 12, 2011;
- OST-1013, “A” Emergency Diesel Generator Operability test on March 2, 2011; and
- OST-1073, “B” Emergency Diesel Generator Operability test on March 18, 2011.

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

- AR # 447418, Air Handler #3 Cooling Coils Leaking
- AR #447253, Wrong Switch Manipulated During MST-I0128, Main Steamline Pressure, and Loop 2 Operational Test

b. Findings

No findings were identified.

.2 In service Testing (IST) Surveillancea. Inspection Scope

The inspectors reviewed the performance of OST-1008, 1A-SA RHR Pump Operability Quarterly Interval, Modes 1-3 on March 10, 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 “A” RHR pump and the following valves throughout the RHR system:

- 1RH-20, “A” RHR Heat Exchanger BYPASS Isolation Valve
- 1RH-25, Suction From “A” RHR Heat Exchanger
- 1RH-30, RHR Heat Exchanger Outlet Isolation Valve
- 1RH-31, “A” RHR Pump Mini Flow Valve
- 1RH-34, “A” RHR Header Injection Check Valve

Enclosure

- 1RH-70, "B" RHR Header Injection Check Valve
- 1SI-300, Containment Sump Suction to "A" RHR Pump
- 1SI-310, Containment Sump Suction to "A" RHR Pump
- 1SI-320, Refueling Water Storage Tank Suction to "A" RHR Pump Check Valve
- 1SI-322, Refueling Water Storage Tank Suction to "A" RHR Pump Isolation Valve
- 1SI-326, Low Head Safety Injection to Hot Leg Cross-Over Valve
- 1SI-340, "A" Low Head Safety Injection Train To Cold Leg Isolation 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

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, and daily Interval Modes 1-2-3-4, on February 10, 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 TS, 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 CAP. 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:

Enclosure

- AR #447364, Increased Containment Sump In-Leakage

b. Findings

No findings were identified.

1EP6 Emergency Planning Drill Evaluation

a. Inspection Scope

The inspectors observed two Emergency Preparedness Drills conducted on March 11, 2011 and March 23, 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.

Initiating Events Cornerstone

- Unplanned Scrams per 7000 Critical Hours
- Unplanned Power Changes per 7000 Critical Hours
- Unplanned Scrams with Complications

The inspectors sampled licensee submittals for the performance indicators listed above for the period from the first quarter 2010 through the fourth quarter 2010. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports and NRC Inspection reports for the period to validate the accuracy of the submittals. Specific documents reviewed are described in the Attachment to this report.

b. Findings

No findings were identified.

Enclosure

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 CAP. The review was accomplished by reviewing daily action request reports.

b. Findings

No findings were identified.

.2 Selected Issue Follow-up Inspection: Main Turbine Generator Supervisory Instrument Panel Failure

a. Inspection Scope

The inspectors selected AR #441520, Main Turbine Generator Supervisory Instrument Panel failure during testing for detailed review. This AR was associated with the operational decision making (ODM) process to address potential issues with the main turbine thrust bearing position trip circuitry. 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 CAP 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 #452538, Turbine Trip Switch ODM Lacks Rigor
- AR #451958, ODM 441520 (Turbine Trip Switch) Needs Review

b. Findings

No findings were identified.

4OA3 Follow-up of Events.1 (Closed) LER 05000400/2010-003-00, Condition prohibited by Technical Specifications when non-seismic system was aligned to Refueling Water Storage Tank

On March 3, 2006, procedure OP-116.01, Fuel Pool Purification System, was revised to permit purification of the Refueling Water Storage Tank (RWST) in plant operating Modes 1-4 without declaring the RWST inoperable and entering the TS Limiting Condition for Operation (LCO) action statement. The alignment for purification of the RWST opens manual valve 1CT-23, RWST to the Spent Fuel Pool (SFP) Pump suction valve, which un-isolates safety and seismic piping from non-safety piping. The 10 CFR 50.59 evaluation supporting the procedure revision credited a manual action to shut 1CT-23 to maintain operability of the system. The evaluation concluded that a license amendment was not required to implement the procedure change.

In 2010, the inspectors questioned this practice. The licensee placed a caution tag on valve 1CT-23 to prevent operation of the valve until the question was resolved. A discussion was held between the plant staff and the NRC Office of Nuclear Reactor Regulation staff. During that discussion, plant staff realized that they should have obtained prior approval from the NRC to perform this activity without entering the TS LCO action statement. The condition was entered into the corrective action program and the procedure was revised to prevent the activity without entering the action statement.

TS LCO 3.1.2.6 Action (b) requires "with the RWST inoperable, restore the tank to Operable status within 1 hour or be in at least hot standby within the next 6 hours and in cold shutdown within the following 30 hours." Because the RWST was not declared inoperable, TS LCO actions were not entered. This resulted in a condition prohibited by TS. Purification of the RWST while online in Modes 1-4 from August 16, 2007, through August 16, 2010, occurred for approximately 91 hours in 2008, 30 hours in 2009, and 24 hours in 2010.

This event was determined to be an inspector identified NCV of TS 3.1.2.6 and of very low safety significance (Green). This NCV was previously documented and closed in NRC Inspection Report 05000400/2010005 as NCV 05000400/2010005-03. This LER is closed.

.2 (Closed) LER 05000400/2010-004-00, Valid Actuation of B Emergency Diesel Generator Due to Loss of 'B-SB' 6.9kV Safety Bus

On November 5, 2010, during refueling outage 16, maintenance personnel were performing Post Maintenance Testing (PMT) following replacement of the "B" main generator lockout relay when the 6.9 kV B-SB Emergency Bus spuriously de-energized, resulting in the automatic starting of the 1B-SB EDG. This temporary interruption in power to the bus also resulted in the loss of the "B" RHR pump and associated shutdown cooling for approximately 3 minutes.

Enclosure

Safety systems responded as expected during the event. The 6.9 kV "A" Emergency Bus remained available from both off site power and the "A" Emergency Diesel Generator throughout the event.

Corrective actions include revising the licensee's PMT procedure to establish guidance for PMT development when replacing complex relays and to implement the use of improved test leads. This event was determined to be a self-revealing NCV of TS 6.8.1 and of very low safety significance (Green). This NCV was previously documented and closed in NRC Inspection Report 05000400/2010005 as NCV 05000400/2010005-04. This LER is closed.

.3 (Closed) LER 05000400/2010-005-00, Emergency Core Cooling System (ECCS) Inoperable for Greater than Time Allowed by Technical Specifications

On November 9, 2010, 1RH-25, "A" RHR Header Isolation Valve to Charging Safety Injection Pump (CSIP) Suction, and 1RH-63, "B" RHR Header Isolation Valve to CSIP Suction, were both de-energized as a result of performing licensee procedure OP-111, Section 7.2, "Restoring the RHR System to Emergency Core Cooling System (ECCS) Mode." This caused both trains of ECCS to be inoperable. The plant was in Mode 4 with one train of ECCS required to be operable. It was not recognized that both trains of ECCS were inoperable. Transition from Mode 4 to Mode 3 occurred while in this condition. In Mode 3 both trains of ECCS were required to be operable. These conditions are prohibited by TS and are reportable under 10 CFR Part 50.73 (a)(2)(i)(B). They are also reportable under 10 CFR Part 50.73 (a)(2)(v)(D). Immediate corrective actions included promptly closing 1RH-25 and 1RH-63 circuit breakers and following operating procedure lineup checks. Additionally, OP-111, Residual Heat Removal System, was revised to correct the steps that required the breakers for 1RH-25 and 1RH-63 to be open in Section 7.2.2.

This event was determined to be a Licensee-Identified Violation (LIV) of Technical Specifications 3.5.3, 3.5.2 and 3.04 and of very low safety significance (Green). This LIV was previously documented in NRC Inspection Report 05000400/2010005. 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

Enclosure

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 Institute of Nuclear Power Operations (INPO) Plant Assessment Report Review

a. Inspection Scope

The inspectors reviewed the final report for the INPO plant assessment conducted in February 2010. The inspectors reviewed the report to ensure that issues identified were consistent with the NRC perspectives of licensee performance and to verify if any significant safety issues were identified that required further NRC follow-up.

b. Findings

No findings were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

An exit meeting was conducted on March 24, 2011, to discuss the results of the Biennial Licensed Operator Requalification inspection. The inspectors confirmed that no proprietary information was reviewed during this inspection.

On April 14, 2011, the inspectors presented the inspection results to Mr. C. Burton, and other members of the licensee staff. The inspectors confirmed that proprietary information was not provided or examined during the inspection period.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel

C. Burton, Vice President Harris Plant
J. Corlett, Supervisor, Licensing/Regulatory Programs
H. Curry, Manager, Nuclear Oversight
J. Dufner, Manager, Engineering
M. Fulks, Program Lead -Licensed Operator Training
D. Griffin, Training Manager
E. Kapopoulos, Plant General Manager
M. McDade, Simulator Support
M. Parker, Superintendent, Radiation Protection
L. Parks, Manager, Support Services
J. Robinson, Superintendent, Environmental and Chemistry
S. Schwindt, Supervisor Operations Continued Training
S. Scott, Superintendent – Operations Training
T. Slake, Manager, Security
M. Wallace, Senior Specialist - Licensing
J. Warner, Manager, Outage and Scheduling
M. Weber, Shift Manager - Operations
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

None

Closed

05000400/2010-003-00	LER	Condition Prohibited by Technical Specifications when Non Seismic System was Aligned to Refueling Water Storage Tank (Section 4OA3.1)
05000400/2010-004-00	LER	Valid Actuation of B Emergency Diesel Due to Loss of 'B-SB' 6.9kV Safety Bus (Section 4OA3.2)
05000400/2010-005-00	LER	Emergency Core Cooling System (ECCS) Inoperable for Greater than Time Allowed by Technical Specifications (Section 4OA3.3)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures

- AP-300, Severe Weather
- AP-301, Seasonal Weather Preparations and Monitoring

Section 1R04: Equipment Alignment

Partial System Walkdown

“A” Emergency Diesel Generator System:

- Procedure OP-155, Emergency Diesel Generator System,
- Drawing 2165-S-0633 Sheet 4, Simplified Flow Diagram Emergency Diesel Generator Starting Air System
- Drawing 2165-S-0563, Simplified Flow Diagram Emergency Diesel Generator Fuel Oil System
- Drawing 2165-S-0633, Simplified Flow Diagram Emergency Diesel Generator Systems

Alternate Seal Injection System:

- Procedure OP- 185, Alternate Seal Injection System,
- Drawing 2165- S-1371, Simplified Flow Diagram Alternate Seal Injection System

Diesel Generator Fuel Oil Storage and Transfer System:

- Procedure OP-155, Emergency Diesel Generator System,
- FSAR 9.5.4, Diesel Generator Fuel Oil Storage and Transfer
- Drawing 2165-S-0563, Simplified Flow Diagram Diesel Generator Fuel Oil Storage and Transfer System

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-012-07-TB, Turbine Building Fire Pre-Plan, Checklist T01, Electrical Cable Vault Room, Charcoal Filter Room, Secondary Sampling Room, Cable Area South
- FPP-012-07-TB, Turbine Building Fire Pre-Plan, Checklist T03, H2 Seal oil Unit, Condensate Pumps, Turbine L.O. Tanks, Feed Pumps, Electrical Room, and Machine Room
- 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-012-06-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 1R11: Licensed Operator Requalification Program

Benchmark Tests:

- SST-001, "Steady State Accuracy and Stability Test", Performed 11/16/09, 12/15/10
- SST-002, "Steady State Accuracy and Stability Test", Performed 11/16/09, 12/15/10
- SST-003, "Steady State Accuracy Test", Performed 11/16/09, 12/15/10
- TT-001, "Reactor Trip", Performed 10/10

Job Performance Measure (JPM) Packages:

- Transfer Control to The ACP
- Reset Turbine Driven Aux Feedwater Pump
- Isolate Ruptured SG – MSIV Will Not Close
- Place Containment Cooling in the Maximum Cooling Mode
- Classify an Event – ALERT

General Documentation Reviewed:

- Biennial written examination for 2010 – weeks 1 through 5
- Calculation E-5525, Safe Shutdown in Case of Fire
- Remedial Action Plan – 2009 – 2010
- Requal attendance records 2009-2010
- EOP-User's Guide, Part 4, Rev 29
- LERs 2009 to 2010

Procedures:

- OSP-NGGC-1000, Fleet Conduct of Operations, Revision 3
- Operations Management Manual, OMM-001, Operations Administrative Requirements, Rev 92
- Training Administrative Procedure (TAP) -403, Examination and Testing, Rev 19
- TAP 410, NRC License Examination Security Program, Rev 15
- TAP-412, Simulator Operations, Maintenance and Testing, Rev 8

- Training Program Procedure (TPP)-206 Training Program Procedure-Simulator Rev 10
- TPP- 306, Licensed Operator Continuing Training Program, Revision 20
- TRN-NGGC-0002, Performance Review and Remedial Training, Rev 0
- TRN-NGGC-0420, Conduct of Simulator Training and Evaluation, Rev 0,
- TRN-NGGC-0440, Rev 0
- TRN-NGGC-1000, Conduct of Training, Rev 3
- AOP- 004, Remote Shutdown
- HNP-E/ELEC-0001 Appendix 1 Compliance Assessment by Scenario
- TRN-NGGC-1000, Conduct of Training, Rev 3

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

- 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

Section 1R15: Operability Evaluations

- OPS-NGGC-1305, Operability Determinations

Section 4OA1: Performance Indicator Verification

- NEI 99-02, Regulatory Assessment Performance Indicator Guideline

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