



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

July 30, 2012

EA-12-156

Mr. Michael Annacone  
Vice President  
Carolina Power and Light Company  
Brunswick Steam Electric Plant  
P.O. Box 10429  
Southport, NC 28461

**SUBJECT: BRUNSWICK STEAM ELECTRIC PLANT - NRC INTEGRATED INSPECTION  
REPORT NO. 05000325/2012003 AND 05000324/2012003; EXERCISE OF  
ENFORCEMENT DISCRETION; REGULATORY PERFORMANCE MEETING**

Dear Mr. Annacone:

On June 30, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Brunswick Unit 1 and 2 facilities. The enclosed integrated inspection report documents the inspection results which were discussed on July 16, 2012, with Mr. E. Wills 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 of very low safety significance (Green) was identified during this inspection. This finding was determined to involve a violation of NRC requirements. However, because of the very low safety significance and because it is entered into your corrective action program, the NRC is treating the finding as a non-cited violation (NCV) consistent with Section 2.3.2.a of the NRC Enforcement Policy.

In addition, a violation of technical specification 3.6.4.1, Secondary Containment was identified. Because the violation was identified during the discretion period described in Enforcement Guidance Memorandum 11-003, the NRC is exercising enforcement discretion in accordance with Section 3.5, "Violations Involving Special Circumstances," of the NRC Enforcement Policy and, therefore, will not issue enforcement action for this violation, subject to a timely license amendment request being submitted.

If you contest the NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Brunswick Steam Electric Plant.

If you disagree with the cross-cutting aspect of the finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region II, and the NRC Resident Inspector at the Brunswick Steam Electric Plant.

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,

*/RA/*

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

Docket Nos.: 50-325, 50-324  
License Nos.: DPR-71, DPR-62

Enclosure: Inspection Report 05000325, 324/2012003  
w/Attachment: Supplemental Information

cc w/encl: (See page 3)

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/RA/

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Letter to Michael J. Annacone from Randall A. Musser dated July 30, 2012

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**U. S. NUCLEAR REGULATORY COMMISSION**

**REGION II**

Docket Nos.: 50-325, 50-324

License Nos.: DPR-71, DPR-62

Report Nos.: 05000325/2012003, 05000324/2012003

Licensee: Carolina Power and Light (CP&L)

Facility: Brunswick Steam Electric Plant, Units 1 & 2

Location: 8470 River Road, SE  
Southport, NC 28461

Dates: April 1, 2012 through June 30, 2012

Inspectors: P. O'Bryan, Senior Resident Inspector  
M. Catts, Senior Resident Inspector  
D. Meléndez-Colón, Acting Senior Resident Inspector  
M. Schwieg, Resident Inspector  
K. Ellis, Resident Inspector, Oconee  
M. Miller, Senior Project Engineer, Branch 2  
A. Guzzetta, Reactor Inspector – Intern  
A. Nielsen, Senior Health Physics Inspector (Section 4OA6)

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

Enclosure

## SUMMARY OF FINDINGS

IR 05000325/2012003, 05000324/2012003; 04/01/12 – 06/30/12; Brunswick Steam Electric Plant, Units 1 & 2; Follow-up of Events.

This report covers a three-month period of inspection by resident inspectors. One self-revealed finding of very low safety significance (Green) was identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). The cross-cutting aspects were 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: Initiating Events

Green. A self-revealing Green NCV of Technical Specification (TS) 5.4.1, Procedures, was identified when the licensee failed to follow procedure 0MST-DG11R, Diesel Generator 1 Loading Test. During the preparation for the test, procedural steps were not performed correctly and the E1 electrical bus was inadvertently de-energized, requiring emergency diesel generator (EDG) 1 to auto-start and re-energize the bus. Once EDG 1 was supplying power to bus E1, the licensee exited from the surveillance procedure and restored offsite power to bus E1. The licensee entered the issue into their corrective action program as Action Request (AR) 529330.

The inspectors determined that the failure to follow procedure 0MST-DG11R, Diesel Generator 1 Loading Test, was a performance deficiency. The finding was determined to be more than minor because the finding was associated with the Initiating Events Cornerstone attribute of human performance and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, loss of the E1 bus adversely affected the shut down unit's defense-in-depth for the electrical power availability key safety function. Since Unit 1 was shut down at the time of the event, the finding's significance with regard to Unit 1 was evaluated using IMC 0609 Appendix G, Shutdown Operations Significance Determination Process. Since one offsite transmission network remained available to Unit 1 during the event, per Checklist 7 of IMC 0609 Appendix G, Attachment 1, the finding did not require a quantitative assessment. Therefore, the finding is of very low safety significance (Green) for Unit 1. Unit 2 was at power and was also affected by the finding. IMC 0609 Attachment 0609.04, Phase 1 - Initial Screening and Characterization of Findings, Table 4a for the Initiating Events Cornerstone was used to determine that the finding is of very low safety significance (Green) because the finding is a transient initiator that did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. The finding has a cross-cutting aspect in the Human Performance cross-cutting area, Work Practices component, because the licensee failed to implement adequate error prevention techniques while performing plant procedure 0MST-DG11R, Diesel Generator 1 Loading

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Test. Specifically, technicians did not utilize adequate error prevention techniques to prevent them from connecting test recorders incorrectly, H.4(a). (4OA3)

B. Licensee-Identified Violations

None.

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## REPORT DETAILS

### Summary of Plant Status

Unit 1 began the inspection period shut down for a refueling outage. Following completion of the refueling outage, the reactor was started up on April 29, 2012, and the main generator was synchronized to the grid on May 1, 2012. Reactor power was raised to rated thermal power (RTP) on May 5. Power was reduced to 84 percent for a control rod pattern adjustment on May 6, and returned to RTP the same day. On May 14, power was reduced to 80 percent for planned work on an off-site transmission line and power was returned to RTP on May 18. On June 12, reactor power was lowered to 98 percent due to the loss of the plant computer system. Power was further reduced to approximately 20 percent and the main turbine was taken off-line on June 15, to repair the hydrogen seal oil tank level indication instrumentation. Following the maintenance, the main generator was synchronized to the grid on June 16. Power was raised to RTP on June 18. Power was reduced to 85 percent for a control rod pattern adjustment on June 19, and returned to 97 percent the same day. Power was raised to RTP on June 21, and operated at or near full power for the remainder of the inspection period.

Unit 2 began the inspection period at RTP. On May 11, 2012, power was lowered to 70 percent for a control rod pattern adjustment and control rod drive maintenance. Power was returned to RTP on May 13. On June 2, power was reduced to 65 percent to isolate the 3B feed water heater for trouble-shooting. Power was returned to RTP on June 4. On June 9, power was reduced to 82 percent to isolate the 3A and 3B feed water heaters due to a tube leak. Power was returned to RTP on June 10. On June 12, reactor power was lowered to 98 percent due to the loss of the plant computer system. Power was returned to RTP on June 14, and remained at or near RTP for the remainder of the inspection period.

#### 1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

#### 1R01 Adverse Weather Protection

##### .1 Readiness of Offsite and Alternate AC Power Systems

##### a. Inspection Scope

The inspectors verified that plant features and procedures for operation and continued availability of offsite and alternating current (AC) power systems during adverse weather were appropriate. The inspectors reviewed the licensee's procedures affecting these areas and the communications protocols between the transmission system operator (TSO) and the plant to verify that the appropriate information was being exchanged when issues arose that could impact the offsite power system. Examples of aspects considered in the inspectors' review included:

- The coordination between the TSO and the plant during off-normal or emergency events;
- The explanations for the issues arose that could impact the offsite power system;

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- The estimates of when the offsite power system would be returned to a normal state; and
- The notifications from the TSO to the plant when the offsite power system was returned to normal.

The inspectors also verified that plant procedures addressed measures to monitor and maintain availability and reliability of both the offsite AC power system and the onsite alternate AC power system prior to or during adverse weather conditions. Specifically, the inspectors verified that the procedures addressed the following:

- The actions to be taken when notified by the TSO that the post-trip voltage of the offsite power system at the plant would not be acceptable to ensure the continued operation of the safety-related loads without transferring to the onsite power supply;
- The compensatory actions identified to be performed if it would not be possible to predict the post-trip voltage at the plant for the current grid conditions;
- A re-assessment of plant risk based on maintenance activities which could affect grid reliability, or the ability of the transmission system to provide offsite power; and
- The communications between the plant and the TSO when changes at the plant could impact the transmission system, or when the capability of the transmission system to provide adequate offsite power was challenged.

The inspectors also reviewed corrective action program items to verify that the licensee was identifying adverse weather issues at an appropriate threshold and entering them into its corrective action program in accordance with station corrective action procedures.

b. Findings

No findings were identified.

.2 Summer Seasonal Readiness Preparations

a. Inspection Scope

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

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

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- Control building ventilation and air conditioning; and
- Service water.

b. Findings

No findings were identified.

.3 Readiness for Impending Adverse Weather Condition

a. Inspection Scope

On May 30, 2012, a tropical storm warning was issued for the plant area as Tropical Storm Beryl approached the site. 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 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 corrective action program items to verify that the licensee identified adverse weather issues at an appropriate threshold and dispositioned them through the corrective action program in accordance with station corrective action procedures.

b. Findings

No findings of were identified.

1R04 Equipment Alignment

.1 Quarterly Partial System Walkdowns

a. Inspection Scope

The inspectors performed four (4) partial system walkdowns of the following risk-significant systems:

- Unit 2 A train standby liquid control system (SLC) with the B train of SLC out for maintenance on April 13, 2012;
- Unit 1 reactor core isolation cooling (RCIC) with the high pressure coolant injection (HPCI) system inoperable on May 3, 2012;

- Unit 1 A train core spray system with the B train of core spray out of service on May 18, 2012; and
- EDG 3 with EDG 4 out of service on May 22, 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, TS requirements, UFSAR, 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 that system components and support equipment were aligned correctly and were operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the corrective action program with the appropriate significance characterization.

b. Findings

No findings were identified.

1R05 Fire Protection

.1 Quarterly Resident Inspector Tours

a. Inspection Scope

The inspectors conducted five (5) fire protection walkdowns which were focused on availability, accessibility, and the condition of firefighting equipment in the following risk-significant plant areas:

- Unit 2 Cable Spreading Room 23' Elevation 2PFP-CB-6;
- Diesel Generator Basement 2' Elevation 0PFP-DG7;
- Unit 1 Reactor Building East 50' Elevation 2PFP-RB2-1h E;
- EDG Supply Air Fan Room 50' Elevation 0PFP-DG-15; and
- Unit 1 Turbine Building 20' Elevation 1PFP-TB1-86.

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 internal fire risk

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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 Licensed Operator Simulator Training

a. Inspection Scope

On May 10, 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 to ensure that training was being conducted in accordance with licensee procedures. The inspectors evaluated the operators in the following areas:

- 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 Main Control Room Operator Performance

### a. Inspection Scope

On May 1, 2012, the inspectors observed operators in the plant's main control room during Unit 1 reactor start-up and main generator synchronization to verify that operator performance was adequate. 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;
- management and supervision of activities, including risk management and reactivity management; and
- crew briefs.

### b. Findings

No findings were identified.

## 1R12 Maintenance Effectiveness

### a. Inspection Scope

The inspectors evaluated two (2) degraded performance issues involving the following risk-significant systems:

- Leak from Unit 1 control rod drive 18-31 on April 12, 2012, (AR 532495); and
- Stem galling on multiple Unit 1 main steam isolation valves on April 25, 2012, (AR 530489).

The inspectors reviewed events where ineffective equipment maintenance may have resulted in equipment failure or invalid automatic actuations of Engineered Safeguards Systems and independently verified the licensee's actions to address system performance or condition problems in terms of the following:

- 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;

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- ensuring 10 CFR 50.65(a)(1) or (a)(2) classification or re-classification; and 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 assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified that maintenance effectiveness issues were entered into the corrective action program with the appropriate significance characterization.

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 five (5) 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:

- Units 1 and 2 in yellow risk during electrical bus E2 outage on April 1, 2012;
- Unit 1 yellow risk and unit 2 increased risk during electrical bus E1 outage on April 6, 2012;
- Unit 1 yellow risk during control rod drive mechanism 18-31 o-ring replacement on April 12, 2012;
- Unit 2 yellow risk during surveillance testing of the B train of the residual heat removal (RHR) system on May 16, 2012; and
- Unit 1 and Unit 2 increased risk during the 1B conventional service water pump motor replacement on May 31, 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.

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## 1R15 Operability Determinations and Functionality Assessments

### a. Inspection Scope

The inspectors reviewed the following seven (7) issues:

- 1A standby gas treatment (SBGT) operated with painting and welding in progress on April 3, 2012, (AR 528145);
- Failed conductor in E2 low voltage relay circuit (AR 527838);
- Unit 1 Scram valve air leakage (AR 528797);
- Foreign material in Unit 1 HPCI Drain Line (AR 521395);
- Valve 1-E41-F054, HPCI steam supply drain pot trap bypass valve, failed to fully close on April 30, 2012, (AR 523485);
- Leakage from the Unit 2, A train of RHR to the unit 2 reactor core isolation cooling system (AR 524278); and
- Unit 2 HPCI barometric condenser level high during OPT-09.2 on June 21, 2012, (AR 545726).

The inspectors selected these 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.

### b. Findings

No findings were identified.

## 1R18 Plant Modifications

### a. Inspection Scope

Engineering design package EC 77451, Replacement of the Motor Operators for Valves, for Valves 1-MS-V28 and 2-MS-V28, was reviewed and selected aspects were discussed with engineering personnel. The permanent modification 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

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documents. The modification replaced the motor and associated cabling for the reactor feed pump high pressure isolation valves.

b. Findings

No findings were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

The inspectors reviewed the following six (6) post-maintenance activities to verify that procedures and test activities were adequate to ensure system operability and functional capability:

- 0PT-12.2, No. 3 ECCS Diesel Generator 2 Logic Test after modification to bus E2 electrical relays on April 3, 2012;
- 0MST-DG12R, DG-2 Loading Test after restoration of EDG 2, following a maintenance outage on April 3, 2012;
- 0PT-14.1a, Control Rod Coupling Check and Control Rod Drive Test after control rod drive mechanism change-outs on April 11, 2012;
- 10P-02, Reactor Recirculation System Operating Procedure after a software change on April 20, 2012;
- 0PT-14.2.1 Single Rod Scram Insertion Timing Test after replacement of alternate rod injection scram valves on April 24, 2012; and
- 0PT-12.12.L Diesel Generator 2 Local Control Operability Test after replacement of the lockout relay May 8, 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 UFSAR to ensure that the test results adequately ascertained 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.

b. Findings

No findings were identified.

## 1R20 Refueling and Other Outage Activities

### .1 Refueling Outage Activities

#### a. Inspection Scope

Unit 1 began the inspection period in a refueling outage. The inspectors reviewed outage plans and contingency plans for the Unit 1 refueling outage, which ended with the reactor startup on April 29, 2012, to confirm that the licensee had appropriately considered risk, industry experience, and previous site-specific problems in developing and implementing a plan that assured maintenance of defense-in-depth of key safety functions.

During the refueling outage, the inspectors monitored licensee controls over the outage activities listed below.

- Licensee configuration management, including maintenance of defense-in-depth for key safety functions and compliance with the applicable TS when taking equipment out of service;
- Implementation of clearance activities and confirmation that tags were properly hung and equipment appropriately configured to safely support the work or testing;
- Installation and configuration of reactor coolant pressure, level, and temperature instruments to provide accurate indication, accounting for instrument error;
- Controls over the status and configuration of electrical systems to ensure that TS and outage safety plan requirements were met, and controls over switchyard activities;
- Monitoring of decay heat removal processes, systems, and components;
- Controls to ensure that outage work was not impacting the ability of the operators to operate the spent fuel pool cooling system;
- Reactor water inventory controls including flow paths, configurations, and alternative means for inventory addition, and controls to prevent inventory loss;
- Controls over activities that could affect reactivity;
- Maintenance of secondary containment as required by TS;
- Startup and ascension to full power operation, tracking of startup prerequisites, walkdown of the drywell (primary containment) to verify that debris had not been left which could block emergency core cooling system suction strainers, and reactor physics testing; and
- Licensee identification and resolution of problems related to refueling outage activities.

#### b. Findings

No findings were identified.

## 1R22 Surveillance Testing

### .1 Routine Surveillance Testing

#### a. Inspection Scope

The inspectors either observed surveillance tests or reviewed the test results for the following four (4) 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.

- OMST-DG11R, DG-1 Loading Test on April 9, 2012;
- OPT-06.2.3, SLC System Squib Valve Test on April 18, 2012;
- OPT-25.1, Nuclear Steam Supply System MSIV Operability Test for Unit 1 on April 25, 2012; and
- OPT-11.1.2, Automatic Depressurization System and Safety Relief Valve Operability Test on May 1, 2012.

#### b. Findings

No findings were identified.

### .2 In-Service Testing (IST) Surveillance

#### a. Inspection Scope

The inspectors reviewed the performance of OPT-08.2.2B, Low Pressure Coolant Injection/Residual Heat Removal System Operability Test – Loop B on May 11, 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. The inspectors evaluated selected portions of the following areas: 1) testing procedures; 2) acceptance criteria; 3) testing methods; 4) compliance with the licensee's IST program, TS, selected licensee commitments, and code requirements; 5) range and accuracy of test instruments; and 6) required corrective actions.

#### b. Findings

No findings were identified.

### .3 Reactor Coolant System Leak Detection Inspection Surveillance

#### a. Inspection Scope

The inspectors observed and reviewed the test results for a reactor coolant system leak detection surveillance, OPT-80.1, Reactor Pressure Vessel Pressure Test on April 24, 2012. The inspectors observed in-plant activities and reviewed procedures and associated records to determine whether: effects of the testing were adequately

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addressed by control room personnel or engineers prior to the commencement of the testing; acceptance criteria were clearly stated, demonstrated operational readiness, and were consistent with the system design basis; plant equipment calibration was correct, accurate, and properly documented; and the calibration frequency were in accordance with TSs, 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. Inspectors verified that test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable; equipment was returned to a position or status required to support the performance of its safety functions; and all problems identified during the testing were appropriately documented and dispositioned in the corrective action program.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

.1 Mitigating Systems Cornerstone

a. Inspection Scope

The inspectors sampled licensee submittals for the performance indicators listed below for the period from the second quarter of 2011 through the first quarter of 2012. The inspectors reviewed the licensee's operator narrative logs, maintenance rule records, issue reports, derivation reports, event reports and NRC integrated inspection reports for the period to validate the accuracy of the submittals. 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.

- Mitigating Systems Performance Index, Emergency AC Power;
- Mitigating Systems Performance Index, Cooling Water Systems; and
- Safety System Functional Failures.

b. Findings

No findings were identified.

## 4OA2 Problem Identification and Resolution

### .1 Routine Review of Items Entered Into the Corrective Action Program

#### a. Inspection Scope

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

#### b. Findings

No findings were identified.

### .2 Semi-Annual Trend Review

#### a. Inspection Scope

The inspectors performed a review of the licensee's corrective action program and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment issues, but also considered the results of daily inspector corrective action program item screening discussed in Section 4OA2.1 above, licensee trending efforts, and licensee human performance results. The inspectors' review nominally considered the six-month period of January 1, 2012, through June 30, 2012, although some examples expanded beyond those dates where the scope of the trend warranted.

Inspectors also reviewed major equipment problem lists, repetitive and rework maintenance lists, departmental problem/challenges lists, system health reports, quality assurance audit/surveillance reports, self-assessment reports, and Maintenance Rule assessments. The inspectors compared and contrasted their results with the results contained in the licensee's corrective action program trending reports. Corrective actions associated with a sample of the issues identified in the licensee's trending reports were reviewed for adequacy.

#### b. Findings and Observations

Inspectors identified an adverse trend in human performance due to inadvertent component mispositionings. Examples of component mispositionings during the review period include:

- An oversized fuse found installed in the 1C switchgear (AR 527854);
- Incorrect recorder installation during EDG 1 surveillance testing (AR 529330);
- Several valves out of their normal position (ARs 531432, 536830, and 544862); and
- U2 circulation water intake pump load shed switch out of its normal position (AR 542103).

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The licensee has entered the issue into their corrective action (AR 545350). With the exception of the incorrect recorder installation during the EDG 1 surveillance testing, these mispositionings were determined to minor deficiencies.

.3 Selected Issue Follow-up Inspection: Inadvertent Trip of the 1A Variable Frequency Drive Unit

a. Inspection Scope

The inspectors selected AR 479378 for detailed review. This AR was associated with inadvertent trip of the 1A variable frequency drive and the 1A reactor recirculation pump. The inspectors reviewed this report to verify that the licensee identified the full extent of the issue, performed an appropriate evaluation, and specified and prioritized appropriate corrective actions. The inspectors evaluated the report against the requirements of the licensee's corrective action program as delineated in corporate procedure CAP-NGGC-0200, Corrective Action Program.

b. Findings

No findings were identified.

4OA3 Follow-up of Events

.1 (Closed) LER 05000324/2011-02-00, Unanalyzed Condition Due to Reactor Pressure Vessel (RPV) Head De-tensioned During Startup

a. Inspection Scope

The inspectors reviewed the plant's response to increased Unit 2 drywell unidentified leakage due to the RPV head being de-tensioned during reactor startup and pressurization on November 16, 2011. The increased drywell unidentified leakage led to a manual reactor scram and a declaration of an Unusual Event. NRC Region II conducted a Special Inspection after the event, and the results of the inspection are described in Inspection Report 05000324/2011013. One Unresolved Issue (URI) was identified in this report. The URI was later dispositioned as three non-cited violations (NCVs) in Inspection Report 05000324/2012007 (NCV 05000324/2012007-01, NCV 05000324/2012007-02, and NCV 05000324/2012007-03). Additionally, inspectors reviewed the accuracy of the LER and appropriateness of the licensee's corrective actions.

b. Findings

Three findings were identified and are included in Inspection Report 05000324/2012007. No additional findings were identified as a result of the LER review.

This LER is closed.

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.2 (Closed) LER 05000325/2012-01-00, Manual Reactor Protection System Actuation in Anticipation of a Loss of Condenser Vacuum

a. Inspection Scope

The inspectors reviewed the plant's response to lowering the Unit 1 main condenser vacuum due to the loss of the main circulating water pumps on February 22, 2012. The main circulating water pumps tripped off line after the screen wash system lost power when the common C bus was de-energized due to a transformer failure. Control room operators manually scrammed the reactor prior to an automatic reactor scram when the main circulating water pumps were lost. Additionally, inspectors reviewed the accuracy of the LER, the licensee's root cause evaluation, and the licensee's corrective actions.

b. Findings

No findings were identified.

This LER is closed.

.3 (Closed) LER 05000325/2012-02-00, Implementation of Enforcement Guidance (EGM) 11-003, Enforcement Guidance Memorandum on Dispositioning Boiling Water Reactor Licensee Noncompliance with Technical Specification Containment Requirements During Operations with a Potential for Draining the Reactor Vessel

a. Inspection Scope

The inspectors reviewed the plant's implementation of NCR EGM 11-003 during Unit 1 maintenance activities which had the potential to drain the reactor vessel during the Unit 1 refueling outage. The activities were:

- Portions of the reactor recirculation system were drained in preparation for chemical decontamination on March 8, 2012; and
- Twelve local power range monitors were replaced on March 13, 2012.

These activities took place without secondary containment being operable. Inspectors verified compliance with the guidelines of EGM 11-003 prior to and during these activities.

b. Findings

A violation of TS 3.4.6.1 was identified. However, because the violation was identified during the discretion period described in Enforcement Guidance Memorandum 11-003, the NRC is exercising enforcement discretion in accordance with Section 3.5, "Violations Involving Special Circumstances," of the NRC Enforcement Policy and, therefore, will not issue enforcement action for this violation, subject to a timely license amendment request being submitted.

This LER is closed.

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.4 (Closed) LER 05000325/2012-03-00, Valid Emergency Diesel Generator Actuation

a. Inspection Scope

The inspectors reviewed the plant's response to the loss of the E1 electrical bus during a maintenance procedure on April 9, 2012. During the maintenance procedure, technicians caused an inadvertent actuation of the E1 bus undervoltage protective circuitry by incorrectly attaching test instrumentation to a bus relay. After the bus was de-energized, EDG 4 started and was automatically connected to bus E1, restoring power to the bus. Additional details about the event are included below.

b. Findings

Introduction: A self-revealing Green non-cited violation of TS 5.4.1, Procedures, was identified when the licensee failed to follow procedure 0MST-DG11R, Diesel Generator 1 Loading Test. During the preparation for the test, procedural steps were not performed correctly and the E1 electrical bus was inadvertently de-energized, requiring EDG 1 to auto-start and re-energize the bus. Once EDG 1 was supplying power to bus E1, the licensee exited from of the surveillance procedure and restored offsite power to bus E1. The licensee entered the issue into their corrective action program as AR 529330.

Description: On April 9, 2012, test preparations were being conducted per section 7.1 of procedure 0MST-DG11R, Diesel Generator 1 Loading Test. During test preparations, 4160 VAC electrical bus E1 was de-energized when the incorrect recorder channel was connected to test relay 1-E1-AE7-27EX contacts 7 and 8. The recorder channel that was supposed to be connected across these relay contacts was a channel designed to measure voltage. The incorrect recorder channel that was connected to the relay contacts was designed to measure frequency. The frequency channel acted as a temporary short circuit across the relay contacts, which sent a low voltage signal to the bus protection circuitry. The bus protection circuitry then isolated (de-energized) the E1 bus, auto-starting EDG 1, and transferring the E1 bus to EDG 1 from off-site power. All operations were verified to occur by design and EDG 1 provided the power to the E1 bus. Once EDG 1 was supplying power to bus E1, the licensee backed out of the surveillance procedure and restored offsite power to bus E1.

Two recorders and several recorder channels are used during procedure 0MST-DG11R. Maintenance technicians performing the procedure prepared the recorder leads for use by labeling them with the recorder number and channel number. Channel 3 of recorder 1 was to be used to measure frequency and channel 3 of recorder 2 was to be used to measure voltage. At step 7.1.6.7 of 0MST-DG11R, technicians failed to accurately read the recorder number written on the recorder leads and incorrectly connected channel 3 of recorder 2 to relay 1-E1-AE8-FTR instead of channel 3 of recorder 1. This did not cause an immediate problem, but when the technicians reached step 7.1.7.6, they again failed to accurately read the recorder number written on the recorder leads and connected channel 3 of recorder 1 to relay 1-E1-AE7-27EX resulting in the bus loss.

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Analysis: The inspectors determined that the failure to follow procedure 0MST-DG11R, Diesel Generator 1 Loading Test, was a performance deficiency. The finding was determined to be more than minor because the finding was associated with the Initiating Events Cornerstone attribute of human performance and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, loss of the E1 bus affected the shut down unit's defense-in-depth for the electrical power availability key safety function.

Since Unit 1 was shut down at the time of the event, the finding's significance with regard to Unit 1 was evaluated using IMC 0609 Appendix G, Shutdown Operations Significance Determination Process. Since one offsite transmission network remained available to Unit 1 during the event, per Checklist 7 of IMC 0609 Appendix G, Attachment 1, the finding did not require a quantitative assessment. Therefore, the finding is of very low safety significance (Green) for Unit 1.

Unit 2 was at RTP and was also affected by the finding. IMC 0609 Attachment 0609.04, Phase 1 - Initial Screening and Characterization of Findings, Table 4a for the Initiating Events Cornerstone was used to determine that the finding is of very low safety significance (Green) because the finding is a transient initiator that did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available.

The finding has a cross-cutting aspect in the Human Performance cross-cutting area, Work Practices component, because the licensee failed to implement adequate error prevention techniques while performing plant procedure 0MST-DG11R, Diesel Generator 1 Loading Test. Specifically, technicians did not utilize adequate error prevention techniques to prevent them from connecting test recorders incorrectly, H.4(a).

Enforcement: TS Section 5.4.1.a, Administrative Control (Procedures), states, in part, that written procedures shall be established, implemented, and maintained, covering applicable procedures recommended in Regulatory Guide 1.33, Appendix A, November 1972 (Safety Guide 33, November 1972). Section H.2 of Regulatory Guide 1.33, Appendix A, November 1972, (Safety Guide 33, November 1972) states, in part, that specific procedures for surveillance tests, inspections, and calibrations should be written. The licensee established procedure 0MST-DG11R, Diesel Generator 1 Loading Test, as an implementing procedure for surveillance testing of EDG 1.

Contrary to the above, on April 9, 2012, the licensee failed to properly implement procedure 0MST-DG11R, Diesel Generator 1 Loading Test, when preparing EDG 1 for load testing. Specifically, personnel did not connect test equipment in accordance with procedural requirements, which lead to de-energizing bus E1, automatic starting of EDG 1, and E1 bus transfer to EDG 1. Because this violation was of very low safety significance and it was entered into the licensee's corrective action program as NCR 529330, this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy (NCV 05000325,324/2012003-01), Failure To Follow Plant Procedure Caused Loss of E1 Bus.

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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 Operation of an Independent Spent Fuel Storage Installation (ISFSI)

###### a. Inspection Scope

During the inspection period the inspectors conducted observations of selected activities to ensure that the licensee has maintained fuel stored in the ISFSI in a safe manner and in compliance with approved procedures. Inspectors also reviewed selected records to ensure that the licensee has identified each fuel assembly placed in the ISFSI, has recorded the parameters and characteristics of each fuel assembly, and has maintained a record of each fuel assembly as a controlled document.

###### b. Findings

No findings were identified.

#### 4OA6 Meetings, Including Exit

##### Exit Meeting Summary

On July 16, 2012, the inspector presented the inspection results to Mr. E. Wills, and other members of the licensee staff. The inspectors confirmed that proprietary information was not provided or examined during the inspection period.

##### Regulatory Performance Meeting

On July 16, 2012, a regulatory performance meeting was conducted between the NRC and the licensee to discuss the corrective actions associated with a White finding involving the failure to identify and correct a condition adverse to quality involving

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degradation of the external flood barriers for the EDG fuel oil tank rooms. The meeting was conducted by the Chief of Reactor Projects Branch 4 and Mr. E. Wills of the licensee staff.

#### Groundwater Monitoring Program Teleconference

On June 13, 2012, the inspectors held a teleconference with licensee staff to discuss the status of the site's groundwater monitoring program. The licensee provided an update on tritium concentrations in water collected from onsite and offsite groundwater and surface water sampling locations and discussed ongoing remediation efforts associated with the storm drain stabilization pond (SDSP) and areas near a Unit 1 condensate storage tank (CST) underground pipe leak. Although seasonal fluctuations can occur, the inspectors noted that onsite tritium concentrations in and near the SDSP have generally trended downward since 2007 when the contamination was discovered and corrective actions were initiated. The licensee has recently installed intermediate-depth monitoring wells in the vicinity of the CST piping leak in order to directly monitor the Castle-Hayne aquifer and to better characterize the tritium plume. Some of these new wells have detected low levels of tritium in the top of the Castle-Hayne aquifer in the area immediately below the plant site. New wells have also been constructed further away from the leak site to monitor any plume migration through the Castle-Hayne aquifer. Samples taken from these wells have not shown any detectable tritium. The inspectors noted that although very low concentrations of tritium have been identified periodically in the offsite environs, (e.g., Nancy's Creek) immediately adjacent to the SDSP, all reported values for offsite samples have remained significantly below established regulatory limits. The licensee has completed a network of sub-surface pumping wells designed to remediate the groundwater around the SDSP and near the CST piping leak. The licensee has also completed construction of a new, double-lined pond to replace the SDSP. Publicly available information regarding onsite groundwater monitoring and radionuclide concentrations in the environment near the site can be found in the Annual Radiological Environmental Operating Report. The 2011 Annual Report is currently available through the Agencywide Documents Access and Management System (ADAMS) at <http://www.nrc.gov/reading-rm/adams.html> (accession number ML12145A348). A 30-day report regarding the Unit 1 CST piping leak is also available through ADAMS (accession number ML110190210).

ATTACHMENT: SUPPLEMENTAL INFORMATION

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## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### **Licensee Personnel**

M. Annacone, Site Vice President  
A. Brittain, Manager – Security  
J. Burke, Director – Engineering  
C. Dunsmore, Manager – Shift Operations  
P. Dubrouillet, Manager – Training  
L. England, Corporate Lead Environmental Specialist  
J. Frisco, Plant General Manager  
C. George, Manager – Technical Support Engineering  
K. Gerald, Superintendent – Mechanical Maintenance  
S. Gordy, Manager – Maintenance  
L. Grzeck, Acting Supervisor – Licensing and Regulatory Affairs  
F. Jefferson, Manager – Systems Engineering  
J. Johnson, Manager – Environmental and Radiological Controls  
M. McGowan, Supervisor – Environmental  
M. Millinor, Sr. Chemistry Specialist  
D. Petrusic, Superintendent – Environmental and Chemistry  
A. Pope, Manager - Support Services  
T. Sherrill, Engineer - Technical Support  
P. Smith, Superintendent – Electrical, Instrumentation, and Controls Maintenance  
S. Snowdon, Senior Chemistry Specialist  
M. Turkal, Lead Engineer - Technical Support  
J. Vincelli, Superintendent – Radiation Protection  
H. Willets, Manager– Design Engineering  
E. Wills, Director – Site Operations

#### **NRC Personnel**

T. Stephen, Project Engineer  
R. Kellner, Health Physicist  
G. Kuzo, Sr. Health Physicist  
T. Nicholson, Sr. Technical Advisor for Radionuclide Transport - Office of Nuclear Regulatory Research  
J. Pelchat, Sr. Regional Governmental Liaison Officer  
Randall A. Musser, Chief, Reactor Projects Branch 4, Division of Reactor Projects Region II

## LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

### Opened and Closed

05000325,324/2012003-01	NCV	Failure To Follow Plant Procedure Caused Loss of E1 Bus (Section 4OA3.4)
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### Closed

05000324/2011-002	LER	Unanalyzed Condition Due to Reactor Pressure Vessel (RPV) Head Detensioned During Startup (Section 4OA3.1)
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05000325/2012-001	LER	Manual Reactor Protection System Actuation in Anticipation of a Loss of Condenser Vacuum (Section 4OA3.2)
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05000325/2012-002	LER	Implementation of Enforcement Guidance (EGM) 11-003, Enforcement Guidance Memorandum on Dispositioning Boiling Water Reactor Licensee Noncompliance with Technical Specification Containment Requirements During Operations with a Potential for Draining the Reactor Vessel (Section 4OA3.3)
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05000325/2012-003	LER	Valid Emergency Diesel Generator Actuation (Section 4OA3.4)
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## **LIST OF DOCUMENTS REVIEWED**

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

0AOP-13.0, Operation during Hurricane, Flood Conditions, Tornado, or Earthquake  
0A1-68, Brunswick Nuclear Plant Response to Severe Weather Warnings  
0PEP-02.1, Initial Emergency Actions  
0PEP-02.6, Severe Weather  
0O1-01.03, Non-Routine Activities  
0AI-062, Seasonal Preparations

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

0OP-50.1, Diesel Generator Emergency Power System Operating Procedure  
Drawing D-02265, sheets 1A and 1B, drawing D-02266, sheets 2A and 2B, Piping Diagram for Diesel Generators Starting Air System Units 1 and 2  
Drawing D-02268, sheets 1A and 1B, drawing D-02269, sheets 2A and 2B, Piping Diagram for Diesel Generators Fuel Oil System Units 1 and 2  
Drawing D-02270, sheets 1A and 1B, drawing D-02271, sheets 2A and 2B, Piping Diagram for Diesel Generators Lube Oil to Lube Oil System Units 1 and 2  
Drawing D-02272, sheets 1A and 1B, drawing D-02273, sheets 2A and 2B, Piping Diagram for Diesel Generators Jacket Water System Units 1 and 2  
Drawing D-02272, sheets 1A and 1B, drawing D-02273, sheets 2A and 2B, Piping Diagram for Diesel Generators Jacket Water System Units 1 and 2  
Drawing D-02274, sheets 1 and 2, Piping Diagram for Diesel Generators Service and Demineralized Water System Units 1 and 2  
1OP-16, Reactor Core Isolation Cooling System Operating Procedure  
1OP-18, Core Spray System Operation Procedure  
0OP-39, Diesel Generator Operating Procedure  
SD-39, Emergency Diesel Generators

### **Section 1R05: Fire Protection**

0PFP-CB, Control Building Prefire Plans  
0PFP-DG, Diesel Generator Building Prefire Plans  
0PFP-013, General Fire Plan  
1PFP-RB, Reactor Building Prefire Plans Unit 1  
1PFP-TB, Turbine Building Prefire Plans Unit 1  
0OP-41, Fire Protection and Well Water System  
0PT-34.11.2.0, Portable Fire Extinguisher Inspection

### **Section 1R11: Licensed Operator Requalification**

0TPP, Licensed Operator Continuing Training Program  
TRN-NGGC-0014, NRC Initial Licensed Operator Exam Development and Administration  
1EOP-01-LPC, Level/Power Control  
0PEP-2.1.1, Emergency Control – Notification of Unusual Event, Alert, Site Area Emergency, or General Emergency  
0PEP-02.1, Initial Emergency Actions

### **Section 1R12: Maintenance Effectiveness**

ADM-NGGC-0101, Maintenance Rule Program  
 NUMARC 93-01, Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants  
 ADM-NGGC-0203, Preventive Maintenance and Surveillance Testing Administration  
 EGR-NGGC-0351, Condition Monitoring of Structures  
 ADM-NGGC-0203, Preventive Maintenance and Surveillance test Administration  
 OAP-022, BNP Outage Risk Management  
 MNT-NGGC-0004, Scaffolding Control

### **Section 1R13: Maintenance Risk Assessment and Emergent Work Control**

OAP-022, BNP Outage Risk Management  
 ADM-NGCC-0104, Work Management Process  
 OAI-144, Risk Management  
 ADM-NGGC-0006, Online EOOS Model  
 WCP-NGGC-0500, Work Activity Integrated Risk Management Program

### **Section 1R15: Operability Determinations and Functionality Assessments**

OPS-NGGC-1305, Operability Determinations  
 OPS-NGGC-1307, Operational Decision making

### **Section 1R18: Plant Modifications**

EGR-NGGC-0005, Engineering Change  
 EGR-NGGC-0011, Engineering Product Quality

### **Section 1R19: Post Maintenance Testing**

OPLP-20, Post Maintenance Testing Program  
 SD-39, Emergency Diesel Generators

### **Section 1R20: Refueling and Other Outage Activities**

1OP17, Residual Heat Removal System Operating Procedure  
 OGP-01, Prestartup Checklist  
 OGP-02, Approach to Criticality and Pressurization of the Reactor  
 OGP-03, Unit Startup and Synchronization  
 OGP-12, Power Changes  
 OSMP-RPV502, Reactor Vessel Reassembly  
 OMMM-015, Operation and Inspection of Cranes and Material Handling Equipment  
 OPT-80.1, Reactor Pressure Vessel ASME Section XI Pressure Test  
 OPT-14.1A, Control Rod Coupling Check and CRD Testing  
 OPT-14.2.1, Single Rod Scram Insertion Times Test



**Section 1R22: Surveillance Testing Activities**

0MST-DG12R, DG-2 Loading Test  
0PT-06.2.3, Standby Liquid Control System Squib Valve Test  
0PT-08.2.2B, Low Pressure Coolant Injection/Residual Heat Removal System Operability Test  
0PT-25.1, Nuclear Steam Supply System MSIV Operability Test  
0PT-11.1.2, Automatic Depressurization System and Safety Relief Valve Operability Test

**Section 40A1: Performance Indicator Verification****Procedures**

REG-NGGC-0009, NRC Performance Indicators and Monthly Operating Report Data

**Records and Data**

Monthly PI Reports, April, 2011 through March, 2012

**Section 40A3: Follow Up of Events and Notices of Enforcement Discretion**

1OP17, Residual Heat Removal System Operating Procedure  
2OP17, Residual Heat Removal System Operating Procedure  
0GP-01, Prestartup Checklist  
0GP-02, Approach to Criticality and Pressurization of the Reactor  
0GP-03, Unit Startup and Synchronization  
0GP-05, Unit Shutdown  
0GP-12, Power Changes  
0MMM-015, Operation and Inspection of Cranes and Material Handling Equipment

**Section 40A6: Meetings, including Exit**

AR 00402755