



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION II
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ATLANTA, GEORGIA 30303-8931

July 28, 2006

Carolina Power and Light Company
ATTN: Mr. James Scarola
Vice President
Brunswick Steam Electric Plant
P. O. Box- 10429-
Southport, NC 28461

SUBJECT: BRUNSWICK STEAM ELECTRIC PLANT - NRC INTEGRATED INSPECTION
REPORT NOS. 05000325/2006003 AND 05000324/2006003

Dear Mr. Scarola:

On June 30, 2006, the US Nuclear Regulatory Commission (NRC) completed an inspection at your Brunswick Units 1 and 2 facilities. The enclosed integrated inspection report documents the inspection findings, which were discussed on July 18, 2006 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.

As an incentive to encourage licensee participation in the International Atomic Energy Agency Operational Safety Review Team (OSART) Missions, the NRC determined that, for those NRC baseline inspections that overlap, either in part or fully, with an OSART review, a one-time regulatory credit (reduction in baseline inspection program), would be granted. Based on a review of the inspection report from an OSART inspection conducted at Brunswick in May, 2005, the NRC determined that Brunswick qualified for a 25% reduction of the inspection effort for two NRC inspection procedures (IPs) documented in the enclosed report. Specifically, credit was given for IP 71114.03, Emergency Response Organization Augmentation, and IP 71114.05, Correction of Emergency Preparedness Weaknesses and Deficiencies. As such, the scope of the inspection of these procedures was reduced by 25%.

This report documents one NRC-identified finding of very low safety significance (Green). The finding was determined to involve a violation of NRC requirements. However, because of the very low safety significance and because it had been entered into your corrective action program, the NRC is treating this finding as a non-cited violation (NCV), in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you contest this 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.

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

Sincerely,

/RA/

Paul E. Fredrickson, 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, 324/2006003
w/Attachment: Supplemental Information

cc w/encl: (See page 3)

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

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CP&L

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Report to J. Scarola from Paul E. Fredrickson dated July 28, 2006

SUBJECT: BRUNSWICK STEAM ELECTRIC PLANT - NRC INTEGRATED INSPECTION
REPORT NOS. 05000325/2006003 AND 05000324/2006003

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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: 05000325/2006003 and 05000324/2006003

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, 2006 through June 30, 2006

Inspectors: E. DiPaolo, Senior Resident Inspector
J. Austin, Resident Inspector
M. Scott, Senior Reactor Inspector (1R02, 1R17.2)
N. Staples, Reactor Inspector (1R02, 1R17.2)
R. Chou, Reactor Inspector (1R02, 1R17.2)
T. Nazario, Reactor Inspector [in-office] (1R17.1)

Approved by: Paul Fredrickson, Chief
Reactor Projects Branch 4
Division of Reactor Projects

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SUMMARY OF FINDINGS

IR 05000325/2006003, 05000324/2006003; 04/01/2006 - 06/01/2006; Brunswick Steam Electric Plant, Units 1 and 2; Equipment Alignment.

The report covered a 3-month period of inspection by resident inspectors, one senior reactor inspector, and four reactor inspectors. One Green non-cited violation (NCV) 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). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

Green. An NRC-identified non-cited violation was identified for failure to meet Technical Specification (TS) 5.4.1, Procedures. Specifically, the temporary modification process was not followed when implementing a temporary change to the Unit 2 reactor core isolation cooling keepfill system. As a result, appropriate reviews of the impact on reactor core isolation cooling system operability were not performed. This resulted in the Unit 2 reactor core isolation cooling system being inoperable due to the potential of voiding the reactor core isolation cooling pump discharge piping during certain scenarios.

This finding is more than minor because it is associated with operating equipment lineup and affected the Mitigating System Cornerstone objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences. The finding was determined to be of very low safety significance (Green) because it did not represent an actual loss of safety function for greater than the TS allowed outage time. The inspectors determined that the cause of this finding is a performance aspect of the human performance cross-cutting area, in that the cause was due to personnel failing to follow the temporary modification process (Section 1R04).

B. Licensee Identified Violations

None

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REPORT DETAILS

Summary of Plant Status

Unit 1 began the report period in Mode 5 (Refueling) and in Refueling Outage (RFO) B116R1. Mode 4 (Cold Shutdown) was achieved on April 4, and a unit startup was commenced on April 6. The unit entered Mode 1 (Power Operation) on April 7, and synchronized with the grid on April 8 to complete the RFO (35 days). On April 15, with power being held at 98 percent due to the review of new feedwater flow measurement venturi's, the unit performed an unplanned downpower to 79 percent as a result of the B circulating water intake pump tripping due to an instrumentation problem. Unit 1 achieved full power later that day. On May 18, the unit performed an unplanned downpower to approximately 86 percent due to high temperature on the main generator output B phase bus caused by a closed bus duct air cooling damper. The unit returned to full power later that day. The unit performed an unplanned downpower to approximately 91 percent due to securing the B circulating water intake pump when a diver experienced an emergency situation while cleaning the pumps associated trash rack. Full power was achieved later that day. On June 16, the unit performed a planned downpower to approximately 60 percent to facilitate fuel leak suppression testing. After successfully identifying and suppressing one leaking fuel assembly, power ascension was commenced. Full power was achieved on June 21. Another unplanned downpower to approximately 83 percent was performed on June 24, when the C circulation water intake pump tripped due to an instrumentation problem. The unit returned to full power later that day.

Unit 2 began the report period at approximately 52 percent in order to facilitate control rod scram time testing, and main turbine and main steam valve testing. The unit returned to full power on April 3. On May 19, Unit 2 commenced a plant shutdown for a midcycle RFO (B217M1) in order to replace leaking fuel assemblies. Mode 5 (Refueling) was achieved on May 21. The unit entered Mode 2 (Startup) on May 28 and Mode 1 (Power Operation) on May 30. Full power was achieved on June 4, where the unit remained for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

a. Inspection Scope

The inspector's reviewed the licensee's preparations for severe weather conditions prior to hurricane season and hot weather. The inspectors reviewed the results of multi-discipline-attended preparation meetings and reviewed the station's procedures for severe weather warnings (i.e., hurricanes). The inspectors toured and reviewed a sampling of design features (e.g., missile shields, severe weather doors, sumps) of the nuclear service water and emergency diesel generator buildings (1 adverse weather sample of 2 systems) to verify that they would remain functional when challenged by adverse weather. Documents reviewed are listed in the Attachment.

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b. Findings

No findings of significance were identified.

1R02 Evaluations of Changes, Tests or Experiments

a. Inspection Scope

The inspectors reviewed selected samples of evaluations to confirm that the licensee had appropriately considered the conditions under which changes to the facility, Updated Final Safety Analysis Report (UFSAR), or procedures may be made, and tests conducted, without prior NRC approval. The inspectors reviewed evaluations for seven changes and additional information, such as calculations, supporting analyses, the UFSAR, and drawings to confirm that the licensee had appropriately concluded that the changes could be accomplished without obtaining a license amendment. The seven evaluations reviewed are listed in the Attachment.

The inspectors also reviewed samples of changes for which the licensee had determined that evaluations were not required, to confirm that the licensee's conclusions to "screen out" these changes were correct and consistent with 10 CFR 50.59. The eighteen "screened out" changes reviewed are listed in the Attachment.

The inspector also reviewed programmatic action requests (ARs, corrective action documents) to confirm that problems were identified at an appropriate threshold, were entered into the corrective action process, and appropriate corrective actions had been initiated.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

.1 Partial System Walkdowns

a. Inspection Scope

The inspectors performed three partial walkdowns of the below listed systems to verify that the systems were correctly aligned while the redundant train or system was inoperable or out-of-service (OOS) or, for single train risk significant systems, while the system was available in a standby condition. The inspectors assessed conditions such as equipment alignment (i.e., valve positions, damper positions, and breaker alignment) and system operational readiness (i.e., control power and permissive status) that could affect operability. The inspectors verified that the licensee had identified and resolved equipment alignment problems that could cause initiating events or impact mitigating system availability. The inspectors reviewed Administrative Procedure ADM-NGGC-0106, Configuration Management Program Implementation, to verify that

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available structures, systems or components (SSCs) met the requirements of the configuration control program. Documents reviewed are listed in the Attachment.

- Unit 2 residual heat removal/residual heat removal service water systems on May 21, 2006 while in shutdown cooling mode prior to core floodup.
- Unit 1 B loop of core spray when A loop was OOS on June 8, 2006
- Unit 2 reactor core isolation cooling (RCIC) system on June 26, 2006 (risk significant single train)

b. Findings

Introduction.

An NRC-identified Green NCV was identified for failure to meet TS 5.4.1, Procedures, in that the temporary modification process was not followed when implementing a temporary change to the Unit 2 reactor core isolation cooling keepfill system.

Description.

On June 22, 2006, the licensee identified that the Unit 2 RCIC discharge piping keepfill pressure rose above the normal setpoint which resulted in lifting of the RCIC pump suction relief valve. On June 24, 2006, efforts were made to rebuild the RCIC keepfill pressure control valve (2-E51-PCV-3006); but during the rebuild, the licensee noted that pressure was still rising, indicating a leaking keepfill bypass line valve. On June 26, a flush of the bypass valve was performed and pressure continued to increase.

As a compensatory action to minimize the pressure increase, a vent was opened at a test connection for a keepfill pressure indicator (2-E51-PI-3005). This allowed the licensee to maintain discharge piping pressure in the normal range during the maintenance by allowing a continuous vent of the keepfill system. The inspectors questioned whether the change could affect RCIC system operability with a loss of keepfill system pressure (i.e., loss of power to the demineralized water pumps).

The licensee informed the inspector that system operability was not effected when in its normal standby lineup (i.e., RCIC pump suction lined up to the condensate storage tank). However, with the RCIC system suction lined up to the suppression pool, which was the case at the time, there was a potential of voiding the RCIC pump discharge piping under certain scenarios which could lead to unacceptable pipe water hammer during subsequent pump starts. Subsequently, operators declared RCIC inoperable. The inspectors determined that the licensee had failed to appropriately follow the temporary modification process per Nuclear Generation Group Standard Procedure EGR-NGGC-0005, Engineering Change, when implementing this temporary change to the Unit 2 RCIC keepfill system. As a result, appropriate reviews of the impact on RCIC system operability were not performed. This resulted in rendering the Unit 2 RCIC system inoperable on June 26, 2006 due to the potential of voiding the RCIC pump discharge piping during certain scenarios.

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Analysis.

The failure to appropriately follow the temporary modification process, which resulted in the Unit 2 RCIC system being inoperable on June 26, 2006, is a performance deficiency. This issue is more than minor because it is associated operating equipment lineup and affected the Mitigating System Cornerstone objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences. The finding was determined to be of very low safety significance (Green) because it did not represent an actual loss of safety function for greater than the TS Allowed outage time. The inspectors determined that the cause of this finding is a performance aspect of the human performance cross-cutting area, in that the cause was due to personnel failing to follow the engineering change (EC) process.

Enforcement.

TS 5.4.1 requires that written procedures shall be implemented covering the applicable procedures recommended in Regulatory Guide 1.33, Appendix A, November 1972. Regulatory Guide 1.33, Appendix A, requires Administrative Procedures for Equipment Control. The licensee's procedures for temporary changes are contained in EGR-NGGC-0005, Engineering Change, Rev. 25. Contrary to EGR-NGGC-0005, a temporary change was made to the Unit 2 RCIC keepfill system on June 26, 2006, without using the instructions of the procedure. As a result, appropriate reviews of the impact on RCIC system operability were not performed. This resulted in the Unit 2 RCIC system being rendered inoperable due to the temporary change. Because this finding is of very low safety significance and has been entered into the corrective action program (CAP) as AR 198380, this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000324/2006003-01, Failure to Follow Engineering Change Procedure Resulting in Inoperable Reactor Core Isolation Cooling System.

.2 Complete System Walkdown

a. Inspection Scope

The inspectors performed a complete walkdown of the accessible portions of the Unit 1 and 2 service water chlorination and control room emergency ventilation (CREV) system chlorine detection system. The inspectors focused on verifying adequate material condition and correct system alignment. The inspectors reviewed the TS, operating procedures, and the UFSAR. The inspectors held discussions with the service water and CREV system engineers to review system status including a review of open system modifications and temporary modifications. The inspectors reviewed open work requests for the system, operator work-arounds, and open adverse conditions or ARs to ensure that the impact on equipment functionality was properly evaluated. The inspectors reviewed the documents listed in the Attachment.

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b. Findings

No findings of significance were identified.

1R05 Quarterly Fire Protection

a. Inspection Scope

Fire Area Walkdowns

The inspectors reviewed ARs and work orders (WOs) associated with the fire suppression system to confirm that their disposition was in accordance with Procedure 0AP-033, Fire Protection Program Manual. The inspectors reviewed the status of ongoing surveillance activities to verify that they were current to support the operability of the fire protection system. In addition, the inspectors observed the fire suppression and detection equipment to determine whether any conditions or deficiencies existed which would impair the operability of that equipment. The inspectors toured the following eight areas important to reactor safety and reviewed the associated prefire plans to verify that the requirements for fire protection design features, fire area boundaries, and combustible loading were met. Documents reviewed are listed in the Attachment.

- Unit 2 Reactor Building East and West, 50' Elevation (2 areas)
- Unit 2 North and South Residual Heat Removal Rooms, -17' Elevation (2 areas)
- Diesel Generator Cells 1, 2, 3, and 4, 23' Elevation (4 areas)

b. Findings

No findings of significance were identified.

1R06 Flood Protection

a. Inspection Scope

The inspectors performed a walkdown of the Units 1 and 2 service water building to verify that internal flood protection features were consistent with the licensee's internal flooding analysis as described in UFSAR Section 3.4.2, Protection From Internal Flooding. The inspectors reviewed the effects of postulated piping failures for the area to verify that analysis assumptions and conclusions were based on the current plant configuration. The internal flooding design features and equipment for coping with internal flooding were also inspected. The walkdown included sources of flooding and drainage, sump pumps, level switches, watertight doors, curbs, pedestals and equipment mounting. The inspectors reviewed the procedures for coping with internal flooding.

1R11 Quarterly Licensed Operator Requalification

a. Inspection Scope

The inspectors observed licensed operator performance and reviewed the associated training documents during dynamic simulator examination sessions for training cycle 2006-02. The simulator observations and review included evaluations of emergency operating procedure and abnormal operating procedure utilization. The inspectors reviewed Procedure OTPP-200, Licensed Operator Continuing Training Program, to verify that the program ensures safe power plant operation. Two simulator examinations (different crews) were observed on May 3, 2006. The scenarios tested the operators' ability to diagnose and respond to various instrumentation failures, abnormal operating transients, losses of power to various safety-related and nonsafety-related electrical bus' and accidents. The inspectors reviewed operator activities to verify consistent clarity and formality of communication, conservative decision-making by the crew, appropriate use of procedures, and proper alarm response. Group dynamics and supervisory oversight, including the ability to properly identify and implement appropriate TS actions, regulatory reports, and notifications, were observed. The inspectors observed instructor critiques and preliminary grading of the operating crews and assessed whether appropriate feedback was planned to be provided to the licensed operators.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

For the two equipment issues described in the ARs listed below, the inspectors reviewed the licensee's implementation of the Maintenance Rule (10 CFR 50.65) with respect to the characterization of failures, the appropriateness of the associated Maintenance Rule a(1) or a(2) classification, and the appropriateness of the associated a(1) goals and corrective actions. The inspectors also reviewed operations logs and licensee event reports to verify unavailability times of components and systems, if applicable. Licensee performance was evaluated against the requirements of Procedure ADM-NGG-0101, Maintenance Rule Program. The inspectors also reviewed deficiencies related to the work activities associated with the ARs to verify that the licensee had identified and resolved deficiencies in accordance with Procedure CAP-NGGC-0200, Corrective Action.

- AR 173198, Diesel generator #4 air compressive repetitive functional failure
- AR 173069, Diesel generator air compressor #1 in degraded condition

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b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

a. Inspection Scope

The inspectors reviewed the licensee's implementation of 10 CFR 50.65 (a)(4) requirements during scheduled and emergent maintenance activities, using Procedure 0AP-025, BNP Integrated Scheduling and Technical Requirements Manual 5.5.13, Configuration Risk Management Program. The inspectors reviewed the effectiveness of risk assessments performed prior to changes in plant configuration for maintenance activities (planned and emergent). The review was conducted to verify that, upon unforeseen situations, the licensee had taken the necessary steps to plan and control the resultant emergent work activities. The inspectors reviewed the applicable plant risk profiles, work week schedules, and maintenance WO's for the following seven conditions involving OOS equipment:

- AR 190487, Unit 1 risk assessment for transitioning from Mode 4 (Cold Shutdown) to Mode 2 (start-up) utilizing provisions of TS 3.0.4.b with an inoperable back-up nitrogen supply to a drywell-to-reactor building vacuum breaker on April 6, 2006 (planned)
- AR 195219, Unit 1 isolated phase bus duct cooling damper adjustments to correct high B phase temperature on May 20, 2006 (emergent)
- AR 194918, Failure of Unit 2 C residual heat removal pump breaker to properly rack resulting in Yellow plant risk condition on May 18, 2006 (emergent)
- AR 194714, Failure of one channel of the Unit 2 main turbine thrust-bearing wear detector on May 16, 2006, resulting in satisfying one-half of the turbine trip logic (emergent)
- Work Request (WR) 236201, Unit 1 B circulating water pump tripped on April 15, 2006, resulting in a Unit 1 power reduction to approximately 80 percent (emergent)
- AR 197918, Unit 2 safety/relief valve C pilot valve leakage identified on June 20, 2006 (emergent)
- AR 193394, Sodium hypochlorite injection with chlorine detection inoperable (emergent)

b. Findings

No findings of significance were identified.

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1R14 Operator Human Performance

a. Inspection Scope

The inspectors observed and/or reviewed the following two transients and abnormal plant conditions to assess operator performance during non-routine evolutions and events. Operator logs, plant computer data, and associated operator actions were reviewed as well as the procedures listed in the Attachment.

- AR 195031, Unit 1 high isolated phase bus high temperature due to closed bus duct air cooling damper resulting in unplanned downpower on May 18, 2006
- AR 195844, Unit 2 entered Abnormal Operating Procedure OROP-26, High Reactor Coolant or Condensate Conductivity, on May 29, 2006 due to a main condenser tube leak detected during startup

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the operability evaluations associated with the following six issues documented in the ARs listed below, which affected risk significant systems or components, to assess, as appropriate: 1) the technical adequacy of the evaluations; 2) the justification of continued system operability; 3) any existing degraded conditions used as compensatory measures; 4) the adequacy of any compensatory measures in place, including their intended use and control; and 5) where continued operability was considered unjustified, the impact on any TS limiting condition for operation and the risk significance. In addition to the reviews, discussions were conducted with the applicable system engineer regarding the ability of the system to perform its intended safety function.

- AR 189599, Primary containment isolation system main steam line flow detector instrument tubing not properly sloped
- AR 194659, Anchor bolt embedment for Unit 1 high pressure coolant injection system support discovered to be less than required minimum
- AR 193506, Unit 2 service water vital header discharge flange discovered with excessive corrosion during ultrasonic test examinations
- AR 197630 Unit 2 containment atmosphere pumps (2-CAC-1260 and 1262) exhibiting excessive leakage
- AR 197367, Periodic venting of Unit 2 drywell not necessary following RFO B217M1
- WR 240719, EDG #3 manual voltage regulator response during testing was slow during testing

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b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modification.1 Annual Reviewa. Inspection Scope

The inspectors reviewed two permanent plant modifications documented in the below listed documents. The inspectors reviewed the design adequacy of the modification for material compatibility which included functional properties, environmental qualification, and seismic evaluation. The review verified that the modification was consistent with the plant's design bases and the design assumptions. Where applicable, the review verified that modification preparation, staging, and implementation did not impair emergency/abnormal operating procedure actions and key safety functions.

Post-modification testing was reviewed to confirm that operability would be established, unintended system interactions would not occur, and the testing demonstrated that modification acceptance criteria were met. Documents reviewed are listed in the Attachment. The following modifications were reviewed:

- Special Procedure OSP-99-002, Sodium Hypochlorite Injection to Circulating Water System
- Engineering Change (EC) 63657, Repair of Unit 1 Reactor Pressure Vessel Internal Core Spray Piping

b. Findings

No findings of significance were identified.

b. Findings

No findings of significance were identified.

.2 Biennial Reviewa. Inspection Scope

The inspectors evaluated design change packages for 14 modifications, in the Initiating Events, Mitigating Systems, and Barrier Integrity Cornerstone areas, to evaluate the modifications for adverse effects on system availability, reliability, and functional capability. The modifications and the associated attributes reviewed are as follows:

Attributes Reviewed by Inspectors

| -Modification Number -Description -Cornerstone Affected | Materials/ Replacement Components | Energy Needs | Field Observati on | Seismic qualification | Environmental qualification | Post-Installa tion testing | Update of licensee documents | Functional testing adequacy and results | Vendor manuals |
|---|--|---------------------|-------------------------------|------------------------------|------------------------------------|---------------------------------------|-------------------------------------|--|-----------------------|
| 50053, Iso-Phase Bus Duct Cooling (Mitigating Systems) | | X | X | | | X | X | X | |
| 50516, Unit 1 SLC Boron Concentration Change for EPUR, Revision 5. (Mitigating Systems) | X | | | | | X | X | X | |
| 60481, Evaluate Manually Filling the 4-Day Fuel Oil Tanks (Mitigating Systems) | X | | | | X | | X | | |
| 59781, Replace Unit 1 RHR Pump Seal Cooler Discharge Line Flow Orifices (Mitigating Systems) | X | | | | X | X | X | X | |
| 50098, Unit 1 RRP Runback Setpoint Change and DSS-CD Hardware Installation (Mitigating Systems) | X | X | X | | X | X | X | X | X |

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|---|---|--|---|---|---|---|---|---|--|
| 46681, SFR Eliminate Single Scram Point Switch 2-MS-CS-347 (Initiating Events) | X | | | | | | X | X | |
| 55876, Extend Qualified Lives of Rosemount Pressure Transmitter in EQ Program (Initiating Events) | | | X | | X | | X | | |
| 59467, Diesel Generator Output Breaker Logic Change (Mitigating Systems) | X | | | | | | X | X | |
| 50294, Drywell Snubber Reduction (Initiating Event and Mitigating Systems) | | | | | | | | | |
| 50294, Drywell Snubber Reduction (Initiating Event and Mitigating Systems) | X | | | X | | | | | |
| 55991, Penetration Sleeve 1-X-2 and Vent Line 1-X-201 H Repairs (Containment Barriers) | X | | | | | X | X | | |
| 55909, Service Level 1 Coating Inside Primary Containment (Initiating Events) | X | | | | X | | | | |

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|---|---|--|--|---|---|---|---|---|---|
| 60030, Replacement of RCIC Lube Oil Valves (Mitigating Systems) | X | | | X | | X | | | |
| 61290, 1, and 4 EGD Air Control Check Valves (Mitigating Systems) | X | | | X | | X | X | X | X |
| 55447, Drywell Insulation Replacement (Initiating Events) | X | | | | X | | | | |

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For selected modification packages, the inspectors observed the as-built configuration. Documents reviewed included procedures, engineering calculations, modification design and implementation packages, work orders, site drawings, corrective action documents, applicable sections of the living UFSAR, supporting analyses, TS, and design basis information.

The inspectors also reviewed selected ARs associated with modifications to confirm that problems were identified at an appropriate threshold, were entered into the corrective action process, and appropriate corrective actions had been initiated.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing

a. Inspection Scope

For the six maintenance activities listed below, the inspectors reviewed the post-maintenance test procedure and witnessed the testing and/or reviewed test records to confirm that the scope of testing adequately verified that the work performed was correctly completed, and that the test demonstrated that the affected equipment was capable of performing its intended function and was operable in accordance with TS requirements. The inspectors reviewed the licensee's actions against the requirements in Procedure 0PLP-20, Post Maintenance Testing Program.

- WO 849455, Unit 2 D residual heat removal service water pump motor bearing high temperature repairs
- WO 633209, Replace Unit 1 feedwater flow venturi
- WO 866974, Troubleshoot and repair emergency diesel generator (EDG) #1 reactive power oscillation observed during monthly testing
- WO 870266 Unit 2 containment atmosphere control sample pump (2-CAC-1262) excessive leakage
- WO 799350, Replace EDG #2 air receiver manway gasket
- WO 849455, Replace Unit 2 D residual heat removal service water pump rotating element

b. Findings

No findings of significance were identified.

1R20 Refueling and Other Outage Activities

a. Inspection Scope

.1 Unit 1 Refueling Outage

The inspectors evaluated Unit 1 RFO B117R1 activities which commenced on March 3, 2006. At the start of the inspection, fuel movement was complete and the unit was in Mode 5 (Refueling) and preparing for startup activities after experiencing outage schedule delays due to the necessity to repair an in-vessel core spray line weld flaw. Documents reviewed are listed in the Attachment. The following specific areas were reviewed during the inspection period:

Licensee Control of Outage Activities. The inspectors reviewed configuration changes due to emergent work and unexpected conditions were controlled in accordance with the outage risk control plan. The inspectors reviewed the following specific items, as specified:

- Decay Heat Removal and Reactor Coolant System Instrumentation. The inspectors reviewed decay heat removal procedures and observed decay heat removal systems' parameters to verify proper removal of decay heat. The inspectors also conducted main control room panel walkdowns and walked down portions of the systems in the plant to verify system availability and to confirm that no work was ongoing that might prevent system use for decay heat removal.
- Reactivity Control. The inspectors observed licensee performance to verify that reactivity control was conducted in accordance with procedures and TS requirements. The inspectors conducted a review of outage activities and risk profiles to verify activities that could cause reactivity control problems were identified.

Monitoring of Heatup and Startup Activities. The inspectors reviewed to verify, on a sampling basis, that TS, license conditions, and other requirements for mode changes were met prior to changing modes or plant configurations. The inspectors performed a walkdown of containment to verify that debris, which could affect performance of the emergency core cooling suction strainers, had been appropriately removed.

Identification and Resolution of Problems. To assess the licensee's ability to identify and resolve problems, the inspector reviewed AR 190075 which documented body-to-bonnet leakage on several valves located in the drywell during hydrostatic testing.

.2 Unit 2 Maintenance/Refueling Outage

The inspectors evaluated Unit 2 maintenance/refueling outage B217M1 activities which commenced on May 19. The planned outage was performed in order to address

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detected leaking fuel assemblies. Unit 2 entered Mode 1 (Power Operation) on May 30 to complete the outage. The following specific areas were reviewed:

Outage Plan. The inspectors reviewed Brunswick Nuclear Plant Unit 2 Outage Risk Assessment for Maintenance Outage B217M1. The inspectors reviewed the outage plan to verify that the licensee had considered risk, industry experience, and previous site-specific problems in developing and implementing a plan that assured maintenance of defense-in-depth.

Shutdown and Cooldown. The inspectors observed portions of the Unit 2 shutdown to enter the outage to verify that activities were in accordance with General Procedure OGP-5.0, Unit Shutdown. The inspectors verified that the licensee monitored cooldown restrictions by performing 2PT-01.7, Heatup/Cooldown Monitoring, to assure that TS cooldown restrictions were satisfied.

Licensee Control of Outage Activities. The inspectors observed and reviewed activities and plant conditions to verify that the licensee maintained defense-in-depth commensurate with the outage risk control plan. The inspectors reviewed the following specific items, as specified:

- Decay Heat Removal. The inspectors reviewed decay heat removal procedures and observed decay heat removal systems' parameters to verify proper removal of decay heat. The inspectors conducted main control room panel walkdowns and walked down portions of the systems in the plant to verify system availability.
- Reactivity Control. The inspectors observed licensee performance during the outage to verify that reactivity control was conducted in accordance with procedures and TS requirements.
- Inventory Control. The inspectors observed operator monitoring and control of reactor coolant temperature and level and monitored outage work and configuration control for activities that had the potential to drain the reactor vessel. This was performed to verify that the activities were performed in accordance with the outage risk plan.
- Electrical Power. The inspectors reviewed the following licensee activities related to electrical power during the refueling outage to verify that they were in accordance with the outage risk plan:
 - Controls over electrical power systems and components to ensure emergency power was available as specified in the outage risk report
 - Controls and monitoring of electrical power systems and components and work activities in the power transmission yard

Refueling Activities. The inspectors reviewed refueling activities to verify fuel handling operations were performed in accordance with TS and fuel handling procedures and that controls were in place to track fuel movement. The inspectors reviewed refueling floor and plant controls to verify that the foreign material exclusion controls were established.

Monitoring of Heatup and Startup Activities. The inspectors reviewed to verify, on a sampling basis, that TS, license conditions, and other requirements for mode changes were met prior to changing modes or plant configurations.

Identification and Resolution of Problems. The inspectors reviewed ARs to verify that the licensee was identifying problems related to outage activities at an appropriate threshold and entering them in the corrective action program. The inspectors reviewed the following issues identified during the outage to verify that the appropriate corrective actions were implemented or planned:

- AR 195275, Steam separator re-assembly guide tube fell into vessel annulus
- AR 195875, Condenser waterbox leak during startup
- AR 196018, High radiation levels in -17' north residual heat removal room
- AR 195806, Reactor building overhead crane power failure
- AR 195840, Unable to complete source range-to-intermediate range nuclear instrument overlap during start-up
- AR 195811, Debris found during drywell closeout
- AR 195263, Foreign material observed during fuel movement

1R22 Surveillance Testing

.1 Routine Surveillance Testing

a. Inspection Scope

The inspectors either observed surveillance tests or reviewed test data for the three risk significant SSC surveillances listed below, to verify the tests met TS surveillance requirements, UFSAR commitments, in-service testing (IST), and licensee procedural requirements. The inspectors assessed the effectiveness of the tests in demonstrating that the SSCs were operationally capable of performing their intended safety functions.

- OPT-80.1, Reactor Pressure Vessel ASME Section XI Pressure Test, performed on Unit 1 on April 4, 2006
- OPT-2.3.2, Reactor Building to Suppression Chamber Vacuum Breaker and Valve Operability Test, performed on Unit 1 on May 20, 2006
- OPT-12.2.A, No. 1 Diesel Generator Monthly Load Test, performed on EDG #1 on June 5, 2006

To assess the licensee's ability to identify and correct problems, the inspectors reviewed the following ARs:

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- AR 197565, Low intake canal level during low lunar tide results in failure to meet TS requirements for ultimate heat sink
- AR 197831, EDG #3 manual voltage adjustment was slow during monthly load test
- AR 189439, Unit 1 RCIC outboard steam supply isolation valve stroked slow during surveillance testing

b. Findings

No findings of significance were identified.

.2 Inservice Surveillance Testing

a. Inspection Scope

The inspectors reviewed the performance of Periodic Test OPT-8.2.2B, Low Pressure Residual Heat Removal System Operability Test, performed on Unit 2, April 24, 2006. The inspectors evaluated the effectiveness of the licensee's American Society of Mechanical Engineers (ASME) Section XI testing program to determine 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. The inspectors also assessed any applicable corrective actions taken.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation

a. Inspection Scope

The inspectors observed a site emergency preparedness training drill/simulator scenario conducted on June 8, 2006. The inspectors reviewed the drill scenario narrative to identify the timing and location of classifications, notifications, and protective action recommendations development activities. The inspectors evaluated the drill conduct from the control room simulator, technical support center, and the emergency operations facility. During the drill, the inspectors assessed the adequacy of event classification and notification activities. The inspectors observed portions of the licensee's post-drill critiques at the technical support center and emergency operating facility.

The inspectors verified that the licensee properly evaluated the drill's performance with respect to performance indicators and assessed drill performance with respect to drill objectives. To assess the ability of the licensee to identify and correct problems, the inspectors reviewed the following corrective action documents that were generated as a result of the drill:

- AR 197676, Emergency operating facility knowledge weaknesses
- AR 196944, Slow activation of operations support center
- AR 196943, Technical support center/operations support center mission control and coordination problems

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification

a. Inspection Scope

The inspectors sampled licensee submittals for the Units 1 and 2 performance indicators (PIs) listed below for the periods indicated. To verify the accuracy of the PI data reported during that period, PI definitions and guidance contained in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guideline", Revision 4, were used to confirm the reporting basis for each data element.

Reactor Safety Cornerstone

- Unplanned Power Changes per 7,000 Critical Hours for the period April 2004 through March 2006
- Safety System Functional Failures for the period July 2004 through March 2006

A sample of plant records and data was reviewed and compared to the reported data to verify the accuracy of the PIs. The licensee's corrective action program records were also reviewed to determine if any problems with the collection of PI data had occurred.

b. Findings

No findings of significance were identified.

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4OA2 Identification and Resolution of Problems

.1 Routine Review of ARs

To aid in the identification of repetitive equipment failures or specific human performance issues for followup, the inspectors performed frequent screenings of items entered into the licensee's CAP. The review was accomplished by reviewing daily ARs.

.2 Annual Sample Review

a. Inspection Scope

The inspectors performed an in-depth annual sample review of AR 196168 which documented that Unit 2 power ascension was delayed following RFO B217M1 due to steam jet air ejector hi radiation alarms. The purpose of the review was to verify that conditions adverse to quality were addressed in a manner that was commensurate with the safety significance of the issue. The inspectors reviewed the actions taken to verify that the licensee had adequately addressed the following attributes:

- Complete, accurate, and timely identification of the problem
- Evaluation and disposition of operability and reportability issues
- Consideration of previous failures, extent of condition, generic or common cause implications
- Prioritization and resolution of the issue commensurate with the safety significance
- Identification of the root cause and contributing causes of the problem
- Identification and implementation of corrective actions commensurate with the safety significance of the issue

b. Findings and Observations

Introduction.

Two unresolved items (URIs) were identified regarding the failure to follow an operating procedure and the potential reduction in the effectiveness of the licensee's emergency plan due to the introduction of air into the condenser off-gas flowpath.

Description.

Following Unit 2 midcycle outage RFO B217M1, completed on May 30, 2006, the main condenser offgas system experienced increased radiation levels during power ascension. The cause of the increased offgas radiation levels was due to previous operation with leaking fuel assemblies. Radiation levels are measured by steam jet air ejector (SJAE) radiation monitors 2-D12-RM-K601A&B, located at the outlet of the SJAE after-condensers. Radiation levels are a function of the concentration of radio-isotopes present in the sample chamber. The level of readings depend on many factors including reactor coolant system activity, the amount of hydrogen being injected into the reactor

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coolant system, reactor power level, and the concentration of nonradioactive gases (e.g., oxygen and nitrogen). A high alarm on the radiation monitors requires investigation and entry into Emergency Operating Procedure (EOP) 0EOP-04-RRCP, Radioactivity Release Control Procedure. Additionally, emergency action levels (EALs) for both an Unusual Event and an Alert are based on readings from the SJAE (i.e., >12,000mr/hr for an Unusual Event and 120,000mr/hr for an Alert) and are used to address abnormal core conditions and core damage.

On two occasions on May 31, 2006, while Unit 2 was performing power ascension, high alarms were received on the radiation monitors. On both occasions operators entered EOP 0EOP-04-RRCP as required. Following confirmation of no fuel cladding failure, operators cleared the alarm; once by placing both SJAE in half-load and once by raising the alarm setpoints in accordance with plant procedures.

On June 1, 2006, power ascension was secured based on SJAE radiation monitor levels increasing with reactor power increases. Operators projected that the high alarm setpoint would again be reached prior to attaining full power. A focus team was formed to address the issue. At the recommendation of the focus team, operators utilized Section 8.9 of Operating Procedure (OP) 2OP-30, Condenser Air Removal and Off-gas Recombiner System, to inject service air into the SJAEs, so that the increased flow past the radiation monitors would dilute the concentration of activity and reduce the number of "false-fuel-failure" alarms. However, the inspectors found that an initial condition of OP 2OP-30, that service air injection to the SJAEs was needed for continued hydrogen water chemistry, was not met in this case. Sufficient condenser air in-leakage was present to provide enough oxygen for hydrogen recombination. The inspectors determined that as a result of this procedure adherence deficiency, in addition to reducing the number of "false-fuel-failure" alarms, the licensee had reduced the ability to monitor for actual fuel cladding damage. The licensee subsequently raised the setpoint of the radiation monitors, secured air injection to the SJAEs, and entered this failure to follow procedure into the CAP as AR 196365.

The inspectors reviewed the procedure history of OP 2OP-30. The inspectors found that the first procedural allowance of using valved-in air to the offgas flowpath during plant operation was in 1997, with the creation of Special Procedure (SP) 0SP-97-004, Service Air Injection to SJAEs. The purpose of the air was for providing sufficient oxygen in the offgas flowpath for recombining with hydrogen, in the hydrogen recombiners, in the case when condenser air in-leakage was insufficient. The introduction of air into the offgas flowpath also has the affect of reducing SJAE radiation monitor readings. This change appears to have potentially reduced the effectiveness of the site Emergency Plan because EAL classifications for both an Unusual Event and an Alert are based on radiation level readings from the SJAE radiation monitor. However, the safety screen for SP 0SP-97-004 stated that the change to inject service air to the offgas flowpath did not involve a change to the previously accepted Emergency Plan. Procedural steps to inject service air were later incorporated into OP 2OP-30, the corresponding Unit 1 procedure OP 1OP-30, and SP 0SP-97-004 was cancelled. The licensee entered the failure to address the procedure change effects on the Emergency Plan into the CAP as AR 196254.

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Enforcement.

The two issues discussed above are unresolved pending additional NRC review. URI 05000325,324/2006003-02, Potential Reduction in Effectiveness of Emergency Plan, is unresolved pending an NRC review of the potential reduction of the effectiveness of the licensee's Emergency Plan due to the introduction of air in the offgas flowpath. URI 05000325/2006003-03, Failure to Follow Condenser Air Removal and Off-gas Recombiner System Procedure, is unresolved pending a further NRC procedural review, subsequent to the resolution of URI 05000325,324/2006003-02.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The review was focused on repetitive equipment issues but also considered the results of frequent inspector CAP item screening (discussed above), licensee trending efforts, and licensee human performance results. The review considered the period of January through June 2006. The review further included issues documented outside the normal CAP in major equipment lists, repetitive and/or rework maintenance lists, operational focus list, control room deficiency list, outstanding work order list, quality assurance audit/surveillance reports, key performance indicators, and self-assessment reports. The inspectors compared and contrasted their results with the results contained in the Brunswick Plant CAP Rollup and Trend Analysis report for the 1st quarter 2006. Corrective actions associated with a sample of the issues identified in the licensee's trend reports were reviewed for adequacy. The inspectors also evaluated the reports against the requirements of the licensee's CAP as specified in Nuclear Generation Group Standard Procedure CAP-NGGC-0200, Corrective Action Program, and 10 CFR 50, Appendix B.

b. Assessment and Observations

No findings were identified. During the current review period, the inspector noted several inspector-identified, self-revealing, and licensee-identified issues involving inadequacies in procedure compliance. Section 1R04 and 4OA2 of this report document two inspector-identified issues involving procedure noncompliance. NRC Inspection Report 05000324,325/2006005, dated April 30, 2006, documented a self-revealing NCV due to a failure to follow a procedure which resulted in a plant transient. Other less significant (i.e., minor) instances of procedure noncompliances were noted including: 1) an inspector-identified issue involving the adjustment of the Unit 1 isophase bus duct cooling dampers with no written procedure contrary to the plant equipment control procedure; 2) a self-revealing issue involving the failure to follow an instrumentation loop maintenance procedure resulting in a main turbine/feedwater turbine half-trip condition; 3) an inspector-identified issue involving the failure to properly prioritize a CREV and control room air compressor maintenance rule functional failure in accordance with CAP-NGGC-0200, Corrective Action; and 4) several

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inspector-identified instances where the formal operability determination process was not entered for equipment conditions as required by OPS-NGGC-1305, Operability Determinations (also observed by the licensee's nuclear assurance organization). Based on the inspectors' review, the inspectors concluded that procedure usage and compliance was an area of challenge for the licensee. As a result of the inspectors' conclusion, the licensee entered the issue into the CAP as AR 200605.

4OA3 Event Follow-up

- .1 (Closed) Licensee Event Report (LER) 050003252006002: Cracking Found in B Loop Core Spray Header Piping. During in-vessel visual inspections of core spray piping, the licensee identified cracking on a core spray system header piping weld. Ultrasonic test examinations demonstrated that the as-found condition of the weld was unacceptable for operation without repair. The licensee completed permanent repairs to the piping weld. This event was discussed in NRC Inspection Report 05000325/2006002, dated April 30, 2006, and resulted in a Green NRC-identified TS NCV. No new issues were identified by the LER. This LER is closed.
- .2 (Closed) LER 05000325.324/2006001: Control Room Emergency Ventilation (CREV) and Air Conditioning (AC) Inoperable Due to Loss of Control Air. On January 12, 2006, with the Unit 2 A control building instrument air compressor out-of-service, the Unit 2 B air compressor failed to maintain pressure. This resulted in the CREV and AC systems shutting down resulting in a loss of function. The licensee returned the A air compressor to service to restore the CREV and AC systems to an operable status.

The inspectors reviewed the LER and associated corrective action documents. The LER stated that the cause was due to ineffective condition monitoring of the compressor oil pressure to detect hydraulic unloader degradation. However, subsequent failure analysis of the compressor revealed that the low oil pressure was due to excessive wear of the cylinder head wrist pins. The inspector concluded that the licensee's original corrective actions were adequate because no additional actions were identified due to the new information. Additionally, the inspectors noted that the A air compressor experienced a similar failure on December 16, 2005. The inspectors concluded that an opportunity to detect and repair the B air compressor prior to failure, based on the A air compressor failure, was not reasonable based on the short time frame (i.e., less than one month) between the failures. This LER is closed.

4. OTHER ACTIVITIES

4OA6 Meetings

On July 18, 2006, the resident inspectors presented the inspection results to Mr. J. Scarola and other members of his staff. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

ATTACHMENT: SUPPLEMENTAL INFORMATION

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SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

G. Atkinson, Supervisor - Emergency Preparedness
L. Beller, Supervisor - Licensing/Regulatory Programs
A. Brittain, Manager - Security
T. Cleary, Director - Site Operations
E. O'Neil, Manager - Training Manager
M. Grantham, Manager (Acting) - Engineering
D. Griffith, Manager - Outage and Scheduling
L. Grzeck, Lead Engineer - Technical Support
S. Howard, Manager - Maintenance
R. Ivey, Manager - Site Support Services
A. Pope, Manager - Operations
S. Rogers, Manager Nuclear Assessment
J. Scarola, Site Vice President
M. Turkal, Lead Engineer - Technical Support
M. Williams, Manager - Operations Support
B. Waldrep, Plant General Manager

NRC Personnel

P. Fredrickson, Chief, Reactor Projects Branch 4, Division of Reactor Projects Region II

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSEDOpened

| | | |
|-------------------------|-----|--|
| 05000325,324/2006003-02 | URI | Potential Reduction in Effectiveness of Emergency Plan (Section 4OA2.2) |
| 05000325/2006003-03 | URI | Failure to Follow Condenser Air Removal and Off-gas Recombiner System Procedure (Section 4OA2.2) |

Opened and Closed

| | | |
|---------------------|-----|---|
| 05000324/2006003-01 | NCV | Failure to Follow Engineering Change Procedure Resulting in Inoperable Reactor Core Isolation Cooling System (Section 1R04) |
|---------------------|-----|---|

Closed

| | | |
|----------------------|-----|--|
| 05000325/2006002 | LER | Cracking Found in B Loop Core Spray Header Piping (Section 4OA3.1) |
| 05000325,324/2006001 | LER | Control Room Emergency Ventilation (CREV) and Air Conditioning (AC) Inoperable due to Loss of Control Air (Section 4OA3.2) |

Discussed

None

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Plant Operating Manual (POM), Volume XIII, Plant Emergency Procedure 0PEP-02.1, Initial Emergency Actions, Rev. 50

POM, Volume XIII, Plant Emergency Procedure 0PEP-02.6, Severe Weather, Rev. 9

POM, Volume I, Administrative Instruction, 0AI-68, Brunswick Nuclear Plant Response to Severe Weather Warnings, Rev. 25

POM, Volume XXI, Abnormal Operating Procedure, 0AOP-13.0, Operation during Hurricane, Flood Conditions, Tornado, or Earthquake, Rev. 36

Section 1R02: Evaluation of Changes, Tests, or Experiments

Full Evaluations (licensing identification #)

02-1791, EHC Pressure Regulator Out-of-Service

05-0665 and 05-0627, Turbine Building Once Through Ventilation

04-1042, [04-019 Temporary Change], AI-117 Filter SLC Tank

05-0424, EC 60736 Condenser Vacuum Pressure Switches

04-0748, Freeze Seal on 1-RCC-74-1-1/2-154

04-0956, 2-CAC-X18D Use of Procedure 2SP-04-005

05-0153, Extend Life of Chlorine Detectors

Screened Out Items (EC = modifications):

51357, electrical - RIP Module Change-out

50053, electrical - EPUR (Extended Power Uprate) Iso-Phase Bus Cooling

50294 civil - Snubber Reduction

59781, mechanical - Replace Unit 1 RHR Pump Seal Cooler Discharge Line Flow Orifices

55447, civil - Drywell Insulation

50516, chemistry - SLC Concentration Change for EPUR

55876, electrical - Rosemount Transmitter EQ Qualification Extended

55909, civil - Torus Coatings

55991, civil - Penetration Sleeve 1-X-2 & Vent Line 1-X-20H Repairs

59819, mechanical - RHR Seal Cooler Orifice Changed

60051 and 59437, mechanical - EDG Starting Air Requirements

60030, civil - 1/2-E51-RV96/97 Replacement and Notching of RCIC Pipe Supports on Skid

46681, electrical - Eliminate Single Scram Point Switch 2-MS-CS-347

61290, 61291 and 61294 mechanical - EDG Air Control Check Valves

60481, mechanical - Evaluation of Manual Fill of EDG 4 Day Tank

51180, 55504 mechanical/civil - EPUR Mod of Steam Dryer

59467, electrical - DG Output Breaker Logic Change

57859, mechanical - EDG Air Check Valve Replacement

Corrective Action Documents (ARs)

00131519, SLC Pump Inoperability
00133346, CAC X18D Failed Open
00190317, Incorrect Wire Label Used During DG-1 Wiring Change

Work Orders

562428, Freeze Seal 1-RCC-74-1/2-154
823648, 1-EHC-XY-644-A69, Pressure Regulator
333171 05, EC 50052
179877 01, 2-RIP- CS-1218

Procedures

OSPP-MECH502, Freeze Seals ½" to 4" Piping, Rev. 17
OOI-01.08, Control of Equipment and System Status, Rev. 15
REG-NGGC-0010, 10 CFR 50.59 and Selected Regulatory Reviews, Rev. 8
1SP-03-001, Unit Extended Power Uprate Startup Test Plan, Rev. 2 (completed data set on iso-phase bus duct coolers)

Miscellaneous Documents:

SER "Brunswick Steam Electric Plant, Units 1 and 2 - Issuance of Amendments Re: Standby Liquid Control Sodium Pentaborate Solution Concentration and Requirements" (TAC Nos. MB5680 and MB5681), March 25, 2003.
BSEP 03-0035, Response to NRC Request for Additional Information
OBNP-TR-001, "BNP Inservice Inspection Technical Report", Rev. 7
Calculation ODSA-0005, Diesel Generator Starting Air Requirements, Rev. 0
SER November 1973, Section 9.5.4 Diesel Generator Starting Air System
UFSAR Section 8.3.1, Diesel Generator Starting Air System
Design Basis Document-39, Emergency Diesel Generator System
Letter from J. S. Keenan (CP&L) to the U.S.N.R.C., "Brunswick Steam Electric Plant, Unit Nos. 1 and 2; Docket Nos. 50-325 and 50-324/License Nos. DPR-71 and DPR-62; Request for License Amendments Core Flow Operating Range Expansion," November 12, 2002.

Drawings:

D-02547, Unit No. 2 Reactor Building Standby Liquid Control System Piping Diagram, Rev. 27
1-FP-05851, Power Range Neutron Monitoring System RPS Outputs, Rev. B

Self-Assessment Documents

AR 122287, Lack of Control of 50.59 Screens Associated with ECs
AR 123992, OI-29 Clearance Audit Revision
AR 135204, Failure to Obtain Manager Approval for 50.59 Work Order
AR 136063, Inadequate Activity Description in a 50.59 Screen

AR 59451, Incorporate UFSAR Requirements into Plant Procedures

Section 1R04: Equipment Alignment

UFSAR Section 9.2.1

Operating Procedure (OP), 1OP-43.1, Chlorination System Operating Procedure
POM, Volume XXI, Abnormal Operating Procedure 0AOP-34.0, Chlorination Emergency
Technical Requirements Manual, Section 3.5, Chloride Intrusion Monitoring

Section 1R05: Fire Protection

POM, Volume XIX, Prefire Plan, 1PFP-RB, Reactor Building Prefire Plans, Rev. 6
POM Volume XIX, Prefire Plan 0PFP-DG, Diesel Generator Building Prefire Plans, Rev. 8

Section 1R17: Permanent Plant Modifications

Self-Assessment Documents

AR 116248, Mod Sketches not Rolled into Drawing
AR 117578, Human Performance Errors Precursors
AR 118616, Draft Procedures not Available for Outage Mod Training
AR 121014, EC 50094 Implementation Error

Procedures

Special Procedure (SP) 0SP-01-002, Rev. 0 Sodium Hypochlorite injection to the Service Water System
POM 0SMP-CWI500 Sodium Hypochlorite injection to circulating water system.
EGR-NGGC-005, Engineering Change, Rev. 24
1OP-05, Standby Liquid Control System, Rev. 45
2OP-05, Standby Liquid Control System, Rev. 57
0PT-20.14, Testing of SLC Injection Check Valves, Rev. 2
0PT-80.1, Reactor Pressure Vessel ASME Section XI Pressure Test, Rev. 52

Corrective Action Documents

AR 190346, EDG Start Air System
AR 190317, Incorrect Wire Label on EDG Wiring Change
AR 190267, UFSAR Change Performed without Proper Evaluation
Engineering Calculation 8K49-M-O1Rev0

Section 1R20: Refueling and Other Outage Activities

POM, Volume IV, Operating Procedure, 0GP-02, Approach to Criticality and Pressurization of the Reactor, Rev. 81
POM, Volume IV, Operating Procedure, 0GP-01, Prestartup Checklist, Rev. 168