



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

EA-14-132

August 4, 2014

Mr. George Hamrick  
Vice President  
Duke Energy Progress, Inc.  
Brunswick Steam Electric Plant  
P.O. Box 10429  
Southport, NC 28461

**SUBJECT: BRUNSWICK STEAM ELECTRIC PLANT - NRC INTEGRATED INSPECTION  
REPORT NOS.: 05000325/2014003 AND 05000324/2014003 AND EXERCISE  
OF ENFORCEMENT DISCRETION**

Dear Mr. Hamrick:

On June 30, 2014, 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 findings, which were discussed on July 24, 2014, 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.

Two NRC-identified findings of very low safety significance (Green) were identified during this inspection. These two findings were determined to involve a violation of NRC requirements. Additionally, four licensee-identified violations which were determined to be of very low safety significance are listed in this report. The NRC is treating these findings as non-cited violations (NCVs) consistent with Section 2.3.2.a of the Enforcement Policy.

A violation of Technical Specification (TS) 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 for the time periods while all other TSs were met, 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. For March 9, 2014, when TS 3.6.4.2, Secondary Containment Isolation Dampers, was not met, the NRC did not exercise enforcement discretion, and a licensee-identified violation is documented in Section 4OA7 of this report.

If you contest the violations or the significance of the violations, 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 assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region II, and the NRC Resident Inspector at the Brunswick Steam Electric Plant.

In accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding," 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 System (PARS) component of NRC's Agencywide Documents 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/*

George T. Hopper, 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, 324/2014003  
w/Attachment: Supplemental Information

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If you contest the violations or the significance of the violations, 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.

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 ADAMS:  Yes      ACCESSION NUMBER: \_\_\_\_\_       SUNSI REVIEW COMPLETE       FORM 665 ATTACHED

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E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	

G. Hamrick

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Letter to George T. Hamrick from George Hopper dated August 4, 2014.

SUBJECT: BRUNSWICK STEAM ELECTRIC PLANT - NRC INTEGRATED INSPECTION  
REPORT NOS.: 05000325/2014003 AND 05000324/2014003 AND EXERCISE  
OF ENFORCEMENT DISCRETION

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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.: 05000325/2014003, 05000324/2014003

Licensee: Duke Energy Progress, Inc.

Facility: Brunswick Steam Electric Plant, Units 1 & 2

Location: 8470 River Road, SE  
Southport, NC 28461

Dates: April 1, 2014 through June 30, 2014

Inspectors: Michelle Catts, Senior Resident Inspector  
Mark Schwieg, Resident Inspector  
Jim Dodson, RII Senior Project Engineer (Section 4OA7)  
Donna Jackson, RII Project Engineer (Section 1R20)

Approved by: George T. Hopper, Chief  
Reactor Projects Branch 4  
Division of Reactor Projects

Enclosure

## SUMMARY OF FINDINGS

IR 05000325/2014003, 05000324/2014003; 04/01/14 – 06/30/14; Brunswick Steam Electric Plant, Units 1 & 2; Adverse Weather Protection and Maintenance Effectiveness.

This report covers a three-month period of inspection by resident inspectors and regional inspectors. Two findings of very low safety significance (Green) were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, issued June 19, 2012, "Significance Determination Process" (SDP). The cross-cutting aspects were determined using IMC 0310, "Aspects Within the Cross-Cutting Areas," effective January 1, 2014. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy dated January 28, 2013. The NRC's program for overseeing the safe operations of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Rev. 4.

### **Cornerstone: Mitigating Systems**

- **Green.** An NRC-identified Green non-cited violation (NCV) of 10 CFR 50.65(b)(2)(ii) was identified for the failure of the licensee to scope flood protection features in the maintenance rule (MR) program. Specifically, from July 10, 1996, to May 8, 2014, the licensee failed to include floor drain flood protection features in the MR program that are nonsafety-related but whose failure could prevent safety-related structures, systems, and components (SSCs) from fulfilling their safety-related function. The licensee's corrective actions included scoping the floor drains into the MR program. The licensee entered this issue into the corrective action program (CAP) as nuclear condition report (NCR) 677850.

The inspectors determined that the failure of the licensee to monitor flood protection features in the MR program, as required by 10 CFR 50.65(b)(2)(ii), was a performance deficiency. The finding is more than minor because it is associated with the protection against external factors (i.e. flood hazard) attribute of the Mitigating Systems Cornerstone and adversely affects the cornerstone objective of ensuring the availability, reliability, and capability of the safety related systems to respond to initiating events to prevent undesirable consequences. Specifically, the finding is more than minor because failing to monitor flood protection features resulted in degradation of various flood protection features which could have impacted safety-related equipment. Using IMC 0609, Appendix A, issued June 9, 2012, The SDP for Findings At-Power, Exhibit 2, the inspectors determined the finding is of very low safety significance (Green) because it did not represent an actual loss of function of one or more non-TS trains of equipment designated as high safety-significant in accordance with the licensee's maintenance rule program for greater than 24 hours. The finding has a cross-cutting aspect in the area of problem identification and resolution associated with the resolution attribute because the organization failed to take effective corrective actions to address issues in a timely manner commensurate with their safety significance. Specifically, the licensee failed to scope the credited flood protection floor drains into the MR program. [P.3] (Section 1R12)

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**Cornerstone: Emergency Preparedness**

- Green. An NRC-identified Green NCV of 10 CFR 50.54(q)(2), 10 CFR 50.47(b)(4), and the requirements of Appendix E to 10 CFR Part 50, was identified for the failure of the licensee to maintain the effectiveness of the emergency plan. Specifically, from November 6, 2009, to July 21, 2014, the licensee failed to maintain in effect, a standard emergency action level (EAL) scheme by failing to provide effective means for determining flooding water levels which is required to properly classify an ALERT during a probable maximum hurricane (PMH). The licensee's corrective actions include painting level indication on the service water building visible to the operator stationed at the service water building to determine when the ALERT flood level is reached. The licensee entered this issue into the CAP as NCRs 688613 and 693590.

The inspectors determined that the failure to provide reliable and timely indication for operators to adequately implement the ALERT flooding EAL HA 1.5 was a performance deficiency. The finding is more than minor because it is associated with the Facilities and Equipment attribute of the Emergency Preparedness (EP) cornerstone and affected the cornerstone objective to ensure the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Specifically, the licensee's ability to classify an ALERT for a flooding event was adversely affected because flood levels could not be adequately determined. In accordance with the IMC 0609, Appendix B, "Emergency Preparedness Significance Determination," issued February 24, 2012, and Figure 5.4-1, the inspectors determined that this finding is of very low safety significance (Green) because the performance deficiency was a condition where an EAL has been rendered ineffective such that an ALERT would not be declared for a flooding event. The finding has a cross-cutting aspect in the area of human performance associated with the resources attribute because leaders failed to ensure that personnel, equipment, procedures, and other resources are available and adequate to support nuclear safety and declare an ALERT for a PMH. [H.1] (Section 1R01.1)

Four violations of very low safety significance that were identified by the licensee have been reviewed by the inspectors. Corrective actions planned or taken by the licensee have been entered into the licensee's CAP. These violations and corrective action tracking numbers are listed in Section 4OA7 of this report.

## REPORT DETAILS

### Summary of Plant Status

Unit 1 began the inspection period in refueling outage B120R1. On April 10, 2014, the unit was started up. The unit was returned to rated thermal power (RTP) on April 16, 2014. On May 30, 2014, power was reduced to 70 percent for a control rod sequence exchange. The unit was returned to RTP on June 1, 2014, and remained at or near RTP for the remainder of the inspection period.

Unit 2 began the inspection period at RTP. On April 24, 2014, power was reduced to 40 percent to repair the 2A variable frequency drive coolant leak. The unit was returned to RTP on April 29, 2014. On May 17, 2014, power was reduced to 64 percent to replace the 2A Reactor Feed Pump Power Supply. The unit was returned to RTP on May 19, 2014. On June 28, 2014, power was reduced to 70 percent for a control rod sequence exchange. The unit was returned to RTP on June 29, 2014, 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 External Flooding (71111.01 – 1 sample)

###### a. Inspection Scope

The inspectors evaluated the design, material condition, and procedures for coping with the design basis probable maximum flood, which is from the PMH. The evaluation included a review to check for deviations from the descriptions provided in the Updated Final Safety Analysis Report (UFSAR) for features intended to mitigate the potential for flooding from external factors. As part of this evaluation, the inspectors checked flood protection features including building drains, conduit seals, door seals, manholes, sump pumps, and other flood barriers, to determine if the flood protection features were adequate to mitigate the flood, were in place, and were functional. Additionally, the inspectors performed a walkdown of the protected area to identify any modification to the site which would inhibit site drainage during a probable maximum precipitation event or allow water ingress past a flood barrier. The inspectors also reviewed the abnormal operating procedure for mitigating the design basis flood to ensure it could be implemented as written. Documents reviewed are listed in the Attachment.

###### b. Findings

Introduction. An NRC-identified Green NCV of 10 CFR 50.54(q)(2), 10 CFR 50.47(b)(4), and the requirements of Appendix E to 10 CFR Part 50, was identified for the failure of the licensee to maintain the effectiveness of the emergency plan.

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Specifically, from November 6, 2009, to July 21, 2014, the licensee failed to maintain in effect, a standard EAL scheme by failing to provide effective means for determining flooding water levels which is required to properly classify an ALERT during a PMH.

Description. In preparation for the 2014 hurricane season, the inspectors reviewed the emergency action levels associated with external flooding. The inspectors determined that the water level gauge used by the licensee to measure the flooding level extended to 19 feet, with plant grade being at 20 feet. EAL HA 1.5 for Natural & Destructive Phenomena requires a declaration of an ALERT at an intake canal water level of 22 feet mean sea level (MSL). The inspectors noted that the Procedure 0AOP-13.0, Operation During Hurricane, Flood Conditions, Tornado, or Earthquake, Section 4.2, states, if intake canal level rises to +19 feet MSL, then obtain canal level locally in accordance with Procedure 2OP-43, Service Water System Operating Procedure. Procedure 2OP-43, Section 8.28, directs operations personnel to obtain service water bay level by inserting a tape measure through the grating between the service water traveling screen and the service water building [located outside at the intake structure].

The inspectors determined the PMH would create a storm surge of 22 feet MSL, which would require an ALERT declaration. The PMH, as defined by UFSAR Section 2.4.5, Probable Maximum Surge and Seiche Flooding, would produce conditions onsite at the intake structure of two feet of surging water, elevation 22 feet, presumably with debris since the storm surge came from overland; three-foot waves on top of the two feet of surging water with a period of four seconds; wave run-up with a maximum instantaneous water level of 28.3 feet; and winds as a strong Category 4 hurricane. The inspectors determined that Procedure 2OP-43 did not address water levels above site grade, and did not address how operations personnel would take intake water level manually during these PMH conditions. The inspectors determined there were no readily available devices or indication that would read water levels that were above plant grade of 20 feet. Interviews with operations personnel and emergency preparedness (EP) personnel indicated that a reliable, timely, and repeatable method for determining when water level reached 22 feet, especially after dark when access to the intake canal would be restricted during the PMH, was not sufficient to support accurate and timely declaration of the ALERT for a flooding event.

The inspectors reviewed NCR 545354, completed on August 24, 2012, which identified the intake canal level instrument 2-SCW-LT-285 had an operating range up to 19 feet MSL. The inspectors determined the licensee had the opportunity to recognize the lack of timely and reliable indication for measuring intake canal level during the resolution of this NCR. The inspectors determined the licensee had failed to properly identify that EAL HA 1.5 was degraded because of the inability to accurately measure flood level. The licensee's corrective actions include painting level indication on the service water building visible to the operator stationed at the service water building to determine when the ALERT flood level is reached. The licensee entered this issue into the CAP as NCRs 688613 and 693590.

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Analysis. The inspectors determined that the failure to provide reliable and timely indication for operators to adequately implement the ALERT flooding EAL HA 1.5 as required by 10 CFR 50.47(b)(4), and 10 CFR Part 50, Appendix E, was a performance deficiency. The finding is more than minor because it is associated with the Facilities and Equipment attribute of the EP cornerstone and adversely affected the cornerstone objective to ensure the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Specifically, the licensee's ability to classify an ALERT for a flooding event was adversely affected because flood levels could not be adequately determined. In accordance with the IMC 0609, Appendix B, "Emergency Preparedness Significance Determination," issued February 24, 2012, and Figure 5.4-1, the inspectors determined that this finding is of very low safety significance (Green) because the performance deficiency was a condition where an EAL has been rendered ineffective such that an ALERT would not be declared for a flooding event. The finding has a cross-cutting aspect in the area of human performance associated with the resources attribute because leaders failed to ensure that personnel, equipment, procedures, and other resources are available and adequate to support nuclear safety and declare an ALERT for a PMH. [H.1]

Enforcement. Title 10 of the CFR 50.54(q)(2) requires, in part, that a licensee shall follow and maintain the effectiveness of an emergency plan which meets the requirements in Appendix E to this part and the planning standards of §50.47(b). Section 50.47(b)(4) requires a standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures. Title 10 CFR, Part 50, Appendix E, Sections IV.B.1, states in part, the emergency action levels shall be based on in-plant conditions and instrumentation in addition to onsite and offsite monitoring.

Contrary to the above, from November 6, 2009, to July 21, 2014, the licensee failed to maintain in effect a standard emergency action level scheme by failing to provide effective means for determining flooding water levels which is required to properly classify an ALERT during a PMH. The licensee's corrective actions included painting level indication on the service water building visible to the operator stationed at the service water building to determine when the ALERT flood level is reached. Because this finding is of very low safety significance (Green) and was entered into the licensee's CAP as NCRs 688613 and 693590, consistent with Section 2.3.2.a of the NRC's Enforcement Policy, this violation is being treated as an NCV: NCV 05000325/2014003-01 and 05000324/2014003-01, Failure to Maintain a Standard Emergency Action Level Scheme for Flooding.

.2 Summer Seasonal Readiness Preparations (71111.01 – 1 sample)

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 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 CAP items to verify that the licensee was identifying weather issues at an appropriate threshold and entering them into the CAP in accordance with station corrective action procedures. The inspectors' reviews focused specifically on the following plant systems:

- Control building ventilation and air conditioning
- Service water (SW)
- Emergency diesel generator (EDG) ventilation and air conditioning

Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.3 (Grid Reliability) Readiness of Offsite and Alternate Alternating Current (AC) Power Systems (71111.01 – 1 sample)

a. Inspection Scope

The inspectors verified that plant features and procedures for operation and continued availability of offsite and 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:

- Coordination between the TSO and the plant during off-normal or emergency events
- Explanations for the issues arose that could impact the offsite power system
- Estimates of when the offsite power system would be returned to a normal state
- Notifications from the TSO to the plant when the offsite power system was returned to normal

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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:

- 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
- 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
- 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
- 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

Inspectors reviewed the material condition of offsite AC power systems and onsite alternate AC power systems to the plant, including switchyard, transformers, EDGs, and emergency buses.

The inspectors also reviewed CAP items to verify that the licensee was identifying issues at an appropriate threshold and entering them into its CAP in accordance with station corrective action procedures. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R04 Equipment Alignment

.1 Quarterly Partial System Walkdowns (71111.04Q – 4 samples)

a. Inspection Scope

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

- Unit 2 core spray (CS) system on April 17, 2014
- Unit 1 nuclear SW system on April 30, 2014
- EDG fuel oil system on May 22, 2014
- Unit 2 standby gas treatment system on May 27, 2014

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,

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system diagrams, UFSAR, TS requirements, outstanding work orders, NCRs, 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 CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2 Semi-Annual Complete System Walkdown (71111.04S – 1 sample)

a. Inspection Scope

On May 15, 2014, the inspectors performed a complete system alignment inspection of the control room emergency ventilation system to verify the functional capability of the system. This system was selected because it was considered both safety-significant and risk-significant in the licensee's probabilistic risk assessment. The inspectors walked down the system to review mechanical and electrical equipment line-ups, electrical power availability, system pressure and temperature indications, as appropriate, component labeling, component lubrication, component and equipment cooling, hangers and supports, operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. The inspectors reviewed any outstanding maintenance work requests on the system/train and any deficiencies that could affect the ability of the system to perform its function(s). The inspectors reviewed any outstanding design issues, including temporary modifications, operator workarounds, and items that are tracked by the engineering department. In addition, the inspectors reviewed the CAP database to ensure that system equipment alignment problems were being identified and appropriately resolved. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R05 Fire ProtectionQuarterly Resident Inspector Tours (71111.05Q – 5 samples)a. Inspection Scope

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

- 0PFP-SW-1b and 0PFP-SW-1a, SW Building -13'4", 4' and 20' elevations
- 2PFP-RB2-1a and 2PFP-RB2-1b, South and North CS Room -17' elevation
- 2PFP-RB2-1g N and 2PFP-RB2-1g S, Reactor Building North and South 20' elevation
- 1PFP-DG-2 thru 1PFP-DG-5, Diesel Generator Cells 1-4 23' Elevation
- 1PFP-DG-6 thru 1PFP-DG-9, E5–E8 Switchgear Rooms 23' Elevation

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 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. 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 that fire doors, dampers, and penetration seals were in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's CAP. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R06 Flood Protection Measures.1 Review of Areas Susceptible to Internal Flooding (71111.06 – 1 sample)a. Inspection Scope

The inspectors reviewed selected risk-important plant design features and licensee procedures intended to protect the plant and its safety-related equipment from internal flooding events. The inspectors reviewed flood analyses and design documents,

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including the UFSAR, engineering calculations, and abnormal operating procedures (AOPs), for licensee commitments. In addition, the inspectors reviewed licensee drawings to identify areas and equipment that may be affected by internal flooding caused by the failure or misalignment of nearby sources of water, such as the fire suppression or the circulating water systems. The inspectors also reviewed the licensee's corrective action documents with respect to past flood-related items identified in the CAP to verify the adequacy of the corrective actions. The inspectors performed a walkdown of the following plant areas to assess the adequacy of flood protection measures, and that the licensee complied with its commitments:

- EDG building, SW building, and reactor buildings

Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

2. Annual Review of Cables Located in Underground Bunkers/Manholes (71111.06)

a. Inspection Scope

The inspectors conducted an inspection of underground bunkers/manholes subject to flooding that contain cables whose failure could disable risk-significant equipment. The inspectors performed walkdowns of risk-significant areas, including manholes to the EDG fuel oil tank chamber, to verify that the cables were not submerged in water, that cables and/or splices appear intact and to observe the condition of cable support structures. When applicable, the inspectors verified proper dewatering device (sump pump) operation and verified level alarm circuits were set appropriately to ensure that the cables would not be submerged. Where dewatering devices were not installed; the inspectors ensured that drainage was provided and was functioning properly. This does not constitute one sample. The sample will be documented as complete when one additional manhole is inspected. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program

.1 Quarterly Review of Licensed Operator Requalification Testing and Training (71111.11Q - 1 sample)

a. Inspection Scope

On May 28, 2014, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator requalification examinations to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and to ensure that training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- Licensed operator performance
- Crew's clarity and formality of communications
- Ability to take timely actions in the conservative direction
- Prioritization, interpretation, and verification of annunciator alarms
- Correct use and implementation of abnormal and emergency procedures
- Control board manipulations
- Oversight and direction from supervisors
- Ability to identify and implement appropriate TS actions and Emergency Plan actions and notifications

No licensed operator requalification training involving declarations and notifications occurred during this quarter. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2 Quarterly Review of Licensed Operator Performance in the Main Control Room (71111.11Q – 1 sample)

a. Inspection Scope

Inspectors observed and assessed licensed operator performance in the plant and main control room, particularly during periods of heightened activity or risk and where the activities could affect plant safety. Specifically, on April 10, 2014, the inspectors observed Unit 1 startup from refueling outage B120R1. The inspectors reviewed various licensee policies and procedures listed in the Attachment. The inspectors evaluated the following areas:

- Operator compliance and use of procedures
- Control board manipulations
- Communication between crew members
- Use and interpretation of plant instruments, indications and alarms
- Use of human error prevention techniques
- Documentation of activities, including initials and sign-offs in procedures

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- Supervision of activities, including risk and reactivity management
- Pre-job briefs and crew briefs

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12Q – 2 samples)

a. Inspection Scope

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

- Units 1 and 2 potential floor drain clogging in safety-related buildings
- 1B residual heat removal (RHR) SW booster pump motor cooler cover loose nuts

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 MR program
- Characterizing system reliability issues for performance
- Charging unavailability for performance
- Trending key parameters for condition monitoring
- Ensuring 10 CFR 50.65(a)(1) or (a)(2) classification or re-classification; and verifying appropriate performance criteria for 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 maintenance effectiveness issues were entered into the CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment.

b. Findings

Failure to Include Flood Protection Features in the Maintenance Rule Program

Introduction. An NRC-identified Green NCV of 10 CFR 50.65(b)(2)(ii) was identified for the failure of the licensee to scope flood protection features in the MR program. Specifically, from July 10, 1996, to May 8, 2014, the licensee failed to include floor drain

flood protection features in the MR program that are nonsafety-related but whose failure could prevent safety-related structures, systems, and components from fulfilling their safety-related function.

Description. The inspectors identified that the drains in the reactor buildings and the service water building are credited for flood protection as the path to get building flood waters to the sumps. The sumps in these areas have metal plates welded over the sump areas, so that water can only enter the sumps through the drains. The inspectors found that the reactor building and service water building drains, credited as flood protection features, were not scoped into the MR program and had no preventative maintenance schedule. The inspectors determined that the drains in these buildings had never been inspected.

Analysis. The inspectors determined that the failure of the licensee to monitor flood protection features in the MR program, as required by 10 CFR 50.65(b)(2)(ii), was a performance deficiency. The finding is more than minor because it is associated with the protection against external factors (i.e. flood hazard) attribute of the Mitigating Systems Cornerstone and adversely affects the cornerstone objective of ensuring the availability, reliability, and capability of the safety related systems to respond to initiating events to prevent undesirable consequences. Specifically, the finding is more than minor because failing to monitor flood protection features resulted in degradation of flood protection features which could have impacted safety-related equipment. Using IMC 0609, Appendix A, issued June 9, 2012, The SDP for Findings At-Power, Exhibit 2, the inspectors determined the finding is of very low safety significance (Green) because it did not represent an actual loss of function of one or more non-TS trains of equipment designated as high safety-significant in accordance with the licensee's maintenance rule program for greater than 24 hours. The finding has a cross-cutting aspect in the area of problem identification and resolution associated with the resolution attribute because the organization failed to take effective corrective actions to address issues in a timely manner commensurate with their safety significance. Specifically, the licensee failed to scope the credited flood protection floor drains into the MR program. [P.3]

Enforcement. Section 50.65(b)(2)(ii) of 10 CFR, requires, in part, that the scope of the monitoring program includes nonsafety-related structures, systems, or components whose failure could prevent safety-related structures, systems, and components from fulfilling their safety-related function. Contrary to the above, from July 10, 1996, until May 8, 2014, the licensee failed to include flood protection features in the MR program that are nonsafety-related but whose failure could prevent safety-related structures, systems, and components from fulfilling their safety-related function. The licensee's corrective actions included scoping the floor drains into the MR program. Because this finding is of very low safety significance (Green) and was entered into the licensee's CAP as NCR 677850, consistent with Section 2.3.2.a of the NRC's Enforcement Policy, this violation is being treated as an NCV: NCV05000325/2014003-02 and 05000324/2014003-02, Failure to Include Flood Protection Features in the Maintenance Rule Program.

Enclosure

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 – 5 samples)a. Inspection Scope

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

- Unit 2 elevated risk due to single loop operation on April 24, 2014
- Unit 2 elevated risk due to 64 percent downpower on May 17, 2014
- Unit 1 elevated risk due to 70 percent downpower on May 30, 2014
- Unit 1 elevated risk due to 1A residual heat removal outage on June 5, 2014
- Unit 1 elevated risk due to EDG 2 outage on June 10, 2014

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. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R15 Operability Evaluations (71111.15 – 6 samples).1 Operability Evaluationsa. Inspection Scope

The inspectors reviewed the following issues:

- Unit 1 drywell floor drain system not pumping on April 17, 2014
- Unit 2 high pressure coolant injection (HPCI) steam supply valve 2-E41-F001 steam leak on May 5, 2014
- Unit 2 reactor building floor drain 1-LS-N6C high level on May 14, 2014
- Unit 2 pipe sleeve 2-FP-200-6-J-2 leak on May 29, 2014
- Unit 2 HPCI high moisture in oil on May 30, 2014
- Unit 2 EDG 4 air receiver corrosion on June 23, 2014

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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. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18 – 3 samples)

a. Inspection Scope

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

- Unit 1 secondary containment isolation dampers (SCIDs) powered from temporary power (Work Order 2066243-11)
- Unit 2 reactor building roof drains, that penetrate secondary containment, fiberglass wrap due to pipe degradation (NCR 682668)
- Unit 1 residual heat removal torus suction containment isolation valve 1-E11-F020A stroke length reduction (Engineering Change 96821)

These documents and related documentation were reviewed for adequacy of the associated 10 CFR 50.59 safety evaluation screenings, consideration of design parameters, implementation of the modifications, post-modification testing, and relevant procedures, design, and licensing documents were properly updated. The inspectors reviewed completed work activities to verify that installation was consistent with the design control documents. Documents reviewed are listed in the Attachment.

b. Findings

The enforcement actions associated with the SCIDs' temporary modification is documented in Section 4OA7.

Any enforcement actions associated with the Unit 2 reactor building roof drains will be documented in the closeout of Licensee Event Report (LER) 05000324/2-2014-002, Loss of Secondary Containment Due to Opening in Reactor Building Roof Drain Piping.

1R19 Post Maintenance Testing (71111.19 – 6 samples)

a. Inspection Scope

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

- OPT-10.1.1, Reactor Core Isolation Cooling (RCIC) System Operability Test after RCIC cooling water valve 1-E51-F046 Limitorque actuator inspection and refurbishment on January 2, 2014
- OPT-20.3 Local Leakrate testing for reactor water cleanup inlet line inboard isolation valve 1-G31-F001 replacement on April 2, 2014
- OPT-99.1, RHR System Loop B Manual Injection Valve Remote Position Indication, Test after the LPCI manual injection valve 1-E11-F060B misposition on April 6, 2014
- OSP-EC79694.01, Supplemental Diesel Generator Phase Rotation/Synchronization Check and Tie to Each Balance of Plant Bus following repairs on May 21, 2014
- OPT-08.2.2C, Low Pressure Coolant Injection / RHR System Operability Test – Loop A after RHR torus suction containment isolation valve 1-E11-F020A repair on June 5, 2014
- OPT-12.2B, No. 2 Diesel Generator Monthly Load Test after repair due to voltage oscillations on June 15, 2014

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

b. Findings

No findings were identified.

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## 1R20 Outage Activities

### Refueling Outage Activities (71111.20 – 1 sample)

#### a. Inspection Scope

Unit 1 began the inspection period in refueling outage B120R1. The inspectors reviewed outage plans and contingency plans for the Unit 1 refueling outage, which ended with the generator synchronization to the grid on April 11, 2014, 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 following outage activities:

- Licensee configuration management, including maintenance of defense-in-depth for key safety functions and compliance with the applicable TSs 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
- Licensee identification and resolution of problems related to refueling outage activities

Documents reviewed are listed in the Attachment.

#### b. Findings

No findings were identified.

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1R22 Surveillance Testing.1 Routine Surveillance Testing (71111.22 – 4 ST samples)a. Inspection Scope

The inspectors either observed surveillance tests or reviewed the test results for the following activities to verify the tests met TS surveillance requirements, UFSAR commitments, in-service testing requirements, and licensee procedural requirements. The inspectors assessed the effectiveness of the tests in demonstrating that the SSCs were operationally capable of performing their intended safety functions. Documents reviewed are listed in the Attachment.

- 0MST-RHR26R, RHR CS Low Reactor Press Permissive Instrumentation Channel Calibration on April 15, 2014
- 0PT-80.1, Reactor Pressure Vessel American Society of Mechanical Engineers (ASME) Section XI pressure test on April 25, 2014
- 2MST-RPS24Q, Reactor Protection System Reactor Vessel Low Water Level (LL1) Trip Channel Calibration on May 5, 2014
- 0E&RC-1010, Diesel Fuel Oil Testing Program on May 21, 2014

b. Findings

No findings were identified.

.2 In-Service Testing (IST) Surveillance (71111.22 – 1 IST sample)a. Inspection Scope

The inspectors reviewed the performance of the following test:

- 1MST-SW12Q, Service Water Diesel Generator Cooling Water Supply Low Pressure Functional Test, on April 28, 2014

Inspectors evaluated the effectiveness of the licensee's 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, TSs, selected licensee commitments, and code requirements; 5) range and accuracy of test instruments; and 6) required corrective actions. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.3 Reactor Coolant System (RCS) Leak Surveillance (71111.22 – 1 RCS leak sample)

a. Inspection Scope

The inspectors observed and reviewed the test results for a Unit 2 RCS leak detection surveillance, 00I-03.1, Reactor Operator Daily Surveillance Report, on June 24, 2014. The inspectors observed in-plant activities and reviewed procedures and associated records to determine whether: effects of the testing were adequately addressed by control room personnel or engineers prior to the commencement of the testing; acceptance criteria were clearly stated, demonstrated operational readiness, and were consistent with the system design basis; plant equipment calibration was correct, accurate, and properly documented; and the calibration frequency were in accordance with TSs, the UFSAR, procedures, and applicable commitments; applicable prerequisites described in the test procedures were satisfied; test frequencies met TS requirements to demonstrate operability and reliability; tests were performed in accordance with the test procedures and other applicable procedures; and test data and results were accurate, complete, within limits, and valid. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1EP6 Emergency Planning (EP) Drill Evaluation (71114.06 – 1 sample)

a. Inspection Scope

The inspectors observed a site EP training drill in the simulator conducted on May 28, 2014. The inspectors reviewed the drill scenario narrative to identify the timing and location of classifications, notifications, and protective action recommendations development activities. During the drill, the inspectors assessed the adequacy of event classification and notification activities. The inspectors observed portions of the licensee's post-drill critique. The inspectors verified that the licensee properly evaluated the drill performance with respect to performance indicators and assessed drill performance with respect to drill objectives. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.



#### 4. OTHER ACTIVITIES

##### 4OA1 Performance Indicator (PI) Verification

###### Initiating Event Cornerstone (71151 – 6 samples)

###### a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index (MSPI) performance indicators listed below for the period from April 1, 2013, through March 31, 2014. The inspectors reviewed the licensee's operator narrative logs, issue reports, MSPI derivation reports, event reports and NRC Integrated Inspection Reports for the period to validate the accuracy of the submittals. The inspectors 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. Documents reviewed are listed in the Attachment.

- Safety System Functional Failure
- MSPI EDG
- MSPI SW

###### b. Findings

No findings were identified.

##### 4OA2 Identification and Resolution of Problems

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

###### a. Inspection Scope

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

###### b. Findings

No findings were identified.

.2 Semi-Annual Trend Review (71152 – 1 trend sample)

a. Inspection Scope

The inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment issues, but also considered the results of daily inspector CAP item screening discussed in Section 4OA2.1 above, licensee trending efforts, and licensee human performance results. The inspectors' review nominally considered the six-month period of January 1, 2014, through June 30, 2014, 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 CAP trending reports. Corrective actions associated with a sample of the issues identified in the licensee's trending reports were reviewed for adequacy. Documents reviewed are listed in the Attachment.

b. Findings and Observations

The inspectors evaluated a sample of departments that are required to provide input into the quarterly trend reports, which included the performance improvement department. This review included a sample of issues and events that occurred over the course of the past two quarters to determine whether issues were appropriately considered or ruled as emerging or adverse trends, and in some cases, verified the appropriate disposition of resolved trends. The inspectors verified that these issues were addressed within the scope of the CAP, or through department review and documentation in the quarterly trend report for overall assessment.

The inspectors noted that with the onset of an adverse trend in equipment reliability, the licensee wrote NCR 678479 to address the issue. The inspectors reviewed a sample of condition reports that were closed to no action taken. No findings were identified.

.3 Annual Follow-up of Selected Issues (71152 - 2 samples)

.1 Floor Drain Socks

a. Inspection Scope

On November 24, 2012, during a steam leak in the 2A Feedwater Heater Room, water did not adequately drain from the room through the floor drains due to plugging of the floor drain sock filters. The licensee's immediate corrective actions included removing the sock filters so that the water could drain. The sock filters were also installed in

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safety-related pump rooms in the reactor building. The licensee removed these floor drain sock filters in late 2012. The licensee performed an evaluation to determine if there would have been an adverse impact on safety-related equipment if the floor drains had been clogged in NCR 574261. The inspectors reviewed the evaluation and interviewed engineering personnel.

b. Findings

No findings were identified. The inspectors completed an evaluation of URI 05000325/2012005-01 and 05000324/2012005-01, Floor Drains Not Functioning Due to Plugging, in Section 4OA5.1. The inspectors determined that during a worst case internal or external flooding event, with the floor drains plugged in the reactor buildings, that safety-related equipment credited for safe shutdown would not have been affected.

.4 Preventative Maintenance Deferred from Refueling Outage B120R1

a. Inspection Scope

The inspectors reviewed the preventative maintenance associated with safety-related equipment that was deferred from refueling outage B120R1. The inspectors ensured that the preventative maintenance deferred was properly dispositioned in the CAP, had proper oversight by management, and had future work schedules. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

4OA3 Follow-up of Events (71153 – 5 samples)

.1 (Closed) Event Notification (EN) 49788 Unusual Event Declared Due to Toxic Gas Release That Could Affect Normal Operations

a. Inspection Scope

For the plant event listed below, the inspectors reviewed plant parameters, reviewed personnel performance, and evaluated performance of mitigating systems. The inspectors communicated the plant events to appropriate regional NRC personnel, and compared the event details with criteria contained in IMC 0309, issued October 28, 2011, "Reactive Inspection Decision Basis for Reactors," for consideration of potential reactive inspection activities. As applicable, the inspectors verified that the licensee made appropriate emergency classification assessments and properly reported the event in accordance with 10 CFR 50.72. The inspectors reviewed the licensee's follow-up actions related to the events to assure that the licensee implemented appropriate corrective actions commensurate with their safety significance. This constitutes one sample. Documents reviewed are listed in the Attachment.

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- On February 3, 2014, operations personnel declared a notice of unusual event for Unit 1 in accordance with EAL HU 3.1, toxic, corrosive, asphyxiate, flammable gas release that could affect normal operations, due to smoke in the Unit 1 “B” Battery room. The Unit 1 standby uninterruptible power supply inverter cabinet was smoking and leaking fluid. The fire brigade responded and declared the room uninhabitable due to smoke. The standby inverter was de-energized and the smoke subsided. The standby inverter was not in service and no plant equipment was lost. Unit 2 was not affected. The licensee wrote NCR 666251 to address this event.

b. Findings

No findings were identified.

.2 (Closed) Licensee Event Report (LER) 05000325/2014-001-00, Implementation of Enforcement Guidance Memorandum (EGM) 11-003, Revision 2

a. Inspection Scope

On March 4, 2014, Unit 1 implemented the guidance of EGM 11-003, Revision 2, Enforcement Guidance Memorandum on Dispositioning Boiling Water Reactor Licensee Noncompliance with TS Containment Requirements During Operations with a Potential for Draining the Reactor Vessel. Consistent with this EGM, secondary containment operability was not maintained during operations with the potential for draining the reactor vessel (OPDRV) activities. The EGM guidance was implemented four additional times during the Unit 1 refueling outage. The activities are discussed in Section 4OA5.2. Inspectors verified compliance with the guidelines of EGM 11-003 prior to and during these activities. The licensee plans to submit a license amendment request to adopt Technical Specification Task Force traveler associated with generic resolution of this issue within 12 months after the issuance of the Notice of Availability. The licensee entered this issue into the CAP as NCRs 673413 and 673746.

b. Findings

The enforcement actions associated with this LER are documented in Sections 4OA5.2 and 4OA7.2. No additional findings were identified during the review of this LER. This LER is closed.

.3 (Closed) Licensee Event Report (LER) 05000325/2014-002-00, Secondary Containment Isolation Dampers Inoperable During Operations with Potential to Drain the Reactor Vessel

a. Inspection Scope

On March 9, 2014, Unit 1 was in Mode 5 with OPDRVs in progress. Planned work started which removed both the normal and emergency power supplies from one

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train of SCIDs. SCIDs were being power by temporary nonsafety-related power. Operations personnel later determined that with temporary power to SCIDs, SCIDs could not be perform its safety function on a loss of offsite power. As a result, the SCIDs were declared inoperable. The licensee's corrective actions included exiting OPDRV conditions, and revising the temporary power procedure to ensure an operability review by operations personnel. The licensee entered this issue into the CAP as NCR 673858. Documents reviewed are listed in the Attachment.

b. Findings

The enforcement aspects of this finding are discussed in Section 4OA7 of this report. This LER is closed.

.4 (Closed) Licensee Event Report (LER) 05000325/2014-003-00, Secondary Containment Loss of Safety Function Due to Airlock Door Interlock Design

a. Inspection Scope

On March 13, 2014, operations personnel were informed that both the inner and outer secondary containment airlock doors, on the 50 foot elevation of the Unit 1 reactor building, had been opened simultaneously for approximately one minute. The licensee took immediate action to secure both doors. Subsequently, on March 17, 2014, operations personnel were informed that both the inner and outer secondary containment airlock doors, on the 20 foot elevation of the Unit 1 reactor building, had been opened simultaneously for approximately 10 seconds. The licensee took immediate action to secure both doors. The licensee performed a root cause evaluation and determined the cause of the issue is that the design of the secondary containment airlock door interlocks is not robust enough to prevent inoperability of secondary containment. The licensee's corrective actions included installing video monitoring on the 20 foot elevation doors and controlling the 50 foot elevation doors for emergency use only. The licensee plans to design and implement a new interlock system for the doors. The licensee entered this issue into the CAP as NCRs 674976, 674992, and 675580. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified. This LER is closed.

.5 (Closed) Licensee Event Report (LER) 05000324/2014-001-00, Secondary Containment Loss of Safety Function Due to Airlock Door Interlock Design

a. Inspection Scope

On March 6, 2014, operations personnel determined that both the inner and outer secondary containment airlock doors, on the 50 foot elevation of the Unit 2 reactor building, had been opened simultaneously on March 5, 2014. This event occurred

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while an employee was exiting secondary containment. The inner door failed to latch and opened as the employee was opening the outer door. Upon recognition, the employee took action to secure both doors. The licensee performed a root cause evaluation and determined the cause of the issue is that the design of the secondary containment airlock door interlocks is not robust enough to prevent inoperability of secondary containment. The licensee's corrective actions included installing video monitoring on the 20 foot elevation doors and controlling the 50 foot elevation doors for emergency use only. The licensee plans to design and implement a new interlock system for the doors. The licensee entered this issue into the CAP as NCRs 673390. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified. This LER is closed.

4OA5 Other Activities

.1 (Closed) Unresolved Item (URI) 05000325/2012005-01 and 05000324/2012005-01, Floor Drains Not Functioning Due to Plugging

a. Inspection Scope

The inspectors completed an evaluation of URI 05000325/2012005-01 and 05000324/2012005-01, Floor Drains Not Functioning Due to Plugging. On November 24, 2012, during a steam leak in the 2A Feedwater Heater Room, water did not adequately drain from the room through the floor drains due to plugging of the floor drain sock filters. The licensee's immediate corrective actions included removing the sock filters so that the water could drain. The sock filters were also installed in safety-related pump rooms in the reactor building. The licensee removed these floor drain sock filters in late 2012. The licensee performed an evaluation to determine if there would have been an adverse impact on safety-related equipment if the floor drains had been clogged in NCR 574261. The inspectors reviewed the evaluation and interviewed engineering personnel. The inspectors noted that safety-related equipment credited for safe shutdown would not have been affected.

b. Findings

No findings were identified.

.2 Implementation of Enforcement Guidance (EGM) 11-003, Revision 2, 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 NRC EGM 11-003, Revision 2, during Unit 1 maintenance activities which had the potential to drain the reactor vessel during the Unit 1 refueling outage. The activities included:

- March 4, 2014: 0.5 gallons per minute leakage through valves E11-F060B and E-11F015B (performance of Procedure 1SP-14-100, EGM 11-003 OPDRV Activities, found these two valves leaking)
- March 9, 2014: 0.09 gallons per minute leakage through valves B32-V37, F037A, and F026A (performance of Procedure 1SP-14-100 found these valves leaking)
- March 14, 2014: 20 gallons per minute leakage through 1A Recirculation Pump drain valves F051A and F052A during A recirculation pump seal replacement, and 71.2 gallons per minute leakage due to local power range monitor replacements
- March 17, 2014: 0.03 gallons per minute leakage through valve B32-V37A during valve replacement
- March 27, 2014: 239 gallons per minute leakage through E11-F060A during valve repacking

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. Additionally, inspectors verified that, for all dates with the exception of March 9, 2014, all other TSs were met during OPDRVs with secondary containment inoperable.

b. Findings

TS 3.6.4.1, Secondary Containment requires that secondary containment be operable and is applicable during operations with a potential for draining the reactor vessel (OPDRVs). The required action if secondary containment is inoperable in this condition is to initiate actions to suspend OPDRVs immediately. Contrary to the above, on March 4, March 9, March 14, March 17, and March 27, 2014, the licensee failed to maintain secondary containment operable while performing OPDRVs.

However, because the violations were identified during the discretion period described in EGM 11-003, Revision 2, the NRC is exercising enforcement discretion for the dates of March 4, March 14, March 17, and March 27, 2014, 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.

For March 9, 2014, the requirements of TS 3.6.4.2, Secondary Containment Isolation Dampers, were not met when the licensee failed to declare the SCIDs inoperable while powered from temporary nonsafety-related electrical power and OPDRVs were in progress. Enforcement action associated with this performance deficiency is discussed in Section 4OA7.2 of this report.

#### 4OA6 Management Meetings

##### Exit Meeting Summary

On July 24, 2014, the inspector presented the inspection results to Mr. George Hamrick, and other members of the licensee staff. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

#### 4OA7 Licensee-Identified Violations

The following findings of very low significance (Green) were identified by the licensee and are violations of NRC requirements which meet the criteria of the NRC Enforcement Policy, for being dispositioned as NCVs.

- .1 Technical Specification 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 I.1 of Regulatory Guide 1.33, Appendix A, November 1972, (Safety Guide 33, November 1972) states, in part, that maintenance that can affect the performance of safety-related equipment should be properly planned and performed in accordance with written procedures, documented instructions, or drawings appropriate to the circumstances. Contrary to the above, from March 11, 2014, to April 3, 2014, the licensee failed to follow procedure OMA-NGGC-0201, Contingency Planning and Discovery Management, to properly plan for the replacement of the reactor water cleanup (RWCU) inlet line isolation valve 1-G31-F001. Specifically, a written contingency plan was not developed. As a result, significant items were missed in the planning and preparation. This contributed to the licensee exceeding the As Low as Reasonably Achievable (ALARA) dose goal for this job by 11 rem. This finding was more than minor because it was associated with the Program and Process ALARA planning attribute of the Occupational Radiation Safety Cornerstone and adversely affected the objective to ensure the adequate protection of worker health and safety from exposure of radiation from radioactive material during routine civilian nuclear reactor operations. The inspectors determined the finding to be of very low safety significance (Green) because Brunswick's three-year rolling average (2011-2013) is 185 person-rem, which is below the SDP criteria of 240 person-rem for boiling water reactors. The licensee entered this issue into the CAP as NCR 678510.



- .2 10 CFR Part 50, Appendix B, Criterion V, Instructions, Procedures, and Drawings, states, in part, activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Licensee Procedure OPS-NGGC-1305, Operability Determinations, states, in part, a structure, system, or component is Operable if the TS definition of OPERABLE is satisfied. Technical Specification 3.6.4.1, Secondary Containment, and TS 3.6.4.2, Secondary Containment Isolation Dampers, require secondary containment and SCIDs to be operable. Contrary to the above, on March 9, 2014, Procedure OMMM-054, Temporary Power Feed Documentation, was not appropriate to the circumstances and did not require an operability determination when SCIDs was powered from a nonsafety-related power supply. The licensee failed to declare the SCIDs inoperable while powered from temporary nonsafety-related electrical power and OPDRVs were in progress. The SCIDs system was inoperable because the normal or emergency electrical power was not capable of performing its related support function. The finding is more than minor because it is associated with the configuration control attribute of the Barrier Integrity Cornerstone and adversely affects the cornerstone objective to provide reasonable assurance that physical design barriers (standby gas treatment) protect the public from radionuclide releases caused by accidents or events. Specifically, the finding is more than minor since the SCIDs system was inoperable. Using IMC 0609, Appendix A, issued June 9, 2012, The SDP for Findings At-Power, the inspectors determined the finding screened to very low safety significance (Green) since the finding only represented a degradation in the radiological barrier function of secondary containment standby gas treatment. The licensee entered this issue into the CAP as NCR 673858.

The NRC issued EGM 11-003, Revision 2, to exercise enforcement discretion and not cite licensees for TS violations related to the conduct of OPDRVs with secondary containment inoperable provided that certain criteria were met. One of the criteria was that the licensee must follow all other TS applicability and action requirements. Since the licensee was conducting OPDRVs during the time of the inoperability, the licensee did not meet the criteria in EGM 11-003 for the staff to consider exercising discretion on March 9, 2014. For the inoperability, TS 3.6.4.2 required initiation of action to suspend OPDRVs immediately, as did TS 3.6.4.1, Secondary Containment, for inoperable secondary containment. Therefore, Unit 1 was in a condition prohibited by TS 3.6.4.1, and TS 3.6.4.2.

- .3 10 CFR 26.29(a), Training content, requires, in part, that in the licensee and other entities shall ensure that the individuals who are subject to this subpart have the following: (1) knowledge of the policy and procedures that apply to the individual, the methods used to implement them, and the consequences of violating the policies and procedures. Contrary to this requirement, the licensee only provided informal training to some contractor supervisors and managers when it initially implemented the fatigue rule requirements in 2009. Specifically, no additional training was given prior to the Unit 1 spring 2012 outage, related to licensee procedure ADM-NGGC-0206, "Managing Fatigue and Work Hour Limits," Revision 7. This finding was more than minor because the lack of procedural knowledge allowed the licensee to routinely fail to perform

appropriate management of work hour limits and waivers, and if left uncorrected, this could lead to a more significant safety concern. This violation was determined to be of very low safety significance (Green) because no significant events or human performance issues were directly linked to personnel fatigue as a result of the hours worked. The licensee entered this issue into their CAP as CRs 546446, 546483 and 551121.

- .4 10 CFR 26.205(b)(1), Shift turnover, requires, in part, that the licensee calculate the work hours of individuals who are subject to this section as the amount of time the individuals perform duties for the licensee. Contrary to this requirement, numerous violations of the work hour limits of individuals were identified. Specifically, during the Unit 1 spring 2012 refueling outage, the licensee misinterpreted the turnover rules to include the time necessary for critical path employees to participate in safety, health physics, and pre-job briefings, dress out, retrieve equipment and arrive at their turnover locations, which, in some cases, was three to four hours of turnover time, which did not meet the definition of shift turnover. This finding was more than minor because if left uncorrected, the continued inappropriate use of work hour calculations would permit workers to exceed work hour limits, and could lead to a more significant safety concern. This violation was determined to be of very low safety significance (Green) because no significant events or human performance issues were directly linked to personnel fatigue as a result of the hours worked. The licensee entered this issue into their CAP as CRs 546446, 546483, 550642, and 564726.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### **Licensee Personnel**

G. Hamrick, Site Vice President  
K. Allen, Manager – Design Engineering  
Y. Anagostopoulos, Manager – Major Projects  
A. Brittain, Manager – Security  
K. Crocker, Supervisor – Emergency Preparedness  
P. Dubrouillet, Manager – Nuclear Systems Engineering  
S. Gordy, Manager – Maintenance  
L. Grzeck, Supervisor – Licensing  
K. Hamm, Superintendent – Mechanical Maintenance  
B. Houston, Manager – Environmental and Radiological Controls  
J. Kalamaja, Manager – Operations  
G. Kilpatrick, Manager – Training  
J. Krakuszeski, Plant General Manager  
W. Murray, Licensing Specialist  
J. Nolin, Director – Engineering  
A. Padleckas, Manager – Shift Operations  
F. Payne, Manager – Outage and Scheduling  
D. Petrusic, Superintendent – Environmental and Chemistry  
A. Pope, Manager – Nuclear Support Services  
B. Raper, Supervisor – U1 Outage Manager  
T. Sherrill, Licensing Specialist  
M. Turkal, Licensing Specialist  
E. Willis, Director – Site Operations  
O. Wisbon, Superintendent – Electrical, Instrumentation and Controls Maintenance

#### **NRC Personnel**

G. Hopper, Chief, Reactor Projects Branch 4  
J. Dodson, Senior Project Engineer

## LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

### Opened and Closed

05000325; 324/2014003-01	NCV	Failure to Maintain a Standard Emergency Action Level Scheme for Flooding (Section 1R01.1)
05000325; 324/2014003-02	NCV	Failure to Include Flood Protection Features in the Maintenance Rule Program (Section 1R12)

### Closed

05000325; 324/2012005-01	URI	Floor Drains Not Functioning Due to Plugging (Section 4OA5.1)
05000325/2014-001-00	LER	Implementation of Enforcement Guidance Memorandum (EGM) 11-003, Revision 2 (Section 4OA3.2)
05000325/2014-002-00	LER	Secondary Containment Isolation Dampers Inoperable During Operations with Potential to Drain the Reactor Vessel (OPDRVs) (Section 4OA3.3)
05000325/2014-003-00	LER	Secondary Containment Loss of Safety Function Due to Airlock Door Interlock Design (Section 4OA3.4)
05000324/2014-001-00	LER	Secondary Containment Loss of Safety Function Due to Airlock Door Interlock Design (Section 4OA3.5)

## LIST OF DOCUMENTS REVIEWED

### Common Documents Reviewed

Updated Final Safety Analysis Report  
Individual Plant Examination  
Individual Plant Examination of External Events  
Technical Specifications and Bases  
Technical Requirements Manual  
Control Room Narrative Logs  
Plan of the Day

### Section 1R01: Adverse Weather Protection

#### Procedures

0AOP-13.0, Operation During Hurricane, Flood Conditions, Tornado, or Earthquake, Rev. 56  
0AP-062, Seasonal Preparations, Rev. 2  
0A1-68, Brunswick Nuclear Plant Response to Severe Weather Warnings, Rev. 44  
0O1-01.03, Non-Routine Activities, Rev. 52  
0PEP-02.6, Severe Weather, Rev. 17  
0AOP-22.0, Grid Stability Rev. 24  
OPT-12.8.1, Breaker alignment Operability Test, Rev. 11  
0BNP-TR-019, External Events Protection Features, Rev. 0  
0PEP-02.2.1, Emergency Action Level Technical Bases, Rev. 0  
2OP-43, Service Water System Operating Procedure, Rev. 152  
0PLP-37, Equipment Important to Emergency Preparedness and Emergency Response  
Organization Response, Rev. 2

#### Condition Reports

685509	688072	681264	670827	670830	670834
671166	671162	671815	680521	672698	672696
372691	672689	672692	672711	671549	671815
688533	668421	671542	671565	669739	668452
668533	670018	669739	693590	688613	650420
545354	533946				

#### Work Orders

13303549	13303548	13303546	13303539	13303535	13303547
13303545	13303537	13303536	13303534		

#### Miscellaneous

Engineering Change 92956  
Engineering Change 80408  
Maintenance Rule Scoping Documents – Reactor Building, Service Water Building, and  
Emergency Diesel Generator Building  
System Health Reports, Heating, Ventilation, and Air Conditioning – Reactor Buildings, and  
Service Water Buildings  
Engineering Change 93642

**Section 1R04: Equipment Alignment**Procedures

1OP-43, Service Water Operating Procedure, Rev. 116  
 2OP-18, Core Spray Operating Procedure, Rev. 71  
 2OP-10, Standby Gas Treatment Operating Procedure, Rev. 77  
 0OP-39, Diesel Generator Operating Procedure, Rev. 156  
 0E&RC-1010, Diesel Fuel Oil Testing Program, Rev. 43  
 0OP-37, Control Building Ventilation System Operating Procedure, Rev. 60

Work Orders

2079414

Drawings

D-20041, Service Water System Piping Diagram, Rev. 2  
 D-25024, Core Spray System Piping Diagram, Rev. 42  
 F-04073, Reactor Building, Piping Diagram, Standby Gas Treatment – Sheet 3 Unit 2, Rev. 15  
 D-02026, Fuel Oil Loading & Storage Piping Diagram, Rev. 26  
 F-04080, Control Building, Air Flow Diagram, Rev. 15

Miscellaneous

BN-43.0.01, Service Water System  
 SD-4, Service Water System, Rev.26  
 SD-18, Core Spray System, Rev. 6  
 SD-37, Control Building Heating, Ventilation, and Air Conditioning, Rev. 16

**Section 1R05: Fire Protection**Procedures

0PFP-PBAA, Power Block Auxiliary Areas Prefire Plans, Rev. 22  
 2PFP-RB, Reactor Building Prefire Plans, Rev. 15  
 0PFP-DG, Diesel Generator Building PreFire Plans, Rev. 15

Condition Reports

687479          687475          655499

**Section 1R06: Flood Protection**Procedures

SAF-NGGC-2174, Confined Space Entry Procedure, Rev. 11  
 EGR-NGGC-0351, Condition Monitoring of Structures, Rev. 20  
 0AOP-05, Radioactive Spills, High Radiation, and Airborne Activity, Rev. 30

Condition Reports

685509	688072	681264	670827	670830	670834
671166	671162	671815	680521	672698	672696
372691	672689	672692	672711	671549	671815
688533	668421	671542	671565	669739	668452
668533	670018	669739			

Work Orders

13303549	13303548	13303546	13303539	13303535	13303547
13303545	13303537	13303536	13303534		

Miscellaneous

Engineering Change 92956, Z01R6, Attachment B, Detailed Track Door Gap Evaluation  
 Engineering Change 80408, Z02R2, Attachment C  
 Maintenance Rule Scoping Documents – Reactor Building, Service Water Building, and  
 Emergency Diesel Generator Building

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

OPEP-02.1, Initial Emergency Actions, Rev. 52  
 OPEP-02.6.21, Emergency Communicator, Rev. 71

**Section 1R12: Maintenance Effectiveness**Procedures

OPM-HX503, Residual Heat Removal Service Water Booster Pump Motor Heat Exchanger  
 Inspection, Rev. 14  
 OMMM-017, Maintenance Methods and Guidelines for Torquing, Rev. 38  
 Specification 248-117, Specification for Installation of Piping Systems, Rev. 32

Condition Reports

638083	669748	680647	666080	574261	681161
681264	677850	574259			

Work Orders

13307579	1939606	726908	972852
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Drawings

F-02010, Service Water Intake Structure General Arrangement, Rev. 12  
 F-02501, Reactor Building Plan Below Grade El. -17'-0" General Arrangement, Rev. 29

Miscellaneous

Engineering Change 95364  
 Engineering Change 80408

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

OAP-022, BNP Outage Risk Management, Rev. 41  
 OAP-025, BNP Integrated Scheduling, Rev. 47  
 ADM-NGGC-0006, Online EOOS Model, Rev. 8  
 ADM-NGGC-0104, Work Management Process, Rev. 42  
 WCP-NGGC-0500, Work Activity Integrated Risk Management Program, Rev. 3  
 AD-OP-ALL-0201, Protected Equipment, Rev. 0

Condition Reports

688295

Miscellaneous

0ENP-24.5, Reactivity Control Planning, Rev. 7  
 0PT-13.2, Jet Pump Baseline Data, Rev. 21  
 BNP EOOS Profile

**Section 1R15: Operability Evaluations**Procedures

EGR-NGGC-0005, Engineering Change, Rev. 35  
 OPS-NGGC-1305, Operability Determinations, Rev. 11  
 0BNP-TR-019, External Event Protection Features, Rev. 1

Condition Reports

686702	689836	690292	694431	682585	606137
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Work Orders

13306957	11627715	13389285
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Miscellaneous

SD-19, High Pressure Coolant Injection (HPCI) system, Rev. 23  
 REW 250203

**Section 1R18: Plant Modifications**Procedures

EGR-NGGC-0005, Engineering Change, Rev. 37  
 REG-NGGC-0010, 10 CFR 50.59 and Selected Regulatory Reviews, Rev. 21  
 0MMM-054, Temporary Power Feed Documentation, Rev. 23  
 EGR-NGGC-0005, Engineering Change, Rev. 37  
 0PT-08.2.2c, Low Pressure Coolant Injection/Residual Heat Removal System Operability Test –  
 Loop A, Rev. 80

Condition Reports

673858	457341	691087	691088	691089	691090
691091	690674	682668	685184	691200	691677

Work Orders

2066243-11

Miscellaneous

Licensee Event Report 05000325/1-2014-002, Secondary Containment Isolation Dampers  
 Inoperable During Operations with Potential to Drain the Reactor Vessel  
 Licensee Event Report 05000324/2-2014-002, Loss of Secondary Containment Due to Opening  
 in Reactor Building Roof Drain Piping  
 Operator Logs  
 Engineering Change 73062



Engineering Change 96822  
 Engineering Change 96861

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

#### Procedures

0PLP-20, Post-Maintenance Testing Program, Rev. 42  
 0PT-20.3 Local Leakrate Testing, Rev. 82  
 ADM-NGGC-0105, ALARA Planning, Rev. 14  
 0SP-EC79694.01, Supplemental Diesel Generator Phase Rotation/Synchronization Check and Tie to Each BOP Bus, Rev. 8  
 0PT-08.2.2C, LPCI/RHR System Operability Test – Loop A  
 0PT-99.1, RHR System Loop B Manual Injection Valve RPI Test, Rev. 2  
 0PT-12.2B, No. 2 Diesel Generator Monthly Load Test, Rev. 5  
 0PT-10.1.1, Reactor Core Isolation Cooling (RCIC) System Operability Test, Rev. 100

#### Condition Reports

678510	676956	677263	677330	680092	680431
692378	653106				

#### Work Orders

2222587	13397304	11630237	13333701
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#### Drawings

0-FP-06006, 24" Gate Valve Motor Operated

#### Miscellaneous

Operator logs  
 Engineering change 96861  
 AWP# 2310, 1-G31-F001 Activities RWCU

### **Section 1R20: Outage Activities**

#### Procedures

1OP-17, Residual Heat Removal System Operating Procedure, Rev. 125  
 0GP-01, Prestartup Checklist, Rev. 187  
 0GP-02, Approach to Criticality and Pressurization of the Reactor, Rev. 107  
 0GP-03, Unit Startup and Synchronization, Rev. 81  
 0GP-10, Rod Sequence Check-off Sheets, Rev. 43  
 0GP-12, Power Changes, Rev. 73  
 0MMM-015, Operation and Inspection of Cranes and Material Handling Equipment, Rev. 60  
 0PM-CRN002, Overhead Crane Checkout, Rev. 14  
 0SMP-RPV502, Reactor Vessel Reassembly, Rev. 31  
 0PT-80.1, Reactor Pressure Vessel ASME Section XI Pressure Test, Rev. 68  
 0PT-14.1A, Control Rod Coupling Check and CRD Testing, Rev. 45  
 0PT-14.2.1, Single Rod Scram Insertion Times Test, Rev. 73  
 AI-127, Primary Containment Inspection and Closeout, Rev. 38  
 1PT-01.7, Heatup/Cooldown monitoring, Rev. 9

OSP-12-001, EGM 11-003 OPDRV Activities, Rev. 5  
 OOI-01.01, BNP Conduct of Operations Supplement, Rev. 62

Condition Reports

681243          681244          681249

Miscellaneous

Unit 1 B120R1 System Outage Windows, March – April 2014  
 Fatigue Management Exceptions, January –April, 2014  
 Outage Report, April 2014

**Section 1R22: Surveillance Testing**

Procedures

0PT-80.1, Reactor Pressure Vessel ASME Section XI Pressure Test, Rev. 68  
 0MST-RHR26R, RHR CS Low Reactor Pressure Permissive Instrumentation Channel  
 Calibration, Rev. 4  
 0E&RC-1010, Diesel Fuel Oil Testing Program, Rev. 43  
 2MST-RPS24Q, Reactor Protection System Reactor Vessel Low Water Level (LL1) Trip Chan  
 Cal, Rev. 7  
 0O1-03.1, Reactor Operator Daily Surveillance Report, Rev. 3  
 1MST-SW12Q, Service Water Diesel Generator Cooling Water Supply Low Pressure Functional  
 Test, Rev. 12

Condition Reports

685642          682585          606137          682585

Work Orders

02119130      11626489      2256600

Miscellaneous

Progress Energy Certificate of Analysis  
 Chemistry Results for Fuel Oil Truck Deliveries

**Section 1EP6: Emergency Planning Drill Evaluation**

Procedures

0PEP-02.1.1, Emergency Control – Notification of Unusual Event, Alert, Site Area Emergency,  
 or General Emergency, Rev. 24  
 0PEP-02.1, Initial Emergency Actions, Rev. 52  
 0PEP-02.6.21, Emergency Communicator, Rev. 72  
 0PEP-02.6.26, Activation and Operation of the TSC, Rev. 34

**Section 4OA1: Performance Indicator (PI) Verification**

Procedures

REG-NGGC-0009, NRC Performance Indicators and Monthly Operating Report Data, Rev. 11

Condition Reports

668723          628665          644978          604452          604452

Miscellaneous

## Operator Logs

NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Rev. 7

Brunswick Unit 1 PI Summary, April 2013 – March 2014

Brunswick Unit 2 PI Summary, April 2013 – March 2014

Monthly PI Reports, April 2013 – March 2014

System Health Reports, April 2013 – March 2014

Licensee Event Reports, April 2013 – March 2014

**Section 40A2: Identification and Resolution of Problems**Procedures

CAP-NGGC-0200, Condition Identification and Screening Process, Rev. 39

AD-PI-ALL-0400, Operating Experience Program, Rev. 0

CAP-NGGC-0205, Condition Evaluation and Corrective Action Process, Rev. 18

CAP-NGGC-0206, Performance Assessment and Trending, Rev. 7

Condition Reports

680399	679109	677117	690263	678479	671565
666126	669949	678479	689404	602614	43552
574261	681161	681264	677850	574256	

Work Orders

2076163	11622244	13371696	1973171	2157552	1746806
2075849	2076098	2076144	1939606		

Miscellaneous

Brunswick Nuclear Plant Quarterly Trend Report, First Quarter 2014

Active Operational Decision Making Items, 2014

Main Control Room Logs, 2014

Maintenance Rule a(1) Issues, 2014

System Health Reports, 2014

B120R1 Preventative Maintenance Work Orders Removed from Scope, April 2014

**Section 40A3: Follow-up of Events**Procedures

OPEP-02.1, Initial Emergency Actions, Rev. 52

OPEP-02.1.1, Emergency Control – Notification of Unusual Event, Alert, Site Area Emergency, and General Emergency, Rev. 24

OPEP-02.2.1, Emergency Action Level Bases, Rev. 5

OOI-01.01, BNP Conduct of Operations Supplement, Rev. 62

1SP-14-100, EGM 11-003 OPDRV Activities, Rev. 1

Condition Reports

666251	673390	673413	673746	673858	675580
674992	674976	457341	675699	673326	

Work Request

2066243      11620157      11620158      11618565

Miscellaneous

Ethylene glycol MSDS

Event Notification 49788 Unusual Event Declared Due to Toxic Gas Release That Could Affect Normal Operations

Licensee Event Report 05000325/2014-001-00, Implementation of Enforcement Guidance Memorandum 11-003, Revision 2

Licensee Event Report 05000325/2014-002-00, Secondary Containment Isolation Dampers Inoperable During Operations with Potential to Drain the Reactor Vessel

Licensee Event Report 05000325/2014-003-00, Secondary Containment Loss of Safety Function Due to Airlock Door Interlock Design

Licensee Event Report 05000324/2014-001-00, Secondary Containment Loss of Safety Function Due to Airlock Door Interlock Design

**Section 40A5: Other Activities**

Procedures

1SP-14-100, EGM 11-003 OPDRV Activities, Rev. 1

Condition Reports

687272      695332      673413      673746

Miscellaneous

Operator Logs

Implementation of Enforcement Guidance 11-003, Revision 2, 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 40A7: Licensee-Identified Violation**

Procedures

ADM-NGGC-0105, ALARA planning, Rev. 13

0E&RC-0208, Hydrolazing Procedure, Rev. 6

1SP-14-100, EGM 11-003 OPDRV Activities, Rev. 1

0MMM-054, Temporary Power Feed Documentation, Rev. 23

Condition Reports

678510      666251      673390      673413      673746      673858  
 675580      674992      674976      457341      675699      673326

Work Request

2066243      11620157      11620158      11618565

Miscellaneous

AWP 2310, 1-G31-F001 Activities Reactor Water Cleanup, Rev. 3

## LIST OF ACRONYMS

ADAMS	Agencywide Documents Access and Management System
ALARA	As Low as Reasonably Achievable
AOP	Abnormal Operating Procedure
CAP	Corrective Action Program
CS	Core Spray
EAL	Emergency Action Level
EDG	Emergency Diesel Generator
EMG	Enforcement Guidance Memorandum
EN	Event Notification
EP	Emergency Preparedness
FOTC	Fuel Oil Tank Chamber
IMC	Inspection Manual Chapter
IST	In-Service Testing
LER	Licensee Event Report
MR	Maintenance Rule
MSL	Mean Sea Level
MSPI	Mitigating System Performance Index
NCR	Nuclear Condition Report
NRC	Nuclear Regulatory Commission
NCV	Non-cited Violation
OPDRV	Operations with the Potential for Draining the Reactor Vessel
PARS	Publicly Available Records System
PMH	Probable Maximum Hurricane
RCIC	Reactor Core Isolation Cooling
RHR	Residual Heat Removal
RTP	Rated Thermal Power
RWCU	Reactor Water Cleanup
SCID	Secondary Containment Isolation Damper
SDP	Significance Determination Process
SRA	Senior Reactor Analyst
SW	Service Water
TSO	Transmission System Operator
UFSAR	Updated Final Safety Analysis Report