

## Brunswick 2

### 4Q/2004 Plant Inspection Findings

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## Initiating Events

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## Mitigating Systems

**Significance:**  Dec 31, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

### **Inadequate Storage of Standby Liquid Control System Nitrogen Accumulator Repair Kits**

Green. A self-revealing finding and non-cited violation of 10CFR50, Appendix B, Criterion XIII, was identified for failure to store Unit 1 standby liquid control system (SLC) nitrogen accumulator repair kits in a condition which did not prevent deterioration. The licensee's material evaluation of the commercially dedicated part did not include special storage requirements and, therefore, the parts were stored, from at least 1999 until March 2004, in a condition which made them susceptible to developing leaks along folds in the nitrogen accumulator bladders. This resulted in accumulator nitrogen leakage into the Unit 1 standby liquid control system and was determined to be the cause of the 1 B standby liquid control pump being discovered in an inoperable condition on July 8, 2004.

This finding is more than minor because it is associated with equipment performance and affected the functional capability of the system to respond to initiating events. This finding was evaluated using MC 0609 Appendix A. A Phase 3 Significance Determination Process analysis determined this finding to be of very low safety significance (Green) because the redundant train of the Unit 1 SLC system remained operable. The licensee's corrective actions included replacing all of the affected nitrogen accumulator bladders.

Inspection Report# : [2004005\(pdf\)](#)

**Significance:**  Nov 19, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

### **Inadequate Implementation of the Fire Protection Program For ERFBS Fire Barrier Protection of Circuits In Fire Area DG-8**

Green. The inspectors identified a non-cited violation of Brunswick Steam Electric Plant Unit 1 Updated Facility Operating License DPR-71, and Unit 2 Updated Facility Operating License DPR-62, Condition 2.B. (6), for the licensee's failure to adequately implement the fire protection program. In 480 volt switchgear room E7 (Fire Area DG-8 ), Division II (Train B) circuits in two conduits were routed closer than 20 feet from the redundant Division I (Train A) circuits in the designated separation zone without being protected by a one-hour fire rated barrier, as required. A fire in this area could damage the unprotected cables to components required to achieve and maintain safe shutdown. This finding is greater than minor because it affected the Mitigating Systems Cornerstone objective of equipment availability and reliability, in that required fire barriers for equipment and circuits relied upon for safe shutdown following a fire were not in place. This finding is of very low safety significance because of the low likelihood of fire ignition of transient combustible materials in critical locations near the affected circuits and the exposure transit time of lubricating oil in area DG-8 during diesel generator oil changes is extremely low. In addition, other defense-in-depth fire protection elements including transient combustible administrative controls, passive fire barriers, automatic fire detection, manual suppression capability, and safe shutdown capability from the main control room were still available and effective.

Inspection Report# : [2004010\(pdf\)](#)

**Significance:**  Jun 19, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

### **Failure to Follow EDG Barring Procedure**

Green. A self-revealing Green non-cited violation of Technical Specifications (TS) 5.4.1 was identified for failure to implement a maintenance procedure. Maintenance personnel failed to follow the emergency diesel generator (EDG) barring procedure (predictive maintenance which slowly cranks the engine) by not closing the right bank engine cylinder petcocks while performing the evolution on EDG 1 on June 6, 2004. This resulted in the EDG being inoperable until the condition was discovered when the EDG was started later that day. This finding is greater than minor because it affected the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to an event. The finding is of very low safety significance because the EDG was restored to an operable status within the TS limiting condition for operation allowed outage time. The finding was related to the cross-cutting area of human performance because the cause was due to maintenance workers failing to properly follow procedural requirements.

Inspection Report# : [2004003\(pdf\)](#)

**G****Significance:** Jun 19, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Adequately Consider Vortexing in the Calculation for CST Level for Automatic Transfer of the HPCI Pump Suction**

Green. The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion III, Design Control, for failure of design calculations to adequately address the potential for air entrainment in the high pressure coolant injection (HPCI) process flow due to vortexing. The Technical Specifications allowable value for the condensate storage tank (CST) level - low function, for automatic HPCI pump suction transfer to the suppression pool, was not adequately supported by these design calculations. The finding is greater than minor because it affects the design control attribute of the mitigating systems cornerstone objective. It is of very low safety significance because the finding is a design deficiency that would not result in loss of the HPCI function, and because the likelihood of having a low level in the CST that would challenge the CST level - low automatic HPCI suction transfer function is very low. In addition, alternate core cooling methods would normally be available, including reactor core isolation cooling as well as automatic depressurization system and low pressure coolant injection.

Inspection Report# : [2004003\(pdf\)](#)**G****Significance:** Jun 19, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Install Dielectric Insulating Kit Between Service Water Valve and Pipe Flange**

Green. The inspectors identified a non-cited violation of 10CFR50, Appendix B, Criterion V, for failure to install dielectric insulators on a service water isolation valve, required by a modification package. This resulted in a galvanic coupling between the carbon steel piping and the stainless steel valve, which could result in corrosion of the pipe flange at the bolt holes, accelerating corrosion of the interior of the pipe in areas where the cement lining had failed. This finding is greater than minor because it affected the equipment performance attribute of the mitigating systems cornerstone objective to ensure reliability of systems required to respond to initiating events. The finding is of very low safety significance because there was no actual loss of function, and a redundant valve was available for the isolation function.

Inspection Report# : [2004003\(pdf\)](#)**W****Significance:** Mar 20, 2004

Identified By: NRC

Item Type: VIO Violation

**FAILURE TO PROMPTLY CORRECT EDG JACKET WATER COOLANT LEAKAGE**

The inspectors identified a violation for failure to take adequate corrective actions in accordance with 10CFR50 Appendix B, Criterion XVI, associated with an unrepaired leak in the No. 3 emergency diesel generator (EDG) jacket water cooling (JWC) system. Specifically, corrective maintenance the licensee performed on December 8, 2003, to stop a pipe coupling leak on the jacket water supply line to the turbo charger for EDG 3 failed to correct the leak. In addition, the licensee failed to identify that two structural supports for the line were not in place, potentially contributing to the misalignment of the coupling. On January 4, 2004, the licensee identified that the line was again leaking at an even greater rate. Because of the ongoing leak, the licensee failed to comply with TS 3.8.1, AC Sources-Operating, in that EDG 3 was inoperable while the plant was in Mode 1 from December 8, 2003 until January 7, 2004, a period in excess of seven days.

The finding was determined to be of low-to-moderate safety significance. Loss of offsite power with failures to supply power to the emergency busses were the dominant risk sequences. The evaluation determined that EDG 3 was nonrecoverable for a short period of time when the demineralized water tank level was below a value that would have allowed gravity feed for makeup. For the remaining portion, the evaluation assumed that EDG 3 could potentially have been recovered by the operator refilling the JWC system. The licensee risk assessment also concluded that the finding was of low-to-moderate safety significance. [Supplemental inspection (05000324/2004009) was performed for this finding. During this supplemental inspection, which was performed in accordance with Inspection Procedure 95001, the inspector determined that all performance issues identified by the NRC were also identified by the licensee, either as conditions adverse to quality, or as causes of those conditions. In addition, the licensee adequately analyzed the circumstances associated with those issues and, where appropriate, took effective immediate corrective action. Also, the licensee developed adequate corrective actions to prevent recurrence, and scheduled timely completion of those actions.]

Inspection Report# : [2004009\(pdf\)](#)Inspection Report# : [2004008\(pdf\)](#)

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## Barrier Integrity

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## Emergency Preparedness

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## **Occupational Radiation Safety**

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## **Public Radiation Safety**

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## **Physical Protection**

[Physical Protection](#) information not publicly available.

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## **Miscellaneous**

Last modified : March 09, 2005