

# Hatch 1

## 4Q/2009 Plant Inspection Findings

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### Initiating Events

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### Mitigating Systems

**Significance:**  Jul 31, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to Correctly Establish Acceptance Criteria for the Standby Diesel Service Water Pump Section**

The team identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XI, Test Control, for failure to correctly establish acceptance criteria for the Standby Diesel Service Water (SDSW) System. The licensee performed a past operability determination and initiated Condition Report (CR) 2009105651 to revise the acceptance criteria.

The licensee's failure to correctly establish acceptance criterion for the SDSW pump under the most limiting conditions was a performance deficiency. The finding is greater than minor because it adversely affected the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. The finding is of very low safety significance (Green) using the SDP because it did not represent a loss of system or safety function. A cross-cutting aspect was not identified because the finding does not represent current performance.

Inspection Report# : [2009006](#) (*pdf*)

**Significance:**  Jul 31, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to Monitor the Main Steam and Feedwater Line Pipe Whip Restraints**

The team identified a non-cited violation of 10 CFR 50.65(a)(1) for the licensee's failure to monitor the main steam line and feedwater line pipe whip restraints for Units 1 and 2. The licensee initiated CRs 2009105147 and 200910622 and plans to complete inspections of the whip restraints during the upcoming Units 1 and 2 outages.

The licensee's failure to periodically inspect the condition of the safety-related pipe whip restraints was a performance deficiency. The finding is more than minor because it is associated with Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined that the finding is of very low safety significance (Green) using the SDP because the finding did not represent an actual loss of safety function. The finding directly involved the cross-cutting aspect of implementing a corrective action program with a low threshold for identifying issues under the Corrective Action Program component of the Problem Identification and Resolution area [P.1(a)].

Inspection Report# : [2009006](#) (*pdf*)

**Significance:**  Jun 30, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to Maintain Fire Brigade Minimum Staffing**

Green. A Green NRC identified NCV of License Conditions 2.C.(3) for Unit-1 and 2.C.(3).(a) for Unit-2 was

identified for failure to implement and maintain in effect all provisions of the approved fire protection program. Specifically, the licensee failed to maintain adequate fire brigade staffing by assigning the Unit-1 Operator at the Controls (OATC) the additional responsibility of Fire Brigade Leader. The licensee entered the issue into the corrective action program (CAP) for resolution.

This finding is more than minor because it affected the protection from external factors (fire) attribute of the Mitigating Systems Cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding is of very low safety significance (Green) because the shift staffing compliment was adequate to support the safe shutdown operating functions and independent fire brigade. In addition, the condition existed for only one 12-hour shift. The cause of the finding is related to the cross-cutting element of Human Performance. (Section 40A2)

Inspection Report# : [2009003](#) (pdf)

**Significance:** **W** Mar 10, 2009

Identified By: NRC

Item Type: VIO Violation

### **1B EDG Coupling Failure**

TBD. A self-revealing apparent violation of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, was identified for failure to promptly identify and correct a condition adverse to quality. Since 1988, the licensee had observed cracks in the glands of the EDG couplings, but did not identify the cracking was an indication of coupling degradation. Therefore, no condition report was written to identify and correct the condition adverse to quality. Consequently, the 1B coupling developed higher than normal vibration on July 12, 2008, during a routine surveillance which prompted the licensee to declare the 1B EDG inoperable.

The failure to promptly identify and correct a condition adverse to quality for the observed degraded condition of the 1B EDG coupling is a performance deficiency. This finding is more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the objective in that there was no reasonable assurance the 1B EDG could meet its mission time. This finding was assessed using the applicable SDP and preliminarily determined to White because there was a calculated risk increase over the base case between 1E-5 and 1E-6. The dominant sequences included (1) LOOP with loss of emergency power (SBO), success of RCIC, successful depressurization, failure to recover offsite power and the EDGs within 5 hours, and failure of firewater injection due to repressurization caused by inability to operate SRVs without DC power (2) a Transient induced LOOP with failures of PCS and HPCI, successful depressurization and failure of all injection due to inability to recover EDGs or offsite power and (3) LOOP with loss of emergency power, RCIC, and HPCI with failure to recover offsite power and the EDGs. The HPCI system is failed in the model with loss of room cooling due to SBO. The exposure period was a total of 182 days including the 4 day repair interval and the 178 day interval consisting of the individual success periods.

2009009 95001 Inspection

The NRC staff performed this supplemental inspection in accordance with IP 95001 to assess the licensee's evaluation of a White finding, which affected the mitigating systems cornerstone in the reactor safety strategic performance area. The inspection objectives were to:

? Verify that the licensee understands the root causes and contributing causes of the 1B EDG failure.

? Verify that the licensee has determined the extent of condition and extent of cause of the identified root and contributing causes.

? Verify that the corrective actions for these issues are sufficient to address the root and contributing causes and to prevent recurrence.

? Verify that the procedures have been revised to perform visual inspections of both sides of the coupling (generator/motor).

The licensee entered the Regulatory Response Column of the NRC's Action Matrix in the first quarter of 2008 as a result of one inspection finding of low to moderate safety (White) significance. The finding was associated with the inoperability of the 1B EDG in July 2008. On July 12, 2008, the 1B EDG was manually shutdown due to excessive vibration and declared inoperable. The finding was characterized as having White safety significance based on the results of a Phase 3 risk analysis performed by a region-based

senior reactor analyst (SRA), as discussed in NRC IR 05000321/2008009, 05000366/2008009. The excessive vibration was attributed to age-related cracks in the rubber gland on both the diesel engine side and generator side of the generator/motor coupling. On July 16, 2008, the generator/motor coupling was replaced and the 1B EDG was returned to service.

The licensee had performed its initial root cause determination (CR 2008107432 RCCA version 1.0, dated 09/04/08) to identify weaknesses that existed in various organizations, which allowed for a risk-significant finding and to determine the organizational attributes that resulted in the White finding. As part of the root cause determination, the licensee also completed a safety culture assessment. The licensee staff informed the NRC staff on September 23, 2009, that they were ready for the supplemental inspection. In October 2009, in preparation for the 95001 inspection, the licensee conducted an indepth readiness assessment of the original root cause determination report. As a result of that self-critical readiness assessment, the licensee made numerous significant improvements to the original report. As a result, the revised root cause determination report (CR 2008107432 RCCA version 2.0, dated 11/12/09) was issued just prior to the inspection.

The inspector reviewed the licensee's root cause determination report, along with several evaluations that were conducted in support of the root cause determination. The inspector reviewed the licensee's extent of condition and extent of cause evaluations to ensure they were sufficient in breadth. The inspector reviewed the corrective actions that were taken or planned to address the identified causes. The inspector also held discussions with licensee personnel to ensure that the root and contributing causes, as well as the contribution of safety culture components, were understood and that corrective actions taken or planned were appropriate to address the causes and preclude repetition.

#### Findings

No findings of significance were identified. Inspectors did note weaknesses in the revised maintenance procedure used to inspect the engine/generator coupling. For example, no specific criteria was provided on how to determine when inspection of the engine side of the coupling would be needed. Based on observations provided by the inspector the licensee initiated actions to add criteria to address this issue.

#### 4OA6 Exit Meeting

On November 18, 2009, the inspector presented the results of the supplemental inspection to Mr. Dennis R. Madison and other members of licensee management and staff, who acknowledged the findings. The inspector confirmed that no proprietary information was provided or examined during the inspection.

Inspection Report# : [2008009](#) (*pdf*)

Inspection Report# : [2009008](#) (*pdf*)

Inspection Report# : [2009009](#) (*pdf*)

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## Barrier Integrity

**Significance:**  Jul 31, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Perform Cause Determinations and Corrective Actions for Deficiencies in Containment Penetration Seals**

The team identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, for the licensee's failure to promptly correct deficiencies in containment penetration seals. The licensee initiated CR 2009105747 to evaluate corrective actions for the seals.

The team determined that the failure to take corrective actions for deficiencies in containment penetration seals was a performance deficiency. The finding is greater than minor because it is associated with the Structures, Systems and Components (SSC) and Barrier Performance attribute of maintaining functionality of containment and affected the cornerstone objective of providing reasonable assurance that containment protects the public from radionuclide releases caused by accidents or events. The finding is of very low safety significance (Green) because the finding did not represent an actual open pathway in the physical integrity of reactor containment. The finding directly involved the cross-cutting aspect of thoroughness of evaluation within the Corrective Action Program component of the Problem Identification and Resolution area [P.1(c)].

Inspection Report# : [2009006](#) (*pdf*)

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## Emergency Preparedness

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## Occupational Radiation Safety

**Significance:**  Mar 31, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to provide training to users of powered air-purifying respirators**

The inspectors identified a Green non-cited violation (NCV) of TS 5.4, Procedures, for failure to provide training to users of Powered Air-purifying Respirator (PAPR) type respiratory protection devices as required by procedure 10AC-MGR-026-0, Respiratory Protection Program, revision 1.0. The licensee has entered this issue into the Corrective Action Program as Condition Report 2009102825.

This finding is greater than minor because it is associated with the Occupational Radiation Safety Cornerstone attribute of Human Performance (Training) and adversely affects the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. The finding was evaluated using the Occupational Radiation Safety SDP and determined to be of very low safety significance (Green). The finding was not related to ALARA planning, nor did it involve an overexposure or substantial potential for overexposure, and the ability to assess dose was not compromised. This finding involved the cross-cutting aspect of Human Performance, Resources [H.2.b] because there was no formal training program provided to users of PAPR type respiratory protection devices. (Section 2OS3)

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

Inspection Report# : [2009002](#) (*pdf*)

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## Public Radiation Safety

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## Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the [cover letters](#) to security inspection reports may be viewed.

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# Miscellaneous

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