

## Braidwood 1

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### Initiating Events



**Significance:** Jun 30, 2002

Identified By: Self Disclosing

Item Type: FIN Finding

#### **OPERATOR ERROR ISOLATING HEATER DRAIN FLOW**

A finding of very low safety significance was identified through a self-revealing event when an operator inadvertently performed steps to isolate heater drain pump flow on Unit 1, which was operating at full power, instead of Unit 2, which was shutdown at the time. The primary cause of this finding was related to the cross-cutting area of Human Performance. Despite several unit-specific visual indications that were available, the operator did not perform adequate self-checking to ensure that he was on the correct unit. This finding was more than minor because it increased the likelihood of a reactor trip event due to low steam generator level and also could have affected the availability of the main feedwater mitigating system because the motor-driven main feedwater pump, if it had been operating, could have tripped on low suction pressure. The finding was only of very low safety significance because the exposure time was short, all other mitigating systems were available, and the main feedwater system could have been recovered by fairly simple operator actions. [This finding was determined not to be a violation of NRC requirements.]

Inspection Report# : [2002006\(pdf\)](#)

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### Mitigating Systems



**Significance:** Sep 30, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

#### **FAILURE TO ESTABLISH COMPENSATORY FIREWATCHES FOR TWO REMOVED FIRE RATED BARRIERS**

A finding of very low safety significance was identified by the inspectors for a violation of Technical Specification Fire Protection Program requirements. The licensee removed two fire rated barriers (floor plugs) in the auxiliary building, and left them off for over five months, without establishing the required compensatory fire watches. The primary cause of this violation was related to the cross-cutting area of Human Performance. The licensee Fire Marshall failed to identify that the floor plugs were rated fire barriers, despite labels indicating that the 10 CFR 50, Appendix R, program applied to them, before authorizing their removal. This issue was more than minor because a fire in one elevation of the auxiliary building could have spread to other elevations and therefore affected redundant trains of mitigating systems. The issue was of very low safety significance because the inspectors could not develop realistic fire scenarios in one elevation that could reasonably propagate to the elevations above. The issue was a Non-Cited Violation of Technical Specification 5.4.1 which required the implementation of written procedures covering the Fire Protection Program.

Inspection Report# : [2002007\(pdf\)](#)



**Significance:** Mar 31, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

#### **FAILURE TO IDENTIFY AND DOCUMENT FAILURE OF AF PUMP**

The licensee failed to identify the cause and prevent recurrence for the September 1999 failure of the 1B auxiliary feedwater system, a significant condition adverse to quality. The cause of the failure was not determined until a subsequent failure occurred in November 2001. This finding was determined to be of very low safety significance because only one train of a Technical Specification safety-related system failed for less than the Technical Specification allowed outage time. The failure to identify the cause of the September 1999 failure was considered a Non-Cited Violation of 10 CFR 50, Appendix XVI.

Inspection Report# : [2002004\(pdf\)](#)



**Significance:** Mar 31, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

#### **FAILURE TO INCLUDE APPROPRIATE PREREQUISITES IN MONTHLY SURVEILLANCE**

The inspectors identified a Non-Cited Violation for inadequate test controls during a monthly surveillance testing of the 1B auxiliary feedwater system monthly surveillance test. This finding was of very low safety significance because the inspectors determined that this preconditioning issue had not led to an actual decline in performance of the 1B auxiliary feedwater system.

Inspection Report# : [2002005\(pdf\)](#)



**Significance:** Feb 22, 2002

Identified By: NRC

Item Type: VIO Violation

**VIOLATION OF 10 CFR APPENDIX B, CRITERION XVI, FOR THE LICENSEE'S FAILURE TO IDENTIFY THE CAUSE AND TAKE ACTION TO PREVENT RECURRENCE FOR FAILURES UNIT 1 PRESSURIZER PORV ACCUMULATOR CHECK VALVES**

The inspectors identified an apparent violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to identify the cause and take action to prevent recurrence for failures of the check valves between the instrument air system and the accumulators for the Unit 1 pressurizer power operated relief valves (PORVs). Specifically, following the October 1998 failures of all the Unit 1 pressurizer PORV accumulator check valves, a significant condition adverse to quality, the licensee did not determine the cause of the back leakage and take actions to preclude repetition as evidenced by the similar failures of the same valves in September 2001. The staff's significance determination of this finding was not complete at the time of issuance of this report; therefore, this issue is considered an unresolved item. The safety significance of this issue has been characterized as "To Be Determined (TBD)" pending the completion of additional risk analysis. Per NRC final significance determination letter to Exelon, dated July 23, 2002, the NRC concluded that the finding is characterized as White, and issued a Notice of Violation for a violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions." The NRC determined that the licensee failed to correct and prevent recurrence of the Unit 1 pressurizer power operated relief valve air accumulator check valves leak-through, a significant condition adverse to quality. Specifically, Unit 1 pressurizer relief valves failed to meet testing acceptance criteria in April 1991, October 1992, April 1994, January 1995, October 1995, October 1998, and September 2001. This resulted in several extended periods where the unit was operated in a condition where the pressurizer power operated relief valves may not have been able to perform their intended safety function of opening following events which resulted in isolation of instrument air to the containment or loss of service air compressors. The licensee's significance determination agreed with the NRC's.

Inspection Report# : [2002003\(pdf\)](#)

Inspection Report# : [2002007\(pdf\)](#)

## Barrier Integrity



**Significance:** Mar 31, 2002

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

**FAILURE TO USE CORRECT INSTANTANEOUS CURRENT TRIP SETPOINT**

The licensee failed to incorporate the correct instantaneous current trip setpoint following maintenance and replacement of a safety-related, motor operated valve's molded case circuit breaker. This issue was originally identified during the replacement of a similar molded case circuit breaker in September 2001. The inspectors identified a Non-Cited Violation for inadequate corrective actions. This finding was of very low safety significance because the issue did not represent an actual loss of a safety function of the reactor containment fan coolers.

Inspection Report# : [2002005\(pdf\)](#)



**Significance:** Feb 22, 2002

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

**FAILURE TO FOLLOW PROCEDURE RESULTED IN THE INOPERABILITY OF THE 1B CONTAINMENT SPRAY SUCTION VALVE FROM THE CONTAINMENT SUMP**

Following a trip of the circuit breaker during surveillance testing, the licensee determined that 14 months earlier, technicians failed to reset the instantaneous overcurrent trip setpoint for the 1CS009B circuit break as prescribed in the station procedure resulting in the instantaneous overcurrent being left at a nonconservatively low value. This event was considered self-revealing. The inspectors determined that this issue had a credible impact on safety because under certain voltage conditions the 1B train of the containment spray would not have been capable of fulfilling the design safety function. The inspectors concluded that this issue could have affected the capability of controlling containment pressure; however, because no actual reduction of the containment pressure control function occurred, this issue was of very low safety significance. The failure to follow the maintenance procedure for the inspection and testing of the 1B containment spray suction valve from the containment sump circuit breaker was a violation of Technical Specification 5.4.1.a. However, since this finding is of very low safety significance and it was captured in the licensee's corrective action program, this finding is being treated as a Non-Cited Violation consistent with Section VI.A.1 of the NRC Enforcement Policy.

Inspection Report# : [2002003\(pdf\)](#)

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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

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## Miscellaneous

**Significance:** N/A Feb 22, 2002

Identified By: NRC

Item Type: FIN Finding

**INSPECTORS NOTED SEVERAL EXAMPLES WHERE APPARENT CAUSE EVALUATIONS (ACEs) WERE OF POOR QUALITY.**

The inspectors concluded that the licensee adequately identified, evaluated, and resolved problems within the requirements of the corrective action program (CAP). In general, the significance threshold for entering issues into the corrective action program appeared appropriate. However, the inspectors noted several examples where apparent cause evaluations (ACEs) were of poor quality. These deficiencies were not identified by line management during the licensee's review and approval process. The types of deficiencies varied but included the following:

- New information that could impact the original operability and reportability evaluations was not re-evaluated by shift management.
- Other apparent problems were mentioned but were not fully addressed in the evaluation. For example, potential common cause failure mechanisms were included as possible apparent causes; however, the impact on like-equipment was not resolved or evaluated.
- The extent of the evaluations and corrective actions were not always well documented. In addition, the inspectors noted that equipment problems identified during outages were not always evaluated for operability or reportability. In addition, causes for significant equipment problems were not always addressed prior to plant startup. The licensee was effective in correcting broke/fix type issues such as equipment problems, procedure deficiencies, and calculational errors. However, the licensee was less effective in correcting recurring human performance problems. This was evidenced by recurring problems associated with configuration control, contractor control, foreign material exclusion control, fire protection control, and rework issues. Through interviews and observations, the inspectors concluded that Braidwood established a safety-conscious work environment where people were not reluctant to raise issues. However, the inspectors noted that recent changes to the CAP made it somewhat burdensome to enter items into the corrective action program computerized process. Additionally, the inspectors ascertained that the recent changes to the CAP also made the trending condition report-related data burdensome by making the manipulation of the data difficult.

Inspection Report# : [2002003\(pdf\)](#)

Last modified : March 25, 2003