

## Dresden 3

### 2Q/2006 Plant Inspection Findings

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## Initiating Events

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## Mitigating Systems

**Significance:**  Jun 29, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

### **Standby Liquid Control Valves Installed In The Plant Different than those Assumed in a Design Calculation**

On May 5, 2006, the inspectors identified a finding involving a non-cited violation of 10 CFR 50.62 associated with a licensee-identified material condition, and having very low safety significance. The licensee identified that the inputs to a design analysis (DRE01-0066, "Dresden Unit 2 & 3 Standby Liquid Control System Discharge Piping Pressure Drop," Revision 1) were non-conservative. Some of the valves installed in the plant were not the same type of valves assumed to be installed in the design analysis. This ultimately resulted in a change in a design calculation that demonstrated that standby liquid control system relief valves could lift upon system initiation during an anticipated transient without scram (ATWS) event.

The finding was more than minor because it affected the design control attribute of the Mitigating Systems objective of ensuring the capability of systems that respond to initiating events to prevent undesirable consequences. The finding was of very low safety significance because the standby liquid control system could be recovered during an ATWS event. Cycling of the relief valves would not prevent most of the borated solution from being injected into the reactor pressure vessel, and the licensee was able to demonstrate that the reactor remained within the acceptance criteria of their original ATWS analysis even if no boron solution was injected into the reactor pressure vessel while the relief valves lifted. The licensee planned to use a more enriched form of boron so that one pump could be used to meet the 10 CFR 50.62 requirements. This enriched boron would replace the current boron in the storage tanks in the next refueling outages. This issue was a non-cited violation of 10 CFR 50.62.

Inspection Report# : [2006007\(pdf\)](#)

**Significance:**  Mar 31, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Perform Weld Inspections by Independent Certified Quality Verification Inspectors**

On February 19 and March 12, 2006, a performance deficiency involving a Non-Cited Violation (NCV) of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors. The finding involved the licensee's failure to follow procedures, in that, approximately 110 safety related welds were not inspected by independent, certified Quality Verification inspectors between December 2, 2002, and May 23, 2003.

This finding was greater than minor because, if left uncorrected, the finding would become a more significant safety concern. The failure to perform adequate safety-related weld exams could have allowed undetected deficiencies to be placed into or have remained in service. The inspectors determined that the finding could not be evaluated using the SDP in accordance with NRC Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," because the SDP for the Mitigating Systems Cornerstone only applied to degraded systems/components, not to deficiencies associated with the procedures that are designed to detect component degradation. Therefore, the finding was reviewed by regional management in accordance with IMC 0612, Section 05.04c, "Screen for Significance," and was determined to be of very low safety significance. In addressing this issue, the licensee terminated this program, generated an issue report, and planned to inspect 100 percent of the identified welds.

Inspection Report# : [2006003\(pdf\)](#)

**Significance:**  Mar 31, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

### **Installation of Various Lighting Fixtures Without Using Plant Modification Process**

On January 27, 2006, a performance deficiency involving a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion III, Design Control, was identified by the inspectors. The finding involved the licensee's failure to use the plant modification process, when installing new design lighting fixtures, to ensure Seismic Category II over Seismic Category I requirements were met when installing these fixtures in various areas of the plant, including the Unit 3 emergency diesel generator room.

The finding was greater than minor because, if left uncorrected, the licensee's practice of modifying the plant without using the modification process would become a more significant safety concern because safety related and safe shutdown equipment could become inoperable. Also, the

finding impacted the Mitigating Systems Cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events. The finding was of very low safety significance because the licensee determined, through engineering evaluation, that the deficient lighting fixture installations did not adversely affect the operability of any important systems. In addressing this issue, the licensee immediately prevented the installation of additional lighting fixtures without engineering review and approval; thoroughly walked down all areas of the plant to identify the full extent of condition of the problem; corrected all of the deficiencies; and prepared an engineering evaluation to assess the impact of these deficiencies on safety related and safe shutdown equipment.

Inspection Report# : [2006003\(pdf\)](#)



**Significance:** Jan 20, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Identify Inadequate Procedure for Surveillance of Remote Shutdown Emergency Lights**

The inspectors identified an NCV of Technical Specification (TS) 6.8.A.1, which required that written procedures be implemented covering the activities in the applicable procedures recommended by Regulatory Guide 1.33, including procedures for surveillances. The surveillance procedure for testing Appendix R, safe shutdown emergency lighting was inadequate because it failed to use an approved testing method of the Technical Requirements Manual (TRM). The licensee entered this performance deficiency into the CAP for resolution.

This finding is associated with the Mitigating Systems Cornerstone. The finding was greater than minor because the lack of emergency lighting could result in a delay in accomplishing safe shutdown actions. The finding was of very low safety significance because of the availability of portable head lamps.

Inspection Report# : [2006002\(pdf\)](#)



**Significance:** Nov 01, 2005

Identified By: NRC

Item Type: FIN Finding

**Identification of Electromatic Relief Valve (ERV) Degradation**

The inspectors identified a failure to enter discrepancies into the corrective action program that were previously identified in work orders associated with the electromatic relief valves (ERVs) during the 2005 Unit 2 and 2004 Unit 3 refueling outages. This information was important for confirming the operability of the relief valves following the discovery of degraded ERVs at the Quad Cities Station.

The finding was greater than minor because if left uncorrected, the extent of degradation of ERVs would not be fully identified or evaluated which could result in inappropriately concluding that equipment important to safety was operable. The inspectors concluded that the finding impacted the Mitigating Systems Cornerstone. The inspectors determined that the finding did not result in an actual loss of a safety function; and concluded that this issue was of very low safety significance.

Inspection Report# : [2006002\(pdf\)](#)



**Significance:** Sep 30, 2005

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**Failure to Perform Post-Maintenance Test on the 3B Reactor Recirculation Pump Seals**

A self-revealing finding involving a non-cited violation of Technical Specification 5.4 "Procedures," was identified on April 1, 2005, due to the licensee's failure to ensure the post-maintenance test procedure contained proper instructions from the Vendor Equipment Technical Information Program Manual regarding actions to take on a reverse pressurization event of the reactor recirculation pump seals. The lack of procedural guidance in the maintenance procedure resulted in returning the 3B reactor recirculation pump to service with a seal which had a displaced O-ring and a cocked rotating face. This condition caused degradation of the pump seal after approximately four months of operation. The degradation of the seal challenged plant operators and increased the risk of a loss of coolant accident.

This finding was considered more than minor because it affected the Initiating Event cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The finding was determined to be of very low safety significance because the 3B reactor recirculation pump #2 seal continued to perform its intended function of maintaining the reactor pressure boundary and controlling leakage to within the Technical Specification limits. Corrective actions by the licensee included revising the maintenance procedure to incorporate the Vendor Equipment Technical Information Program (VETIP) Manual guidance on proper actions to take for a reverse pressurization on the reactor recirculation pump seals, and installing a new reactor recirculation pump seal. This finding was related to the cross-cutting issue of human performance because the licensee failed to have pertinent information from the VETIP Manual in the post-maintenance procedure.

Inspection Report# : [2005010\(pdf\)](#)



**Significance:** Sep 30, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

**Lack of Prioritization for Performing TS 3.4.3.1 Surveillance Testing and Valve Inspections for Target Rock Valves and Corrective Action Assignments for the 4G Valve**

A finding involving a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," was identified by the inspectors on July 25, 2005, for the licensee's lack of timely actions to promptly identify and correct out-of-tolerance lift setpoints for the main steam safety valves and the main steam safety/relief valves (Target Rock valves). The licensee's actions lacked prioritization in performing Technical Specification required surveillance testing on the Unit 2 and Unit 3 Target Rock safety/relief valves, in determining the cause of the surveillance test failures on the Target Rock valves, and in not assigning corrective actions to determine the cause of the 4G safety valve Technical Specification surveillance test failure. The licensee's lack of timely actions resulted in the delayed issuance of a Licensee Event Report following the discovery of degradation of the Unit 2 Target Rock valve during disassembly of the valve.

The finding was greater than minor because, if left uncorrected, the lack of prioritization of the licensee's actions could lead to the valves not meeting the safety function of preventing over-pressurization of the reactor coolant system. The finding could also lead to the licensee unknowingly operating the units with inoperable safety-related equipment. The finding impacted the Mitigating System cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events. The finding was of very low safety significance because the ability of the main steam Target Rock safety/relief valves and the 4G main steam safety valve to function to prevent over-pressurization of the reactor coolant system was not invalidated by the inability of the valves to lift at the prescribed setpoint. In addressing this issue, the licensee discontinued in-plant Technical Specification testing after obtaining approval from the NRC, submitted an analysis to the NRC for determining that the drift condition of the valves was still bounded by the analysis for over-pressurization events, and installed refurbished valves in December 2004. This finding was related to the cross-cutting issue of problem identification and resolution because the licensee's actions were untimely and unfocused.

Inspection Report# : [2005010\(pdf\)](#)

**Significance:**  Aug 12, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Technical Specification Requirements for Position Verification Not Met**

The inspectors identified a Non-Cited Violation of Technical Specification Surveillance Requirement 3.7.2.1 regarding the failure to periodically verify the position of manual valves. Specifically, the licensee did not verify the correct position of 11 manual valves that were not locked, sealed, or otherwise secured in position in the diesel generator cooling water (DGCW) subsystem flow path associated with the DGCW pump motor coolers. The licensee's corrective actions included verifying and then locking the affected valves in the open position and revising operating procedures to reflect that the affected valves are locked in the open position.

This finding was more than minor because it was associated with the mitigating systems attribute of configuration control, which affected the mitigating systems cornerstone objective of ensuring the availability and reliability of the DGCW system to respond to initiating events to prevent undesirable consequences. The finding was of very low safety significance based on the licensee verifying the valves were in their correct position and screened as Green using the SDP Phase 1 screening worksheet.

Inspection Report# : [2005009\(pdf\)](#)

**Significance:**  Aug 12, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Unanalyzed Diesel Loading Sequence in Operating Procedures**

The inspectors identified a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," due to the design basis emergency diesel generator (EDG) loading sequence during a loss of coolant accident/loss of offsite power not being correctly translated into procedures or instructions. Specifically, the loss of power procedure provided guidance to operate the plant outside the analyzed EDG loading sequence. The licensee's corrective actions included evaluating the effect of the procedure's unanalyzed load sequence and concluded that the EDG would have been capable of performing its safety function.

This finding was more than minor because it was associated with the attribute of procedure quality, which could have affected the mitigating systems cornerstone objective of ensuring the availability and reliability of the EDGs to respond to initiating events to prevent undesirable consequences. The finding was of very low safety significance based on the results of the licensee's analysis and screened as Green using the SDP Phase 1 screening worksheet.

Inspection Report# : [2005009\(pdf\)](#)

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## **Barrier Integrity**

**Significance:**  Jun 29, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to Perform Procedure Steps in the Proper Sequence by Operations Caused Emergency Safety Feature Systems Actuation**

On April 5, 2006, a performance deficiency involving a non-cited violation of TS 5.4.1 was self revealed when an auxiliary nuclear station operator (Aux NSO) and a unit supervisor (US) were performing Dresden Operating Procedure (DOP) 0500-03, "Reactor Protection System Power Supply Operation," Revision 27. The Aux NSO and US did not verify that the area radiation monitor's (ARM) power supply voltage was normal and did

not reset all trips on the ARM modules prior to removing an installed jumper which bypassed the trips. This required entry into TS 3.6.4.1 Limiting Condition of Operation, Action A for reactor building low differential pressure. Both operators had been provided with marked up copies of the procedure, and briefed on jumper placement and removal and on the use of concurrent verification prior to the event.

The finding was greater than minor because it impacted the structures, systems, and components attribute of the Barrier Integrity cornerstone objective. The finding was of very low safety significance because it impacted the reactor building differential pressure for a time period of less than 1 hour. As an immediate corrective action, the two individuals were temporarily removed from licensed shift duties. The operations department was tasked to develop a dynamic learning activity for place-keeping and jumper manipulation for all operations personnel, and to create an internal operating experience document to communicate lessons learned. This finding affected the cross-cutting area of human performance (personnel).  
Inspection Report# : [2006007\(pdf\)](#)

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## Emergency Preparedness

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## Occupational Radiation Safety

**G****Significance:** Sep 30, 2005

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**Failure to Ensure That a Gate to a Posted LHRA was Secured Following Work in the Area**

On June 8, 2005, a self-revealing finding of very low safety significance and an associated violation of NRC requirements were identified for the failure to adequately secure/lock the gate to a posted locked high radiation area (LHRA) and physically challenge the access to verify closure and proper latching in accordance with radiation protection procedures. As a result, access to a posted LHRA was unsecured for a period of approximately 24-hours.

The issue was more than minor because it was associated with the Program/Process and Human Performance attributes of the Occupational Radiation Safety cornerstone in that the cornerstone objective to ensure adequate protection of worker health and safety from exposure to radiation was impacted. The issue represents a finding of very low safety significance because it did not involve ALARA planning or work controls, no unauthorized entry into the posted locked high radiation area occurred so there was no overexposure or substantial potential for an overexposure, nor was the licensee's ability to assess worker dose compromised. A non-cited violation of Technical Specification 5.4.1 was identified for the failure to comply with the radiation protection procedure that governs the control of access into high radiation areas. Corrective actions following the identification of the problem included tailgate training for radiation protection staff, development of enhanced pre-job briefing forms for high radiation area entry, performance of an additional physical verification to ensure barriers are secure following work in a locked high radiation area, and plans for additional training specific to high radiation area controls intended for all station radiation workers. Since the principal cause of the problem was a human performance deficiency, the finding also relates to the cross-cutting area of human performance.

Inspection Report# : [2005010\(pdf\)](#)

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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 : August 25, 2006