

## Dresden 3

# 4Q/2006 Plant Inspection Findings

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## Initiating Events

**Significance:** G Dec 31, 2006

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### **Review of Unit 2/3 Condensate Storage Tank Overflow Event**

A performance deficiency involving a non-cited violation of Technical Specification (TS) 5.4.1, was self revealed on November 20, 2006, when during the Unit 3 hotwell drain down to support Unit 3 startup, operators allowed the 2/3 condensate storage tank (CST) to overflow into the Unit 2 turbine building equipment drain system, which eventually overflowed onto the condensate/condensate booster pump room floor. Corrective actions by the licensee included implementing a standard pre-job brief to address risk and contingencies for this infrequently performed evolution. Additional actions involved revising procedures to include appropriate actions if the 2/3 CST high water level alarm is exceeded and limitations and precautions associated with proper 2/3 CST level, hotwell level, and emergency reject operations.

The finding was considered more than minor because it could be reasonably viewed as a precursor to a significant event. The finding was determined to be of very low safety significance because the event did not affect credited items for shutdown safety. This finding was related to the cross-cutting issue of human performance (resources) because the licensee did not provide complete, accurate and up-to-date procedures to plant personnel.

Inspection Report# : [2006011](#) (*pdf*)

**Significance:** G Oct 06, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

### **Inappropriate Basis in 10 CFR 50.59 Evaluation for Temporary Modification**

The inspectors identified a Severity Level IV Non-Cited Violation (NCV) of 10 CFR 50.59 "Changes, Tests, and Experiments," having very low safety significance (Green) for the licensee's failure to perform an adequate safety evaluation review for changes made to the facility per Temporary Modification EC TCCP 354622. Specifically, the licensee failed to appropriately evaluate the installation of a temporary jumper at the Electro-Hydraulic Control (EHC) Card 2-5640-A37 to bypass the function of the "A" Main Steam Pressure Regulator (MSPR). The licensee's 10 CFR 50.59 safety evaluation 2005-01-001 failed to provide a basis as to why the activity which bypassed one of the two MSPRs did not present more than minimal increase in the likelihood of occurrence of a malfunction of an SSC important to safety previously evaluated in the Updated Final Safety Analysis Report (UFSAR).

Inspection Report# : [2006012](#) (*pdf*)

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## Mitigating Systems

**Significance:** G Oct 06, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

### **EQ Binder Failed to Include Conductor Temperature Rise**

The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control" having very low safety significance (Green) for the licensee's failure to evaluate and include the conductor temperature rise for the 5KV cables for the CS and LPCI pump motors in the Equipment Qualification Binder EQ-04D. The EQ Binder used the cable design limit of 194 degrees F in calculating the qualified life of the 5KV cables instead of the sum of the conductor temperature rise and

the ambient temperature, during and post accident, which together exceeded the cable design limit.

Inspection Report# : [2006012](#) (*pdf*)

**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 27, 2006

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:**  Jan 27, 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*)

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## **Barrier Integrity**

**Significance:**  Dec 31, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Licensee's Failure to Develop a Pre-fire Plan for Fire Zone 8.2.6.A, Elevation 534'**

A performance deficiency involving a non-cited violation of the Dresden Nuclear Power Station Renewed Facility

Operating License was identified by the inspectors due to the licensee's failure to develop a pre-fire plan. Specifically, on November 17, 2006, the inspectors identified that the licensee failed to develop a pre-fire plan for Fire Zone 8.2.6.A, elevation 534'. The licensee has since developed a pre-fire plan for the Fire Zone 8.2.6.A, Elevation 534'.

This finding was considered more than minor because it involved the Barrier Integrity attribute of procedural quality for the control room ventilation system because the failure to develop a pre-fire plan for Fire Zone 8.2.6.A could have adversely impacted the fire brigade's ability to fight a fire. The finding was related to the performance of the fire brigade and was not suitable for SDP evaluation. Therefore, the finding was reviewed by NRC management and determined to be of very low safety significance because no safe shutdown equipment was located in this fire zone.

Inspection Report# : [2006011](#) (*pdf*)

**Significance:**  Jun 29, 2006

Identified By: Self-Revealing

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**

**Significance:**  Sep 30, 2006

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### **Failure to Satisfy Technical Specification LHRA Access Requirements During Entry Into a Steam Sensitive Area at Power**

A self-revealed finding of very low safety significance, and an associated violation of NRC requirements were identified for the failure to satisfy Technical Specification requirements for access into a high radiation area with dose rates in accessible areas greater than 1000 mrem/hour. As a result, a worker was allowed to enter a steam sensitive area at power that was controlled as a locked high radiation area (LHRA), without adequate recognition of the area radiological conditions and without positive radiological control over the activities within the area. The electronic dosimetry (ED) worn by the worker alarmed when significantly higher than expected dose rates were encountered, resulting in some unnecessary dose to that worker.

The issue was more than minor, because it was associated with the Program/Process attribute of the Occupational Radiation Safety Cornerstone, and affected the cornerstone objective to ensure adequate protection of worker health and safety from exposure to radiation. The issue represents a finding of very low safety significance because it did not involve ALARA Planning or work controls, there was no overexposure, nor did a substantial potential for an overexposure exist given the radiological conditions in the area and the worker's response to the ED alarm. Also, the licensee's ability to assess worker dose was not compromised. A Non-Cited Violation of TS 5.7.1 was identified for the failure to comply with the requirements for access into a high radiation area with dose rates accessible to personnel greater than 1000 mrem/hour. Corrective actions taken by the licensee included modification to the survey maps for steam sensitive areas, tagging of certain LHRA keys to remind radiation protection staff to coordinate entries into these areas with operations staff, and plans to reevaluate the radiation protection department practices for entry into steam sensitive areas, and in general for entry into high radiation areas with the potential for significant dose rate gradients.

Inspection Report# : [2006010](#) (*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

**Significance:** N/A Jan 27, 2006

Identified By: NRC

Item Type: FIN Finding

### **Biennial PI&R Inspection Summary**

In general, the station identified issues and entered them into the corrective action program (CAP) at the appropriate level. In addition, issues that are identified from operating experience reports and instances where previous corrective actions were ineffective or inappropriate were also entered into the CAP. The inspectors concluded that issues were properly prioritized and generally evaluated well. The sample of corrective actions reviewed appeared to be appropriate and effective. The inspectors determined that conditions at the Dresden station were conducive to identifying issues. The licensee staff at Dresden was aware of and generally familiar with the CAP and other station processes, including the Employee Concerns Program, through which concerns could be raised. Two findings of very low safety significance (Green) were identified associated with the effectiveness of problem identification. These findings originated from a review of station procedures based on known Quad Cities station electromatic relief valve operating experience and Dresden's high failure rate of safe shutdown emergency lighting units.

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

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