

# Dresden 3

## 2Q/2009 Plant Inspection Findings

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### Initiating Events

**Significance:**  Jun 30, 2009

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

#### **Instrument Air Isolation Valve Mispositioning on April 26, 2009**

A finding of very low safety significance and associated Non Cited Violation of Technical Specification Section 5.4.1 was self revealed when the Unit 2 instrument air system had a significant pressure drop because a non licensed operator failed to follow procedure DOP 4700 01, "Instrument Air System Startup," Revision 46. The violation was placed into the licensee's corrective action program (CAP) in Issue Reports 911794 and 893376. The non licensed operator was relieved from duty. Both the non licensed operator and the unit supervisor were counseled for the failure to perform expected work practices. The licensee also found that this event was similar to other problems discussed in the licensee's Root Cause Report 893376, "Operations Cyclic Performance." Multiple corrective actions were assigned in Root Cause Report 893376 to address a lack of operations supervision enforcing department standards. Using the guidance contained in IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Disposition Screening," dated December 4, 2008, the inspectors determined that the finding was more than minor because the finding could be reasonably viewed as a precursor to a significant event. Specifically, the failure to follow procedure resulted in an instrument air (IA) transient that could have resulted in a unit scram if the IA system had not been recovered in a timely manner. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 Initial Screening and Characterization of findings," Table 4a, for the Initiating Event Cornerstone. The inspectors determined that the finding represented an increase in the likelihood of a reactor trip and the likelihood that mitigation equipment would be unavailable because the finding increased the likelihood of a loss of instrument air (LOIA) event. Therefore, the finding required a phase 2 SDP evaluation. The duration of the condition was less than three days. Using the SDP usage rules from IMC 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At Power Situations", the inspectors increased the initiating event frequency for the LOIA event by one order of magnitude for the three day exposure period. The result was an estimated change in core damage frequency of less than 1.0E 6/yr. As a result, the finding was determined to be of very low safety significance (Green) based on the phase 2 SDP evaluation. This finding had a cross cutting aspect in the area of Human Performance, Work Practices because the operator did not use the expected human performance techniques.

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

**Significance:**  Dec 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Freeze Seal Established Prior to Meeting The Requirements of Procedure MA-AA-736-610**

A finding of very low safety significance and associated Non Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by NRC inspectors on November 12, 2008, when the licensee had declared a freeze seal established prior to meeting the requirements of procedure MA AA 736 610, "Application of Freeze Seal to All Piping," Revision 3. The licensee took corrective actions that included counseling the first line supervisor and the engineer involved in the work.

The finding was determined to be more than minor because the finding, if left uncorrected, would become a more significant safety concern. Specifically, the inspectors determined that the licensee had determined the freeze seal to be acceptable before it was allowed by procedure. Had there been a problem with the freeze seal, there may not have been adequate time to react and implement any required contingency actions. The inspectors concluded this finding was associated with the Initiating Events Cornerstone. This finding has a cross cutting aspect in the area of Human Performance, H.1.b, because the licensee did not make a conservative assumption in decision making

## Mitigating Systems

**Significance:**  May 22, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

### **Diesel-Driven Fire Pump Discharge Valve Found Out of Position**

A finding of very low safety significance and associated non-cited violation of license conditions 2.E and 3.G for Units 2 and 3, respectively, was identified by the inspectors for the failure to restore the Unit 1 diesel-driven fire pump to an operable condition within 7 days as required by Technical Requirements Manual (TRM) 3.7.i.A.1. Specifically, the Unit 1 fire pump discharge valve was found closed rendering the pump inoperable for greater than 7 days. Upon discovery of the valve in the closed position the licensee repositioned the valve in the correct locked open position and initiated Action Requests (AR) 922581 and 922585.

This finding is more than minor because the failure to provide the two required fire pumps could have resulted in a failure of the station's water based fire protection system should the Unit 2/3 fire pump have been out of service at the same time. The finding screened as very low safety significance because the performance of the system was not affected by the closed valve as the Unit 2/3 diesel-driven fire pump remained operable to provide water to the station's fire protection system, if required. This finding has a cross-cutting aspect in the area of human performance, work control because the licensee did not properly plan and coordinate activities consistent with nuclear safety. Specifically, the licensee failed to restore the Unit 1 diesel-driven fire pump to an operable condition within 7 days as required by TRM 3.7.i.A.1 as a result of ineffective communications between licensee personnel to verify that valve 1-4199-109 was in its correct locked open position prior to declaring the pump operable [H.3(b)].

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

**Significance:**  Jan 28, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Develop a Pre Fire Plan for Fire Zone 18.6**

The inspectors identified an NCV of the Dresden Nuclear Power Station Renewed Facility Operating License having very low safety significance for the licensee's failure to develop a pre fire plan for Fire Zone 18.6. This issue was entered into the licensee's CAP as issue reports 873977 and 875688. The licensee's corrective actions included the development of a pre fire plan for Fire Zone 18.6.

The finding was more than minor because it involved the Mitigating Systems attribute of protection against external factors (i.e., fire), where the failure to develop a pre fire plan for Fire Zone 18.6 could have adversely impacted the fire brigade's ability to fight a fire. The inspectors completed a Phase 1 significance determination of this issue using IMC 0609, "Significance Determination Process," Appendix A, Attachment 0609.04. However, as discussed by Attachment 0609.04, issues related to performance of the fire brigade are not included in IMC 0609, Appendix F, "Fire Protection SDP," and require management review. The finding was reviewed by NRC management, and was determined to be a finding of very low safety significance because no safe shutdown equipment was located in this fire zone. The inspectors determined that this issue also affected the cross cutting area of Problem Identification and Resolution (e.g., corrective action program) because the licensee failed to thoroughly evaluate the problem addressed in NCV 05000237/2008008 02; 05000249/2008008 02, "Failure to Develop a Pre fire Plan for Fire Zone 18.6," such that appropriate corrective actions to address safety issues and adverse trends were not taken in a timely manner, commensurate with their safety significance and complexity.

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

**Significance:**  Jan 28, 2009

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

## **Failure to Implement and Maintain in Effect All Provision of the Approved Fire Protection Program as described in the UFSAR**

A self revealed NCV of the Dresden Nuclear Power Station Renewed Facility Operating License having very low safety significance was identified for the licensee's failure to implement and maintain in effect all provisions of the approved Fire Protection Program as described in the Updated Final Safety Analysis Report (UFSAR). Specifically, the licensee failed to ensure that the floor penetrations to Fire Zone 2.0 were sealed as described in the Fire Hazards Analysis. Licensee corrective actions included revising the Fire Hazard Analysis and sealing the floor penetrations.

The finding was more than minor because it involved the Mitigating Systems attribute of protection against external factors (i.e., flood hazard, fire) and impacted the Mitigating Systems objective to ensure availability, reliability, and capability of systems that respond to initiating events (i.e., flood hazard, fire) to prevent undesirable consequences. The inspectors performed a Phase 1 qualitative screening and the finding screened to very low safety significance. The inspectors determined that because the modifications took place in the 1985 to 1986 timeframe, the performance deficiency is not reflective of current licensee performance and therefore no cross cutting area was affected.

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

**Significance:** SL-IV Jan 15, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Provide Complete and Accurate Information to the NRC Associated with Verifying No Operating Test Item Duplication with the Audit Test**

The inspectors identified a Severity Level IV Non-Cited Violation (NCV) of 10 CFR 55.40, "Implementation," 10 CFR 50.9, "Completeness and accuracy of information," and 10 CFR 55.49, "Integrity of examinations and tests." For the Dresden Station March 2009 NRC Initial Operator License Examination, the inspectors identified that the examination author and the facility reviewer had initialed Step 2.b and Step 3.a.(3) of Form ES-201-2, "Examination Outline Quality Checklist," on August 15, 2008, and August 19, 2008, respectively, and Step 1.c of Form ES-301-3 "Operating Test Quality Checklist," on January 15, 2009, and January 20, 2009, respectively, which indicated that the operating test did not duplicate items from the applicants' audit test, when, upon NRC review, it was determined that six of the 23 dynamic simulator scenario events, and one of the 15 Job Performance Measures (JPMs) for the Reactor Operator (RO) candidates were duplicated from the applicants' audit test.

The finding was determined to be more than minor, because the integrity of the NRC initial operator licensing examination could have been compromised if, but for detection by the NRC examiners, the NRC examination had been administered with the duplication of the operating test items from the applicants' audit test. The finding was determined to be of very low safety significance because the duplication of operating test items was discovered by the NRC examiners prior to administration of the NRC examination, the duplicate test items were either removed from the audit test or the NRC exam changed to remove the duplication, and the facility implemented examination security requirements for the audit test similar to that which was required for the NRC examination. The inspectors concluded that this finding had a cross-cutting aspect in the area of Human Performance, Work Practices, because the licensee did not define and effectively communicate expectations regarding procedural compliance and for personnel to follow procedures (i.e., in the development of the NRC initial operator license examination).

Inspection Report# : [2009301](#) (*pdf*)

**Significance:**  Dec 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

### **LPCI Heat Exchangers' Design Calculation Deficiencies and Discrepancies**

The inspectors identified a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance involving the low pressure coolant injection (LPCI) heat exchangers cooling capability during a design basis loss of coolant accident (LOCA). Specifically, the licensee failed to evaluate the effects of higher containment pressure post power up-rate on the LPCI heat exchangers' differential pressure set-point calculation. In response to the issue, the licensee implemented compensatory actions including updating various calculations and performing several operability evaluations.

This finding was more than minor because there was reasonable doubt on the operability of the LPCI heat exchangers and if left uncorrected, these heat exchangers had the potential to be inoperable during the summer months. This

finding was of very low safety significance because the inspectors determined that the LPCI heat exchangers were in a non-conforming but operable condition and the issue screened as Green using the SDP Phase 1 screening worksheet.

Inspection Report# : [2008005](#) (*pdf*)

**Significance:**  Sep 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Provide an Adequate Procedure for Several Instrument Maintenance Surveillance Tests**

The inspectors identified a NCV of Technical Specification (TS) 5.4.1 for the failure to provide an adequate procedure for the verification of correct installation and restoration of equipment during instrument maintenance surveillance tests in June and August 2008. As part of the corrective actions, the licensee included a task to identify affected instrument surveillance procedures and generate a work down curve for revising the affected procedures.

Using IMC 0612, Appendix E, "Examples of Minor Violations," issued on September 20, 2007, the inspectors determined that there were no similar examples to this finding in Appendix E. The inspectors referenced IMC 0612, Appendix B, "Issue Screening," dated September 20, 2007. The inspectors determined that the finding was more than minor based on Section 3, (2), "If left uncorrected would the finding become a more significant safety concern." The inspectors determined that the failure to perform an independent verification that a testing configuration had been returned to normal could result in the inability of a system or component to perform its function which would be a more significant safety concern. No systems had been incorrectly returned to service as a result of the inadequate procedure and, therefore, this violation had very low safety significance. The inspectors did not identify a cross cutting issue for this finding that was separate from the finding itself for inadequate procedures.

Inspection Report# : [2008004](#) (*pdf*)

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## **Barrier Integrity**

**Significance:**  Jun 30, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Have a Procedure to Sample and Establish Administrative Controls for pH in the Torus**

The inspectors identified a finding of very low safety significance involving a Non Cited Violation of Technical Specification 5.4.1 for the failure to include essential information in procedures CY AB 120 310, "Suppression Pool/Torus Chemistry," and CY DR 120 31, "Suppression Pool/Torus Chemistry," to ensure torus pH values were above 5.6 in support of the radiological consequence dose analyses as described in Regulatory Guide 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors." As corrective actions, the licensee changed procedures CY-AB-120-310 and CY-DR-120-31 to include essential information for sampling the torus and revised the methodology for calculating torus pH.

Using IMC 0612, Appendix E, "Examples of Minor Issues," issued on September 20, 2007, and Appendix B, "Issue Screening," issued on December 4, 2008, the inspectors determined that this finding was more than minor because there was reasonable doubt on the operability of the standby liquid control system and its ability to maintain torus pH above 7 following a loss of coolant accident and because of significant programmatic deficiencies in the licensee's corrective action program. The inspectors also determined that this finding impacted the Barrier Integrity objective to provide reasonable assurance that physical design barriers (i.e., containment) protect the public from radionuclide releases caused by accidents or events. The failure to maintain adequate procedures addressing torus pH sampling resulted in a condition where there was reasonable doubt of the operability of the standby liquid control system. The inspectors completed a Phase 1 significance determination on this issue using IMC 0609, "Significance Determination Process," Attachment 4, Table 4a, dated January 10, 2008. The inspectors determined that this finding only represented a degradation of a radiological barrier function and therefore screened as Green. This finding was related to the cross cutting issue of problem identification and resolution (corrective action program) because the licensee did not take appropriate corrective actions to address safety issues in a timely manner.

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

**G****Significance:** Oct 29, 2008

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**Failure to Declare Primary Containment Isolation Valve Inoperable and Take Required Actions**

A self-revealed NCV of Dresden Station Improved Technical Specification (TS) 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)," of very low safety significance was identified for the failure to declare primary containment isolation valve 3 3702 inoperable and take actions in accordance with the requirements of TS 3.6.1.3 required action A. The licensee generated IR 837675 and IR 839009 to address this issue. Corrective actions included: the initiation of a training request to re enforce with Operations personnel the potential operability issues when light indications are not functioning properly, and the revision of Operations procedures to include guidance to alert users that a failed or flickering indication light associated with a motor operated valve may indicate problems that could affect valve operation, and that valve operability must be verified.

The finding was more than minor because it impacted the Barrier Integrity objective to provide reasonable assurance that physical design barriers (i.e., containment) protect the public from radionuclide releases caused by accidents or events. The inspectors completed a Phase 1 significance determination of this issue using IMC 0609, Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," The inspectors answered NO to all questions in the Containment Barrier column of Table 4a, therefore the finding screened as Green (i.e., very low safety significance). The inspectors determined that this finding also affected the cross cutting area of Human Performance, resources aspect (H.2(c)) because the licensee failed to provide complete, accurate and up to date procedures.

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

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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