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## **Dresden 3 – Quarterly Plant Inspection Findings**

### **2Q/2017 – Plant Inspection Findings**

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#### **Initiating Events**

#### **Mitigating Systems**

**Significance:** G Mar 31, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

#### **Failure to Correct a Condition Adverse to Quality Associated with EDG Single Largest Load Rejection**

##### **Surveillance Testing**

The NRC identified a finding of very low safety significance and associated NCV of Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to correct a condition adverse to quality, originally identified in Issue Report (IR) 2501498, associated with instructions and acceptance criteria in the emergency diesel generator (EDG) surveillance procedures to ensure that the single largest load rejection test bounded the power demand of the largest load in accordance with Technical Specification Surveillance Requirement (TSSR) 3.8.1.10. Specifically, the failure to correct a condition adverse to quality associated with the inadequate performance of TSSR 3.8.1.10 required an operability determination and engineering assessment to ensure continued operability of the site's three EDGs.

The performance deficiency was determined to be more than minor, and thus a finding, in accordance with IMC 0612, Appendix B, "Issue Screening," dated September 7, 2012, because it was associated with the Mitigating Systems cornerstone attribute of Procedure Quality and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). The inspectors applied IMC 0609, Attachment 4, "Initial Characterization of Findings," issued October 7, 2016, to this finding. The inspectors answered "No" to all questions within Table 3, "Significance Determination Process Appendix Router," and transitioned to IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," dated June 19, 2012. The inspectors answered "No" to all questions in Exhibit 2, "Mitigating Systems Screening Questions, Section A: Mitigating SSCs and Functionality." Therefore, the finding was screened as

very low safety significance. The inspectors concluded that the cause of the finding involved a cross-cutting component in the area

of Human Performance, Documentation, in that the licensee did not create and maintain complete, accurate and up-to-date documentation. Specifically, the licensee utilized surveillance procedures (DOS 6600-03, 04 and 05) which did not ensure that design post-accident conditions were met during testing. In addition, the licensee created Corrective Action Program (CAP) actions, to make procedure changes to operations surveillance DOS 6600-12 to establish bounding conditions for TSSR 3.8.1.10, that were never incorporated. [H.7]

Inspection Report# : 2017001 (*pdf*)

**Significance:**  Mar 02, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

### **Inadequate Pre-Fire Plans**

The inspectors identified a finding of very-low safety significance and associated NCV of license conditions 2.E and 3.G for Units 2 and 3, respectively for the licensee's failure to include the correct information in pre-fire plans. Specifically, the licensee failed to provide the location of compressed flammable gas cylinders and included them in the Hazards in Area section of the pre-fire plans for two fire areas as required by Procedure OP-AA-201-008, "Pre-Fire Plan Manual." The licensee entered the issue into their Corrective Action Program and updated the pre-fire plans to contain the correct information.

The inspectors determined that the performance deficiency was more-than-minor because the lack of information in the pre-fire plans regarding the hazards in the area could complicate firefighting activities by the fire brigade and could either increase the likelihood of a larger fire event or the severity of the fire. The finding was of very-low safety significance because it was associated with pre-fire plans and because the fire brigade members receive extensive training to deal with unexpected contingencies. The finding did not have a cross-cutting aspect associated with it because it was not representative of current performance as the licensee last updated the pre-fire plans in 2010.

Inspection Report# : 2017007 (*pdf*)

**Significance:**  Mar 02, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

### **Inadequate Procedure Steps to Ensure Proper Valve Rotation for Cold Shutdown Repair**

The inspectors identified a finding of very-low safety significance and associated NCV of Technical Specification 5.4.1.c for the licensee's failure to have appropriate written procedures covering the Fire Protection Program for cold shutdown repairs. Specifically, Procedure DSSP 0200-T8 included inadequate repair instructions for three motor operated valves (MOV) that if implemented as written could result in the valve rotating in undesired safe shutdown position, caused damage to MOVs and prevented manipulating the valve to the desired position and caused a delay in reaching cold shutdown condition. The licensee entered the issue into their Corrective Action Program, revised DSSP 0200-T8 and corrected the cable designations at the Motor Control Center for these MOVs for proper connection and phase rotation.

The inspectors determined that the performance deficiency was more-than-minor because the inadequate instruction in the repair procedure could have delayed reaching cold shutdown in the event of a fire and added unnecessary burden for operations personnel during an already challenging fire event. The finding was of very-low safety significance per Task 1.3.1 of IMC 0609, Appendix F, because it only affected the ability to reach and maintain cold shutdown conditions. The finding did not have a cross-cutting aspect associated with it because it was not representative of current performance.

Inspection Report# : 2017007 (*pdf*)



**Significance:** Nov 15, 2016

Identified By: Self-Revealing

Item Type: VIO Violation

### **Failure to Verify the Adequacy of Design for the Unit 3 HPCI AOP Motor Shunt Resistor Setting**

A self-revealing finding determined to be of low to moderate safety significance, and a violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was associated with the licensee's failure to ensure that the applicable design basis for applicable structures, systems, and components was maintained by the performance of design reviews, through the use of alternate or simplified calculational methods, or by the performance of a suitable testing program. Specifically, the licensee failed to verify the adequacy of design for the Unit 3 high pressure coolant injection (HPCI) auxiliary oil pump (AOP) motor shunt resistor setting during motor replacement in March of 2002, and then again in March of 2015, eventually resulting in pump failure in June of 2016, and inoperability of the HPCI system. The licensee documented this issue in its corrective action program (CAP) as IR 2686163.

The inspectors determined that the licensee's failure to verify the adequacy of design for the Unit 3 HPCI AOP motor shunt resistor setting was a performance deficiency, the cause was reasonably within the licensee's ability to foresee and correct due to previous events and licensee generated causal determinations regarding the significance of adjusting the shunt field resistors on motor and pump operations, and should have been prevented. The inspectors determined the issue was more than minor because it adversely impacted the Mitigating Systems Cornerstone attribute of Design Control and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Specifically, the failure to control the design of the Unit 3 HPCI AOP motor resulted in the degradation and ultimate failure of the pump motor windings, which is a required component for HPCI operation. The inspectors applied IMC 0609, Attachment 4, and IMC 0609, Appendix A, Exhibit 2, Section A, for "Mitigating Systems" to screen this finding and determined that a detailed risk evaluation was required because the finding represented a loss of system and/or function. Therefore, a coordinated effort between inspection staff and regional Senior Reactor Analyst (SRA) was required to perform an appropriate risk evaluation for the degraded condition that resulted from the finding. The SRA used the Dresden Standardized Plant Analysis Risk (SPAR) model, version 8.24 for the detailed risk evaluation. This evaluation concluded that the exposure time for the HPCI system was 1 year. The total delta core damage frequency (CDF) for the 1 year exposure period was 6.9E-6/year, which is a finding of low to moderate safety significance (White). HPCI is an important high pressure injection system that is used to mitigate internal events, internal flooding, and internal fire events at Dresden. The inspectors determined the contributing cause that provided the most insight into the performance deficiency was associated with the cross-cutting area of Human Performance, Design Margins because the licensee failed to operate and maintain equipment within design margins, in that margins are carefully guarded and changed only through a systematic and rigorous process with special attention placed on maintaining fission product barriers, defense-in-depth, and safety-related equipment [H.6]. Specifically, the licensee failed to verify the adequacy of design for the Unit 3 HPCI AOP motor shunt resistor setting during motor replacement in March of 2002 and then again in March of 2015.

Inspection Report# : 2016010 (*pdf*)

Inspection Report# : 2017009 (*pdf*)

Inspection Report# : 2017010 (*pdf*)



**Significance:** Jul 01, 2016

Identified By: NRC

Item Type: FIN Finding

### **Main Steam Acoustic Safety/Relief Valve Monitoring Channel Calibration Not Performed**

The inspectors identified a finding of very-low safety significance for the failure to perform a 24-month channel calibration of the Regulatory Guide 1.97 safety/relief valve acoustic monitoring system in accordance with the Technical Requirements Manual. Specifically, the licensee failed to perform a channel calibration, where the channel

calibration shall encompass all devices in the channel required for channel operability and the channel functional test. The performance deficiency was determined to be more-than-minor because the finding was associated with the Mitigating System's cornerstone attribute of Procedure Quality and affected the cornerstone's objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee failed to maintain the acoustic safety/relief valve position indicators instrumentation in accordance with the Technical Requirements Manual. The performance deficiency affected the design or qualification of a mitigating system, structure or component; however, the system, structure or component maintained its functionality based on successful completion of channel functionality checks. Since the system, structure or component remained functional, the inspectors screened the finding as having very low safety significance (Green). The inspectors did not identify a cross cutting aspect associated with this finding because the finding was not representative of the licensee's current performance.

Inspection Report# : 2016009 (*pdf*)

## **Barrier Integrity**

### **Emergency Preparedness**

### **Occupational Radiation Safety**

**Significance:** G Dec 31, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

#### **Failure to Comply With Radiation Work Permit Requirements Resulting In Unplanned Dose Rate Alarms**

A finding of very-low safety significance, and an associated Non-Cited Violation (NCV) of Technical Specification 5.4.1 was self-revealed when workers violated a radiation work permit (RWP) by entering an area that was outside of the scope of the original RWP brief without obtaining a required appropriate brief, resulting in these workers receiving unplanned electronic dosimeter dose rate alarms. These workers immediately exited the area and reported the event to the radiation protection staff. The licensee entered these issues as two separate events into their CAP as Issue Reports (IR) 02735594 and IR 02735651.

The inspectors determined that the performance deficiency was more than minor in accordance with Inspection Manual Chapter 0612, Appendix B, because the finding impacted the program and process attribute of the Occupational Radiation Safety Cornerstone, and adversely affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation. Specifically, worker entry into areas beyond the RWP briefing could lead to unintended dose. The finding was determined to be of very-low safety significance (Green) in accordance with Inspection Manual Chapter 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," dated August 19, 2008, because: (1) it did not involve as-low-as-reasonably-achievable planning or work controls, (2) there was no overexposure, (3) there was no substantial potential for an overexposure, and (4) the ability to assess dose was not compromised. The inspectors concluded that the cause of the finding involved a cross-cutting component in the human performance area of challenging the unknown because the individual did not stop when faced with an uncertain condition. Risks were not evaluated and managed before proceeding [H.11].

Inspection Report# : 2016004 (*pdf*)

## **Public Radiation Safety**

### **Security**

The security cornerstone is an important component of the ROP, which includes various security inspection activities the NRC uses to verify licensee compliance with Commission regulations and thus ensure public health and safety. The Commission determined in the staff requirements memorandum (SRM) for SECY-04-0191, "Withholding Sensitive Unclassified Information Concerning Nuclear Power Reactors from Public Disclosure," dated November 9, 2004, that specific information related to findings and performance indicators associated with the security cornerstone will not be publicly available to ensure that security-related information is not provided to a possible adversary. Security

inspection report cover letters will be available on the NRC Web site; however, security-related information on the details of inspection finding(s) will not be displayed.

### **Miscellaneous**

Current data as of : August 03, 2017

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