

Dresden 3

1Q/2013 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2012

Identified By: Self-Revealing

Item Type: FIN Finding

Loss of Lift Station due to Human Performance Error

A finding of very low safety significance was self-revealed when a human performance error resulted in the loss of the Bus 41 which caused a trip of all circulating water hot canal lift pumps. The licensee performed a rapid down power on both Units 2 and 3 and secured the 3C circulating water pump. The lift pump Bus 41 was restored and the lift pumps were restarted. The licensee conducted all hands meetings to enforce why the actions taken prior to this event were incorrect. This was not a violation of NRC requirements.

The finding was determined to be more than minor because the finding could be reasonably viewed as a precursor to a significant event. Specifically, the loss of the lift pump bus resulted in securing a circulating water (CW) pump on Unit 3 and rapid load reductions on both units to prevent a loss of vacuum. The loss of vacuum could have resulted in a reactor scram. A rapid load reduction was performed on Unit 2 in preparation of securing a Unit 2 CW pump, but the lift station was restored before the securing of the Unit 2 CW pump became necessary. 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 Events Cornerstone. This event was a transient initiator that could have resulted in a reactor scram. The inspectors answered 'No' to the question: "Does the finding contribute to both the likelihood of a reactor trip AND the likelihood that mitigation equipment or functions will not be available?" Therefore, the finding was screened as having very low safety significance, (Green). This finding has a cross-cutting aspect in the area of human performance, work practices, because licensee personnel did not use sufficient human error prevention techniques. Specifically, the placement of the lead in the wrong position at the completion of work was contrary to the work instructions in WO1507014-01. Stronger physical boundaries could have been established to prevent placing the lead in the wrong position. (H.4(a))
Inspection Report# : [2012003](#) (*pdf*)

Mitigating Systems

Significance: G Mar 31, 2013

Identified By: NRC

Item Type: FIN Finding

Failure to Include Adequate Acceptance Criteria in a Surveillance Test

The inspectors identified a Finding having very low safety significance for the failure to include acceptance criteria in a surveillance test for equipment that is the sole source of make-up water to the isolation condenser and spent fuel pool for both units during a probable maximum flood (PMF) scenario postulated in the Updated Final Safety Analysis Report (UFSAR). As described in the Exelon Quality Assurance Manual, the licensee is committed to the requirements of ANSI/ANS 3.2-1988, which states that surveillance tests contain or reference acceptance criteria in appropriate design or other source documents.

The inspectors determined that the failure to include adequate acceptance criteria in a surveillance test was a

performance deficiency warranting a significance evaluation. The inspectors determined that the finding was more than minor because if left uncorrected, it could lead to a more significant safety concern. Specifically, without any acceptance criteria in the surveillance test, the licensee cannot determine whether the flood pump was able to perform its function as described in the UFSAR and calculation DRE99-0035. The inspectors completed a Phase 1 significance determination of this finding and determined that the finding impacted the Mitigating Systems Cornerstone. The inspectors concluded that the diesel-driven make-up pump would be a mitigating system in the case of the probable maximum flood. The inspectors answered “No” to the question on Exhibit 2 - Mitigating Systems Screening Questions of Appendix A, “The Significance Determination Process for Findings At-Power,” of IMC 0609. As a result, the issue screened as of very low safety significance. Similar issues were identified previously by the inspectors involving inadequate surveillance test and operating procedures for the flood pump. Therefore, the inspectors determined that this finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program.

Inspection Report# : [2013002](#) (*pdf*)

Significance: TBD Mar 31, 2013

Identified By: NRC

Item Type: AV Apparent Violation

Deficiency In Abnormal Operating Procedures for Site Response to External Flooding Events

The inspectors identified a finding and an associated Apparent Violation (AV) of Technical Specification (TS) Section 5.4.1. Technical Specification 5.4.1 requires, in part, that written procedures be established, implemented, and maintained covering the following activities: “the applicable procedures recommended in Regulatory Guide (RG) 1.33. Revision 2, Appendix A, February 1978.” RG 1.33. Revision 2, Appendix A, Paragraph 6 addresses “Procedures for Combating Emergencies and Other Significant Events” and Item w addresses “Acts of Nature (e.g ., tornado, flood, dam failure, earthquakes).” From February 20, 1991, to November 21, 2012, the licensee failed to establish a procedure addressing all of the effects of an external flooding scenario on the plant. Specifically, DOA 0010-04, “Floods,” did not account for reactor vessel inventory make up during an external flooding scenario up to and including the probable maximum flood event which could result in reactor vessel water level lowering below the top of active fuel. This finding does not represent an immediate safety concern in that the licensee now has procedures for providing reactor vessel make up water during an external flood scenario up to and including a PMF event.

The inspectors determined that the licensee’s failure to consider reactor vessel inventory make up during an external flooding scenario up to and including the PMF was a performance deficiency warranting a significance evaluation. The finding was determined to be more than minor in accordance with Inspection Manual Chapter (IMC) 0612, “Power Reactor Inspection Reports,” 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. A Significance and Enforcement Review Panel (SERP), using IMC 0609, Appendix M, “Significance Determination Process Using Qualitative Criteria,” dated April 12, 2012, preliminarily determined the finding to be of low to moderate safety significance (White). The inspectors determined that this finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, Self and Independent Assessments, since it involves the failure to identify the lack of procedural steps to address a critical function during a comprehensive self assessment of the flooding strategy.

Inspection Report# : [2013002](#) (*pdf*)

Significance:  Dec 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure To Follow Cold Weather Initiating Procedure

The inspectors identified a finding of very low safety significance and associated NCV of Technical Specification 5.4.1.a for the failure to follow an abnormal operating procedure. Specifically, abnormal operating procedure (DOA) 5700-01, “Loss of Heating Boilers,” Revision 12, required per step D.5 monitoring and logging temperatures per

Checklists 1 and 2 at specific locations within and outside the plant when outside ambient temperature was below 40 degrees Fahrenheit. The licensee failed to enter DOA 5700-01 and perform the required Checklists even though the outside ambient temperatures dropped below 40 degrees 21 times between October 6 and November 6, 2012. The licensee's corrective actions include revising procedures DOA 5700-01 and DOS 0010-22 to remove inconsistencies and creating a method for ensuring plant temperature monitoring is performed in all required locations in accordance with proceduralized compensatory measures.

The finding was determined to be more than minor because the finding was similar to IMC 0612, Appendix E, Example 4.a. In this example the failure to write an engineering evaluation was not more than minor; however, the example states the failure to write engineering evaluations on similar issues was more than minor. The reason this violation is similar to IMC 0612, Appendix E, Example 4.a, is that the environmental conditions necessary to enter DOA 5700-01 existed 21 times between October 5, 2012 and November 6, 2012. Therefore this performance deficiency also impacted the Mitigating System Cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors evaluated the finding using IMC 0609, "Significance Determination Process," Appendix A, "The SDP for Findings At-Power," The inspectors reviewed IMC 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," dated June 19, 2012, and answered all four questions NO. Therefore the issue screened as having very low safety significance. This finding has a cross-cutting aspect in the area of problem identification and resolution, because the licensee did not take appropriate corrective actions. Specifically, the licensee was aware that the plant heating boilers were not available and that temperatures were dropping below freezing and did not enter the appropriate procedures to ensure the plant was adequately protected from the weather.

Inspection Report# : [2012005](#) (*pdf*)

Significance:  Dec 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Post Protected Pathway Signs for a Red Risk Path System

A finding of very low safety significance and associated NCV of 10 CFR 50.65(a)(4), Maintenance Rule, was identified by the inspectors for the licensee's failure to implement all necessary prescribed risk management actions during a Unit 3 250 Vdc battery system maintenance and testing window. Specifically, the licensee failed to post protected equipment signs for the Unit 2 systems whose unavailability would have taken the unit into a Red risk condition. The licensee entered this issue into their corrective action program.

The inspectors determined that this performance deficiency is a finding and greater than minor because the licensee failed to perform a complete risk assessment including failing to review PARAGON, the licensee's configuration risk management software, prior to commencing the maintenance task and as a result did not implement prescribed risk management actions of posting signs and barricades to protect the Unit 2 250 Vdc battery equipment during the Unit 3 250 Vdc battery work window; which is similar to Example 7.f in IMC 0612, Appendix E. The inspectors performed a Phase 1 screening with assistance from the Regional Senior Reactor Analyst (SRA) using IMC 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," Flowchart 2, "Assessment of Risk Management Actions." The licensee provided core damage frequency (CDF) and large early release frequency (LERF) risk increase factors of 1.49 and 1.50, respectively, for the maintenance configuration, and a zero baseline CDF of 3.5E-6/yr. Given these values and assuming a maximum duration of 24 hours that the RMAs were not implemented, the SRA calculated an incremental core damage probability (ICDP) and incremental large early release probability (ICLERP) of 1.4E-8. Using flowchart 2, the finding was determined to be of very low safety significance (Green) because the ICDP was less than 1E-6 and ILERP was less than 1E-7. This finding has a cross-cutting aspect in the area of Human Performance, Work Practices, Procedural Compliance because the licensee failed to conduct an adequate risk assessment prior to commencing maintenance activities and as such did not perform risk management actions required by procedure OP-AA-108-117, resulting in the missed postings for the protected pathway equipment.

Inspection Report# : [2012005](#) (pdf)

Significance: G Jun 30, 2012

Identified By: NRC

Item Type: FIN Finding

Inspectors Found Unit 3 Containment Cooling Service Water (CCSW) Vault Flood Door Open and Unattended

A finding of very low safety significance was identified by the inspectors for leaving the containment cooling service water (CCSW) vault door open and unattended. The licensee immediately closed the door, posted the door as difficult to close, and lubricated the door to make the door easier to close. The inspectors determined that leaving the CCSW vault door open and unattended was contrary to the Technical Requirements Manual 3.7.o.2 which required the CCSW vault and vault door to be operable. However, this did not involve a violation of NRC requirements.

The finding was determined to be more than minor because the finding was associated with the Mitigating System Cornerstone attribute of protection against external events and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. 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 Mitigating System Cornerstone. The vault door was designed to mitigate the effect of internal flooding caused by a condenser boot failure. Question 5 asks, does the finding screen as potentially risk significant due to flooding. The inspectors answered yes, because with the door failed, two trains of a multi-train system were degraded (see Table 4b). The Region III Senior Risk Analyst (SRA) was contacted to perform a Phase 3 analysis. The SRAs performed a phase 3 SDP evaluation of the finding using the Risk-Informed Inspection Notebook for Dresden. The transient without the power conversion system (TPCS) initiator was used as a surrogate for the flooding initiator. This is conservative because the internal flood frequency is less than the frequency of TPCS. The SRAs solved the worksheet assuming the duration of the condition was less than 3 days and the CCSW system was unavailable. The result was a finding of very low safety significance (Green). The dominant sequence is a flood-induced transient with loss of the power conversion system and failure of containment heat removal, followed by random failures of the isolation condenser, shutdown cooling and late inventory injection. The inspectors did not identify a cross-cutting aspect associated with this finding.

Inspection Report# : [2012003](#) (pdf)

Significance: G Apr 20, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Identify and Remove Diesel Fire Pump Battery Terminal Corrosion

The inspectors identified a finding of very low safety significance (Green) and associated NCV of Technical Specifications for the licensee's failure to adequately implement the diesel fire pump (DFP) battery surveillance procedure. Specifically, the licensee failed to identify and remove corrosion on the DFP battery terminals, which was contrary to the surveillance procedure that implemented the fire protection program. A similar NCV was previously cited by the NRC on October 17, 2011, and documented in inspection report 05000237/2011008; 05000249/2011008, "Failure to Identify Diesel Fire Pump Battery Terminal Corrosion." The licensee entered the issue into their corrective action program and planned to clean the battery terminals. In addition, the licensee planned to replace the 2/3 DFP batteries in July 2012.

The inspectors determined that the finding was more than minor because, if left uncorrected, the presence of corrosion in conjunction with identified voltage issues for two battery cells could affect the reliability of the diesel fire pump. This finding was of very low safety significance because the DFP had started as part of a recent routine surveillance. This finding has a cross-cutting aspect in the area of PI&R because the licensee failed to identify the battery corrosion accurately and in a timely manner commensurate with their safety significance.

Inspection Report# : [2012007](#) (pdf)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

Miscellaneous

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