

Dresden 2

3Q/2014 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Sep 30, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Perform 10 CFR 50.59 Evaluation for Procedure DOP 1300-02

The inspectors identified a NCV of 10 CFR 50.59, "Changes, Tests and Experiments," when, on February 10, 2011, the licensee failed to complete a 10 CFR 50.59 evaluation when they revised procedure DOP 1300-02 to change the position of Motor Operated Valve (MOV) 2-1301-3, Reactor Inlet Isolation, such that the Isolation Condenser (IC) system would not meet its design requirement of removing 84.2E+06 BTUs in 20 minutes when initiated from its minimum Technical Specification (TS) level and maximum TS temperature.

The inspectors determined that the licensee's failure to identify that the valve position adjustment required a 10 CFR 50.59 evaluation was a performance deficiency. This finding was evaluated using traditional enforcement because it had the potential for impacting the NRC's ability to perform its regulatory function. This finding was more than minor because there was a reasonable likelihood that the change would have required NRC review and approval prior to implementation. Specifically, by establishing a new position setting of MOV 2-1301-3, the licensee failed to determine that the proposed change would cause isolation condenser tubes to become exposed in the design basis accident such that it adversely affected a Final Safety Analysis Report described design function, which required an evaluation to be performed. In accordance with IMC 0612, Appendix B, "Issue Screening," traditional enforcement does apply as the violation impacted the regulatory process. Using IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated June 19, 2012, Exhibit 2, "Mitigating Systems Screening Questions," the issue screened as having very low safety significance (Green) because it was a design or qualification deficiency that did not represent a loss of the system and/or function, did not represent an actual loss of function of at least a single train for greater than its TS allowed outage time, and did not result in the actual loss of one or more trains of non-technical specification equipment. Inspectors assessed the violation in accordance with the Enforcement Policy, and determined it to be a Severity Level IV violation because it resulted in a condition evaluated by the SDP as having very low safety significance (Enforcement Policy example 6.1.d.2). This finding has a cross-cutting aspect of Design Margins

[IMC 0310, H.6] in the area of human performance, for failing to carefully guard and maintain the IC design requirement of removing 84.2E+06 BTU in 20 minutes.

Inspection Report# : [2014004](#) (*pdf*)

Significance: G Jun 30, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Take Appropriate Corrective Action When a Maintenance Rule Performance Goal for the Standby Coolant System Was Not Met

The inspectors identified a finding of very low safety significance and non-cited violation of 10 CFR 50.65(a)(1),

“Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants,” for the licensee’s failure to take corrective actions by performing an (a)(1) determination when the standby coolant supply system preventative maintenance (a)(2) demonstration was failed. Specifically, in November 2013, the standby coolant supply system exceeded its maintenance rule performance criteria when it experienced an additional maintenance preventable functional failure. The licensee failed to appropriately account for this failure in their Maintenance Rule Program and, as a result, the site failed to perform appropriate corrective action, by failing to perform an (a)(1) determination in accordance with Procedures ER-AA-310, “Implementation of the Maintenance Rule,” and ER-AA 310-1005, “Maintenance Rule—Dispositioning Between (a)(1) and (a)(2),” Revision 6. Corrective actions taken by the licensee to address this issue included performing a maintenance rule (a)(1) determination and placing the system into (a)(1) status. The issue was entered into the licensee’s corrective action program as issue report (IR) 1644740, “NRC Questions D2R23 Performance of DOS 3900-01,” and IR 1650033, “MRule A1 Determination Needed for Missed MRFF Z39-1.”

The performance deficiency was determined to be more than minor because the finding was associated with the Mitigating Systems Cornerstone’s attribute of Equipment Performance and affected the cornerstone’s objective of ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the licensee failed to identify a functional failure during a periodic (a) (2) demonstration purposed to provide reasonable assurance that the structures, systems, and components (SSCs), the standby coolant injection valve MO 2-3902, was capable of performing its intended function as specified in licensee emergency operating procedure DEOP 0500-03, “Alternate Water Injection Systems,” Revision 22. In accordance with IMC 0609, “Significance Determination Process,” Attachment 0609.04, “Initial Characterization of Findings,” Table 2, the inspectors determined the finding affected the Mitigating Systems cornerstone. As a result, the inspectors determined the finding could be evaluated using Appendix A, “The Significance Determination Process (SDP) for Findings At-Power,” Exhibit 2 for the Mitigating Systems cornerstone. The inspectors answered “Yes” to the question “Does the finding represent a loss of system and/or function” and determined that a Detailed Risk Evaluation was required. The Senior Reactor Analysts (SRAs) evaluated the finding using the Dresden Standardized Plant Analysis Risk (SPAR) model version 8.18 and Systems Analysis Programs for Hands-on Integrated Reliability Evaluations (SAPHIRE) version 8.0.9.0 software. The exposure time for the unavailability of the Standby Coolant Supply Valve 2-3902 was assumed to be the maximum value of one year. The result was a delta core damage frequency (?CDF) of 6.6E-8/yr. The dominant sequence was a medium loss of coolant accident initiating event with a failure of suppression pool cooling, a failure of power conversion system recovery, and a failure of late injection. Based on the Detailed Risk Evaluation, the SRAs determined that the finding was of very low safety significance (Green). This finding had a crosscutting aspect in Human Performance, Procedure Adherence, because the licensee failed to appropriately document the failure of a standby coolant supply valve in accordance with periodic test procedure DOS 3900-01, “Standby Coolant Supply Functional Test.” [H.8]

Inspection Report# : [2014003](#) (*pdf*)

Significance:  May 23, 2014

Identified By: NRC

Item Type: FIN Finding

Inadequate Applicability Reviews of Configuration Changes for De-Energizing Safety-Related Valves

The inspectors identified a finding of very low safety significance (Green) related to inadequate applicability reviews of operational configuration changes that were implemented as a result of the licensee's Multiple Spurious Operation (MSO) evaluations. Specifically, the licensee failed to follow procedural requirements for determining the applicability for performing 10 CFR 50.59 screening and evaluations for changes made to the facility which de-energized several safety-related motor operated valves (MOV's). The procedural action required that the configuration changes be screened for applicability for a specific 10 CFR Part 50.59 evaluation since aspects of the changes were not completely controlled under the licensee's Fire Protection Program. The licensee entered this issue into their Corrective Action Program to perform a 10 CFR 50.59 screening of changes for each affected system to ensure that all aspects of component design were evaluated.

The performance deficiency was determined to be more than minor because the issue, if left uncorrected, would have become a more significant safety concern. Specifically, by not individually evaluating the scope and applicability of plant configuration changes, the licensee lost the ability to ensure that all aspects of component design were appropriately evaluated against the plant's design and licensing basis. Such changes have the potential to adversely affect design or operation of systems. Failure to evaluate such aspects allows the potential for adverse changes to go undetected. This finding has a cross-cutting aspect in the area of Human Performance because the licensee became complacent during the conduct of performing applicability reviews that were related to the facility's Fire Protection Program, and failed to recognize changes that included elements outside of the scope of fire protection.

Inspection Report# : [2014008](#) (*pdf*)

Significance:  May 23, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Seismically Secure Nitrogen Bottles

The inspectors identified a finding of very low safety significance (Green) and associated Non-Cited Violation of Technical Specifications (TS) Section 5.4.1.a, for the licensee's failure to seismically restrain nitrogen bottles located near safety-related motor control centers (MCCs). Specifically, the licensee failed to seismically restrain a cart with two nitrogen bottles located near safety-related MCCs per their procedures for the handling and storage of compressed gas cylinders and restraint of portable equipment. The licensee entered this issue into their corrective action program, moved the cart with the nitrogen bottles away from the MCCs, and secured it to a column nearby.

The inspectors determined that the finding was more than minor because during a seismic event the bottles could have tipped over and impacted the MCCs, thereby causing a loss of safety-related equipment, such as the Unit 2/3 emergency diesel generator. The finding was determined to be of very low safety significance based on a detailed risk-evaluation. The finding has a cross-cutting aspect in the area of Human performance because maintenance and operations personnel did not coordinate during a change out of nitrogen bottles which resulted in the bottles being left unsecured. (Section 4OA5.2)

Inspection Report# : [2014008](#) (*pdf*)

Significance:  Mar 15, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Adequately Incorporate GE Operating Experience into Vendor Manual

The inspectors identified 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," for the licensee's failure to ensure that operating experience provided via a vendor Service Information Letter (SIL) was properly evaluated and incorporated into the vendor manual contrary to the requirements of procedure

RS-AA-115, "Operating Experience." The failure to properly assess operating experience for alternating current (AC) Motors resulted in a condition where specific deficiencies could go unrealized under the licensee's condition based monitoring program. The licensee initiated action request (AR) 1633528 and 1635766 to document and develop corrective actions for the issue.

The finding was determined to be more than minor because it was associated with the Mitigating Systems Cornerstone attribute of design control and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to adequately evaluate and document the basis for the use or rejection of 9 out of 10 experiences presented in General Electric (GE) SIL 484, Supplement 6, could cause a reduction in reliability for safety related systems that use AC motors. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." The finding was screened against the Mitigating Systems Cornerstone, Exhibit 2 of Appendix A, and determined to be of

very low safety significance because the answer was “no” to all of the screening questions. This finding has a cross-cutting aspect in the area of Human Performance, Avoid Complacency (H.12), because individuals failed to recognize and plan for the possibility of mistakes, latent issues, and inherent risk, even while expecting successful outcomes.
Inspection Report# : [2014007](#) (*pdf*)

Significance:  Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Update the UFSAR for Reactor Water Cleanup Design Changes

A Severity Level IV NCV of 10 CFR 50.71(e), “Periodic Update of the Final Safety Analysis Report” (UFSAR) and an accompanying Green finding were identified by the inspectors for the licensee’s failure to update the Updated Final Safety Analysis Report (UFSAR) for a design modification performed on the Unit 3 reactor water cleanup (RWCU) system. Specifically, the licensee did not update Dresden UFSAR Section 5.4.8, “Reactor Water Cleanup System,” to reflect changes made during a design modification installed on Unit 3 in 1997. The design changes included reducing the pipe dimension of RWCU piping outside of the primary containment and eliminating a string of regenerative and non-regenerative heat exchangers. The licensee also identified several high energy line break (HELB) calculations which did not include the design modification when determining the impact on environmentally qualified components affected by a failure of the RWCU system piping outside of the primary containment structure. Corrective actions included submitting a UFSAR change request to include the appropriate operating characteristics and specifications under the present design. In addition, the licensee reviewed all affected calculations to ensure no non-conservative outcomes resulted based on the design modifications installed.

This finding was determined to be more than minor using IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," dated September 7, 2012 because, if left uncorrected, the performance deficiency could have led to a more significant safety concern. Specifically, failure to update the UFSAR with the actual RWCU system configuration prevented the inspectors from readily concluding that the design change would not require additional calculational analyses for HELB. The inspectors completed a Phase 1 significance determination of this issue using IMC 0609, “Significance Determination Process,” Attachment 0609.04, “Initial Characterization of Findings,” dated July 1, 2012 and IMC 0609, Appendix A, “The Significance Determination Process (SDP) For Findings At-Power,” dated July 1, 2012. The inspectors answered NO to all questions in Exhibit 2, Section A, “Mitigating SSCs and Functionality,” therefore the finding screened as Green (very low safety significance). In accordance with Section 6.1.d.3 of the NRC Enforcement Policy, this violation is categorized as Severity Level IV because the information was not used to make an unacceptable change to the facility or procedures since the design changes did not result in a reduction of the previous margin to the 10 CFR 100 guidelines nor did they challenge the environmental quality rating of safety related components in the vicinity of the RWCU system during a HELB event outside of containment. The inspectors determined that this finding did not reflect present performance because it is a legacy issue with changes made to the facility more than 16 years previously; therefore, there was no cross cutting aspect associated with this finding.

Inspection Report# : [2013004](#) (*pdf*)

Significance:  Dec 31, 2013

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Inadvertent Lo-Lo Reactor Water Level Indication Received During Maintenance Resulting in Unavailability of the 2/3 Emergency Diesel Generator to Unit 3

A finding of very low safety significance and associated non-cited violation of Technical Specification (TS) 5.4.1, “Procedures”, was self-revealed on November 17, 2013, when the 2/3 Emergency Diesel Generator (EDG) was inoperable to Unit 3 with an Emergency Core Cooling Systems (ECCS) signal present on Unit 2 due to sensing a low reactor water level condition. Specifically, while the licensee performed procedure DIS 0263-07, Revision 20, “Unit 2

ATWS RPT/ARI and ECCS Level Transmitters Channel Calibration Test and EQ Maintenance Inspection”, in conjunction with Anticipated Transient Without a Scram (ATWS) level transmitter replacements, a failure to remove trip relays in addition to performing all transmitter replacements at the same time resulted in an unexpected Lo-Lo reactor water level trip signal, subsequently resulting in the auto initiation of the Unit 2 EDG and the 2/3 EDG, causing the 2/3 EDG to be inoperable to Unit 3. The licensee immediately restored the ATWS trip relay circuitry, clearing the Lo-Lo reactor water level signal. This enabled the EDGs to be returned to a standby condition and, thereby, restored 2/3 EDG availability to Unit 3.

The licensee’s failure to properly implement the steps in the procedure was a performance deficiency that was determined to be more than minor, and thus a finding, because it was associated with the Mitigating Systems Cornerstone attribute of Configuration 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. The finding was determined to be of very low safety significance. The finding was of very low safety significance because each of the questions provided in IMC 0609, Appendix A, Exhibit 2, “Mitigating Systems Screening Questions,” were answered “no.” The finding has a cross-cutting aspect in the area of human performance, work control, for failing to appropriately coordinate work activities by incorporating actions to address the impact of changes to the work activity on the plant. Specifically, the licensee committed a human performance error by failing to adequately address the impact of work activity changes on the plant and implement the required prerequisites. Inspection Report# : [2013005 \(pdf\)](#)

Barrier Integrity

Emergency Preparedness

Significance:  Sep 30, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Evacuation Time Estimate Submittals

The NRC identified a NCV of 10 CFR 50.54(q)(2) associated with 10 CFR 50.47(b)(10) and 10 CFR Part 50, Appendix E, Section IV.4, for failing to maintain the effectiveness of the Dresden Nuclear Power Station Emergency Plan as a result of failing to provide the station evacuation time estimate (ETE) to the responsible offsite response organizations (OROs) by the required date.

Exelon submitted the Dresden Nuclear Power Station ETE to the NRC on

December 12, 2012, prior to the required due date of December 22, 2012. The NRC completeness review found the ETEs to be incomplete due to Exelon fleet common and site-specific deficiencies, thereby preventing Exelon from providing the ETEs to responsible OROs and from updating site-specific protective action strategies as necessary. The NRC discussed its concerns regarding the completeness of the ETE, in a teleconference with Exelon on June 10, 2013, and on September 5, 2013, Exelon resubmitted the ETEs for its sites. The NRC again found the ETEs to be incomplete. The issue is a performance deficiency because it involves a failure to comply with a regulation that was under Exelon’s control to identify and prevent. The finding is more than minor because it is associated with the emergency preparedness cornerstone attribute of procedure quality and because it adversely affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The finding is of very low safety significance because it was a failure to comply with a non-risk significant portion of 10 CFR 50.47(b)(10). The licensee had entered this issue into their corrective action program (CAP) and re-submitted a new revision of the Dresden Nuclear Power Station ETE to

the NRC on May 2, 2014, which was found to be complete by the NRC. The cause of the finding is related to the cross-cutting element of Human Performance, Documentation. [IMC 0310, H.7]
Inspection Report# : [2014004](#) (*pdf*)

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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