Braidwood 1
3Q/2014 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Sep 30, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
ADVERSE IMPACT OF FLOOR DRAIN DESIGN ON FLOODING ANALYSIS
The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III "Design Control," when licensee personnel failed to verify the design of bag-strainers in the floor drains of the auxiliary building and their impact on the associated flooding analysis. Specifically, when Calculation 3C8–0686–002, "Auxiliary Building Flood Level Calculation," was revised on May 16, 2013, the licensee credited the use of floor drains, which had bag-type strainers that were designed in such a way that they increased the potential for blockage, and therefore adversely impacted the analysis of record for internal flooding. This issue was entered into the licensee's Corrective Action Program (CAP) as Issue Report (IR) 2385204, "NRC Questions on Aux [Auxiliary] Building Flood Evaluation." Corrective actions for this issue included instituting Standing Order 14–005 to prevent the interim removal of flood seals, and a plan to revise Calculation 3C8–0685–002 to resolve the identified non-conformances. The inspectors determined that the performance deficiency was more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," because the issue was associated with the Design Control attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the floor drain strainer bags were inadequately designed in such a manner that instead of ensuring that the floor drains would be able to function properly to remove flood water, they would act to increase the possibility that the floor drains would become plugged and unable to perform this function adequately. The inspectors concluded that the finding was of very low safety significance in accordance with IMC 0609, Appendix A, Exhibit 2 and Exhibit 4. The inspectors determined that the finding had a cross-cutting aspect in the Evaluation component of the Problem Identification and Resolution (PI&R) cross-cutting area because the licensee failed to thoroughly evaluate the issue to ensure that the resolution addressed the causes. Specifically, when the licensee made a major revision to Calculation 3C8–0685–002 in 2013 to, in part, incorporate minor revisions and address non-conservatisms in the calculation, the licensee failed to adequately consider a previous minor revision that had removed credit for the drain system due to problems with its design that were previously identified by the NRC (P.2).
Inspection Report# : 2014004 *(pdf)*

Significance: G Sep 30, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
MULTIPLE FAILURES TO FOLLOW OPERABILITY EVALUATION PROCESS FOLLOWING DISCOVERY OF A NON-CONFORMING CONDITION IN THE ULTIMATE HEAT SINK
The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," when licensee personnel failed to follow

procedure OP–AA–108–115, “Operability Determinations.” Specifically, licensee personnel failed to adhere to numerous Operability Determination Process standards after identifying a non-conforming condition that had the potential to impact the operability of the Ultimate Heat Sink (UHS). This issue was entered into the licensee’s CAP as IR 1674557, “Question on UHS License Amendment Request Impact on Pumps,” and IR 1675291, “Unanalyzed Condition Identified During IR 1674557 Response.” Corrective actions included correcting the non-conforming condition by revising the abnormal operating procedures to be aligned with the current licensing basis (CLB). The inspectors determined that the performance deficiency was more than minor in accordance with IMC 0612, Appendix B, “Issue Screening,” because the issue was associated with the Design Control attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, based on the analysis of record, at the time of discovery there was reasonable doubt that the UHS could meet its mission time of 30 days. The inspectors determined that the finding was of very low safety significance in accordance with IMC 0609, Appendix A, Exhibit 2, since it was determined to not represent a confirmed loss of operability. The inspectors concluded that this finding had a cross-cutting aspect in the Conservative Bias component of the Human Performance cross-cutting area because the licensee failed to use conservative assumptions in their decision-making when evaluating the operability of the UHS. Specifically, operations did not request a documented evaluation to support understanding why the UHS was operable and to verify that their assumptions regarding operator actions were feasible (H.14).
Inspection Report# : 2014004 *(pdf)*

Significance: G Sep 30, 2014
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
STATION DIESEL DRIVEN FIRE PUMP RESTORED TO SERVICE NON-FUNCTIONAL DUE TO INCORRECT STOP PUSH BUTTON SWITCH REPLACEMENT
A finding of very low safety significance and an associated NCV of Braidwood Operating License Condition 2.E, “Fire Protection Program,” was self-revealed during the performance of a scheduled diesel-driven fire pump (DDFP) sequential start surveillance when the DDFP was observed by operators to start, but then cycle on and off. The DDFP was declared non-functional and a subsequent causal evaluation determined that an incorrectly designed DDFP stop pushbutton switch had been installed several months prior to the identification of the issue. The licensee entered this issue into their CAP as IR 1649515, “Incorrect Stop Pushbutton Installed on 0B Fire Pump.” Corrective actions included replacing the switch with a switch of a correct design. The inspectors determined that the performance deficiency was more than minor in accordance with IMC 0612, Appendix B, “Issue Screening,” because the issue was associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the performance deficiency resulted in a non-functional DDFP. The finding was determined to be of very low safety significance by a NRC Senior Reactor Analyst. The inspectors concluded that this finding had a cross-cutting aspect in the Avoid Complacency component of the Human Performance cross-cutting area because the licensee did not adequately recognize and plan for the possibility that the DDFP stop pushbutton replacement switch design could have been different than plant-specific design requirements (H.12).
Inspection Report# : 2014004 *(pdf)*

Significance: G Mar 31, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
INADEQUATE AOP ENTRY CRITERIA FOR INTAKE FRAZIL ICING CONDITIONS
The inspectors identified a finding of very low safety significance and an associated NCV of TS 5.4.1, “Procedures” when licensee personnel failed to specify adequate entry conditions in the station Abnormal Operating Procedure

(AOP) that would be utilized to monitor and mitigate a frazil icing event at the lake screen house. Specifically, the licensee had established the entry condition of (Lake Temperature = 32 °F) without adequately considering the resources available to the control room operators and supervisors and without accounting for the necessary margin. The licensee entered this issue into their Corrective Action Program as Issue Reports (IRs) 1613506, and 1617385. Corrective action consisted of changing the entry conditions based specifically upon essential service water temperature with margin to account of uncertainty and heat input. The inspectors determined that the performance deficiency was more than minor because it was associated with the Procedural Quality attribute of the Mitigating System cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, failure to establish and maintain adequate entry conditions into this station AOP could result in additional time for ice to accumulate on plant components before mitigating actions would be initiated. Any delay in mitigating this type of event could increase the likelihood of a loss or partial loss of essential service water event or other type of transient (e.g., loss of instrument air, and reactor trip). A detailed risk evaluation was performed by an NRC Regional Senior Risk Analysis and the significance of this finding was determined to be of very low safety significance (Green). This finding did not have an associated cross cutting aspect because the inspectors determined that the most significant cause of the error was when the entry criteria was established in November 2010 and, therefore, not indicative of recent performance.

Inspection Report# : 2014002 *(pdf)*

Significance: G Mar 31, 2014
Identified By: NRC
Item Type: FIN Finding
FAILURE TO ENSURE MITIGATING SYSTEM AVAILABILITY AND RELIABILITY DURING WEATHER CONDITIONS THAT COULD PROMOTE FRAZIL ICE AT THE LAKE SCREEN HOUSE
The inspectors identified a finding of very low safety significance when licensee personnel failed to ensure that the LSH trash rake would be capable of clearing ice buildup on the trash rake bars. Specifically, the licensee failed to ensure that the trash rake system was functional prior to the onset of weather conditions that could promote frazil ice production and after a repair following a trash rake failure during those conditions. The licensee entered this issue into their CAP as IR 1613767, “LSH Trash Rake Will Not Traverse on Rails.” The licensee corrected this issue by utilizing a vendor to re-furbish and repair the trash rake. Additionally, the licensee revised their procedures to include additional methods to clear ice from the trash bars. The inspectors determined that the performance deficiency was more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the failure to have any mitigating systems available during weather conditions that could promote frazil icing of the lake intake increased the likelihood of a plant transient including a loss of essential service water event. A detailed risk evaluation was performed by an NRC Regional SRA and the finding was determined to be of very low safety significance (Green). This finding had a cross cutting aspect in the Restoration component of the Problem Identification and Resolution cross-cutting area because the organization failed to take effective corrective action to address a non-functioning LSH trash rake in a timely manner commensurate with safety after restoring the equipment to Operations for use during weather conditions that could promote frazil icing conditions.
Inspection Report# : 2014002 *(pdf)*

Significance: G Mar 31, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO IDENTIFY FIRE DOORS THAT DO NOT CONFORM TO NFPA CODES AND STANDARDS

The inspectors identified a finding of very low safety significance and an associated NCV of Braidwood Operating License Condition 2.E, "Fire Protection Program," when licensee personnel failed to identify fire doors that did not conform to the current licensing basis standard within the National Fire Protection Agency (NFPA) 80 Code that required fire doors to automatically shut and latch without assistance. Specifically, station personnel were not adequately performing a daily fire door testing procedure and, as a result, failed to identify a number of fire doors that were not conforming to the standard. As a result, IRs were not generated when degraded conditions existed. The licensee entered this issue into their CAP as IR 1629689, "Unclear Direction in 0BwOS FP.7.2.D-1." Corrective actions included training plant operators on the expectations regarding generation of IRs for any abnormal condition in the plant, and requiring the use of a copy of the surveillance procedure in the field while completing the daily fire door surveillance. The inspectors determined that the performance deficiency was more than minor because it is associated with the Protection Against External Factors attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, licensee personnel did not identify a number of fire doors that were not capable of closing and latching without assistance, which impacted the door's ability to perform its design function. Using IMC 0609, Appendix F, Attachment 1, "Fire Protection Significance Determination Process Worksheet," the inspectors determined that the finding category was "Fire Confinement," and that the finding did not impact the ability of the plant to achieve safe shutdown. As a result, the finding screened as having very low safety significance (Green). This finding had a cross cutting aspect in the Procedure Adherence component of the Human Performance cross-cutting area because licensee personnel did not follow procedures, processes and work instructions. Specifically, the licensee did not have the fire door testing procedure in hand while performing the surveillance and did not follow the procedure steps.

Inspection Report# : 2014002 *(pdf)*

Significance: N/A Dec 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO MAINTAIN ACCURATE OPERATOR LOGS
The inspectors identified a Severity Level IV NCV of 10 CFR 50.9(a), "Completeness and Accuracy of Information," when licensee personnel failed to provide complete and accurate operator logs of record. Specifically, operator log entries of record on May 9, 2013, did not accurately document entry into and exit from Limiting Condition for Operation (LCO) 3.0.3. Initial corrective actions included additional late log entries and issuance of Operations Standing Order 13 10, "Corrections to Electronic Log Entries," which provided interim guidance to operators regarding how to make revisions to electronic log entries. The Operations Director also initiated discussions with the fleet Operations Director peer group to determine how to incorporate guidance on revising electronic logs into procedure OP AA 111 101, "Operating Narrative Logs and Records." The licensee entered this issue into their Corrective Action Program (CAP) as Issue Report (IR) 1519660, "Lack of Details in Log Entries." In consultation with regional enforcement staff, the inspectors determined that the issue was more than minor because operator logs of record are material documents to the NRC, in that inspection activities are planned and conducted based, in part, on the review of operator logs and the presumption of their accuracy. In determining the significance of the violation, the inspectors referenced the examples of violations in Section 6.9, "Inaccurate and Incomplete Information or Failure to a Make a Required Report," of the NRC Enforcement Policy. Because the issue was determined to be more than minor, but did not meet the threshold of the examples of Severity Level I, II, or III violations, the inspectors determined this issue was a Severity Level IV violation. Because a more than minor Reactor Oversight Process finding was not identified, there was no cross cutting aspect associated with this violation.

Inspection Report# : 2013005 *(pdf)*

Barrier Integrity

Emergency Preparedness

Significance: G Sep 30, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
INADEQUATE EVACUATION TIME ESTIMATE SUBMITTALS
The NRC identified a finding of very low safety significance and an associated NCV of 10 CFR 50.54(q)(2) related to 10 CFR 50.47(b)(10) and 10 CFR Part 50, Appendix E, Section IV.4, for failing to maintain the effectiveness of the Braidwood Station Emergency Plan as a result of failing to provide the station Evacuation Time Estimate (ETE) to the responsible offsite response organizations by the required due date. Exelon submitted the Braidwood Station ETE to the NRC on December 12, 2012, prior to the required due date of December 22, 2012. However, an NRC review found the ETE to be incomplete due to Exelon fleet common and site-specific deficiencies, thereby preventing Exelon from providing the ETE to responsible offsite response organizations 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. Subsequently, the NRC again found the ETE to be incomplete. Exelon's failure to submit a complete updated ETE for Braidwood Station by December 22, 2012, was a licensee performance deficiency because the issue was a failure to comply with a regulatory requirement and the issue was reasonably within the licensee's ability to foresee and correct, and therefore should have been prevented. The inspectors determined the performance deficiency was more than minor because it was associated with the Emergency Preparedness cornerstone attribute of Procedure Quality and adversely affected the cornerstone objective of ensuring that the licensee was capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The finding was 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 entered this issue into their CAP and re-submitted a new revision of the Braidwood Station ETE to the NRC on May 2, 2014. The inspectors concluded that this finding had a cross-cutting aspect in the Documentation component of the Human Performance cross-cutting area (H.7).

Inspection Report# : 2014004 *(pdf)*

Significance: N/A Dec 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO SUBMIT A REPORT REQUIRED BY 10 CFR 50.72(b)(3)(xiii)
The inspectors identified a Severity Level IV NCV of 10 CFR 50.72(b)(3)(xiii) when licensee personnel failed to submit a report required by 10 CFR 50.72 for a loss of emergency assessment capability when an unplanned degradation was identified associated with the Technical Support Center (TSC) ventilation filtered make-up train. Specifically, the discharge damper for the TSC ventilation filtered make up fan was found unexpectedly closed, which adversely impacted the ability to supply filtered air to the TSC absent implementation of compensatory actions. Corrective actions included making the required Event Report on January 14, 2014. The licensee entered this issue into their CAP as IR 1598598, "Wording Differences Between NUREG-1022 and Reportability Manual," and IR 1608133, "ENS [Event Notification System] Call Made Due to TSC Ventilation Impact in October 2013." The inspectors determined that this issue had the potential to impact the regulatory process based, in part, on the generic communications input that 10 CFR 50.72 reports serve. Since the issue impacted the regulatory process, it was dispositioned through the traditional enforcement process. The inspectors determined that this issue was a Severity Level IV violation based upon Example 6.d.9 in the NRC Enforcement Policy. Example 6.d.9 specifically stated, "The

licensee fails to make a report requirement by 10 CFR 50.72 or 10 CFR 50.73." Because a more than minor Reactor Oversight Process finding was not identified, there was no cross cutting aspect associated with this violation.
Inspection Report# : 2013005 *(pdf)*

Occupational Radiation Safety

Significance: G Dec 31, 2013
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
FAILURE TO FOLLOW PROCEDURE AND TECHNICAL SPECIFICATION ASSOCIATED WITH CONTROL FOR HIGH AND LOCKED HIGH RADIATION AREAS
The inspectors identified a self revealed finding of very low safety significance and an associated NCV of Technical Specification 5.7.1 when licensee personnel failed to adequately monitor and provide positive control over activities within a high radiation area that was greater than 100 millirem per hour (mrem/hr) but less than or equal to 1000 mrem/hr from a radiation source which was created during the cycling of valve 1RH8701B inside the missile barrier in containment. A slug of material dislodged from the valve and was transported to a location that resulted in localized elevated dose rates where an individual was performing work. As an immediate corrective action, the licensee instituted appropriate radiation protection controls and initiated an Apparent Cause Evaluation (ACE) to review the event in more detail. The licensee entered this issue into their CAP as IR 1559430, "ED [Electronic Dosimeter] Dose Rate Alarm Received." The performance deficiency was more than minor because, if left uncorrected, it would have the potential to lead to a more significant safety concern. Specifically, not evaluating the radiological impact of the slug of radioactive material being transported to an area where a worker was performing work caused the worker to receive unnecessary and unplanned exposure to radiation that if left uncorrected could lead to a more significant safety concern in that a worker could receive a much higher dose under different circumstances. The inspectors determined that the finding was of very low safety significance (Green) using IMC 0609, Appendix C. This finding had a cross-cutting aspect in the Work Practices component of the Human Performance cross-cutting area because licensee personnel failed to validate and communicate the changing dose rates of the work area after Operations personnel performed work that affected the dose rates in the work area (H.4(a)).
Inspection Report# : 2013005 *(pdf)*

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

Last modified : November 26, 2014