

Braidwood 2

4Q/2011 Plant Inspection Findings

Initiating Events

Significance:  Sep 30, 2011

Identified By: NRC

Item Type: FIN Finding

FAILURE TO ADHERE TO STANDARDS OF OUTDOOR SECURED MATERIAL ZONES

The inspectors identified a finding of very low safety significance when licensee personnel failed to adhere to station housekeeping procedures to ensure materials that could become missile hazards during high winds or tornado conditions were not stored in the vicinity of the station's offsite power transformers. Specifically, the licensee failed to remove or secure three boards and a tarp within the secured material zone that were intended for work scheduled the next day. No violation of regulatory requirements was identified. The licensee entered this issue into their corrective action program as Issue Report (IR) 1243186 and IR 1246870. Corrective actions included plans to brief licensee staff and supervisors on the procedural requirements to ensure materials that could become missile hazards during high winds or tornado conditions were not stored in the vicinity of the station's offsite power transformers, a daily walkdown of outdoor areas to identify inappropriately stored material, reduction in the size of the secured material zone to credit buildings as a barrier, and painting to identify the boundaries of the secured material zone. The performance deficiency was determined to be more than minor because it was associated with the Human Performance attribute of the Initiating Events Cornerstone and adversely affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, controls prescribed by station procedures to limit the likelihood of losing offsite power during adverse weather conditions were not adhered to by station personnel. 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. Specifically, the inspectors answered 'No' to all of the Transient Initiator questions in IMC 0609.04, Table 4a, and therefore the finding screened as having very low safety significance (Green). This finding had a cross cutting aspect in the Work Practices component of the Human Performance cross cutting area [H.4(c)] since the licensee failed to provide supervisory and management oversight of work activities to ensure that nuclear safety was supported.

Inspection Report# : [2011004](#) (*pdf*)

Significance:  Jun 30, 2011

Identified By: NRC

Item Type: FIN Finding

FAILURE TO FOLLOW PROCEDURAL STANDARDS RELATED TO THE STORAGE OF OUTSIDE MATERIAL THAT COULD IMPACT OFSITE POWER AVAILABILITY

The inspectors identified a finding of very low safety significance when licensee personnel failed to adhere to housekeeping and severe weather abnormal operating procedures to ensure specified materials were not stored in the vicinity of the station offsite power transformers. The licensee had implemented these standards to reduce the possibility of material impacting offsite power during severe weather conditions, such as high winds. Corrective actions included the immediate removal of the material from the prohibited areas, reinforcement of the procedural standards to the licensee's staff, and entering the issue into the corrective action program as Issue Reports (IRs) 1221226 and 1221435. The inspectors determined that the failure to adhere to procedural standards was a performance deficiency. This issue was determined to be more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," because it was associated with the Human Performance attribute of the Initiating Events Cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, Attachment 4, "Phase 1 - Initial Screening and Characterization of Findings." Using IMC 0609, Attachment 4, and because this finding was associated with the

Transient Initiator area of the Initiating Events Cornerstone and did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available, the finding was determined to be of very low safety significance (Green). The inspectors determined that this finding had a cross cutting aspect in the Work Practices component of the Human Performance cross cutting area (H.4(c)) because the licensee did not ensure adequate supervisory and management oversight of work activities such that nuclear safety was supported.
Inspection Report# : [2011003](#) (pdf)

Mitigating Systems

Significance:  Dec 31, 2011

Identified By: NRC

Item Type: FIN Finding

OPERABILITY EVALUATION NOT PERFORMED IN ACCORDANCE WITH STATION STANDARDS

The inspectors identified a finding of very low safety significance when licensee personnel failed to adhere to Operability Determination Process standards after identifying a non-conservative assumption related to closure times for hazard barrier dampers separating the Turbine Building from various safety-related rooms within the Auxiliary Building. In particular, the issues raised by the inspectors during their review of Operability Evaluation 11-006, Revision 1, resulted in the station re-evaluating the non-conservative assumptions against aspects of the Current Licensing Basis (CLB) not previously considered, and substantially revising Operability Evaluation 11-006, Revision 1. The licensee entered these issues into their CAP as IR 1185016, IR 1199223, IR 1237395, IR 1237140, IR 1242942, IR 1246918, IR 1276888, IR 1277627, and IR 1279543. In addition to revising Operability Evaluation 2011-006, Revision 1, corrective actions included an assignment to reconstitute design basis calculation records and plans to re-design the hazard barrier dampers. This finding did not involve enforcement action because no regulatory requirement was violated. The finding was determined to be more than minor because it 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). The inspectors determined that 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 Systems Cornerstone. The inspectors answered "No" to all of the Mitigating Systems Cornerstone questions in Table 4a of IMC 0609.04, and, as a result, the finding screened as having very low safety significance (Green). This finding had a cross cutting aspect in the Corrective Action Program component of the Problem Identification and Resolution cross-cutting area [P.1(c)] because the licensee failed to thoroughly evaluate the impact on operability of a non-conforming condition associated with hazard barrier damper closure times.

Inspection Report# : [2011005](#) (pdf)

Significance:  Dec 31, 2011

Identified By: NRC

Item Type: FIN Finding

FAILURE TO ADHERE TO MAINTENANCE RULE IMPLEMENTATION PROCEDURES

The inspectors identified a finding of very low safety significance when licensee personnel failed to adhere to licensee procedure ER AA 310, "Implementation of the Maintenance Rule." Specifically, procedural requirements for the use of operator restoration actions to credit availability of auxiliary feedwater, main steam dump valves, or emergency diesel generator ventilation during certain surveillances were not met. The licensee entered this issue into their CAP as IR 1249723, IR 1251652, IR 1291692, IR 1293440, and IR 1293998. Immediate corrective actions included a review of all risk management actions and implementation of new Operations Standing Order requirements to enhance discussions of risk management actions and to formally log dedicated operator assignments. The licensee was also improving the method of documenting and using restoration actions such that the actions would be more formally documented and referenced in controlled procedures. This finding did not involve enforcement action because no regulatory requirement was violated.

The finding was determined to be more than minor because it was associated with the Procedure Quality 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). 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 Systems Cornerstone. The inspectors answered 'No' to all of the Mitigating Systems Cornerstone questions in Table 4a of IMC 0609.04 and, as a result, the finding screened as having very low safety significance. This finding had a cross cutting aspect in the Resources component of the Human Performance cross cutting area [H.2(c)] because the documented restoration actions for several surveillances were not in accordance with licensee procedures or industry generic guidance.

Inspection Report# : [2011005](#) (pdf)

Significance:  Dec 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW AND ESTABLISH ADEQUATE HAZARD BARRIER IMPAIRMENT PROCEDURES

The inspectors identified a finding of very low safety significance (Green) and an associated NCV of 10 CFR 50.65(a) (4), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," when the licensee's process for the control of hazard barriers failed to manage the risk of temporarily impairing barriers under certain circumstances. Specifically, the licensee's Risk Management and Plant Barrier Impairment (PBI) Processes provided generic approval for the impairment of a hazard barrier door function to permit movement of heavy equipment through the door provided the duration was less than 30 minutes and the door was not blocked open. The inspector's were concerned that this would not restrict activities in which the equipment being moved would prevent the door from closing and providing its hazard barrier function during the 30 minute time frame. The licensee communicated to the inspector's that the 30 minutes had no regulatory basis, but was used, in part, because it was reasonable. In addition to this example, the inspectors identified two examples in which licensee personnel failed to adhere to the station's PBI Program, which adversely affected the station's ability to manage risk. The licensee entered this issue into their CAP as IR 1282782 and IR 1307401. As a result of the inspectors' observations, the licensee revised procedure BwAP 1110 03, "Plant Barrier Impairment Program," to include additional guidance on the control of hazard barriers. The licensee was also considering whether additional training of personnel on the control of hazard barriers was warranted.

The finding was determined to be more than minor because it 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). The inspectors determined that 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 Systems Cornerstone. The inspectors answered 'No' to all of the Mitigating Systems Cornerstone questions in Table 4a and, as a result, the finding screened as having very low safety significance. This finding had a cross cutting aspect in the Corrective Action Program component of the Problem Identification and Resolution cross cutting area [P.2(b)] since licensee personnel failed to adequately utilize operating experience (i.e., Regulatory Information Summary 2001 009, "Control of Hazard Barriers") to ensure that station procedures provided adequate controls for effectively managing risk when hazard barrier doors could be impaired during activities to facilitate maintenance.

Inspection Report# : [2011005](#) (pdf)

Significance:  Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO CONTROL HIGH ENERGY LINE BREAK BARRIER DOORS

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 ensure that Unit 1 and Unit 2 boundary doors credited as shut in design basis High Energy Line Break (HELB) room heat-up calculations were effectively controlled in station procedures. Specifically, doors separating divisions for the Unit 1 and Unit 2 Engineered Safety Feature (ESF) Switchgear Rooms and Miscellaneous Electrical Equipment Rooms (MEERs) were not considered HELB boundaries in the station's Plant Barrier Impairment (PBI) procedure as required. Therefore, these doors could

have been impaired for various reasons (e.g., maintenance) without the licensee ensuring that regulatory requirements were maintained, including those contained in the Technical Specifications (TSs) and 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." The licensee entered this issue into their corrective action program as IR 1242942. Corrective actions included a revision to the station's PBI procedure to ensure that these barrier doors were considered HELB boundaries. The performance deficiency was determined to be more than minor because it was associated with the Protection Against External Events 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, if these doors had been impaired during a design basis turbine building HELB event with an active single failure of a HELB isolation damper, both electrical divisions in the ESF Switchgear Rooms or MEERs could have been adversely affected by the harsh steam environment. 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 Systems Cornerstone. Specifically, the inspectors answered 'No' to all of the Mitigating Systems Cornerstone questions in Table 4a of IMC 0609.04 and, as a result, the finding screened as having very low safety significance (Green). Due to the age of this issue, it was not reflective of current licensee performance and therefore the inspectors did not assign a cross-cutting aspect to this finding.

Inspection Report# : [2011004](#) (pdf)

Significance:  Sep 30, 2011

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

ASIATIC CLAMS IDENTIFIED IN THE ESSENTIAL SERVICE WATER SYSTEM SUPPLY TO THE AUXILIARY FEEDWATER SYSTEM

A finding of very low safety significance and an associated NCV of TS 3.7.5, "Auxiliary Feedwater (AF) System," was self-revealed when, on various occasions between March and July 2011, asiatic clam shells were identified in the 2A AF essential service water (SX) suction piping. Specifically, the asiatic clam shells in the 2A AF pump SX suction piping were of sufficient size to interfere with flow through the downstream steam generator flow control valves, which rendered the 2A AF pump inoperable for greater than the 72 hour Allowed Outage Time (AOT) prescribed in TS 3.7.5. This condition was determined to likely have existed since the late 1990's. The licensee entered this issue into their corrective action program as IR 1213669. Corrective actions included the removal of the clam shells from the 2A AF pump SX suction piping and completion of both an apparent cause and root cause evaluation. The performance deficiency was determined to be 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). 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 Systems Cornerstone. The inspectors answered 'Yes' to the screening question, "Does the finding represent [an] actual loss of safety function of a single Train for > [greater than] its TS Allowed Outage Time?" since the inoperability of the 2A AF pump due to clam shells in the SX suction piping could have been present for at least one year. Therefore, a Phase 2 SDP evaluation was required using IMC 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At Power Situations." Since the dominant risk was associated with external events, a Phase 3 analysis was required in order to estimate the risk significance of the issue. Therefore, a Region III Senior Reactor Analyst (SRA) performed a Phase 3 SDP evaluation of the finding. Based on the Phase 3 analysis, the finding was determined to be of very low safety significance (Green). This finding had a cross cutting aspect in the Corrective Action Program component of the Problem Identification and Resolution cross cutting area [P.1(c)] since the licensee failed to thoroughly evaluate the identification of asiatic clam shells in the 2A AF SX suction piping in March 2011 and May 2011 and, as a result, implemented corrective actions that were inadequate.

Inspection Report# : [2011004](#) (pdf)

Significance: SL-IV Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

MODIFICATION OF THE AUXILIARY FEEDWATER SYSTEM WITHOUT PRIOR NRC APPROVAL

The inspectors identified a Severity Level IV NCV of 10 CFR 50.59, "Changes, Tests, and Experiments," when licensee personnel failed to obtain a license amendment prior to implementing a proposed change to the plant that resulted in a more than minimal increase in the likelihood of occurrence of a malfunction of a structure, system or component important to safety previously evaluated in the Updated Final Safety Analysis Report (UFSAR). Specifically, the licensee performed a modification to the facility that permitted the Unit 1 and Unit 2 "A" AF trains to be shared between units and the 10 CFR 50.59 evaluation that was performed reached the erroneous conclusion that prior NRC approval was not required. The licensee entered this issue into the corrective action program as IR 1258017 and planned to submit a License Amendment Request (LAR) to the NRC for this design change. The violation was determined to be more than minor because the inspectors determined that the change required prior NRC approval. Violations of 10 CFR 50.59 are dispositioned using the traditional enforcement process because they are considered to be violations that potentially impede or impact the regulatory process. In accordance with Section 6.1.d.2 of the NRC Enforcement Policy, this violation is categorized as Severity Level IV because the resulting changes were evaluated by the SDP as having very low safety significance.

The associated Performance Deficiency is tracked as item 2011-004-07.

Inspection Report# : [2011004](#) (pdf)

Significance:  Sep 30, 2011

Identified By: NRC

Item Type: FIN Finding

MODIFICATION OF THE AUXILIARY FEEDWATER SYSTEM WITHOUT PRIOR NRC APPROVAL

The inspectors identified a finding of very low safety significance when licensee personnel failed to obtain a license amendment prior to implementing a proposed change to the plant that resulted in a more than minimal increase in the likelihood of occurrence of a malfunction of a structure, system or component important to safety previously evaluated in the Updated Final Safety Analysis Report (UFSAR). Specifically, the licensee performed a modification to the facility that permitted the Unit 1 and Unit 2 "A" AF trains to be shared between units and the 10 CFR 50.59 evaluation that was performed reached the erroneous conclusion that prior NRC approval was not required. The licensee entered this issue into the corrective action program as IR 1258017 and planned to submit a License Amendment Request (LAR) to the NRC for this design change. The violation was determined to be more than minor because the inspectors determined that the change required prior NRC approval. The underlying technical issue was evaluated through the SDP to determine the severity of the violation. In this case, 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 Systems Cornerstone. Specifically, the inspectors answered "Yes" to Question 1 of the Mitigating Systems Cornerstone column of the Phase 1 worksheet because the inspectors concluded that this was a change confirmed not to result in the loss of operability. Based upon this Phase 1 screening, the inspectors concluded that the issue was of very low safety significance (Green). This finding had a cross-cutting aspect in the Operating Experience component of the Problem Identification and Resolution (PI&R) cross-cutting area [P.2.(b)] because the licensee failed to make adequate use of known industry operating experience in the screening of a modification prior to installation.

The associated Traditional Enforcement Item is tracked as item 2011-004-06.

Inspection Report# : [2011004](#) (pdf)

Significance:  Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW MAINTENANCE RULE PROCEDURE

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 adhere to licensee procedure ER AA 310, "Implementation of the Maintenance Rule." Specifically, the licensee failed to adhere to the requirements of procedure ER AA 310 when crediting availability of the Unit 1 and Unit 2 'B' train AF pumps by not having documented restoration actions (i.e. Risk Management Actions (RMAs)) during quarterly in service testing surveillances that involved the manual cycling of cooling water valves. The licensee entered the issue into the corrective action program as IR 1251652 and took immediate corrective actions to revise the applicable portion of the

Excel spreadsheet that documented restoration actions. The licensee was also considering a more robust process for the documentation of restoration actions to credit equipment availability. The performance deficiency was determined to be more than minor because it was associated with the Procedure Quality attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of system that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, procedural requirements to credit the availability of the 'B' train AF pumps were not met. 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 Systems Cornerstone. The inspectors answered 'No' to all of the Mitigating Systems Cornerstone questions in Table 4a of IMC 0609.04 and, as a result, the finding screened as having very low safety significance (Green). This finding had a cross cutting aspect in the Work Control component of the Human Performance cross cutting area [H.2(c)] since during performance of the 1B and 2B AF pump surveillances that involved the manual cycling of cooling water valves, the licensee did not have complete and accurate documentation related to the implementation of RMAs for these surveillances.

Inspection Report# : [2011004](#) (pdf)

Significance:  Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

DESIGN OF AUXILIARY FEEDWATER SYSTEM INCLUDED VOIDS IN SAFETY-RELATED ALTERNATE SUCTION FLOWPATHS

The inspectors identified a finding of very low safety significance (Green) and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," when licensee personnel failed to properly analyze the configuration of the SX connections to the AF pumps. Specifically, a section of the piping was intentionally maintained empty (voided), but was not previously analyzed. This condition existed since initial plant construction. The issue was entered into the licensee's corrective action program as IR 1173517. Additionally, the licensee filled the voided sections of pipe, restoring compliance with the licensed design basis. The performance deficiency 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 (i.e., core damage). Specifically, the unverified configuration might have rendered each of the AF pumps inoperable. 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 Systems Cornerstone. Specifically, the inspectors answered 'Yes' to Question 1 of the Mitigating Systems Cornerstone column of the Phase 1 worksheet because the inspectors concluded that this finding was confirmed not to result in a loss of operability. This conclusion was reached after reviewing tests performed by the licensee. The tests demonstrated there was reasonable assurance that the AF system would perform its safety function in the installed configuration. Based on this Phase 1 screening, the inspectors concluded that the issue was of very low safety significance (Green). Due to the age of this issue, the inspectors did not identify a cross cutting aspect associated with this finding because it was not indicative of current licensee performance.

Inspection Report# : [2011004](#) (pdf)

Significance:  Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Embedment Plate Design Deficiencies

The inspectors identified a finding of very low safety significance (Green) and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to properly evaluate the structural steel embedment plate which supports Safety Injection (SI) pipe supports 1SI06025V and 1SI06030S. Specifically, the licensee failed to demonstrate compliance with the American Institute of Steel Construction (AISC) and Seismic Category I linear elastic requirements. The licensee entered this issue into their corrective action program and planned calculation revisions and modifications as needed to restore design margins.

The finding was determined to be more than minor because the finding was associated with the Mitigating Systems cornerstone attribute of design control and affected the cornerstone objective of the availability, reliability, and capability of the SI piping and pipe supports. Specifically, the licensee used the actual material yield stress to ensure the structural steel embedment plate would maintain structural integrity when subjected to design loads. This is contrary to the AISC and Seismic Category I linear elastic requirements to use the specified minimum yield stress of the material. The inspectors determined that the finding was of very low safety significance because the finding did not result in loss of operability or functionality. The inspectors did not identify a cross-cutting aspect associated with this finding because it was associated with a calculation from the 1980s and was not reflective of current performance. (Section 1R17.2.b.(1))

Inspection Report# : [2011008](#) (pdf)

Significance:  Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Permanent Lead Shielding Added to Safety Injection and Chemical Volume and Control System Piping.

The inspectors identified a finding of very low safety significance (Green) and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to properly evaluate the Unit 1 SI subsystem 1SI06 and the Unit 1 Chemical Volume and Control System (CVCS) subsystem 1CV18 piping and pipe supports. Specifically, the licensee failed to demonstrate compliance with the AISC and the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code for the 1SI06 and 1CV18 piping and pipe supports. The licensee entered this

issue into their corrective action program and planned calculation revisions and modifications as needed to restore design margins.

The finding was determined to be more than minor because the finding was associated with the Mitigating Systems cornerstone attribute of design control and affected the cornerstone objective of the availability, reliability, and capability of SI piping and pipe supports and CVCS piping and pipe supports. Specifically, the licensee did not perform an analysis to ensure compliance with AISC and ASME Section III requirements with the addition of permanent lead shielding to ensure the 1SI06 and 1CV18 piping and pipe supports would maintain structural integrity when subjected to design basis loads. The inspectors determined that the underlying finding was of very low safety significance because the finding did not result in loss of operability or functionality. The inspectors did not identify a cross-cutting aspect associated with this finding because this was a calculational deficiency that did not occur within the past three years and was not reflective of current performance. (Section 1R17.2.b.(2))

Inspection Report# : [2011008](#) (pdf)

Significance:  Jun 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PERFORM POST VT-3 EXAMINATION ILLUMINATION VERIFICATION IN ACCORDANCE WITH ASME CODE

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 50.55a(g)4 when a licensee vendor examiner failed to perform VT 3 visual examinations in accordance with the American Society of Mechanical Engineers (ASME) Code. Specifically the examiner failed to verify the adequacy of illumination following a snubber VT 3 examination. The licensee entered this issue into the corrective action program as IR 1208643 and, following an extent of condition evaluation, re-performed 18 VT-3 visual examinations. The inspectors determined that the licensee examiner's failure to verify the adequacy of the illumination level following the examination of a snubber was a performance deficiency. This issue was determined to be more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," because it was associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone and 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). Absent NRC identification, the licensee would not have performed the ASME Code-required examinations for a number of components, which could have allowed a rejectable condition to go undetected. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 4, "Phase I Initial Screening and Characterization of Findings," Table 4a for the Mitigating Systems Cornerstone and answered "No" to the Mitigating Systems Cornerstone questions. Specifically,

the issue did not result in the actual loss of the operability or functionality of a safety system. Therefore, the finding screened as having very low safety significance (Green). This finding had a cross cutting aspect in the Work Practices component of the Human Performance cross-cutting area (H.4(b)) because the licensee did not effectively communicate expectations regarding procedural compliance and licensee personnel did not follow procedures. Inspection Report# : [2011003](#) (pdf)

Significance:  Jun 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ENSURE THAT THE DESIGN OF THE AUXILIARY FEEDWATER SUCTION PIPING WAS ADEQUATE TO PREVENT AIR ENTRAINMENT FOLLOWING A SEISMIC OR TORNADO EVENT

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 analyze whether the design of the auxiliary feedwater (AF) system ensured that air entrained into the system following a postulated seismic or tornado event did not prevent the system from performing its safety function. Specifically, licensee personnel failed to evaluate the failure of non-seismically qualified condensate storage tank suction piping during an earthquake or tornado that would cause the operating auxiliary feedwater pumps to draw air from the break location, potentially air-binding the pumps. The licensee entered this issue into their corrective action program as 1202772 to identify any required changes to the design of the system and performed an operability evaluation. The inspectors determined that the failure to analyze whether air entrained into the AF system following a postulated seismic or tornado event would prevent the system from performing its safety function was a performance deficiency. This issue was determined to be more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," because it was associated with the Protection Against External Events attribute of the Mitigating Systems Cornerstone and 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). The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 4, "Phase I Initial Screening and Characterization of Findings," Table 4a for the Mitigating Systems Cornerstone and answered "No" to the Mitigating Systems Cornerstone questions. Specifically, the issue did not result in the actual loss of the operability or functionality of a safety system. Therefore, the finding screened as having very low safety significance (Green). The inspectors determined that there was no cross-cutting aspect associated with this finding because it did not reflect current performance due to the age of the performance deficiency.

Inspection Report# : [2011003](#) (pdf)

Significance:  Jun 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE QUALITY REVIEW OF TEMPORARY CONSTRUCTED SCAFFOLDS INSTALLED THROUGHOUT THE PLANT

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," related to an inadequate quality review of temporarily constructed scaffolds installed throughout the plant. Specifically, the licensee failed to adhere to procedural requirements associated with installed temporary scaffolds prior to reaching 90 days in service. The procedural action required that the temporary scaffold be converted to a permanent scaffold or that a 10 CFR Part 50.59 evaluation be performed for the specific scaffold to ensure that the temporary scaffold did not adversely affect structures, system and components (SSCs) before reaching 90 days in service. Corrective actions included implementing the procedural requirements for the identified scaffolds and entering the issue into the corrective action program as IR 1206426. The inspectors determined that the failure to adhere to the standards of a quality procedure was a performance deficiency. This issue was determined to be more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," because the performance deficiency, if left uncorrected, would have the potential to become a more significant safety concern. Specifically, by not taking the actions prescribed by procedure, the temporary structures would not have an adequate qualification if left in the plant for greater than 90 days and may not meet all standards of the station's licensing basis. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 4, "Phase I Initial Screening and Characterization of findings," Table 4a for the Mitigating Systems Cornerstone and answered "No" to the

Mitigating Systems Cornerstone questions. Specifically, the issue did not result in the actual loss of the operability or functionality of a safety system. Therefore, the finding screened as having very low safety significance (Green). The inspectors determined that this finding had a cross cutting aspect in the Corrective Action Program component of the Problem Identification and Resolution cross-cutting area (P.1(d)) because the licensee did not take appropriate correct actions to address safety issues and adverse trends in a timely manner, commensurate with their safety significance and complexity. Specifically, the licensee did not take appropriate corrective actions to address a very similar issue identified as NRC inspection finding 05000456/2010004 01; 05000457/2010004 01, "Failure to Follow Procedures for Temporary Scaffolds."

Inspection Report# : [2011003](#) (pdf)

Significance:  Jun 30, 2011

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

INCORRECT EQUIPMENT USED DURING AN AUXILIARY FEEDWATER SUCTION PIPING FLUSH SURVEILLANCE

A finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self revealed when incorrect equipment was used during an AF suction piping flush surveillance. Specifically, the use of an incorrect and unqualified drain hose resulted in the hose rupturing and spraying water onto nearby safety related equipment, rendering the equipment inoperable until equipment tests could be performed. The licensee immediately terminated the flushing operation and entered this issue into the corrective action program as IR 1226235. The licensee also initiated a root cause evaluation to identify additional corrective actions. The inspectors determined that the use of an improper hose during an AF suction piping flush surveillance was a performance deficiency. This issue was determined to be more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," because it was associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone and 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). The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings." Using Table 2 of IMC 0609, Attachment 4, the inspectors determined that the finding affected the secondary short-term decay heat removal function of the Mitigating Systems Cornerstone. The inspectors answered "No" to all Mitigating Systems Cornerstone questions in Table 4a, "Characterization Worksheet for Initiating Events, Mitigating Systems, and Barrier Integrity Cornerstone," and, as a result, the finding was determined to be of very low safety significance (Green). The inspectors determined that this finding had a cross cutting aspect in the Work Practices component of the Human Performance cross cutting area (H.4 (a)) because when faced with the choice between two different hoses for a flushing activity, workers proceeded with the evolution in the face of uncertainty.

Inspection Report# : [2011003](#) (pdf)

Significance:  May 04, 2011

Identified By: NRC

Item Type: FIN Finding

Failure to Adequately Document and Justify Continued Operability of the Auxiliary Feedwater System.

A finding of very low safety significance was identified at the Braidwood and Byron Stations by the inspectors when licensee personnel failed to adequately document and justify continued operability of the auxiliary feedwater (AF) system. Specifically, licensee evaluations of known voids in the AF alternate source suction piping did not provide an adequate technical basis to support operability of the AF pumps during a suction swap-over scenario. Subsequently, the licensee filled the voids and a Root Cause Evaluation (RCE) was initiated under Issue Report (IR) 1194196 (Braidwood) and IR 1194324 (Byron). The RCE was initiated to determine why prior opportunities for discovery of the inadequate void acceptance basis were missed and to develop associated corrective actions.

The inspectors determined the finding was more than minor because, if left uncorrected, the failure to recognize conditions that could render equipment inoperable had the potential to lead to a more significant safety concern. Because the finding was not a design deficiency, did not result in a loss of safety function, and did not screen as potentially risk-significant due to a seismic, flooding, or severe weather initiating event, the inspectors concluded that the finding was of very low safety significance (Green). This finding was associated with a cross-cutting aspect in the Decision-Making component of the Human Performance cross-cutting area because the licensee did not use

conservative assumptions and did not verify the validity of underlying assumptions in their evaluations of the AF suction piping voids. (H.1(b)) (Section 4OA5.1.7.b)

Inspection Report# : [2011012](#) (pdf)

Significance:  May 04, 2011

Identified By: Self-Revealing

Item Type: FIN Finding

Incorrect Installation of Annunciator System Wiring.

A finding of very low safety significance was self-revealed at Braidwood Station when licensee personnel failed to properly install portions of the annunciator system circuitry in accordance with design specifications. Specifically, wiring in the annunciator system clock circuitry (the portion of the circuitry that allows annunciators to change status) was incorrectly installed, which resulted in an unexpected loss of all Braidwood Unit 2 control room annunciators on March 24, 2011. The licensee entered the issue into the corrective action program (CAP) as IR 1192465, corrected the wiring to provide the intended function, and revised procedures used to energize and de-energize the system.

The finding was determined to be more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, annunciator system redundancy was adversely affected and when the annunciator panels were de-energized, the ability of operators to identify and respond to abnormal plant conditions was degraded. Because the finding was not a design deficiency, did not result in a loss of safety function, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event, the inspectors concluded that the finding was of very low safety significance (Green). The inspectors did not identify a cross-cutting aspect associated with this finding because it was not indicative of current performance. (Section 4OA5.2.3.b)

Inspection Report# : [2011012](#) (pdf)

Significance:  Mar 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE INSTRUCTIONS FOR MEASURING ECCS VOIDS

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 the inspectors for the licensee's failure to establish instructions for measuring pipe voids detected during surveillances of the emergency core cooling systems for gas accumulation. Specifically, instructions to measure the size of gas voids detected during venting at each safety injection and residual heat removal system vent location were not provided so that the effect of the void on system operability could be evaluated. The licensee entered this issue into the corrective action system and initiated procedure revisions to provide additional guidance for recording data to size voids identified during venting operations. The performance deficiency was determined to be more than minor because if left uncorrected it would have the potential to lead a more significant safety concern. The finding screened as of very low safety significance because it was a qualification deficiency confirmed not to result in loss of operability or functionality. Specifically, a qualitative assessment of the voids detected by venting since the implementation of the licensee's resolution of GL 2008 01 established reasonable assurance that they did not represent loss of operability. The inspectors did not find an applicable cross cutting aspect which represented the underlying cause of this performance deficiency; therefore, no cross cutting aspect was not assigned.

Inspection Report# : [2011002](#) (pdf)

Barrier Integrity

Significance:  Jun 30, 2011

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE DURING REACTOR VESSEL HEAD LIFT

A finding of very low safety significance and an associated NCV of Technical Specification (TS) 5.4.1 was self revealed on April 21, 2011, when licensee personnel failed to suspend a reactor vessel head lift after it became apparent that there was a large deviation between the crane's actual load cell indication and the expected indication. Immediate corrective actions for this issue included resetting the head on the reactor vessel flange, and resolving the load cell indication issue prior to lifting the head again. The licensee also entered this issue into the corrective action program as IR 1206020. The inspectors determined that the failure to adhere to a station quality procedure was a performance deficiency. This issue was determined to be more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," because it was associated with the Human Performance attribute of the Barrier Integrity Cornerstone and affected the cornerstone objective of providing reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. The inspectors determined the finding could be evaluated in accordance with IMC 0609, "Significance Determination Process," Appendix G, "Shutdown Operations Significance Determination Process," and determined that the finding was Green since it did not require a Phase 2 or Phase 3 analysis. The inspectors determined that this finding had a cross cutting aspect in the Decision Making component of the Human Performance cross-cutting area (H.1(b)) because licensee personnel failed to use conservative assumptions in decision making after identifying a large deviation between actual and expected load cell indications during a head lift evolution. Inspection Report# : [2011003](#) (*pdf*)

Significance:  Mar 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ACCOUNT FOR VORTEXING WHEN CALCULATING THE MAXIMUM AVAILABLE TIME TO SECURE THE CONTAINMENT SPRAY ADDITIVE TANK

The inspectors identified a Non Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having a very low safety significance (Green) for the failure to account for vortexing when determining the maximum available time to secure the containment spray additive tank. Specifically, the applicable calculation assumed that nitrogen would enter the system when the tank was completely drained. The licensee entered this issue into the corrective action program and, at the time of the inspection, planned to revise the applicable calculation. The performance deficiency was determined to be more than minor because it was associated with the Containment Barrier cornerstone attribute of Structures, Systems, Components, and Barrier Performance and affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The finding screened as of very low safety significance because it was a design deficiency of the physical integrity of the reactor containment that did not: (1) affect the barrier function of the control room against smoke or a toxic atmosphere; (2) represent an actual open pathway in the physical integrity of reactor containment; and (3) involve an actual reduction in function of hydrogen igniters in the reactor containment. The inspectors determined that this finding had a cross cutting aspect in the area of Problem Identification and Resolution because the licensee did not thoroughly evaluate external operating experience. [P.2(a)] Inspection Report# : [2011002](#) (*pdf*)

Significance:  Mar 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO EVALUATE THE EFFECTS OF DYNAMIC LOADS AT THE CONTAINMENT SPRAY DISCHARGE PIPING

The inspectors identified a Non Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having a very low safety significance (Green) for the failure to evaluate the effects of dynamic loads at the containment spray discharge piping. The inspectors were concerned because portions of the containment spray discharge piping are normally voided by design and neither the structural design nor operation of the system addressed the dynamic loads that would result when the voided piping is rapidly filled following system initiation. The licensee entered this issue into the corrective action program and, at the time of the inspection, planned to review the design to ensure compliance. The performance deficiency was determined to be more than minor because it was associated with the Containment Barrier cornerstone attribute of Structures, Systems, Components, and Barrier Performance and affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The finding screened as Green because it

did not affect either core damage frequency or large early release frequency. The inspectors determined that this finding had a cross cutting aspect in the area of Problem Identification and Resolution because the licensee did not thoroughly evaluate external operating experience. [P.2(a)]

Inspection Report# : [2011002](#) (pdf)

Emergency Preparedness

Significance:  Dec 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO EVALUATE EMERGENCY COMMUNICATION SYSTEM PERFORMANCE AGAINST MAINTENANCE RULE CRITERIA

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 50.65(a)(1) when licensee personnel failed to adequately monitor the performance of nonsafety related systems and components that exceeded performance criteria against pre established goals. Specifically, inadequate tracking of failures in the Emergency Communication (CQ) system resulted in the failure to evaluate corrective actions by the Maintenance Rule Expert Panel when 10 CFR 50.65(a)(1) performance criteria were unknowingly exceeded. In addition, once the system was placed in an (a)(1) status for an unrelated reason, the Action Plan did not address all of the performance criteria that had been unknowingly exceeded. The licensee entered this issue into their CAP as IR 1251652. Immediate corrective actions included revising the (a)(1) Action Plan to address the additional failures and to determine why the previously unknown failures were not included in the maintenance rule database. The finding was determined to be more than minor because it was associated with the Facilities and Equipment attribute of the Emergency Preparedness Cornerstone and 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 inspectors determined that the finding could be evaluated using the SDP in accordance with IMC 0609, Attachment 4, "Phase 1 Initial Screening and Characterization of Findings." Because this finding was associated with the Emergency Preparedness area, further evaluation was completed using IMC 0609, Appendix B, "Emergency Preparedness Significance Determination Process." Using the examples of findings associated with Planning Standard 10 CFR 50.47(b)(6) and Planning Standard 10 CFR 50.47(b)(8), the inspectors concluded that the finding was of very low safety significance. The inspectors determined that there was no cross cutting aspect associated with this finding since none of the cross-cutting aspects in IMC 0310 were determined to be appropriate for this issue.

Inspection Report# : [2011005](#) (pdf)

Significance:  May 04, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Untimely Declaration of a Notice of Unusual Event

The inspectors identified a finding of very low safety significance (Green) and an associated non-cited violation of 10 CFR 50.54(q) at Braidwood Station after licensee personnel failed to promptly declare a Notice of Unusual Event in accordance with the Braidwood Emergency Plan. Specifically, on March 24, 2011, contrary to the Braidwood Station Radiological Emergency Plan Annex, the licensee did not declare Emergency Action Level (EAL) MU6 (Unusual Event) within 15 minutes of indications of a loss of greater than 75 percent of Unit 2 main control room annunciators. Corrective actions included implementation of Standing Order 11-007; additional training; and procedures revisions, which were all intended to clarify the function of the annunciator test push buttons in determining whether a loss of annunciators has occurred.

The finding was more than minor because it was associated with the Emergency Response Organization Performance attribute of the Emergency Preparedness cornerstone, and affected the cornerstone objective of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Using the emergency preparedness significance determination process, Sheet 2, "Actual Event Implementation Problem," the inspectors determined the finding was of very low safety significance (Green) because the licensee failed to

implement a risk significant planning standard (10 CFR 50.47(b)(4)) during an actual Notice of Unusual Event. This finding was associated with a cross-cutting aspect in the Resources component of the Human Performance cross-cutting area because the licensee did not ensure that procedures were accurate and adequate to assure nuclear safety. Specifically, when provided with sufficient evidence that the annunciators were not properly responding, licensee personnel delayed implementation of the Emergency Plan until further information was obtained. This was due to inaccurate and conflicting procedures and a lack of knowledge of the annunciator system. (H.2(c)) (Section 40A5.2.5.b)

Inspection Report# : [2011012](#) (*pdf*)

Significance: SL-IV Feb 10, 2011

Identified By: NRC

Item Type: VIO Violation

(Traditional Enforcement) Changes to EAL Basis Decreases the Effectiveness of the Plan without Prior NRC Approval (1EP4.1)

A Severity Level IV, Cited Violation of 10 CFR 50.54(q) was identified by the inspector for the licensee's change to the emergency plan which decreased the effectiveness of the plan without NRC approval. Specifically, the licensee modified the Emergency Action Level (EAL) Basis in EAL HU6, Revision 21, to delay the 15 minute classification time by the dispatching of personnel, reporting the notification of a fire from the field, and extinguishing the fire. As a result, this change indefinitely extends the start of the 15 minute emergency classification clock beyond a credible notification that a fire is occurring or indication of a valid fire detection system alarm. This change decreased the effectiveness of the emergency plan by reducing the capability to perform a risk significant planning function in a timely manner.

The violation affected the NRC's ability to perform its regulatory function because it involved implementing a change that decreased the effectiveness of the emergency plan without NRC Commission approval. Therefore, this issue was evaluated using Traditional Enforcement. The NRC determined that a Severity Level IV violation was appropriate due to the reduction of the capability to perform a risk significant planning standard function in a timely manner. The violation is cited because no corrective action had been taken to restore compliance since the issue was entered in the licensee's corrective action program in December 2009. (Section 1EP4)

The associated Performance Deficiency is tracked as item 2010503-02. Response letter received 03/30/2011, Acknowledgement letter sent back on 07/21/2011.

Inspection Report# : [2010503](#) (*pdf*)

Inspection Report# : [2011005](#) (*pdf*)

Significance:  Feb 10, 2011

Identified By: NRC

Item Type: FIN Finding

Changes Made to EAL Basis that Decreased the Effectiveness (1EP4.1)

A Green finding involving a Severity Level IV, Cited Violation of 10 CFR 50.54(q) was identified by the inspector for the licensee's change to the emergency plan which decreased the effectiveness of the plan without NRC approval. Specifically, the licensee modified the Emergency Action Level (EAL) Basis in EAL HU6, Revision 21, to delay the 15 minute classification time by the dispatching of personnel, reporting the notification of a fire from the field, and extinguishing the fire. As a result, this change indefinitely extends the start of the 15 minute emergency classification clock beyond a credible notification that a fire is occurring or indication of a valid fire detection system alarm. This change decreased the effectiveness of the emergency plan by reducing the capability to perform a risk significant planning function in a timely manner.

The performance deficiency was more than minor and of very low safety-significance using Manual Chapter (MC) 0612 and MC 0609, Appendix B, because it is associated with the emergency preparedness cornerstone attribute of procedure quality for EAL and emergency plan changes, and 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. Therefore, the performance deficiency was a finding. Using MC 0609, Appendix B, the inspector determined that the finding had a very low safety significance. The inspectors also determined that the finding had a cross-cutting aspect in the area of Human Performance, decision making because the licensee did not recognize that the change made to the EAL basis document decreased the effectiveness of the

emergency plan. (H.1.(b)) (Section 1EP4)

The associated Traditional Enforcement violation is tracked as item 2010503-01
Inspection Report# : [2010503](#) (*pdf*)

Occupational Radiation Safety

Public Radiation Safety

Significance:  Dec 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO MAINTAIN ADEQUATE CIRCULATING WATER BLOWDOWN PROCEDURE DURING LIQUID RADIOLOGICAL RELEASES

The inspectors identified a finding of very low safety significance and an associated NCV of Technical Specification 5.4.1, "Procedures," when licensee personnel failed to adequately maintain procedure BwOP CW-12, "Circulating Water Blowdown System Fill, Startup, Operations, and Shutdown." The Circulating Water Blowdown system was used during certain liquid radiological releases. Specifically, the licensee's procedure did not provide sufficient guidance to prevent the system from being operated outside analyzed limits. The potential consequence of not operating this system within the design assumptions was an unplanned and unmonitored release of radioactive material to the environment. This issue was entered into the licensee's CAP as IR 1299273. Corrective actions included the implementation of an Operations Standing Order to prohibit the operation of the Circulating Water Blowdown lineup and an assignment to formally revise the procedure.

The finding was determined to be more than minor because it was associated with the Programs and Processes attribute of the Public Radiation Safety cornerstone and adversely affected the cornerstone objective of ensuring the adequate protection of public health and safety from exposure of radioactive materials released into the public domain as a result of routine civilian nuclear reactor operations. The inspectors determined that the finding could be evaluated in accordance with IMC 0609, Appendix D, "Public Radiation Safety Significance Determination Process," since the finding was associated with the licensee's Radioactive Effluent Release program. This finding was determined to be of very low safety significance since it was not a failure to implement the effluent program and no unplanned or unmonitored release actually occurred. This finding had a cross cutting aspect in the Decision Making component of the Human Performance cross cutting area [H.1(a)] since licensee personnel failed to demonstrate that nuclear safety was an overriding priority. Specifically, licensee personnel failed to make risk significant decisions when faced with uncertain or unexpected plant conditions to ensure safety was maintained.

Inspection Report# : [2011005](#) (*pdf*)

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.

Miscellaneous

Significance: SL-IV Dec 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO SUBMIT LICENSEE EVENT REPORT PER 10 CFR 50.73(a)(2)(vii)

The inspectors identified a Severity Level IV NCV of 10 CFR 50.73(a)(2)(vii) when licensee personnel failed to report events where a single cause or condition could have caused two safety related instrument channels to become inoperable in a single system designed to shutdown the reactor and maintain it in a safe shutdown condition. Specifically, on March 8, 2011, the licensee had identified errors in the station's High Energy Line Break (HELB) calculations of record. On March 14, 2011, the licensee completed an Operability Evaluation and concluded that the equipment rollup doors for the Division 11 and Division 21 Miscellaneous Electric Equipment Rooms (MEERs) could not be opened in Modes 1 4 without declaring the safety related instrument inverters within the rooms inoperable. The licensee implemented administrative compensatory actions to prevent these doors from being opened in Modes 1 4. On April 7, 2011, the inspectors identified that the licensee did not have plans to review this issue for 10 CFR 50.73 reporting requirements. The inspectors notified the licensee that they were aware of previous instances when these doors had been opened in Modes 1 4. Following the inspectors' discussion with the licensee, the licensee initiated a CAP assignment to conduct a formal License Event Report (LER) review. The due date for this assignment was revised numerous times. The inspectors challenged the timeliness of this review based on the previous conclusions in the Operability Evaluation and the historic practice of not restricting access to these doors in any operational mode. On December 22, 2011, the licensee submitted an LER to report multiple historic events. The inspectors concluded that the licensee failed to submit the LER within 60 days of the discovery of the event on March 14, 2011, based upon a review of 10 CFR 50.73 and NUREG-1022, Revision 2. This issue was entered into the licensee's CAP as IR 1299906. Corrective actions included submitting an LER to the NRC on December 22, 2011. The inspectors determined that the failure to submit an LER in accordance with NRC regulations was a performance deficiency. Since this issue impacted the regulatory process, it was dispositioned through the TE process. The inspectors determined that this issue was a Severity Level IV violation based on a similar example referenced in Supplement I, Example D.4 of the NRC Enforcement Policy. The inspectors reviewed the technical issue related to the HELB calculation errors using the Reactor Oversight Process and documented a licensee-identified NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," which was of very low safety significance. Reactor Oversight Process cross cutting aspects do not apply to traditional enforcement issues, or licensee identified ROP findings of very low safety significance, therefore, none was identified.

Inspection Report# : [2011005](#) (pdf)

Significance: SL-IV Dec 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PERFORM ADEQUATE EVALUATIONS TO FACILITATE INDEPENDENT SPENT FUEL STORAGE INSTALLATION ACTIVITIES

The inspectors identified a Severity Level IV NCV of Title 10 of the Code of Federal Regulations (CFR) 72.146, "Design Control," when licensee personnel failed to perform adequate evaluations of the Independent Spent Fuel Storage Installation (ISFSI) pad, ISFSI components, and the effects of ISFSI loading operations on the operating plant. Specifically, the inspectors identified three examples in which licensee personnel failed to perform adequate evaluations to ensure compliance with 10 CFR 72.212(b)(5)(ii); 10 CFR 72.212(b)(8); and the Safety Analysis Report (SAR) referenced in the Holtec Certificate of Compliance (CoC). The licensee entered these issues into their Corrective Action Program (CAP) as Issue Report (IR) 1280650, IR 1278520, and IR 1245756. Corrective actions included revisions to calculations. Because this violation was related to an ISFSI license, it was dispositioned using the Traditional Enforcement (TE) process in accordance with Section 2.2 of the Enforcement Policy. The inspectors determined that the deficiency was of more than minor significance because the licensee's evaluation did not assure structural integrity of the affected components under the design basis loads, and required extensive revisions to the calculations. The inspectors determined that the issue represented a Severity Level IV violation. Reactor Oversight Process (ROP) cross cutting aspects do not apply to TE issues or licensee identified ROP findings of very low safety significance, therefore, none was identified.

Inspection Report# : [2011005](#) (pdf)

Significance: SL-IV Dec 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURES TO ENSURE MULTI PURPOSE CANISTER DESIGN BASIS PRESSURE IS NOT EXCEEDED

The inspectors identified a Severity Level IV NCV of 10 CFR 72.150, "Instructions, Procedures, and Drawings," when licensee personnel failed to adhere to procedures to ensure that the design pressure limit for the multi-purpose canister (MPC) would not be exceeded during loading operations. The licensee entered this issue into their CAP as IR 01279837, IR 01286670, and IR 01285354. The licensee imposed an ISFSI stand-down to reinforce and correct procedure use and adherence as a corrective action to restore compliance. The issue was determined to be of more than minor significance using IMC 0612, "Power Reactor Inspection Reports," Appendix E, "Examples of Minor Issues," Example 2h, in that multiple examples of a failure to follow procedures were identified. Although the violation contributed to the likelihood of the canister design pressure being exceeded, it was verified that the canister was within its design pressure. Therefore, the inspectors determined that the issue represented a Severity Level IV violation. Reactor Oversight Process cross cutting aspects do not apply to TE issues or licensee identified ROP findings of very low safety significance, therefore, none was identified.

Inspection Report# : [2011005](#) (*pdf*)

Significance: SL-IV Mar 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PROVIDE COMPLETE AND ACCURAE INFORMATION IN LER 05000457/2010-04-00

A Severity Level IV Non Cited Violation of 10 CFR 50.9 was identified by the inspectors regarding Licensee Event Report 05000457/2010 004 00, "Unplanned Limiting Condition for Operation Entry Due to Low Header Pressure on the 2B Essential Service Water Pump," which was determined to not be complete and accurate in all material aspects. Specifically, the licensee's Licensee Event Report stated that an evaluation had determined that the both units and trains of essential service water were capable of mitigating the effects of design basis events. The evaluation referenced in this statement had not been performed at the time the Licensee Event Report was submitted. The inspectors determined that this issue was a Severity Level IV violation based on a similar example referenced in NRC Enforcement Policy Supplement I, Section 6.9 "Inaccurate and Incomplete Information of Failure to Make a Required Report" example D.1 (i.e., a licensee fails to make a required report which, had it been submitted, would have resulted in, for instance, increasing the scope of the next regularly scheduled inspection). The inaccurate information was considered to be material to the NRC because it potentially affected our assessment of this LER and assessment if this station should have reported this issue under a loss of safety function. This issue was entered into the corrective action program and corrective actions included the station performing the analysis mentioned in the LER. The inspectors had previously reviewed the ROP aspect related to this finding and a self revealed violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was documented in Section 1R22 of NRC Integrated Inspection Report 05000456/2010-004-03; 05000457/2010-004-03 for this issue.

Inspection Report# : [2011002](#) (*pdf*)

Last modified : March 02, 2012