Braidwood 1
3Q/2015 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
FAILURE TO UPDATE THE UFSAR - THIMBLE TUBE INSPECTION PROGRAM
The inspectors identified a Severity Level IV NCV of Title 10 of the Code of Federal Regulations (10 CFR) 50.71(e), “Periodic Update of the Updated Final Safety Analysis Report (UFSAR),” and an associated Green finding for the licensee’s failure to update the UFSAR with a description of the Thimble Tube Inspection Program to reflect information submitted to the NRC in response to NRC Bulletin 88-09. Specifically, the licensee did not update Section 5.2.4, “Inservice Inspection and Testing of Reactor Coolant Pressure Boundary,” of the UFSAR to include the Incore Thimble Tube Inspection Program, which provided the basis for leakage integrity for this portion of the reactor coolant pressure boundary. The licensee entered this issue into their Corrective Action Program (CAP) and identified a recommended action to incorporate the Incore Thimble Tube Inspection Program into the UFSAR. The performance deficiency was determined to be more than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," dated September 7, 2012, because, if left uncorrected, the performance deficiency would have the potential to lead to a more significant safety concern. Specifically, the failure to update the UFSAR with the Thimble Tube Inspection Program could result in reductions or elimination of the program without seeking prior NRC approval and insufficient thimble tube inspections could also result in the failure to detect thimble tube wear prior to an un-isolable leak in the reactor coolant pressure boundary. Additionally, the failure to update the UFSAR was more than minor because it was associated with the Initiating Events Cornerstone attribute of Equipment Performance and adversely affected the Cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions. The finding screened as having very low safety significance (Green), because the licensee’s failure to update the UFSAR with a description of the Thimble Tube Inspection Program had not resulted in degradation of a thimble tube such that the reactor coolant system leak rate for a small break loss of coolant accident was exceeded and did not affect systems used to mitigate a loss of coolant accident. Therefore, the inspectors answered “No” to Questions A.1 and A.2, of Exhibit 1, “Initiating Events Screening Questions,” identified in Appendix A of IMC 0609 and the finding screened as having very low safety significance. Violations of 10 CFR 50.71(e) 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 Sections 6.1.c.7 and 6.1.d.3 of the NRC Enforcement Policy, this violation was categorized as Severity Level IV because the licensee’s failure to update the UFSAR as required by 10 CFR 50.71(e) had not yet resulted in an unacceptable change to the facility (e.g. thimble tube structural integrity was maintained) or procedures and the associated finding was of very low risk significance. The finding was the result of an error made in excess of 10 years ago, and thus was not indicative of current licensee performance. Therefore, no cross-cutting aspect was identified.
Inspection Report# : 2015002 *(pdf)*

Mitigating Systems

Significance: G Aug 28, 2015

Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Ensure that Circuits Associated with Pressurizer PORVs and Block Valves Were Free of Fire Damage (Section 1R05.6.b)
Green. The inspectors identified a finding of very low safety significance, and an associated NCV of the Braidwood Station facility operating license condition 2.E associated with the Fire Protection Program for the licensee's failure to ensure that the safe shutdown capability was independent of the fire area and thus free of fire damage. Specifically, in the event of a fire in the control room, cable spreading rooms, or electrical cable penetration areas the circuits associated with the Pressurizer Power Operated Relief Valve (PORV) block valves, which are relied upon to safely shutdown the plant, could be affected and may not be available due to fire-induced failures. The licensee entered this issue into their Corrective Action Program, established fire watches, and intended to perform plant modifications to correct the issue.
The inspectors determined that the issue was more than minor because fire-induced circuit failures could impair the operation of the PORV block valves and complicate shutdown of the plant in the event of a fire in the control room, cable spreading rooms, or electrical cable penetration areas. The finding affected the Mitigating Systems Cornerstone. The finding was determined to be of very low safety significance based on a detailed risk-evaluation by a Region III Senior Reactor Analyst. This finding was not associated with a cross-cutting aspect because the finding was not representative of the licensee's current performance. (Section 1R05.6.b)

Inspection Report# : 2015007 *(pdf)*

Significance: G Jun 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
MECHANIC JOINT LEAKAGE ACCEPTED FOR CONTINUED SERVICE WITHOUT CODE CORRECTIVE ACTIONS
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," for the licensee's failure to follow a procedure for completing an American Society of Mechanical Engineers (ASME) Section XI Code pressure test.
Specifically, the licensee failed to implement the required corrective actions or evaluations for evidence of leakage (boric acid deposits) identified on a containment spray (CS) system valve bolted connection prior to returning this component to service. The licensee entered this issue into their CAP and initiated actions to clarify procedures to ensure the ASME Code Section XI, Paragraph IWB-3522, requirements were implemented, and components with Code relevant conditions were corrected or evaluated prior to returning them to service. The performance deficiency was determined to be more than minor in accordance with IMC 0612, because if left uncorrected, the performance deficiency would have the potential to lead to a more significant safety concern. Specifically, the failure to adhere to procedure ER AA-330-001 was based upon the licensee's decision to return a component exhibiting evidence of boric acid leakage to service without Code corrective measures or evaluation. Additionally, this type of error could result in inservice failure of equipment. Therefore, this finding affected the Mitigating Systems Cornerstone attribute of Equipment Performance 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 finding screened as having very low safety significance (Green), because the licensee's failure to adhere to procedure ER AA-330-001 and remove valve 1CS011B from service with a Code relevant condition did not result in operation of the plant with an inoperable system or component. Therefore, the inspectors answered "Yes" to Question A.1 of Exhibit 2, "Mitigating Systems Screening Questions," identified in Appendix A of IMC 0609, and the finding screened as having very low safety significance. The inspectors identified a cross-cutting aspect associated with this finding in the area of Human Performance, Conservative Bias because the licensee staff did not use a decision-making practice that emphasized prudent choices over those that were simply allowable. Specifically, the failure to remove valve 1CS011B from service with a relevant condition was based upon the licensee's decision that this was an allowable option because the ASME Code Section XI paragraph was not clear.

Inspection Report# : 2015002 *(pdf)*

Significance: G Jun 30, 2015
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
CONTROL ROOM CHILLER INOPERABILITY DUE TO HIGH OIL CONTENT IN THE REFRIGERANT
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 on April 28, 2015, when licensee personnel failed to establish adequate procedural controls related to how much oil could be added or removed from the control room chillers without affecting its functionality. Specifically, the 0A control room ventilation (VC) chiller was declared inoperable due to high oil content in the refrigerant, which caused reduced cooling efficiency to the point of non-functionality. The licensee entered this issue in their CAP, restored the 0A VC chiller to operable status on May 1, 2015, and performed an evaluation to establish the acceptable level of oil migration to retain functionality of the VC chiller. The performance deficiency was determined to be more than minor in accordance with IMC 0612, because, it was associated with the Mitigating Systems Cornerstone attribute of Equipment Performance and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of mitigating systems to respond to initiating events to prevent undesirable consequences (i.e. core damage). The finding screened as having very low safety significance (Green), because it did not result in the loss of safety function, and did not result in an actual loss of function of at least a single train for greater than its technical specification allowed outage time. The inspectors determined that the associated finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Resolution, because the licensee staff did not implement effective corrective actions to address issues in a timely manner commensurate with their safety significance. Specifically, following three documented issues with VC chiller performance, Engineering determined that the issues were related to high oil content in the chiller refrigerant. Based on this information, corrective actions related to optimizing refrigerant/oil levels in the chiller were recommended to the Plant Health Committee, which were approved for immediate implementation. However, the actions were not appropriately incorporated into the work control process or the CAP, which led to them not being implemented in a timely manner.
Inspection Report# : 2015002 *(pdf)*

Significance: G Mar 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
FAILURE TO ENSURE THAT TEMPORARY STRUCTURES DID NOT ADVERSELY IMPACT SAFETY DURING POSTULATED PROBABLE MAXIMUM PRECIPITATION 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 establish adequate measures to ensure that temporary equipment and structures stored at the station did not create an unanalyzed condition during a probable maximum precipitation (PMP) event. Specifically, the licensee's processes did not prevent the placement and storage of temporary equipment in a manner that could result in a condition not bounded by the station's plant design that prevents rainwater from impacting safety-related equipment. This issue was entered into the licensee's Corrective Action Program (CAP) as Issue Report (IR) 2473324.
The inspectors determined that the performance deficiency was more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," 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). Specifically, the failure to ensure that credited rainwater runoff flow paths were not impeded by the storage of temporary structures resulted in the licensee not ensuring the availability, reliability, and capability of systems that would be needed to respond to an initiating event. This assessment was based upon the inspector's review of current flood barrier margins,

assumed turbine building below-grade flooding levels, the number of safety-related or risk-significant systems that could be adversely affected, and the absence of an abnormal operating procedure or any other similar procedure that could create additional margin. The inspectors determined that because the finding did not involve a confirmed loss or degradation of equipment or function specifically designed to mitigate a PMP external flooding event, the issue was of very low safety significance. The inspectors determined that the finding did not have a cross-cutting aspect because the performance deficiency was not indicative of current performance.
Inspection Report# : 2015001 *(pdf)*

Significance: G Mar 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
FAILURE TO ADEQUATELY EVALUATE OPERABILITY OF A DEGRADED CONTROL ROOM CHILLER
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 the operability determination process after identifying a degraded condition on the 0B control room chiller. This issue was entered into the licensee's CAP as IR 2435363.
The inspectors determined that the performance deficiency was 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 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 licensee did not provide an adequate basis to support 0B control room chiller availability, reliability, and capability to respond to an initiating event. The inspectors determined that the finding was of very low safety significance because all questions related to structures, systems, and components (SSCs) and functionality in the associated significance determination process (SDP) were answered "No." The finding had a cross-cutting aspect in the Design Margins component of the Human Performance cross-cutting area because the licensee failed to adequately evaluate whether the degraded oil return line in the 0B control room chiller had sufficient margin to assure operability (H.6).
Inspection Report# : 2015001 *(pdf)*

Significance: G Dec 31, 2014
Identified By: NRC
Item Type: NCV Non-Cited Violation
FAILURE TO ADEQUATELY EVALUATE OPERABILITY FOLLOWING THE DISCOVERY OF AN UNANALYZED CONDITION INVOLVING THE PROBABLE MAXIMUM PRECIPITATION EVENT
The inspectors identified a finding of very low safety significance (Green) and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," when licensee personnel failed to adhere to Operability Determination Process standards after identifying an unanalyzed condition that had the potential to adversely impact numerous safety-related systems during a probable maximum precipitation (PMP) event. The issue was entered into the Corrective Action Program (CAP) as Issue Report (IR) 2396124. Corrective actions for this issue included performing an operability evaluation. The performance deficiency was more than minor in accordance with IMC 0612, Appendix B, "Issue Screening" because the issue was associated with the Protection Against External Factors 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, the licensee evaluated an unanalyzed condition utilizing another power plant's licensing basis in a manner that was not accurate and was not adequate. The finding was of very low safety significance (Green) because the potentially impacted systems remained operable. The finding had a cross-cutting aspect of Avoid Complacency in the Human Performance area. Specifically, the licensee failed to recognize and plan for the possibility of mistakes and plant specific differences between Braidwood and Byron while using Byron's

current licensing basis to evaluate a Braidwood condition not previously analyzed (H.12).

Inspection Report# : 2014005 *(pdf)*

Significance: G Dec 31, 2014
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
FAILURE TO CORRECT UNDERSIZE ESSENTIAL SERVICE WATER PUMP BEARING CASING DRAIN LINE RESULTED IN SYSTEM INOPERABILITY
A finding of very low safety significance (Green) and an associated NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control" was self-revealed following the licensee's failure to design the 1B essential service water (SX) pump inboard bearing casing drain line in a manner that ensured pump operability. Specifically, the licensee had re-designed the 1B SX pump inboard bearing drain line by replacing a hard pipe drain with a flexible hose drain line consisting of fittings of a smaller diameter when compared to the previous hard pipe drain line. This design change resulted in unplanned 1B SX pump inoperability and required operator action to secure the pump to preclude pump damage. The licensee entered this issue into the CAP as IR 2413941. Corrective actions included restoring adequate drain flow by replacing the flexible hose drain line with a hard pipe of a larger diameter. The performance deficiency was of more than minor safety significance 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 failure to adequately design the 1B SX pump inboard bearing housing drain line resulted in an inoperable 1B SX pump. The finding was of very low safety significance (Green) because the inspector answered 'No' to all of the associated Mitigating Systems screening questions within IMC 0609, Attachment 4, "Initial Characterization of Findings." The finding is associated with the cross-cutting area of Problem Identification and Resolution with an aspect of Evaluation because the licensee did not thoroughly evaluate plant design in a manner commensurate with the safety significance. Specifically, the licensee inappropriately evaluated the design of the 1B SX pump inboard bearing housing drain line after identifying that the drain line size was the contributing cause for a loss of oil inventory in December 2013 (P.2).

Inspection Report# : 2014005 *(pdf)*

Significance: G Dec 31, 2014
Identified By: NRC
Item Type: NCV Non-Cited Violation
FAILURE TO EVALUATE IMPACT OF PROBABLE MAXIMUM PRECIPITATION EVENT ON TURBINE BUILDING FLOODING AS ASSOCIATED SAFETY-RELATED SSCs
The inspectors identified a finding of very low safety significance (Green) and an associated NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to assess the impact of plant modifications on the PMP event analysis in the plan design basis. Specifically, the licensee failed to determine if modifications to plant grading that caused higher water levels during a PMP event would adversely affect safety-related equipment. The licensee entered this issue into the CAP as IR 2413941. Corrective actions included performing an operability determination to ensure safety until a formal quality design review can be completed at a later date. The performance deficiency was more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," because the issue was associated with the Protection Against External Factors 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, the licensee failed to evaluate the design to ensure that the consequences of the licensing basis PMP would be acceptable with respect to NRC regulations. The finding was of very low safety significance (Green) because it did not result in the loss or degradation of equipment or function specifically designed

to mitigate a seismic, flooding, or severe weather initiating event. The finding had a cross-cutting aspect of Design Margins in the Human Performance area. Specifically, the licensee did not carefully guard design margins when making station grade modifications that could adversely affect safety-related equipment during a heavy rainfall event. This issue was determined to be indicative of recent performance based upon two recent major revisions to station calculation WR–BR–PF–10, Local PMP Analysis, which evaluated the acceptability of recent grade modifications at the station (H.6).
Inspection Report# : 2014005 *(pdf)*

Barrier Integrity

Emergency Preparedness

Significance: G Mar 31, 2015
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
FAILURE TO ACTIVATE THE EMERGENCY RESPONSE ORGANIZATION DURING AN ACTUAL EVENT
A self-revealed finding of very low safety significance and an associated NCV of 10 CFR 50.54(q)(2) and 10 CFR 50.47(b)(2) was identified on July 23, 2014, when after a Notice of Unusual Event was declared and the Shift Manager activated the Emergency Response Organization (ERO), several of the ERO members failed to respond as required. This issue was entered into the licensee's CAP as IR 2469494.
The inspectors determined that the performance deficiency was more than minor because it was associated with the Emergency Response Organization Readiness attribute of the Emergency Preparedness cornerstone 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. Since the finding involved a failure to comply with emergency preparedness requirements, the inspectors reviewed IMC 0609, Appendix B, Attachment 2, and determined that the finding was of very low safety significance because it involved a degraded planning standard function. The finding had a cross-cutting aspect in the Change Management component of the Human Performance cross-cutting area because the licensee did not appropriately evaluate and implement changes when the new ERO Augmentation System was implemented (H.3).
Inspection Report# : 2015001 *(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Security

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

Miscellaneous

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