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## Braidwood 2 – Quarterly Plant Inspection Findings

### 2Q/2017 – Plant Inspection Findings

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#### Initiating Events

#### Mitigating Systems

**Significance:** G Jun 30, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

#### **Failure to Adequately Implement Surveillance Frequency Program for the Deferral of a Technical Specification Surveillance**

A finding of very low safety significance and an associated NCV of Technical Specification (TS) 5.5.19.b, "Surveillance Frequency Program," were identified by the inspectors for the failure to implement the requirements contained in the surveillance frequency control program when making a change to the specified frequency of TS Surveillance Requirement (SR) 3.3.1.11. On May 3, 2017, the licensee improperly deferred a TS required surveillance through the preventive maintenance deferral process due to a belief that it was a preventive maintenance activity and not an activity supporting a TS SR. The licensee captured this issue in their corrective action program (CAP) as Issue Report (IR) 4009050 with an action to reestablish the surveillance at an 18 month frequency and to perform it before the end of the Unit 2 refueling outage (RFO) A2R19.

The performance deficiency was determined to be of more than minor safety significance because if left uncorrected it could lead to a more significant safety concern. The finding screened as being of very low safety significance (Green) because it did not result in the loss of operability or functionality of any system, structure, or component (SSC). The inspectors determined that this finding had a cross-cutting component in the area of human performance, work management aspect, because the licensee had failed to utilize a work process that included proper coordination with different groups or job activities. Specifically, licensee personnel conducting the deferral did not coordinate the activity with personnel in either the operations or regulatory assurance departments. Knowledgeable personnel in either of these station organizations could have identified that the wrong process for deferral was being utilized.

Inspection Report# : 2017002 (*pdf*)

**Significance:**  Jun 30, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

**Failure to Adequately Implement Technical Specification Surveillance Frequency Requirements into Implementing Procedures**

A finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," were identified by the inspectors for the licensee's failure to have appropriate implementing procedures for TS SR 3.9.3.2. Specifically, procedure BwIS NR 203, "Post Accident Neutron Monitoring System Discriminator Adjustment," did not provide for determining and checking the discriminator voltage for the system at an 18 month frequency, as specified by TS SR 3.9.3.2. The licensee captured this issue into their CAP as IR 4010147 with an action to revise the surveillance frequency to every 18 months for each channel.

The performance deficiency was determined to be more than minor because it impacted the procedure quality attribute of the Mitigating Systems Reactor Safety Cornerstone. The finding screened as being of very low safety significance (Green) because it did not result in the loss of operability or functionality of any SSC. The licensee performed a review of the records associated with the last three years of operation and did not find any instances in which the post accident neutron monitors (PANMs) were used to satisfy TS 3.9.3, "Nuclear Instrumentation," requirements. No cross-cutting aspect was associated with this finding because it was confirmed not to be reflective of current licensee performance due to the age of the performance deficiency.

Inspection Report# : 2017002 (*pdf*)

**Significance:**  Sep 30, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

**FAILURE TO ERECT SCAFFOLDING IN ACCORDANCE WITH STATION PROCEDURES**

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 failure to follow Revision 7 of NES-MS-04.1, "Seismic Prequalified Scaffolds." Specifically, the licensee erected four scaffolds within 3 inches of safety-related equipment and failed to account for seismic movements of safety-related equipment in close proximity to scaffolds in accordance with NES-MS-04.1. As part of their corrective actions, the licensee performed walk downs of installed scaffolds to ensure that they were in compliance with NES-MS-04.1. Additionally, the licensee performed refresher training for all personnel involved in erecting and inspecting scaffolds. This issue was entered into the licensee's CAP as IRs 2703650, 2703895, 2703967, and 2705092. The inspectors determined that the performance deficiency was more than minor because it was associated with the Mitigating Systems cornerstone attribute of Protection Against External Factors and adversely impacted 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, scaffolds built in close proximity to or in contact with safety-related equipment could adversely affect the ability of those systems to perform their intended safety function during a seismic event. The inspectors determined that this finding was of very low safety significance because it did not result in the loss of operability or functionality of a mitigating system. Specifically, an engineering evaluation reasonably determined that the failure to build the scaffolds in accordance with NES-MS-04.1 did not result in a loss of operability to safety-related equipment. The inspectors determined that this finding had a cross cutting aspect in the Human Performance area of Teamwork. Specifically, there were multiple points in the scaffold erection process to engage other workgroups to ensure the seismic qualification of scaffolds, and in every example there was no coordination with other groups to ensure nuclear safety was maintained.

Inspection Report# : 2016003 (*pdf*)

**Significance:** G Sep 30, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

**FAILURE TO FOLLOW INSERVICE TESTING REQUIREMENTS FOR THE 2A ESSENTIAL SERVICE WATER PUMP LEADS TO AN INVALID TEST**

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 failure to follow Revision 9 of Procedure 2BwOSR 5.5.8.SX-6A, "Comprehensive Inservice Testing (IST) Requirements for 2A Essential Service Water Pump (2SX01PA)." Specifically, on September 7, 2016, the licensee failed to establish flow as close as possible to the reference point of 24,000 gallons per minute (gpm), as specified in Step 1.17 of the procedure, which ultimately led to an invalid test. The planned corrective actions included re performing the comprehensive test on September 26, 2017, and an action to revise affected procedures to specify that the flow should be established as close as possible to the reference value, and to not throttle flow to below the reference value to obtain acceptable testing results. This issue was entered into the licensee's CAP as IRs 2644532 and 2660824. The inspectors determined that the performance deficiency was more than minor because it was associated with the Mitigating Systems cornerstone attribute of Equipment Performance and adversely impacted 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 follow the requirements established by the American Society of Mechanical Engineers (ASME) for comprehensive testing led to an invalid test of the pump on September 7, 2016. The inspectors determined that this finding was of very low safety significance because it did not result in the loss of operability or functionality of a mitigating system. Specifically, when the test was re performed on September 26, 2016, it was confirmed that the 2A essential service water pump was operable. The inspectors determined that this finding had a cross cutting aspect in the Human Performance area of Training. Specifically, licensee staff in Operations and Engineering were under the impression that they did not need to establish flow as close as possible to the reference value of 24,000 gpm. Instead, their belief was that the flow band in the surveillance procedure allowed them to set flow at any point in the band; therefore, when faced with results that fell within the Required Action Range, licensee staff believed that it was acceptable to lower flow to obtain more favorable results provided the system flow remained within the flow band.

Inspection Report# : 2016003 (*pdf*)

**Significance:** G Jul 29, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

**OPERATION OF SX SYSTEM VALVES RESULTS IN CAVITATION DAMAGE AND PIPE LEAKAGE**

A finding of very low safety significance and an associated NCV of Title 10 of the Code of Federal Regulations (CFR) Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self-revealed when the licensee failed to prescribe essential service water (SX) system operating and/or surveillance procedures appropriate to the circumstances. Specifically, the licensee failed to provide SX operating procedure guidance to limit the closure position of valves 1SX007, 2SX007 and 0SX007, such that cavitation-induced damage/failure of components did not occur or to establish a procedure to monitor and correct cavitation-induced damage prior to component failure associated with the operation of these valves. Consequently, a through-wall leak occurred downstream of valve 1SX007 that was caused by cavitation-induced wall loss at the neck of the pipe flange supporting this valve. The licensee replaced the damaged valve and piping and entered this issue into their CAP as Issue Report (IR) 2697962. The team determined that the performance deficiency was more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, continued operation of the SX007 valves without monitoring or correcting 3 cavitation-induced damage could result in

a more significant failure resulting in the loss of an SX train and/or an internal flooding event. The team determined that this finding was of very low safety significance because although it was determined to be a deficiency affecting the design or qualification of a mitigating structure, system, and component (SSC), the operability or functionality of the component was not affected. The team did not identify a cross-cutting aspect for this finding because the finding did not reflect current licensee performance.

Inspection Report# : 2016007 (*pdf*)

## **Barrier Integrity**

### **Emergency Preparedness**

### **Occupational Radiation Safety**

### **Public Radiation Safety**

**Significance:** G Jun 30, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

#### **Failure to Adequately Implement and Maintain the Radiological Environmental Monitoring Program by Collecting Representative Samples from the Principal Food Pathways**

A finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix I, Section IV(B), were identified by the inspectors for the licensee's failure to establish an appropriate surveillance and monitoring program in order to provide data on measurable levels of radiation and radioactive materials in the environment to evaluate the relationship between quantities of radioactive material released in effluents and resultant radiation doses to individuals from principal pathways of exposure. This was an NRC identified finding for failure to implement and maintain the licensee's radiological environmental monitoring program (REMP) by collecting representative samples from the highest deposition coefficient (D/Q) quadrant locations during annual REMP sampling and collections of food products in 2015. On May 25, 2016, during a review of the station's annual radiological environmental operating report for 2015, the inspectors noted that the licensee documented missed samples in three out of four quadrants where the principal food pathways were grown within the 10 kilometers from the station and missed milk samples. The licensee's corrective actions included, but were not limited to, revising the applicable REMP procedures and investigating the possibility of growing the principal food pathways on the licensee's owner controlled area or other approved licensee property within the 10 kilometer site radius.

The performance deficiency was determined to be of more than minor safety significance because it impacted the program and process attribute of the Public Radiation Safety Cornerstone and adversely affected the cornerstone objective of ensuring adequate protection of the public from radiation. Specifically, the licensee failed to implement effective sample collection from sample locations for food products from three of the major quadrants during annual REMP sampling and collections in 2015. The licensee's Offsite Dose Calculation Manual (ODCM), as written, did not meet 10 CFR Part 50, Appendix I, which requires the licensee to establish and provide data on measurable levels of radiation and radioactive materials in the site environs. The finding was determined to be of very low safety significance in accordance with IMC 0609, Appendix D, "Public Radiation Safety Significance Determination Process," because it only involved the licensee's REMP. The inspectors concluded that the cause of the issue involved a cross cutting component in the area of human performance, change management aspect, because the licensee did not use a systematic process for evaluating and implementing changes in their REMP sampling and collection program.

Inspection Report# : 2017002 (*pdf*)

## **Security**

The security cornerstone is an important component of the ROP, which includes various security inspection activities the NRC uses to verify licensee compliance with Commission regulations and thus ensure public health and safety. The Commission determined in the staff requirements memorandum (SRM) for SECY-04-0191, "Withholding Sensitive Unclassified Information Concerning Nuclear Power Reactors from Public Disclosure," dated November 9, 2004, that specific information related to findings and performance indicators associated with the security cornerstone will not be

publicly available to ensure that security-related information is not provided to a possible adversary. Security inspection report cover letters will be available on the NRC Web site; however, security-related information on the details of inspection finding(s) will not be displayed.

### **Miscellaneous**

Current data as of : September 05, 2017

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