



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

November 5, 2010

Mr. Michael J. Pacilio
Senior Vice President, Exelon Generation Company, LLC
President and Chief Nuclear Officer (CNO), Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

**SUBJECT: BRAIDWOOD STATION, UNITS 1 AND 2, NRC INTEGRATED INSPECTION
REPORT 05000456/2010004; 05000457/2010004**

Dear Mr. Pacilio:

On September 30, 2010, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Braidwood Station, Units 1 and 2. The enclosed report documents the results of this inspection, which were discussed on October 1, 2010, with Mr. A. Shahkarami and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, one NRC-identified finding and one self-revealed finding of very low safety significance were identified. Both findings involved a violation of NRC requirements. However, because of their very low safety significance, and because the issues were entered into your corrective action program, the NRC is treating the issues as Non-Cited Violations (NCVs) in accordance with Section 2.3.2 of the NRC Enforcement Policy. Additionally, two licensee-identified violations are listed in Section 4OA7 of this report.

If you contest the subject or severity of these NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission - Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the Resident Inspector Office at the Braidwood Station. In addition, if you disagree with the cross-cutting aspect assigned to any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region III, and the NRC Resident Inspector at the Braidwood Station.

M. Pacilio

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In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records System (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Eric R. Duncan, Chief
Branch 3
Division of Reactor Projects

Docket Nos. 50-456; 50-457
License Nos. NPF-72; NPF-77

Enclosure: Inspection Report 05000456/2010004; 05000457/2010004
w/Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 50-456; 50-457
License Nos: NPF-72; NPF-77

Report No: 05000456/2010004; 05000457/2010004

Licensee: Exelon Generation Company, LLC

Facility: Braidwood Station, Units 1 and 2

Location: Braceville, IL

Dates: July 1 through September 30, 2010

Inspectors: J. Benjamin, Senior Resident Inspector
M. Thorpe-Kavanaugh, Acting Resident Inspector
D. Betancourt-Roldan, Acting Resident Inspector
T. Go, Health Physics Inspector
M. Perry, Resident Inspector
Illinois Emergency Management Agency

Approved by: E. Duncan, Chief
Branch 3
Division of Reactor Projects

Enclosure

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SUMMARY OF FINDINGS

IR 05000456/2010004, 05000457/2010004; 07/01/2010 – 09/30/2010; Braidwood Station, Units 1 & 2; Temporary Plant Modifications; Surveillance Testing.

This report covers a 3-month period of inspection by resident inspectors and announced baseline inspection by a regional inspector. One Green finding was identified by the inspectors and one Green finding was self-revealed. The findings were considered Non-Cited Violations of NRC regulations. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified and Self-Revealed Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified a Green finding and an associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," related to the control of temporary scaffolds. Specifically, the licensee's procedure for the installation, modification, and removal of scaffolds was not followed on a routine basis for temporary scaffolds that remained in the plant for greater than 90 days. The licensee entered this issue into the Corrective Action Program (CAP) as Issue Report (IR) 1095900. Corrective actions for this issue included walk downs of temporary scaffolds that had been in place for greater than 90 days utilizing the permanent scaffold checklist, and an assignment to ensure the procedure was followed in the future.

The inspectors determined that this issue was more than minor in accordance with IMC 0612, Appendix E, "Examples of Minor Issues." Specifically, this issue was similar to the more than minor criteria in Example 4.a, "Insignificant Procedural Errors," in that the licensee failed to perform engineering evaluations on similar issues, or if the later evaluation determined that safety-related equipment was adversely affected. The finding was of very low safety significance because there was not a confirmed loss of operability of any mitigating system component. This finding was associated with the cross-cutting aspect of Decision-Making in the Human Performance cross-cutting area. Specifically, the licensee had not made safety-significant or risk significant decisions by utilizing the systematic scaffolding construction process to ensure adequate quality and therefore adequate safety was maintained (H.1(a)). (Section 1R18.1)

- Green. A self-revealed Green finding and an associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified after the licensee failed to follow procedures during an essential service water inservice test on August 24, 2010. Specifically, during the section of the procedure utilized to establish testing conditions, the licensee throttled the wrong valve resulting in an unplanned reduction in flow to safety-related structures, systems, and components. This flow reduction resulted in the Train "B" equipment being declared inoperable for approximately 5 minutes. The licensee entered this issue into the CAP as IR 1105448. Corrective actions for this issue included returning the Unit 2 essential service water system to operable status by restoring the required valve lineup and a corrective action

assignment to provide additional training to the operating crews on the use of human error prevention techniques.

The inspectors determined that this finding was more than minor, because it was associated with the Human Performance attribute of the Mitigating Systems Cornerstone and impacted the cornerstone objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. This finding was determined to be of very low safety significance based on a Phase 3 Significance Determination Process analysis that conservatively bounded the risk of this event to be less than $1.0E-7/yr$. The inspectors concluded that this finding was associated with the cross-cutting aspect of Work Practices in the Human Performance cross-cutting area because adequate human error prevention techniques were not effectively used to ensure that the surveillance activity was performed properly (H.4(a)). (Section 1R22.1)

B. Licensee-Identified Violations

Violations of very low safety significance that were identified by the licensee have been reviewed by inspectors. Corrective actions planned or taken by the licensee have been entered into the licensee's corrective action program. These violations and corrective action tracking numbers are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Unit 1 operated at or near full power for the entire report period with two exceptions. On August 16, 2010, a reactor trip occurred. The unit returned to 100 percent power on August 23, 2010. A second reactor trip occurred on September 20, 2010, with the unit returning to approximately 95 percent power on September 24, 2010. The unit remained at approximately this power level for the remainder of the period.

Unit 2 operated at or near full power for the entire report period, except for a reactor trip on August 16, 2010. The unit returned to 100 percent power on August 24, 2010, and operated at full power for the remainder of the period.

1. REACTOR SAFETY

Cornerstone: Initiating Events, Mitigating Systems, Barrier Integrity and Emergency Preparedness

1R01 Adverse Weather Protection (71111.01)

.1 Readiness For Impending Adverse Weather Condition – Extreme Heat Conditions

a. Inspection Scope

The inspectors performed a detailed review of the licensee's procedures and preparations for operating the facility during an extended period of time when ambient outside temperature was high and the ultimate heat sink was experiencing elevated temperatures. The inspectors focused on plant specific design features and implementation of the procedures for responding to or mitigating the effects of these conditions on the operation of the facility's essential service water cooling systems. Inspection activities included a review of the licensee's adverse weather procedures, daily monitoring of the off-normal environmental conditions, and verification that operator actions specified by plant specific procedures were appropriate to ensure operability of the facility's normal and emergency cooling systems. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one readiness for impending adverse weather condition sample as defined in Inspection Procedure (IP) 71111.01-05.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Quarterly Partial System Walkdowns

a. Inspection Scope

The inspectors performed partial system walkdowns of the following risk-significant systems:

- 2B Chemical and Volume Control Pump While the Redundant 2A Pump was Out-of-Service;
- Unit 1 Main Steam System Following the August 16 Dual Unit Trip; and
- 2B Component Cooling (CC) System Alignment While the Redundant 2A System was Out-of-Service.

The inspectors selected these systems based on their risk significance relative to the Reactor Safety Cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could impact the function of the system, and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, the Updated Final Safety Analysis Report (UFSAR), Technical Specification (TS) requirements, outstanding work orders, condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems incapable of performing their intended functions. The inspectors also walked down accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the Corrective Action Program (CAP) with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

These activities constituted three partial system walkdown samples as defined in IP 71111.04-05.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

The inspectors conducted fire protection walkdowns which were focused on availability, accessibility, and the condition of firefighting equipment in the following risk-significant plant areas:

- 2B Auxiliary Feedwater Pump Room;
- Division 12 Cable Penetration Area;
- Lake Screen House;
- Engineered Safety Feature Switchgear Rooms;
- Unit 2 Cable Tunnel; and
- Turbine Building Following the August 16 Dual Unit Trip.

The inspectors reviewed areas to assess if the licensee had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant, effectively maintained fire detection and suppression capability, maintained passive fire protection features in good material condition, and implemented adequate compensatory measures for out-of-service, degraded or inoperable fire protection equipment, systems, or features in accordance with the licensee's fire plan. The inspectors selected fire areas based on their overall contribution to internal fire risk as documented in the plant's Individual Plant Examination of External Events, with later additional insights, their potential to impact equipment which could initiate or mitigate a plant transient, or their impact on the plant's ability to respond to a security event. Using the documents listed in the Attachment, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed; that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's CAP. Documents reviewed are listed in the Attachment to this report.

These activities constituted six quarterly fire protection inspection samples as defined in IP 71111.05-05.

b. Findings

No findings of significance were identified.

.2 Annual Fire Protection Drill Observation (71111.05A)

a. Inspection Scope

On September 10, 2010, the inspectors observed an unannounced fire drill and fire brigade activation during a simulated hot work fire in the proximity of the station air compressors. Based on this observation, the inspectors evaluated the readiness of the plant fire brigade to fight fires. The inspectors verified that the licensee staff identified deficiencies; openly discussed them in a self-critical manner at the drill debrief, and took appropriate corrective actions. Specific attributes evaluated were:

- proper wearing of turnout gear and self-contained breathing apparatus;
- proper use and layout of fire hoses;
- employment of appropriate fire fighting techniques;
- sufficient firefighting equipment brought to the scene;
- effectiveness of fire brigade leader communications, command, and control;
- search for victims and propagation of the fire into other plant areas;
- smoke removal operations;
- utilization of pre-planned strategies;

- adherence to the pre-planned drill scenario; and
- accomplishment of drill objectives.

Documents reviewed are listed in the Attachment to this report.

These activities constituted one annual fire protection inspection sample as defined in IP 71111.05-05.

b. Findings

No findings of significance were identified.

1R06 Flooding (71111.06)

.1 Internal Flooding

a. Inspection Scope

The inspectors reviewed selected risk significant plant design features and licensee procedures intended to protect the plant and its safety-related equipment from internal flooding events. The inspectors reviewed flood analyses and design documents, including the UFSAR, engineering calculations, and abnormal operating procedures to identify licensee commitments. The specific document reviewed is listed in the Attachment to this report. In addition, the inspectors reviewed licensee drawings to identify areas and equipment that may be affected by internal flooding caused by the failure or misalignment of nearby sources of water, such as the fire suppression or the circulating water systems. The inspectors also reviewed the licensee's corrective action documents with respect to flood-related items identified in the CAP to verify the adequacy of the corrective actions. The inspectors performed a walkdown of the following plant area to assess the adequacy of watertight doors and verify drains and sumps were clear of debris and were operable, and that the licensee complied with applicable commitments:

- Turbine Building (Following the Condensate Storage Tank Vent Line Overflow Event that Occurred During the August 16, 2010, Dual Unit Trip.)

This inspection constituted one internal flooding sample as defined in IP 71111.06-05.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

.1 Resident Inspector Quarterly Review

a. Inspection Scope

On July 21, 2010, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator requalification examinations to verify that operator performance was adequate, evaluators were identifying and documenting crew

performance problems, and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- licensed operator performance;
- crew's clarity and formality of communications;
- ability to take timely actions in the conservative direction;
- prioritization, interpretation, and verification of annunciator alarms;
- correct use and implementation of abnormal and emergency procedures;
- control board manipulations;
- oversight and direction from supervisors; and
- ability to identify and implement appropriate TS actions and Emergency Plan actions and notifications.

The crew's performance in these areas was compared to pre-established operator action expectations and successful critical task completion requirements. The document reviewed is listed in the Attachment to this report.

This inspection constituted one quarterly licensed operator requalification program sample as defined in IP 71111.11.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Quarterly Evaluations (71111.12Q)

a. Inspection Scope

The inspectors evaluated degraded performance issues involving the following risk-significant system:

- 2B Main Feedwater Pump

The inspectors reviewed events where ineffective equipment maintenance resulted in valid or invalid automatic actuations of engineered safeguards systems and independently verified the licensee's actions to address system performance or condition problems in terms of the following:

- implementing appropriate work practices;
- identifying and addressing common cause failures;
- scoping of systems in accordance with 10 CFR 50.65(b) of the maintenance rule;
- characterizing system reliability issues for performance;
- charging unavailability for performance;
- trending key parameters for condition monitoring;
- ensuring 10 CFR 50.65(a)(1) or (a)(2) classification or re-classification; and
- verifying appropriate performance criteria for structures, systems, and component functions classified as (a)(2) or appropriate and adequate goals and corrective actions for systems classified as (a)(1).

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance effectiveness issues were entered into the CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one quarterly maintenance effectiveness sample as defined in IP 71111.12-05.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)

.1 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors reviewed the licensee's evaluation and management of plant risk for the maintenance and emergent work activities affecting risk-significant and safety-related equipment listed below to verify that appropriate risk assessments were performed prior to removing equipment for work:

- Yellow Risk with the 1A Containment Spray System Out-of-Service;
- Green Risk Following the August 16, 2010 Dual Unit Trip;
- Yellow Risk with the Unit 1 Condensate Storage Tank Inoperable; and
- Yellow Risk with Emergent Switchyard Transformer Work.

These activities were selected based on their potential risk significance relative to the Reactor Safety Cornerstones. As applicable for each activity, the inspectors verified that risk assessments were performed as required by 10 CFR 50.65(a)(4) and were accurate and complete. When emergent work was performed, the inspectors verified that the plant risk was promptly re-assessed and managed. The inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst and/or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed TS requirements and walked down portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met. Documents reviewed are listed in the Attachment to this report.

These maintenance risk assessments and emergent work control activities constituted four samples as defined in IP 71111.13-05.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

.1 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following issues:

- Effects of Bryozoa on the Essential Service Water (SX) system;
- Component Cooling Piping Class Break Analysis Inadequacy;
- 2B SX Low Discharge Header Pressure During Surveillance; and
- Effects of Seismic Activities on Auxiliary Feedwater Recirculation Line.

The inspectors selected these potential operability issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure that TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the TS and UFSAR to the licensee's evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Documents reviewed are listed in the Attachment to this report.

This operability inspection constituted four samples as defined in IP 71111.15-05.

b. Findings

No findings of significance were identified.

1R18 Plant Modifications (71111.18)

.1 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the following temporary modifications:

- Sample of Temporary Scaffolds Left in the Plant for Greater than 90 Days (Issue Report (IR) 1073578, 1081977, 1081934, 1083041 and 1063870)

The inspectors compared the temporary configuration changes and associated 10 CFR 50.59 screening and evaluation information against the design basis, the UFSAR, and the TS, as applicable, to verify that the modification did not affect the operability or availability of the affected system. The inspectors also compared the licensee's information to operating experience information to ensure that lessons-learned from other utilities had been incorporated into the licensee's decision to implement the temporary modification. The inspectors, as applicable, performed field

verifications to ensure that the modifications were installed as directed; the modifications operated as expected; modification testing adequately demonstrated continued system operability, availability, and reliability; and that operation of the modifications did not impact the operability of any interfacing systems. Lastly, the inspectors discussed the temporary modification with operations, engineering, and training personnel to ensure that the individuals were aware of how extended operation with the temporary modification in place could impact overall plant performance. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one temporary modification sample as defined in IP 71111.18-05.

b. Findings

(1) Failure to Follow Procedure for Temporary Scaffolds

Introduction: The inspectors identified a Green finding and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," related to an inadequate quality review of temporary and permanently constructed scaffolds installed throughout the plant. Specifically, the licensee failed to follow procedural requirements for installed temporary scaffolds prior to reaching 90 days inservice. In addition, the licensee failed to ensure that a Fire Marshal review was accomplished for each permanently constructed scaffold consistent with a basis provided in the procedure's 10 CFR 50.59 evaluation.

Description: From April 30, 2010 to June 18, 2010, the licensee identified five instances in which the temporary constructed scaffolds had remained in the plant for over 90 days. The licensee entered these individual deficiencies into the CAP as IR 1073578, 1081977, 1081934, 1083041, and 1063870. The inspectors reviewed the IRs and noted that although these scaffolds had been entered into the corrective action process, the corrective action assignments for these IRs did not align with the required actions established in the applicable station procedure.

Specifically, Step 2.11 of quality procedure MA-AA-716-025, "Scaffold Installation, Modification, and Removal Request Process," Revision 7B, defined a temporary scaffold as follows:

"Scaffold – Temporary access structures erected in support of Maintenance or Operations activities that are to be removed at the completion of the activities. These temporary access structures are not intended to be left in place for more than 90 days of power plant operations."

Additionally, Step 3.6 of the procedure required the following:

"Scaffold Coordinator/Designee – Is responsible for the coordination of erection and removal of all scaffolds on site. Maintaining a log or electronic equivalent of the status of all scaffolds, and reviewing the log to ensure that any scaffolds approaching their 90 day limit are removed or converted to a permanent scaffold or requesting that an individual 10 CFR 50.59 review be performed for the individual scaffold required to be left in place beyond 90 days."

The inspectors reviewed the corrective actions for the documented IRs and noted that although these issues were generically being tracked in the CAP, no assignment was completed or planned to comply with the requirement of Step 3.6.

The inspectors questioned the difference between the station's procedural requirements and the prescribed generic CAP action to correct the deficiencies. The inspectors interviewed engineering staff and management and understood it was the licensee's position that there was no specific requirement that temporary scaffolds be disassembled prior to exceeding an inservice life of 90 days. A generic 10 CFR 50.59 evaluation had previously been completed that was applicable to all temporary scaffolds, which allowed those scaffolds to be erected more than 90 days (ref: NSWP-A-24, dated July 23, 1998).

The inspectors reviewed this 10 CFR 50.59 evaluation and concluded that this evaluation was not an individual 10 CFR 50.59 review for an individual scaffold as required by the procedure. The inspectors concluded that this 10 CFR 50.59 review was broad in nature and did not have a level of review consistent with an individual analysis. Therefore, the inspectors concluded that the 10 CFR 50.59 evaluation, NSWP-A-24, was not sufficient to satisfy the requirements of Step 2.11 and Step 3.6 of MA-AA-716-025.

The inspectors reviewed and evaluated the difference in the level of details between the procedural requirements for the construction of a temporary and permanent scaffold. The inspectors conducted this review to determine if the performance deficiency for not following the procedure was administrative in nature. The inspectors identified that a significant difference between the two processes was related to Engineering involvement.

In particular:

- The permanent scaffold process required that Engineering review and evaluate the technical impact of the scaffold and identify any special instructions. By contrast, engineering review was optional for the temporary constructed scaffold process.
- The procedural steps for erecting a temporary scaffold contained a pre-erection review that consisted of eight [Yes/No] check boxes for blocking of fire suppression equipment, seismic considerations, and access to equipment. By contrast, the procedural steps for erecting permanent scaffolding consisted of two pages of questions to guide a reviewer through what to consider when conducting a review.

The inspectors concluded that the station routinely failed to follow Step 3.6 of Station Procedure MA-AA-716-025 and had not met the intent of Step 2.11. The inspectors determined that this was not an administrative issue based on a detailed review of the procedures, a review of the applicable 10 CFR 50.59 evaluation, and discussions with licensee staff.

The inspectors reviewed the generic 10 CFR 50.59 evaluation that was utilized to provide a basis for the process used to install permanent scaffolding in the plant (Ref: BRW-SE-2000-1193). The inspectors identified that this 10 CFR 50.59 evaluation asserted that all permanent scaffolds were reviewed by Engineering, Operations, and the Fire Marshall, and were only approved at locations that would not interfere with safe

operations of the plant. The inspectors identified that station procedure MA-AA-716-025, Revisions 7B and 8, did not require the Fire Marshall to review permanent scaffolds. Therefore, the inspectors determined that this aspect of the procedure was inadequate.

Analysis: The inspectors identified a performance deficiency, in that the licensee was routinely not following a 10 CFR 50, Appendix, B, quality procedure, MA-AA-716-025, as it related to the control of temporary scaffolding. In addition, the inspectors identified that the procedure for construction of permanent scaffolding was inadequate because it did not require a Fire Marshal review consistent with the supportive 10 CFR 50.59 analysis. The performance deficiency affected the Mitigating Systems Cornerstone.

The inspectors determined that this issue was more than minor in accordance with IMC 0612, Appendix E, "Examples of Minor Issues." Specifically the inspectors concluded that this issue was similar to the more than minor criteria established in Example 4.a, "Insignificant Procedural Errors," as described below:

"A scaffold erected between safety-related plant service water strainers was wedged tightly between the system piping. Licensee procedures required an engineering evaluation be performed for all scaffolding located above or near safety-related equipment. No engineering evaluation was performed to assess the seismic impact of the scaffold.

Minor if: A later engineering evaluation determined that there is no safety concern.

Not minor if: The licensee routinely failed to perform engineering evaluations on similar issues, or if the later evaluation determined that safety-related equipment was adversely affected."

This finding was associated with the Decision-Making aspect in the Human Performance cross-cutting area. Specifically, the licensee had not made safety-significant or risk-significant decisions by utilizing the systematic scaffolding construction process to ensure adequate quality and therefore adequate safety was maintained (H.1(a)).

Enforcement: 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality be prescribed by instructions, procedures, or drawings, of a type appropriate to the circumstance and shall be accomplished in accordance with these instructions, procedures, or drawings. Step 3.6 of quality procedure MA-AA-716-025, "Scaffold Installation, Modification, and Removal Request Process," Revision 7B, required that temporary constructed scaffold be removed or converted to a permanent scaffold or an individual 10 CFR 50.59 review be performed for the individual scaffold required to be left in place beyond 90 days.

Contrary to the above, from April 30, 2010 to June 18, 2010, the licensee failed to follow Step 3.6 of quality procedure, MA-AA-716-025, in five instances that temporary constructed scaffolds remained in the plant for greater than 90 days and without a individual 10 CFR 50.59 evaluation or converted to a permanent scaffold.

Because this violation was of very low safety significance, was not repetitive or willful, and was entered into the licensee's CAP (IR 1095900), this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy. Corrective actions included performance of Step 3.6 of MA-AA-716-025, by converting all

temporarily constructed scaffolds to a permanent scaffold utilizing the applicable section of the procedure and an assignment to ensure the procedure requires the appropriate level of review for permanently constructed scaffolds. **(NCV 05000456/2010004-01; 05000457/2010004-01, Failure to Follow Procedure for Temporary Scaffolds)**

Temporary Scaffolding Process Quality

Introduction: The inspectors identified an Unresolved Item (URI) related to the station's quality control for constructing temporary scaffolding. Specifically, the inspectors opened this URI to determine whether the licensee's procedures for constructing temporary scaffolding provided an adequate level of quality to ensure the station's licensing basis was maintained.

Description: The inspectors conducted a review of quality procedure MA-AA-716-025, "Scaffold Installation, Modification, and Removal Request Process." This procedure was utilized to construct both temporary and permanent scaffolds. With respect to temporarily constructed scaffolds, this procedure was utilized regardless of whether the scaffold was for support of maintenance or for other reasons. As discussed in Section 1R18.b(1) of this report, the procedure required the use of eight [Yes/No] check boxes for evaluating blockage of fire suppression equipment, seismic considerations, and access to equipment to determine if the temporary scaffold could be erected. The inspectors also reviewed the approval process for these structures.

At the end of the inspection period, it was unclear if the licensee scaffold procedure ensured an adequate level of quality for temporary scaffolding such that all licensing bases were maintained.

This URI will remain open pending a more detailed review of the licensee's processes utilized to construct temporary scaffolding and a review and field walkdown of actual scaffolds constructed in the plant. **(URI 05000456/2010004-02; 05000457/2010004-02, Temporary Scaffold Quality Control Process)**

.2 Permanent Plant Modifications

a. Inspection Scope

The following engineering design package was reviewed and selected aspects were discussed with engineering personnel:

- Condensate Storage Tank Manual Hotwell Reject.

The inspectors examined the adequacy of the 10 CFR 50.59 safety evaluation screening, the adequacy of the design parameters considered, the implementation of the modification, and the post-modification testing completed. The inspectors also determined whether relevant procedures, design, and licensing documents were properly updated. The inspectors observed ongoing and completed work activities to verify that installation was consistent with the design control documents. The modification changed the method of rejecting water from the station's main condenser to the condensate storage tank from an automatic method to a manual method. This modification was put in place to address multiple post-trip water overflow events. In addition to the review described above, the inspectors reviewed the implementation of

this modification after the September 20, 2010, Unit 1 trip. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one permanent plant modification sample as defined in IP 71111.18-05.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed the following post-maintenance testing activities to verify that procedures and test activities were adequate to ensure system operability and functional capability:

- Containment Spray Sump Suction Isolation Valve 2CS009B Actuator Rebuild;
- Charging Flowing Control Valve 1CV121 Packing Replacement;
- 1C Steam Generator Power Operated Relief Valve Work;
- Diesel Driven Fire Pump Relief Valve Replacement; and
- 1B SX Pump Work.

These activities were selected based upon the structure, system, or component's impact on risk. The inspectors evaluated these activities for the following (as applicable): the effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed; acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate; tests were performed as written in accordance with properly reviewed and approved procedures; equipment was returned to its operational status following testing (temporary modifications or jumpers required for test performance were properly removed after test completion); and test documentation was properly evaluated. The inspectors evaluated the activities against TS, the UFSAR, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with post-maintenance tests to determine whether the licensee was identifying problems and entering them in the CAP and that the problems were being corrected commensurate with their importance to safety. Documents reviewed are listed in the Attachment to this report.

This inspection constituted five post-maintenance testing samples as defined in IP 71111.19-05.

b. Findings

No findings of significance were identified.

1R20 Outage Activities (71111.20)

Unit 1 and Unit 2 Non-refueling Outage Activities

a. Inspection Scope

The inspectors evaluated outage activities for an unscheduled Unit 1 and 2 outage that began on August 16, 2010, and continued through August 21, 2010. The inspectors reviewed activities to ensure that the licensee considered risk in developing, planning, and implementing the outage schedule. Documents reviewed are listed in the Attachment to this report.

The inspectors observed:

- portions of the plant shutdown and cooldown processes;
- Mode 3 as-left containment closeout tour;
- post-trip transient review evaluations;
- mode transitions;
- reactor startups;
- power ascensions;
- Plant Operations Review Committee meetings;
- shift turnovers; and
- fatigue management.

This inspection constituted one other outage sample as defined in IP 71111.20-05.

b. Findings

No findings of significance were identified.

.2 New Fuel Receipt

a. Inspection Scope

On August 12, 2010, the inspectors observed new fuel receipt inspections in anticipation of the Unit 1 refueling outage, which was scheduled to begin on October 3, 2010. The inspectors verified the licensee performed inspections in accordance with their procedures and that any issues were appropriately dispositioned.

This inspection did not constitute an outage sample as defined in IP 71111.20-05, but will be a part of the Unit 1 refueling outage sample planned for next quarter. Documents reviewed are listed in the Attachment to this report

c. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

.1 Surveillance Testing

a. Inspection Scope

The inspectors reviewed the test results for the following activities to determine whether risk-significant systems and equipment were capable of performing their intended safety function and to verify testing was conducted in accordance with applicable procedural and TS requirements:

- Unit 1 Train A Emergency Diesel Generator Monthly Surveillance (Routine);
- Unit 1 Train B Emergency Diesel Generator Monthly Surveillance (Routine);
- Unit 1 Main Steam Safety Valve Operability Test (Routine);
- 2A Chemical and Volume Control American Society of Mechanical Engineers (ASME) Test (Inservice Testing);
- 2A SX ASME Test (Inservice Testing); and
- 2B SX ASME Test (Inservice Testing).

The inspectors observed in-plant activities and reviewed procedures and associated records to determine the following:

- did preconditioning occur;
- were the effects of the testing adequately addressed by control room personnel or engineers prior to the commencement of the testing;
- were acceptance criteria clearly stated, demonstrated operational readiness, and consistent with the system design basis;
- plant equipment calibration was correct, accurate, and properly documented;
- as-left setpoints were within required ranges; and the calibration frequency were in accordance with TSs, the UFSAR, procedures, and applicable commitments;
- measuring and test equipment calibration was current;
- test equipment was used within the required range and accuracy; applicable prerequisites described in the test procedures were satisfied;
- test frequencies met TS requirements to demonstrate operability and reliability;
- tests were performed in accordance with the test procedures and other applicable procedures;
- jumpers and lifted leads were controlled and restored where used;
- test data and results were accurate, complete, within limits, and valid;
- test equipment was removed after testing;
- where applicable for inservice testing activities, testing was performed in accordance with the applicable version of Section XI, ASME codes, and reference values were consistent with the system design basis;
- where applicable, test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable;
- where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure;
- where applicable, actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished;

- prior procedure changes had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test;
- equipment was returned to a position or status required to support the performance of its safety functions; and
- all problems identified during the testing were appropriately documented and dispositioned in the CAP.

Documents reviewed are listed in the Attachment to this report.

This inspection constituted three routine surveillance testing samples, and three inservice testing samples as defined in IP 71111.22, Sections -02 and -05.

b. Findings

Unplanned Cooling Water Flow Reduction During Essential Service Water Inservice Testing Surveillance Test

Introduction: A self-revealed Green finding and an associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified during a 2B SX pump inservice testing (IST) surveillance that resulted in an unplanned loss of TS equipment operability. Specifically, during the section of the procedure utilized to set the proper flow conditions, the wrong valve was throttled, resulting in a drop of SX system pressure and reduction of cooling water flow to dependent plant safety-related equipment.

Description: On August 24, 2010, Operations was performing 2B SX IST surveillance in accordance with Procedure 2BwOSR5.5.8.SX-3B, "Group A IST Requirements for 2B Essential Service Water Pump (2SX01PB)." To establish test flow conditions, the operators were to throttle open the Unit 2 CC heat exchanger outlet valve to establish a flow rate of 24,000 gallons per minute (gpm) at the pump's discharge. Instead of observing the flow rate at the pump's discharge per Step 3B of the procedure, operators performing this evolution used a flow meter that measured the flow rate at the inlet of the 2B CC heat exchanger. As a result of this error, the total flow at the pump discharge approached 36,000 gpm and the header pressure rapidly lowered from approximately 90 pounds per square inch (psig) to 65 psig. A low discharge pressure alarm was received in the control room and operators took prompt action to restore the discharge pressure to 90 psig by re-throttling close the Unit 2 CC heat exchanger outlet valve. This action took approximately 5 minutes. During this time, Operations entered multiple TS Limiting Conditions for Operations due to one inoperable SX train and two inoperable containment cooling trains.

The licensee entered this issue into their CAP. Subsequently, the licensee reviewed plant data recorders and determined that the maximum discharge flow achieved by the 2B SX pump was approximately 36,000 gpm and that the maximum flow established to the Unit 2 CC heat exchanger was approximately 22,000 gpm. The licensee performed an operability evaluation to evaluate whether the 2B SX pump and/or the Unit 2 CC heat exchanger had been damaged. The licensee determined that the 2B SX pump did not exceed pump run out hydraulic conditions and therefore was not damaged. This conclusion was based on examining the 2B SX pump's pump curve, conversations with the vendor, and the field observations that no pump cavitations were observed. With respect to the Unit 2 CC heat exchanger, the licensee concluded that the excess flow

through the heat exchanger was within the vendor specifications that the heat exchanger was capable of successfully passing twice the nominal flow capacity of 19,900 gpm in emergency situations for short period of times without damage.

At the end of the inspection period, the licensee was evaluating past operability and the ability of the SX system to meet its safety function during the brief period of time the incorrect valve was operated.

Analysis: The inspectors determined that the licensee's failure to adequately implement an IST surveillance procedure was a performance deficiency. This issue was determined to be more than minor because it was associated with the Human Performance attribute in the Mitigating Systems Cornerstone and adversely affected the cornerstone's objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences.

The inspectors evaluated the finding in accordance with IMC 0609, "Safety Significance Process." The inspectors determined that a Phase 2 evaluation was required because the finding represented a potential loss of the SX system safety function. The inspectors performed an SDP Phase 2 evaluation using the pre-solved SDP worksheets for Braidwood. The Phase 2 SDP worksheets indicated a potentially greater than Green finding based on a loss of function with a less-than-3-day exposure time.

An SDP Phase 3 analysis was performed based on the conservative Phase 2 results. The Phase 3 analysis assumed a bounding complete loss of safety function for 1 hour. The increase in core damage probability was conservatively calculated to be less than $1.0 \text{ E-}7$. The dominant sequence was a transient followed by the loss of SX and a failure to provide alternate reactor coolant pump seal cooling which resulted in a seal Loss of Coolant Accident event that would not be recoverable.

The finding had a cross-cutting aspect in the Human Performance area, Work Practice component. Specifically, licensee programmatic human error prevention techniques were not effectively used to ensure that the surveillance activity was performed in a planned safe manner (H.4(a)).

Enforcement: 10 CFR Part 50, Appendix B, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings.

Contrary to the above, on August 24, 2010, the licensee failed to follow Step 3B of Procedure 2BwOSR 5.5.8.SX-3B, "Group A Inservice Testing Requirements for 2B SX Pump (2SX01PB)," Revision 1. This temporarily rendered the Unit 2 SX system inoperable for approximately 5 minutes. Because this violation was of very low safety significance, was not repetitive or willful, and it was entered into the licensee's CAP as IR 01105448, this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy. Corrective actions for this issue included returning the Unit 2 SX system to operable status by restoring the required valve lineup and a corrective action assignment to provide additional training to the operating crews on the use of human error prevention techniques. **(NCV 05000456/2010004-03; 05000457/2010004-03, Unplanned Cooling Water Flow Reduction during Essential Service Water IST Surveillance)**

1EP6 Drill Evaluation (71114.06)

Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on July 21, 2010, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the simulated control room and Technical Support Center (TSC) to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee staff in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering them into the CAP. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the Attachment to this report.

This emergency preparedness drill inspection constituted one sample as defined in IP 71114.06-05.

b. Findings

Potentially Inadequate Emergency Preparedness Critique

Introduction: An URI was identified to determine whether the licensee's critique process adequately identified the appropriate weaknesses associated with a Drill & Exercise Performance (DEP) PI failure on July 21, 2010.

Description: The Emergency Preparedness Cornerstone licensee response band was established by the PI scheme and the licensee's CAP. Identified weaknesses come from drill and exercise critiques. The baseline inspection program was based on identification and correction of these performance weaknesses and on accurate PI data. The DEP PI was based on the licensee's ability to determine whether a PI opportunity was successful.

On July 21, 2010, the licensee conducted a combined simulator, TSC, and Operational Support Center emergency preparedness full-scale drill. The NRC inspectors observed this drill from the TSC and the simulator. The licensee concluded that the overall performance during the drill was satisfactory, including successfully demonstrating seven of eight DEP PIs.

The licensee identified one drill deficiency for the inappropriate inject by the TSC lead controller. The licensee determined that this inject caused the general emergency classification to be rated as a failure for the DEP PI.

The NRC inspectors questioned the adequacy of the critique process regarding the basis of this DEP PI failure. According to the licensee's final critique, the scenario was designed such that the first indication for meeting the General Emergency declaration threshold (Time T=0) was based on Controller Message, CM-10. Accordingly, at the time CM-10 was given to the drill players, there was no indication available to the players that a General Emergency was required to be declared.

In the next 15 minutes, TSC players did not declare a General Emergency. After 17 minutes, the lead controller informed the Station Emergency Director that the time limit for classification of the General Emergency was exceeded and instructed the Emergency Director to declare a General Emergency. Based on this, the Station Emergency Director declared a General Emergency, as expected in the scenario.

However, the licensee's final critique determined that the Station Emergency Director did not have sufficient evidence that plant conditions could not be recovered such that the threshold for a General Emergency was met. Therefore, the licensee concluded that the Station Emergency Director was correct in not declaring the General Emergency. Furthermore, the licensee determined that the reason for the DEP PI failure was due to the improper inject provided by the lead controller.

The inspectors opened this URI to determine whether a performance deficiency exists regarding the licensee's ability to observe, identify, evaluate, and critique a weakness associated with a risk significant planning standard. This URI will remain open pending a review of the licensee's critique process to determine if it adequately identified the appropriate weakness(es) associated with the failure of the DEP PI.

(URI 05000456/2010004-04; 05000457/2010004-04, Potentially Inadequate Emergency Preparedness Critique)

2. RADIATION SAFETY

Cornerstones: Occupational and Public Radiation Safety

2RS8 Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation (71124.08)

This inspection constituted one sample as defined in IP 71124.08 05.

.1 Inspection Planning

a. Inspection Scope

The inspectors reviewed the solid radioactive waste system description in the UFSAR, the Process Control Program (PCP), and the recent radiological effluent release report for information on the types, amounts, and processing of radioactive waste disposed.

The inspectors reviewed the scope of any quality assurance (QA) audit in this area since the last inspection to gain insights into the licensee's performance and inform the "smart sampling" inspection planning.

b. Findings

No findings of significance were identified.

.2 Radioactive Material Storage

a. Inspection Scope

The inspectors selected areas where containers of radioactive waste were stored in the Braidwood radwaste building, and evaluated whether the containers were labeled in

accordance with 10 CFR 20.1904, "Labeling Containers," or controlled in accordance with 10 CFR 20.1905, "Exemptions to Labeling Requirements," as appropriate.

The inspectors assessed whether the radioactive materials storage areas were controlled and posted in accordance with the requirements of 10 CFR Part 20, "Standards for Protection against Radiation." For materials stored or used in the controlled or unrestricted areas, the inspectors evaluated whether they were secured against unauthorized removal and controlled in accordance with 10 CFR 20.1801, "Security of Stored Material," and 10 CFR 20.1802, "Control of Material Not in Storage," as appropriate.

The inspectors evaluated whether the licensee established a process for monitoring the impact of long term storage (e.g., buildup of any gases produced by waste decomposition, chemical reactions, container deformation, loss of container integrity, or re-release of free-flowing water) that was sufficient to identify potential unmonitored, unplanned releases or nonconformance with waste disposal requirements.

The inspectors inspected several containers of stored radioactive materials for signs of swelling, leakage, and deformation.

b. Findings

No findings of significance were identified.

.3 Radioactive Waste System Walkdown

a. Inspection Scope

The inspectors walked down accessible portions of selected radioactive waste processing systems to assess whether the current system configuration and operation was consistent with descriptions in the UFSAR, offsite dose calculation manual, and PCP.

The inspectors reviewed administrative and physical controls (i.e., drainage and isolation of the system from other systems) to verify that equipment that was not-in-service or abandoned in place would not contribute to an unmonitored release path, affect operating systems, or be a source of unnecessary personnel exposure. The inspectors assessed whether the licensee reviewed the safety significance of systems and equipment abandoned in place in accordance with 10 CFR 50.59, "Changes, Tests, and Experiments."

The inspectors reviewed the adequacy of changes made to the radioactive waste processing systems since the last inspection. The inspectors evaluated whether changes from what was described in the UFSAR were reviewed and documented in accordance with 10 CFR 50.59, as appropriate, and assessed the impact on radiation doses to members of the public.

For selected processes for transferring radioactive waste resin and/or sludge discharges into shipping/disposal containers, the inspectors assessed whether the waste stream mixing, sampling procedures, and methodology for waste concentration averaging were consistent with the PCP, and provided representative samples of the waste product for

the purposes of waste classification as described in 10 CFR 61.55, "Waste Classification."

The inspectors evaluated whether the tank recirculation procedures provided sufficient mixing for systems that provide tank recirculation.

The inspectors assessed whether the licensee's PCP correctly described the current methods and procedures for dewatering and waste stabilization (e.g., removal of freestanding liquid).

b. Findings

No findings of significance were identified.

.4 Waste Characterization and Classification

a. Inspection Scope

The inspectors selected the following Braidwood radioactive waste streams for review:

- Dry Active Waste Stream;
- Primary Filter Stream; and
- Radwaste Filter Stream.

For the waste streams listed above, the inspectors assessed whether the licensee's radiochemical sample analysis results (i.e., "10 CFR Part 61" analysis) were sufficient to support radioactive waste characterization as required by 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste." The inspectors evaluated whether the licensee's use of scaling factors and calculations to account for difficult-to-measure radionuclides was technically sound and based on current 10 CFR Part 61 analyses for the selected radioactive waste streams.

The inspectors evaluated whether changes to plant operational parameters were taken into account to: (1) maintain the validity of the waste stream composition data between the annual or biennial sample analysis update; and (2) assure that waste shipments continued to meet the requirements of 10 CFR Part 61 for the waste streams selected above.

The inspectors evaluated whether the licensee had established and maintained an adequate QA program to ensure compliance with the waste classification and characterization requirements of 10 CFR 61.55 and 10 CFR 61.56, "Waste Characteristics."

b. Findings

No findings of significance were identified.

.5 Shipment Preparation

a. Inspection Scope

The inspectors observed shipment packaging, surveying, labeling, marking, placarding, vehicle checks, emergency instructions, disposal manifest, shipping papers provided to the driver, and licensee verification of shipment readiness. The inspectors assessed through reviews whether the requirements of applicable transport cask certificate of compliance had been met. The inspectors evaluated whether the receiving licensee was authorized to receive the shipment packages. The inspectors evaluated whether the licensee's procedures for cask loading and closure procedures were consistent with the vendor's current approved procedures.

The inspectors observed radiation workers during the conduct of radioactive waste processing and radioactive material shipment preparation and receipt activities. The inspectors assessed whether the shippers were knowledgeable of the shipping regulations and whether shipping personnel demonstrated adequate skills to accomplish the package preparation requirements for public transport with respect to:

- the licensee's response to NRC Bulletin 79-19, "Packaging of Low-Level Radioactive Waste for Transport and Burial," dated August 10, 1979; and
- 49 CFR Part 172, "Hazardous Materials Table, Special Provisions, Hazardous Materials Communication, Emergency Response Information, Training Requirements, and Security Plans," Subpart H, "Training."

Additionally, due to limited opportunities for direct observation, the inspectors reviewed the technical instructions presented to workers during a routine radwaste operation. The inspectors assessed whether the licensee's training program provided to personnel responsible for the conduct of radioactive waste processing and radioactive material shipment preparation activities.

b. Findings

No findings of significance were identified.

.6 Shipping Records

a. Inspection Scope

The inspectors assessed whether the shipping documents indicated the proper shipper name; emergency response information and a 24-hour contact telephone number; accurate curie content and volume of material; and appropriate waste classification, transport index, and United Nation number for several radioactive shipments that occurred between January 2009 and July 2010. Additionally, the inspectors assessed whether the shipment placarding was consistent with the information in the shipping documentation.

b. Findings

No findings of significance were identified.

.7 Identification and Resolution of Problems

a. Inspection Scope

The inspectors assessed whether problems associated with radioactive waste processing, handling, storage, and transportation, were being identified by the licensee at an appropriate threshold, were properly characterized and were properly addressed for resolution in the licensee CAP. Additionally, the inspectors assessed whether the corrective actions were appropriate for a selected sample of problems documented by the licensee that involve radioactive waste processing, handling, storage, and transportation.

The inspectors reviewed results of selected audits performed since the last inspection of this program and evaluated the adequacy of the licensee's corrective actions for issues identified during those audits.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

.1 Safety System Functional Failures

a. Inspection Scope

The inspectors sampled licensee submittals for the Safety System Functional Failures performance indicator (PI) for both Unit 1 and Unit 2 for the period from the third quarter 2009 to the second quarter 2010. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009, and NUREG-1022, "Event Reporting Guidelines 10 CFR 50.72 and 10 CFR 50.73," definitions and guidance, were used. The inspectors reviewed the licensee's operator narrative logs, operability assessments, maintenance rule records, maintenance work orders, IRs, event reports and NRC Integrated Inspection Reports for the period of July 1, 2009, through June 30, 2010, to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two safety system functional failures PI samples as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.2 Mitigating Systems Performance Index - Emergency Alternating Current Power System

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index (MSPI) - Emergency Alternating Current Power System PI for both Unit 1 and Unit 2 for the period from the third quarter 2009 to the second quarter 2010. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009, were used. The inspectors reviewed the licensee's operator narrative logs, MSPI derivation reports, issue reports, event reports and NRC Integrated Inspection Reports for the period of July 1, 2009 through June 30, 2010, to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and, if so, verified that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's IR database to determine if any problems had been identified with the PI data collected or transmitted for this indicator. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two emergency ac power system PI samples as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.3 Mitigating Systems Performance Index - High Pressure Injection Systems

a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - High Pressure Injection Systems PI for Braidwood Unit 1 and Unit 2 for the period from the fourth quarter 2009 to the second quarter 2010. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009, were used. The inspectors reviewed the licensee's operator narrative logs, IRs, MSPI derivation reports, event reports and NRC Integrated Inspection Reports for the period of October 1, 2009, through June 30, 2010, to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, verified that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's IR database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two high pressure injection system PI samples as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.4 Mitigating Systems Performance Index - Heat Removal System

a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - Heat Removal System PI for Braidwood Unit 1 and Unit 2 for the period from the fourth quarter 2009 to the second quarter 2010 to determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009, were used. The inspectors reviewed the licensee's operator narrative logs, IRs, event reports, MSPI derivation reports, and NRC Integrated Inspection Reports for the period of October 1, 2009, through June 30, 2010, to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, verified that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two heat removal system PI samples as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.5 Mitigating Systems Performance Index - Residual Heat Removal System

a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - Residual Heat Removal System PI for Braidwood Unit 1 and Unit 2 for the period from the first quarter 2010 to the second quarter 2010. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009, were used. The inspectors reviewed the licensee's operator narrative logs, IRs, MSPI derivation reports, event reports and NRC Integrated Inspection Reports for the period of January 1, 2010, through June 30, 2010, to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, verified that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two residual heat removal system PI samples as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.6 Mitigating Systems Performance Index - Cooling Water Systems

a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - Cooling Water Systems PI for Braidwood Unit 1 and Unit 2 for the period from the first quarter 2010 to the second quarter 2010. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009, were used. The inspectors reviewed the licensee's operator narrative logs, IRs, MSPI derivation reports, event reports and NRC Integrated Inspection Reports for the period of January 1, 2010, through June 30, 2010, to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, verified that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two cooling water system PI samples as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.4 Occupational Exposure Control Effectiveness

a. Inspection Scope

The inspectors sampled licensee submittals for the Occupational Radiological Occurrences PI for the period from the first quarter 2009 through first quarter 2010. The inspectors used PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5 to determine the accuracy of the PI data reported during those periods. The inspectors reviewed the licensee's assessment of the PI for occupational radiation safety to determine if indicator related data was adequately assessed and reported. To assess the adequacy of the licensee's PI data collection and analyses, the inspectors discussed with radiation protection staff, the scope, and breadth of its data review, and the results of those reviews. The inspectors independently reviewed electronic dosimetry dose rate and accumulated dose alarm and dose reports and the dose assignments for any intakes that occurred during the time period reviewed to determine if there were potentially unrecognized occurrences. The inspectors also conducted walkdowns of locked high radiation area entrances to determine the adequacy of the controls in place for these areas. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one occupational radiological occurrences PI sample as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.5 Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual
Radiological Effluent Occurrences

a. Inspection Scope

The inspectors sampled licensee submittals for the Radiological Effluent Technical Specifications (RETS)/ Offsite Dose Calculation Manual (ODCM) Radiological Effluent Occurrences PI for the period between the first quarter of 2009 and the first quarter of 2010. The inspectors used PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5 to determine the accuracy of the PI data reported during those periods. The inspectors reviewed the licensee's issue report database and selected individual reports generated since this indicator was last reviewed to identify any potential occurrences such as unmonitored, uncontrolled, or improperly calculated effluent releases that may have impacted offsite dose. The inspectors reviewed gaseous effluent summary data and the results of associated offsite dose calculations for selected dates between January 2009 and May 2010 to determine if indicator results were accurately reported. The inspectors also reviewed the licensee's methods for quantifying gaseous and liquid effluents and determining effluent dose. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one RETS/ODCM radiological effluent occurrences PI sample as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Public Radiation Safety, Occupational Radiation Safety, and Physical Protection

.1 Routine Review of Items Entered into the Corrective Action Program

a. Inspection Scope

As part of the various baseline inspection procedures discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that they were being entered into the licensee's CAP at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. Attributes reviewed included: the complete and accurate identification of the problem; that timeliness was commensurate with the safety significance; that evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent-of-condition reviews, and previous occurrences reviews were proper and adequate; and that the classification, prioritization, focus, and timeliness of corrective actions were commensurate with safety and sufficient to prevent recurrence of the issue. Minor issues entered into the licensee's CAP as a result of the inspectors' observations are included in the Attachment to this report.

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples. Instead, by procedure they were considered an integral part of the inspections performed during the quarter and documented in Section 1 of this report.

b. Findings

No findings of significance were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

In order to assist with the identification of repetitive equipment failures and specific human performance issues for followup, the inspectors performed a daily screening of items entered into the licensee's CAP. This review was accomplished through inspection of the station's daily condition report packages.

These daily reviews were performed by procedure as part of the inspectors' daily plant status monitoring activities and, as such, did not constitute any separate inspection samples.

b. Findings

No findings of significance were identified.

4OA3 Followup of Events and Notices of Enforcement Discretion (71153)

Fire Brigade and Operation's Response to a Small Fire in the Turbine Building

c. Inspection Scope

On August 22, 2010, at 3:29 p.m., equipment operators identified a small fire originating from lagging on a 2B feedwater pump steam line. The operators immediately reported the fire to the main control room and extinguished the fire within 3 minutes by utilizing a locally staged fire extinguisher. The main control room announced the fire and took action to start the 2A feedwater pump and then tripped the running 2B feedwater pump in accordance with station procedures. The station fire brigade was dispatched and responded promptly after the station fire alarm was sounded. Additional mitigating actions were taken to cool the lagging with water and a reflash watch was stationed.

The resident inspectors verified that the station followed the appropriate procedures to address both a fire and prompt transfer of running feedwater pumps. Additionally, the inspectors verified that Operations had reviewed the station's emergency action levels and had an adequate basis to support not declaring a station event. The fire was extinguished in less than 15 minutes and did not affect or pose a challenge to any safety-related equipment. Additionally, the inspectors verified that the licensee had entered the condition into the CAP.

This event followup review constituted one sample as defined in IP 71153-05.

d. Findings

No findings of significance were identified.

.6 Unit 2 Trip on August 16, 2010 – Dual Unit Plant Trip

a. Inspection Scope

On August 16, 2010, at 2:06 a.m., the Unit 2 reactor tripped due to a main generator lockout relay actuation. Following the reactor trip, all safety systems functioned as designed with the exception of one auxiliary feedwater flow control valve, which failed in its safety-related open position.

Following the reactor trip, the Unit 2 main condenser hotwell began to rise, as expected, as steam was exhausted into the condenser. After the hotwell level reached a high level setpoint, the hotwell level control valves automatically opened to send water to the unit's condensate storage tank. During this transfer, water from open-ended risers then was released on the 451' elevation and impacted a Unit 1 motor control center. The resulting loss of this motor control center caused a loss of two circulating water pumps on Unit 1.

The resident inspectors discussed the cause of the reactor trip with operations, engineering and licensee management personnel to gain an understanding of the event and assess follow-up actions. The inspectors also discussed the event with the licensee's root cause analysis team and assessed the team's actions to gather, review, and assess information regarding the cause of the reactor trip. The inspectors later reviewed the initial investigation and cause determination to assess the detail of review, the adequacy of the root cause and the proposed corrective actions prior to unit restart. The licensee's preliminary investigation identified that the cause of the trip was a ground fault in the turbine. Also, the resident inspectors observed operations personnel in the control room, reviewed procedures, sequence of event logs, narrative logs and emergency response computer system data. The inspectors also used this information to determine whether operations personnel had responded appropriately following the reactor trip.

This event followup review constituted one sample as defined in IP 71153-05.

b. Findings

No findings of significance were identified.

.7 Unit 1 Trip on August 16, 2010 – Dual Unit Plant Trip

a. Inspection Scope

On August 16, 2010, following the Unit 2 reactor trip, at 2:19 a.m., the Unit 1A and 1C circulating water pumps tripped, which caused a Unit 1 automatic reactor trip on low condenser vacuum. Due to the loss of the condenser, operators maintained Unit 1 temperature and pressure using steam generator power operated relief valves. Following the Unit 1 reactor trip, the 1D steam generator safety relief valve stuck partially open. The resident inspectors discussed the cause of the reactor trip with operations, engineering and licensee management personnel to gain an understanding of the event and assess follow-up actions. The inspectors met with the licensee's root cause

analysis team and assessed the team's actions to gather, review, and assess information regarding the cause of the reactor trip. The inspectors later reviewed the initial investigation and cause determination to assess the detail of review, the adequacy of the root cause and the proposed corrective actions prior to unit restart. The licensee's preliminary investigation identified that the cause of the trip was related to water intrusion into a motor control center. The water originated from an open-ended vent riser on the Unit 2 auxiliary feedwater suction piping.

The resident inspectors observed operations personnel in the control room, reviewed procedures, sequence of event logs, narrative logs and emergency response computer system data. Also, the inspectors discussed the cause of the reactor trip with operations, engineering and licensee management personnel to gain an understanding of the event and assess follow-up actions. The inspectors also used this information to determine whether operations personnel had responded appropriately following the reactor trip.

This event followup review constituted one sample as defined in IP 71153-05.

b. Findings

No findings of significance were identified

.8 Unit 1 Trip on September 20, 2010

a. Inspection Scope

On September 20, 2010, at 5:04 p.m., Braidwood Unit 1 experienced an automatic reactor trip. When the trip occurred, two surveillances were taking place, a power range N43 calibration and a calibration of the 1C steam generator narrow level range channel. The resident inspectors discussed the cause of the reactor trip with operations, engineering and licensee management personnel to gain an understanding of the event and assess follow-up actions. The inspectors also discussed this event with the licensee's root cause analysis team and assessed the team's actions to gather, review, and assess information regarding the cause of the reactor trip. The inspectors later reviewed the initial investigation and cause determination to assess the detail of review, the adequacy of the root cause and the proposed corrective actions prior to unit restart. The licensee's preliminary investigation identified that the cause of the trip was related to a failed Solid State Protection System universal card that provided the two out of four logic with a second channel out due to the surveillance.

The inspectors observed operations personnel in the control room, reviewed procedures, sequence of event logs, narrative logs and emergency response computer system data, and held discussions with licensee personnel to determine the cause of a Unit 1 automatic reactor trip. The inspectors also used this information to determine whether operations personnel had responded appropriately following the reactor trip.

This event followup review constituted one sample as defined in IP 71153-05.

b. Findings

No findings of significance were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

On October 1, 2010, the inspectors presented the inspection results to Mr. A. Shahkarami, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors confirmed that none of the potential report input discussed was considered proprietary.

.2 Interim Exit Meetings

On July 16, 2010, an interim exit was conducted for the radioactive solid waste processing and radioactive material handling, storage, and transportation inspection and two PI verifications under the Public and Occupational Radiation Safety Cornerstones with Mr. A. Shahkarami and other members of the licensee staff.

The inspectors confirmed that none of the potential report input discussed was considered proprietary. Proprietary material received during the inspection was returned to the licensee.

4OA7 Licensee-Identified Violations

The following violations of very low safety significance (Green) were identified by the licensee and are violations of NRC requirements which meet the criteria of Section 2.3.2 of the NRC Enforcement Policy for being dispositioned as NCVs.

- 10 CFR 50.65(a)(4) requires, in part, that before performing maintenance activities (including but not limited to surveillance, post-maintenance testing, and corrective and preventive maintenance), the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities. Contrary to the above, on July 7, 2010, the licensee failed to assess and manage the increase in risk with the main steam dump valve 1MS004E and steam generator power operated relief valve 1MS018D out-of-service for maintenance at the same time. This issue was determined to be of very low safety significance and was entered into the licensee's CAP (IR1102435).
- 10 CFR 50.65(a)(4) requires, in part, that before performing maintenance activities (including but not limited to surveillance, post-maintenance testing, and corrective and preventive maintenance), the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities. Contrary to the above, on August 16, 2010, the licensee failed to assess and manage the increase in risk following a dual unit trip. Specifically, a Yellow risk configuration was not identified by the licensee in accordance with station procedures after the main power transformer breakers were opened following an August 16, 2010, dual unit trip. This issue was determined to be of very low safety significance and was entered into the licensee's CAP (IR1102435).

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

A. Shahkarami, Site Vice President
L. Coyle, Plant Manager
D. Evans, Security Operations Manager
S. Butler, Emergency Preparedness Manager
P. Daly, Radiation Protection Manager
R. Gadbois, Maintenance Manager
G. Galloway, Work Control Manager
R. Gaston, Regulatory Assurance Manager
J. Knight, Nuclear Oversight Manager
M. Marchionda, Operations Manager
J. Moser, Radiation Protection Manager
T. Schuster, Chemistry/Environmental Manager
M. Smith, Engineering Manager

Nuclear Regulatory Commission

E. Duncan, Chief, Branch 3, Division of Reactor Projects
B. Dickson, Chief, Plant Support Team, Division of Reactor Safety

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

05000456/2010004-01; 05000457/2010004-01	NCV	Failure to Follow Procedure for Temporary Scaffolds (Section 1R18.1.b(1))
05000456/2010004-02; 05000457/2010004-02	URI	Temporary Scaffold Quality Control Process (Section 1R18.1.b(2))
05000456/2010004-03; 05000457/2010004-03	NCV	Unplanned Cooling Water Flow Reduction during Essential Service Water IST Surveillance (Section 1R22.1.b)
05000456/2010004-04; 05000457/2010004-04	URI	Potentially Inadequate Emergency Preparedness Critique (Section 1EP6.b)

Closed

05000456/2010004-01; 05000457/2010004-01	NCV	Failure to follow Procedures for Temporary Scaffolds (Section 1R18.1)
05000456/2010004-0X; 05000457/2010004-0X	NCV	Unplanned Cooling Water Flow Reduction during Essential Service Water IST Surveillance (Section 1R22.1)

Discussed

None

LIST OF DOCUMENTS REVIEWED

The following is a partial list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspector reviewed the documents in their entirety, but rather that selected sections or portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

1R01 Adverse Weather Protection

- IR 1090645; Degraded Condition of a SX Pump Room; July 14, 2010
- IR 1090787; High Lake Temperature; July 14, 2010
- IR 1091226; NRC Identified Possible Room Temp Inst Calibration Issue; July 15, 2010
- WO 1236881 01; High Temperature Equipment Protection; May 6, 2010
- WO 1236881 03; OP Place 2 to Coolers Online for Seasonal Readiness; April 14, 2010
- 0BwOS XHT-A1; Unit Common High Temperature Equipment Protection Surveillance; Revision 15
- EN-BR-402-0005; Extreme Heat Implementation Plan; Revision 3
- OP-AA-108-107-1001; Station Response to Grid Capacity Conditions; Revision 3
- WC-MW-114; High Temperature Equipment Protection; Revision 0
Site Environmental EHIP Report; July 16, 2010

1R04 Equipment Alignment

- BwOP CC-M2, Component Cooling Mechanical Lineup, Unit 2, Revision 014
- BwOP CV-E2; Chemical Volume Operating Electrical Lineup – Unit 2 Operating; Revision 7
- BwOP CV-M2; Chemical Volume Operating Mechanical Lineup Unit 2; Revision 25
- BwOP MS-M1, Main Steam Operating Mechanical Lineup, Unit 1, Revision 20
- WO 1352541 01, IST - 1A D/G Operability Monthly
- 2A CV Window – July 2010 – Protected Equipment
- CV-1, CVCS; November 18, 2009; Revision 13
- IR 1093718; ASME Class Breaks at CC to 1/2PS29J are inadequate; July 22, 2010
- IR 0880654; Design Vulnerability in CC Surge Tank Makeup; February 13, 2010
- BwOP CC-M1; Operating Mechanical Lineup Unit 1, Revision 16

1R05 Fire Protection

- UFSAR 2.3.11.50; Division 12 Cable Penetration Area – Fire Zone 11.6-11; Amendment 18, December 1998
- UFSAR 2.3.18.28; Circulating Water Pump House (Byron), Lake Screen House (Braidwood) – Fire Zone 18.12-01; Amendment 22, December 2006
- Braidwood Generating Station Pre-Fire Plan #159; AB 426' Division 12, Elec. Penetrations Area; Fire Area/Zone FZ 11.6-1; Revision 0
- Braidwood Generating Station Pre-Fire Plan #224; LSH 602' Lake Screen House; Fire Area/Zone 18.12-0; Revision 0
- Braidwood Fire Protection Report 2.4.2.118; Division 12 Containment Electrical Penetration Area, El. 426' – Fire Zone 11.6-1; Amendment 22, December 2006
- Braidwood Fire Protection Report 2.4.2.174; ESW Return Valve Pit @ Braidwood Cooling Lake – Fire Zone 18.39-0; Amendment 23, December 2006
- Braidwood Fire Protection Report figure 2.3-28; Plan & Section Lake Screen House; Amendment 12, December 1989

- OP-AA-201-003; Fire Drill Scenario No. 20.09.10.10 for Station Air Compressor 1SA01C Hot Work Fire; September 10, 2010

1R06 Flood Protection

- EC 380196, Change from Automatic to Manual Hotwell Reject Post Trip, Revision 0

1R11 Licensed Operator Regualification Program

- LORT Simulator Exam, July, 21 2010

1R12 Maintenance Effectiveness

- IR 1075234; 2B FW Pump Decrease Speed Light Blinking; May 31, 2010
- IR 1094292; 2B FW Pump Decrease Speed Light Blinking; July 26, 2010
- IR 1094389; AVB Deployed to Stop Unsearched Vehicle; July 26, 2010
- IR 1094949; NOS ID: Troubleshooting Performed to a Suspended Work Order; July 27, 2010
- IR 1095049; 2B FW Pump T-Shooter Recorder Missed Opportunity; July 27, 2010
- IR 1095344; 2B FW PP – C3 Card – Correct Jumper Configuration (- or + voltage); July 28, 2010
- IE 1096497; 2B FW PP Control Station Lights Blinking Again; July 31, 2010
- IR 1096897; 2FW01PB-A Tripped during BwOP FW-10; August 2, 2010
- IR 1097256; FW Pump Speed Control Loops; July 3, 2010
- BwOP FW-2; Shutdown of a Turbine Driven Main Feedwater Pump; Revision 13b
- BwOP FW-7; Startup of a Motor Driven Main Feedwater Pump; Revision 12
- BwOP FW-23; Swapping Feedwater Pumps; Revision 26
- MA-AA-716-004; IR 1075234 & 1094292, WO 01342496-01, Braidwood 2B FW Speed Control Cabinet 2PA36J; July 27, 2010
- OP-AA-108-111; Adverse Condition Monitoring and Contingency Plan; 2B TDFW Pp Speed Decrease Light; May 31, 2010
- Performance Monitoring – Unavailability; Braidwood FW1 and FW2; Aug 2008 – Aug 2010

1R13 Maintenance Risk Assessments and Emergent Work Control

- TS 3.0.4.b Evaluation – Unit 1 CST Inoperable during Unit 1 Startup
- ER-AA-600-1011, Risk Management Program, Revision 008
- ER-AA-600-1042, Online Risk Management, Revision 004

1R15 Operability Evaluations

- IR 1092591; Bryozoa Exceeds Action Level in 2B Circ-Water Bay; July 20, 2010
- IR 1092686; CW Pump DP Low Annunciator; July 21, 2010
- IR 1092709; CW Troubleshooting Unsuccessful; July 21, 2010
- IR 1094398; Bryozoa Exceeds Action Level in 1B Circ Water-Bay; July 22, 2010
- IR 1098969; As Found findings 1CW01PC Forebay Inspection; August 6, 2010
- IR 1099054; 1C CW Pump Delta P Low Alarm – 1PDS-CW015; August 7, 2010
- BwMP 3300-091; Lake Screen House Diver Related Inspections; Revision 20
- LSH 1A Forebay Inspection Report; As Found
- LSH 1C Forebay Inspection Report; As Found on 8-6-10
- LSH 2B Forebay Inspection Report ; As Found
- Bryozoa Monitoring Monthly Report; 22-24 July 2010
- Bryozoa Monitoring Monthly Report; 24 May 2010

- Nuclear Plant (PWR) Chemistry Report; July 23, 2010
- Nuclear Plant (PWR) Chemistry Report; July 26, 2010
- SOER 07-2; Intake Cooling Water Blockage; January 28, 2010
- IR 1093718; ASME Class Breaks at CC to 1/2PS29J are inadequate; July 22, 2010
- IR 0880654; Design Vulnerability in CC Surge Tank Makeup; February 13, 2010
- EC 377882; Design Vulnerability associated with the CC system ; Revision 0
- IR 0855296; CC System Design for Post-LOCA Passive Failure; December 11, 2008
- EC 374604; Design Vulnerability associated with the CC system surge tank ; Revision 0
- OP-AA-108-115; Operability Determinations(CM-1), Revision 9
- EC 380038; Essential Service Water System Header Pressure; Revision 0
- IR 1105448; Unplanned LCO Entry due to Operator Error; August 24, 2010
- OPR-10-007; Essential Service Water System; August 27, 2010

1R18 Plant Modifications

- IR 969296, NOS Identified Inadequate Documentation for Perm. Scaffold, October 14, 2008
- IR 830692, Risk to Operations FWRV – 520 with Scaffold Build, October 14, 2008
- IR 901412, NRC Identified Issues – Scaffold and Tools in Rad Areas, April 1, 2009
- IR 829434, WO # 114524, Inadequate Review of Scaffold Packages, October 10, 2008
- IR 1073578, Temp Scaffold is Over 90 Days
- IR 1081934, Two Scaffold in the Aux Bldg Stm Tunnel will Exceed 90 days, June 18, 2008
- IR 1083041, U-1 DOST Temporary Scaffold Remain, June 17, 2010
- IR 1081977, Rescheduling Removed Scaffold Activities Past 90 Days, June 18, 2010
- IR 828969, FP Sprinklers at AB Center Stairwell Impaired by Scaffolding
- IR 1081977, Rescheduling Remove Scaffold Activities Past 90 Days
- IR 1063870, Procedure Violation/Housekeeping Issue
- 10 CFR 50.59 Safety Evaluation, BWR-SE-1998-915, for Procedure NSWP-23, Revision 0, “All System are Potentially Affected by the Installation of Temporary Scaffold”, May 26, 2010
- 10 CFR 50.59 Safety Evaluation, for Procedure MA-AA-AD-6-00025, Revision 0, “Station Scaffold Installation/Modification and Removal Request”
- 10 CFR 50.59 Safety Evaluation, BWR-SE-2000-1193, Permanent Scaffolds Stored in the Plant
- MA-AA-716-025, Scaffold Installation, Modification, and Removal Request Process, Revision 7B
- 10 CFR 50.59 Safety Evaluation, NSWP-A-24, Station Scaffold Erection & Inspection, Revision 0
- 10 CFR 50.59 Safety Evaluation, MA-AA-AD-6-00025, Station Scaffold Installation/Modification and Removal Request, Revision 0
- NEI 96-07, Guidelines for 10 CFR 50.59 Implementation, Revision 1
- EC 380196, Change from Automatic to Manual Hotwell Reject Post Trip, Revision 0

IR19 Post-Maintenance Testing

- IR 1092966; 2CS009B Motor Pinion Gear Found Degraded; July 21, 2010
- IR 1099650; PMT for 1CV121 Not Completed in Portal; August 9, 2010
- IR 1100009; Valve Packing Installed Incorrectly – 1CV121; August 10, 2010
- IR 1081770, DDFP Relief Valve Potentially need Setpoint Adjustment, June 17, 2010
- CR 1081379-06; Braidwood Unit 2 Motor Operated Valve 22CS009B Failed to Stroke Closed During Surveillance Testing; June 17, 2010
- BwOP CV-27; CV Valve Bypass Operations; Revision 2

- BwVSR 5.5.2a; Leakage Testing Requirements for Potentially Radioactive Components Outside Containment; Revision 3
- BwVSR 5.5.2.au1; Unit 0/1 Leakage Quantification Report for Potentially Radioactive Components Outside Containment; Revision 5
- 2BwOST 5.5.8.CS-1B; Train B Containment Spray System Valve Stroke Surveillance; July 22, 2010
- MOV Post-Test Data Review Worksheet; Braidwood Unit 2 Valve BRA-2CS009B; July 22, 2010
- MA-AA-716-012; AOV Post Maintenance Test Matrix; Revision 120
- MA-AA-716-025, Scaffold Installation, Modification, and Removal Request Process, Revision 7B;
- MA-AA-716-025, Scaffold Installation, Modification, and Removal Request Process, Revision 8
- OP-AA-108-11; Adverse Condition Monitoring Contingency Plan for 1CV121 Packing Leak and RCS Leak Rate, Revision 6
- OP-AA-109-101; Supervision Clearance Acceptance/Release Checklist; Revision 5
- CV-2 CVCS Notes; November 28, 2007; Revision 8
- Animation of 1CV121 Leakoff Flow Modification; Purpose: To Quantify Leakoff Flow as Identified RCS Leakage; August 4, 2010CV-1, CVCS; Schematics November 18, 2009; Revision 13
- PI&R M-52, Diagram of Fire Protection at Lake Screen House Units 1 & 2, Sheet 5, dated June 6, 1976
- WO 1062468-02, Remove Valve, Install Blind Flange for Testing, Reinstall New Relief Valve
- 0BwOS FP 2.2.M-2, Diesel Driven Fire Pump Surveillance, Revision 11
- 0BwVS FP.2.1.E-1b, 0B Fire Protection Pump Flow and Pressure Test, Revision 3
- MA-AA-716-012, Post Maintenance Testing, Revision 12
- Memo – Kunkle Valve Division Models 218 and 228 Fire Pump Relief Valve Installation and Operating Instructions
- Day Shift Operations Log; August 5, 2010
- Night Shift Operations Log; August 5, 2010
- Day Shift Operations Log; August 6, 2010
- Night Shift Operations Log, August 6, 2010
- Initial Timeline for 2V121 Testing
- Regulatory Guide 1.183; Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors; July 2000
- TIMM100 Work Task Outline – Nuclear Production (PN1P); MM-Valve Packing Leak; August 5, 2010
- TIMM301 – Task Completion Processing – Nuclear Production (PN2P); OP PMT Funct/Leak Check 1CV121 Flow Control Valve; August 9, 2010
- TIMM301 – Task Completion Processing – Nuclear Production (PN2P); MM 1CV121 Repack or Adjust Packing; August 5, 2010
- WO 01296076 01; MM-Valve Packing Leak; August 5, 2010
- WO 01332724, RCDT Containment Isolation Valve Stroke Test; August 9, 2010
- WO 10625468, Diesel Driven Fire Pump Relief Valve Replacement
- NEI 96-07, Guidelines for 10 CFR 50.59 Implementation, Revision 1

1R20 Outage Activities

- 1BwGP 100-1T2; Mode 5 to 4 Checklist; Revision 22
- 1BwGP 100-1T3; Mode 4 to 3 Checklist; Revision 20
- 1BwGP 100-2, Plant Startup, Revision 30
- 2BwGP 100-2; Plant Startup; Revision 25

- 2BwGP 100-2T2; Mode 3 to 2 checklist; Revision 22
- IR 1102109; 1D RCP CC Flex Hose Leak at Flange Connection; August 16, 2010
- IR 1102153; Unit 1 Buttress Received some Damage Following Trip; August 16, 2010
- IR 1102230; NRC Identified Minor Cracks in the U1 Steam Tunnel Wall; August 16, 2010
- IR 1102248; Unplanned Release of U1 Steam/Tritium Condensing to Ground; August 16, 2010
- IR 1102435; Online Risk Analysis Post Dual Unit Trip; August 16, 2010
- IR 1102578; Incorrect Flow Operability Values in 2BWOSR – 5.5.8.RH-6A; August 17, 2010
- IR 1102716; Isolate Input Power to 133V; August 17, 2010
- IR 1103089; NOS ID – Inadequate Documentation for PM Deferrals; August 18, 2010
- IR 1103123; CW Forebay IRs not Rigorously Reviewed for Operability; August 18, 2010
- IR 1103188; No Problem Found During T'Shoot of 2AG005G Failure to Open; August 18, 2010
- IR 1103198, Dual Unit Outage Affecting SX Strainer Permanent Power Mod; August 16, 2010
- IR 1103269; 1PS-Es052 Does not Reset; August 19, 2010
- ER-AP-3311002; Evaluation of Boric Acid Leakage; Revision 5
- LS-AA-119; Fatigue management and Work Hour Limits; Revision 8
- LS-AA-119-1003; Calculating Work Hours; Revision 0
- LS-AA-119-1004; Reviews and Reporting; Revision 0
- OP-AA-108-111; Adverse Condition Monitoring and Contingency Plan; Revision 5
- Mode Change Check Lists
- Post Transient Trip Report

1R22 Surveillance Testing

- IR 1090806; Elevated Copper in 2CV01PA Outboard Motor Bearing Lube Oil; July 14, 2010
- IR 1091592; NRC Identified Posting Enhancement Opportunity for 2CV01PA; July 15, 2010
- IR 1098534, 1A EDG Trouble Alarm
- BwMSR 3.7.1.1.1, Main Steam Safety Valve Operability Test, Revision 1
- 1BwOS 3.8.1.2-2; 1B Diesel Generator Operability Surveillance; Revision 22
- 2BwOSR 5.5.8.CV-4A; Group A IST Requirements for 2A Centrifugal Charging Pump (2CV01PA) and Check Valve 2CV8480A Stroke Test; Revision 4
- 2BwOSR 5.5.8.SX-3B; Group A IST Requirements for 2 B Essential Service Water Pump (2SX01PB); Revision 1
- ER-AA-321; IST Pump Evaluation Form, Report 2CV01PA; Revision 10
- WO 1335633 01; IST For 2CV841B/8480A/8480B – ASME Surveillance Requirements for 2CV01PA; July 15, 2010
- WO 1356205 01; IST – 1B DG Operability Monthly; August 24, 2010
- WO 1336396 01; IST for 2SX002B – ASME Surveillance Requirements for 2B Essential Service Water; August 26, 2010
- WO 1361121 01; U2 SX System Flow Balance Surveillance 2BwOSR 3.6.6.3-1; August 19, 2010
- 2BwOA PRI-8; Essential Service Water Malfunction Unit 2; Revision 103
- IR 1105448; Unplanned LCO Entry due to Operator Error; August 24, 2010
- BwAP 340-1; Use of Procedures for Operating Department; Revision 24
- WO 1361121 01; U2 SX System Flow Balance Surveillance 2BwOSR 3.6.6.3-1; August 19, 2010
- Previous SR Vibration Results; 2CV01PA; July 15, 2010
- ASME OM Code 2001; Centrifugal Pump Test Acceptance Criteria

1EP6 Drill Evaluation

- Team A July Mini-Drill Findings and Observation Report; August 11, 2010
- IR1096984; Failed DEP in July 21 PI Drill due to Scenario Control Issue; August 2, 2010
- IR1100228; Failed Demonstration Criteria in TSC during 7/21/10 PI Drill; August 11, 2010
- IR1100230; Failed Demonstration Criteria in OSC from July 21 PI Drill; August 11, 2010
- IR1100236; Scenario Management Issues from July 21 Team A PI Drill; August 11, 2010
- IR1100242; Facility/Equipment Issues from July 21 PI Drill; August 11, 2010
- IR1100362; TSC Performance deficiencies from July 21 Team A PI Drill; August 11, 2010
- IR1100365; TSC ERO Performance Enhancements from July 21 PI Drill; August 11, 2010
- IR1100371; Simulator ERO Performance Enhancements from July 21 PI Drill; August 11, 2010
- IR1100375; OSC ERO Performance Deficiencies from July 21 PI Drill; August 11, 2010
- IR1100380; OSC ERO Performance Enhancements from July 21 PI Drill; August 11, 2010
- Braidwood 7/21/10 PI Mini-Drill Scenario
- EP-AA-1001; Braidwood Annex, Revision 23 (March 2010)
- EP-AA-1001; Braidwood Annex, Revision 24 (May 2010)
- EP-AA-112-F-08; OSC and TSC Drill Player Logs; July 21, 2010
- EP-AA-125-1002; PI Summary; Revision 6; July 21, 2010
- EP-MW-114-100-F-01; Nuclear Accident Reporting System (NARS) Form; Revision E; July 21, 2010
- EP-AA-111-F-02; Braidwood Plant Based PAR Flowchart; Revision C; July 21, 2010
- LS-AA-1150; Reactor Plant Event Notification Worksheet; Revision 0; July 21, 2010
- EP-AA-122-1001-F-12; Drill & Exercise Observation Form – OSC and TSC Evaluator Logs; Revision C; July 21, 2010
- EP-AA-122-1001-F-11; Drill & Exercise Comment & Feedback Form – Player Critique; Revision D; July 21, 2010
- EP-AA-122; Drills & Exercise; Revision 10
- EP-AA-125-1001; EP Performance Indicator Guidance; Revision 6
- EP-AA-112-200; TSC Activation and Operation; Revision 7

2RS8 Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation

- RP-AA-600; Radioactive Material/Waste Shipments; Revision 10
- RP-AA-600-1011; Use and Operation of WMG Software for Gross Gamma Characterization and Generation of Shipping Paperwork; Revision 0
- RP-AA-600-1010; Use and Operation of WMG Software for Creating Containers, Samples of Waste Streams and Wastes and Waste Types; Revision 0
- RP-AA-605; 10 CFR Part 61 Programs; Revision 2
- LS-AA-126-1005; Attachment No. 2; Check-In Self-Assessment Report Template; Revision 4; Radioactive Solid waste Processing and Radioactive Material Handling, Storage, and Transportation; May 12, 2010
- Scaling Factor Determination Cover Sheet; July 11, 2008
- 2008 Annual 10 CFR Part 61 Analysis of Waste Streams
- Radioactive Material Shipment Log 2009
- IR 0866300; RCCA Shipment Rework Required for Shipping; January 13, 2009
- IR 0879054; During Sluicing Resin from the OC Radwaste mixed Bed Demineralizer Valve 0WX-523C Failed to Closed; February 10, 2009
- IR 0881332; Emerging Trend RW Online Dose Challenges Dept/Station Goals; February 16, 2009

- IR 0976876; Class B Characterization of De-borated Resin and ALPS Resin in Access of 300 Percent Class A Limits; October 05, 2009
- IR 0978972; DAW Improperly Loaded into Seavan and Lock Removed; October 14, 2009
- IR 0979154; Filter Storage Room in Radwaste is Full of Bagged Filters; November 13, 2009
- IR 1010982; Poor Lid Closure Mechanism on Radioactive Shipping Box; December 30, 2009
- IR 1016702; Non-Conforming Waste Found in the Waste Shipment; January 12, 2010
- IR 1031145; Waste Liner Needs to be Filled with Filters and Shipped; March 18, 2010
- IR 1032928; Prep Actions to Support Tritium Transport Plan; February 19, 2010
- IR 1086877; Issue with Incoming Shipment with Rad Search; July 01, 2010
- IR 1091084; Incoming Rad Empty Cask Denied PA Access by Security; July 15, 2010
- RP-AA-600-1010; Use and Operation of WMG Software for Creating Containers Samples, Waste Stream and Waste Types; Revision 0
- RP-AA-600-1011; Use and Operation of WMG Software for Gross Gamma Characterization and Generation of Shipping Paperwork; Revision 0
- RWS-09-022; Radioactive Material; Excepted Package; Limited Quantity of Material, 7, UN2910; Shipment of Instrument and 20 Gallons HPDE Drum; February 23, 2009
- RWS-09-028; Radioactive Material, LSA-III, 7, UN3321; Cask and Liner Containing Resin; December 01, 2009
- RWS-09-124; 2 Radioactive Material, Low Specific Activity (LSA1), 7, UN2912; and Radioactive Material, Surface Contaminated Objects (SCOII), 7, UN2913; Metal Boxes containing Eddy Current Equipment; October 28, 2009
- RWS-09-127; Radioactive Material, Type A Package, 7, UN2915 and Excepted Package; Limited Quantity, 7, UN2910, Fissile Excepted (Seavan); December 29, 2009
- RWS-10-006; Radioactive Material, LSA-II, 7, UN3321; Cask and Liner Containing Dewatered Resin; April 07, 2010
- RWS-10-013; Radioactive Waste Shipment: Radioactive Material, Low Specific Activity (LSA-1), 7, UN2912; Radioactive Material, Excepted Package Limited Quantity, 7, UN2310; July 12, 2010
- Teledyne Brown Engineering Inc.; Report Analysis I29479; Comparison Of Sample Data Sets Validation; August 14, 2009

40A1 Performance Indicator Verification

- LS-AA-2150; Revision 5; Monthly Data Elements for NRC Functional Failures; from July 1, 2009 through June 30, 2010
- LS-AA-2150; Revision 5; Monthly Data Elements for NRC Emergency AC; from July 1, 2009 through June 30, 2010
- LS-AA-2150; Revision 5; Monthly Data Elements for NRC High Pressure Injection Systems; from October 1, 2009 through June 30, 2010
- LS-AA-2150; Revision 5; Monthly Data Elements for NRC Heat Removal Emergency AC; from October 1, 2009 through June 30, 2010
- LS-AA-2150; Revision 5; Monthly Data Elements for NRC Residual Heat Removal; from January 1, 2010 through June 30, 2010
- LS-AA-2150; Revision 5; Monthly Data Elements for NRC Cooling Water Systems; from January 1, 2010 through June 30, 2010
- LS-AA-2140; Revision 4; Monthly Data Elements for NRC Occupational Exposure Control Effectiveness; from January 2009 through May 2010
- LS-AA-2150; Revision 5; Monthly Data Elements For NRC RETS/ODCM Radiological Effluent Occurrences; From January 2009 through May 2010

40A2 Identification and Resolution of Problems

- IR 1089999, IDNS Identified 2 Unsecured Scaffold Carts in the Aux Bldg, July 12, 2010
- IR 1091226, NRC Identified Possible Room Temp Inst Calibration Issue, July 12, 2010
- IR 1091573, NRC Resident Asked Questions about Hot Weather Preparations, July 16, 2010
- IR 1091592, NRC Identified Posting Enhancement Opportunity for 2CV01PA, July 15, 2010
- IR 1099650, NRC Identified that PMT for 1CV121 not Completed in Portal, August 9, 2010
- IR 1106410, Eval Process for Forebay Inspection Results needs Review, August 26, 2010
- IR 1106404, NRC ID'D Potential Effects of Containment Buttress Panels, August 26, 2010
- IR 1103059, NRC Identified Lack of Quarantine of Areas or Items, August 18, 2010
- IR 1102230, NRC Identified Minor Cracks in the U1 Steam Tunnel Wall, August 16, 2010
- IR 1086548, Shift in 1D RCP MTR Upper Thrust Bearing Temp - 1RC01PD, June 30, 2010
- IR 1087060, 1FW006D has a Medium Steam Leak from Test Connection, June 16, 2010
- IR 1087453, Appendix R ELP Battery Charging Module Failure, July 2, 2010
- IR 1087697, Non ESF Switchgear Room Temp High Alarm Came Early, July 4, 2010
- IR 1088162, Potential Blockage in 2B CW Outlet Waterbox, July 5, 2010
- IR 1088364, Potential Design Vulnerability in Auxiliary Feedwater, July 7, 2010
- IR 1088664, Unit 1 PRA not Updated for Actual Plant Status, July 9, 2010
- IR 1089189, 1C SI Accumulator Level Showing an Upward Trend, July, 9, 2010
- IR 1089367, Cable Vaults need to be Pumped Out, July 9, 2010
- IR 1089540, 2A SX Pump Discharge Temperature High Alarm is in, July 10, 2010
- IR 1090645, Degraded Condition of SX Pump Room, July 14, 2010
- IR 1090787, High Lake Temperature, July 14, 2010
- IR 1091707, FME in Spent Fuel Pool, July 17, 2010
- IR 1091745, 1B RCP Seal Outlet Temperature High, July 17, 2010
- IR 1092591, Bryzoa Exceed Actions Level in 2B Cir-Water Bay, July 20, 2010
- IR 1092637, U-1 RCS Leak Rate Exceeded Action Level Three, July 20, 2010
- IR 1092727, Excessive Water in VA Plenum, July 20, 2010
- IR 1092966, 2CS009B Motor Pinion Gear Found Degraded, July 21, 2010
- IR 1093043, 1B DG Lube Oil Temp Switch not Controlling Properly, July 21, 2010
- IR 1094060, Removed Scaffold Over 90 Days, July 24, 2010
- IR 1094102, Security – Kubota Accident in the OCA, July 24, 2010
- IR 1094663, 2B CV Pump Inboard Seal Leakage, July 27, 2010
- IR 1095023, Vacuum Breaker 1 will not Communicate, July 27, 2010
- IR 1095069, Debris on Surface of Fuel Pool, July 28, 2010
- IR 1095896, Review of Wolf Creek OPEX for Braidwood Applicability, July 28, 2010
- IR 1095900, Question Regarding 50.59 Requirements for Scaffolding, July 29, 2010
- IR 1097184, U-1 RCS Exceeded Action Level 2, August 2, 2010
- IR 1097499, 1CV121 Packing Leak Increasing Trend, August 3, 2010
- IR 1105985, 2MS068 Valve Packing Leak, August 26, 2010
- IR 1107294, Unexpected VCT Level Drop Caused when Opening 2BR010B, August 8, 2010
- IR 1108193, Degraded Blowup Panels could allow Water to Enter MSIV Room, August 25, 2010
- IR 1120884, Braidwood Simulator Ramp Rates do not Match Programmed Rates, October 1, 2010

40A3 Event Followup

- IR 1104511; Fire on 2BFW Pump HP CV Cross-under Pipe; August 22, 2010
- OP-AA-201-002; Fire Event Report –Turbine Building 426', 2FW01PB Feedwater Pump, HP GV Cross-under Pipe Small Fire; August 25, 2010

- CC-AA-501-1027; Hot Work Precautions and Safety Practices; Revision 1
- OP-AA-201-004; Fire Prevention for Hot Work; Revision 8
- OP-AA-201-006; Control of Temporary Heat Sources; Revision 5
- Operations Log, dated August 16, 2010
- Operations Log, dated August 22, 2010
- Operations Log, dated September 20, 2010
- IR 1115492; U-1 RX trip; September 20, 2010
- IR 1115934; Turbine Trip Alarm First out Not Received on Turbine Trip; September 21, 2010
- IR 1116024; Reheat Stop Valve 1MS5001A Drifted Shut; September 21, 2010
- OTDM 1115574; Plant Startup after a failure of a Train "B" Universal Logic Card; September 21, 2010
- 1BwGP 100-2: Plant Startup: Revision 30
- Mode Change Check Lists
- Post Transient Trip Report for August 16, 2010 Dual Unit Trip
- Post Transient Trip Report for September 20, 201 Unit One Trip

LIST OF ACRONYMS USED

ADAMS	Agencywide Document Access Management System
ASME	American Society of Mechanical Engineers
CAP	Corrective Action Program
CC	Component Cooling
CFR	Code of Federal Regulations
DEP	Drill & Exercise Performance
gpm	gallons per minute
IR	Issue Report
IST	Inservice Testing
MSPI	Mitigating System Performance Indicator
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
PCP	Process Control Program
PI	Performance Indicator
psig	Pounds Per Square Inch Gauge
QA	Quality Assurance
RETS	Radioactive Effluent Technical Specifications
SDP	Significant Determination Process
SX	Essential Service Water
TS	Technical Specification
TSC	Technical Support Center
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item

M. Pacilio

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Sincerely,

/RA/

Eric R. Duncan, Chief
Branch 3
Division of Reactor Projects

Docket Nos. 50-456; 50-457
License Nos. NPF-72; NPF-77

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Letter to M. Pacilio from E. Duncan dated November 5, 2010.

SUBJECT: BRAIDWOOD STATION, UNITS 1 AND 2, NRC INTEGRATED INSPECTION
REPORT 05000456/2010004; 05000457/2010004

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