



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION III
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LISLE, IL 60532-4352

July 25, 2014

Mr. Michael J. Pacilio
Senior VP, Exelon Generation Co., LLC
President and CNO, Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: BRAIDWOOD STATION, UNITS 1 AND 2, NRC INTEGRATED INSPECTION
REPORT 05000456/2014003; 05000457/2014003

Dear Mr. Pacilio:

On June 30, 2014, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Braidwood Station, Units 1 and 2. On July 17, 2014, the NRC inspectors discussed the results of this inspection with Ms. M. Marchionda, and other members of your staff. The inspectors documented the results of this inspection in the enclosed inspection report.

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.

The NRC inspectors did not identify any findings or violations of more than minor significance.

In accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding," 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)

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

Enclosure:
IR 05000456/2014003; 05000457/2014003
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: 05000456/2014003; 05000457/2014003

Licensee: Exelon Generation Company, LLC

Facility: Braidwood Station, Units 1 and 2

Location: Braceville, IL

Dates: April 1 through June 30, 2014

Inspectors: J. Benjamin, Senior Resident Inspector
F. Ramirez, Resident Inspector
D. Betancourt, Resident Inspector
T. Bilik, Senior Reactor Inspector
T. Go, Health Physicist
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Illinois Emergency Management Agency

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

Enclosure

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SUMMARY OF FINDINGS

Inspection Report 05000456/2014003; 05000457/2014003; 04/01/2014–06/30/2014;
Braidwood Station, Units 1 and 2; Routine Integrated Inspection.

This report covers a 3-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG–1649, "Reactor Oversight Process," Revision 5, dated February 2014.

NRC-Identified and Self-Revealed Findings

None.

Licensee Identified Violations

None.

REPORT DETAILS

Summary of Plant Status

Unit 1 operated at or near full power during the entire inspection period.

Unit 2 operated at or near full power during the entire inspection period with one exception. On May 2, 2014, Unit 2 was shut down for a planned refueling outage. The unit was restarted on May 22, 2014 and reached full power on May 27, 2014

1. REACTOR SAFETY

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

1R01 Adverse Weather Protection (71111.01)

.1 Summer Readiness of Offsite and Alternate Alternating Current Power System

a. Inspection Scope

The inspectors verified that plant features and procedures for the operation and continued availability of offsite and alternate alternating current (AC) power systems during adverse weather were appropriate. The inspectors reviewed the licensee's procedures affecting these areas and the communication protocols between the transmission system operator and the plant to verify that appropriate information was exchanged when issues arose that could impact the offsite power system. Examples of aspects considered in the inspectors' review included:

- coordination between the transmission system operator and the plant during off-normal or emergency events;
- explanations for the events;
- estimates of when the offsite power system would be returned to a normal state; and
- notifications from the transmission system operator to the plant when the offsite power system was returned to normal.

The inspectors also verified that plant procedures addressed measures to monitor and maintain the availability and reliability of both the offsite AC power system and the onsite alternate AC power system prior to and during adverse weather conditions. Specifically, the inspectors verified that licensee procedures addressed the following:

- actions to be taken when notified by the transmission system operator that the post-trip voltage of the offsite power system at the plant would not be acceptable to assure the continued operation of the safety-related loads without transferring to the onsite power supply;
- compensatory actions identified to be performed if it would not be possible to predict the post-trip voltage at the plant for the current grid conditions;
- re-assessment of plant risk based on maintenance activities which could affect grid reliability, or the ability of the transmission system to provide offsite power; and

- communications between the plant and the transmission system operator when changes at the plant could impact the transmission system, or when the capability of the transmission system to provide adequate offsite power was challenged.

Documents reviewed are listed in the Attachment. The inspectors also reviewed corrective action program (CAP) items to verify that the licensee was identifying adverse weather issues at an appropriate threshold and entering them into their CAP in accordance with station corrective action procedures.

This inspection constituted one readiness of offsite and alternate AC power systems sample as defined in Inspection Procedure (IP) 71111.01–05.

b. Findings

No findings were identified.

.2 Summer Seasonal Readiness Preparations

a. Inspection Scope

The inspectors performed a review of the licensee’s preparations for summer weather for selected systems, including conditions that could lead to an extended drought.

During the inspection, the inspectors focused on plant-specific design features and the licensee’s procedures used to mitigate or respond to adverse weather conditions. Additionally, the inspectors reviewed the Updated Final Safety Analysis Report (UFSAR) and performance requirements for systems selected for inspection, and verified that operator actions were appropriate as specified by plant-specific procedures. Documents reviewed are listed in the Attachment. The inspectors also reviewed CAP items to verify that the licensee was identifying adverse weather issues at an appropriate threshold and entering them into their CAP program in accordance with station corrective action procedures. The inspectors’ reviews focused specifically on the following plant systems:

- Ultimate Heat Sink (UHS); and
- Auxiliary Building Ventilation System.

This inspection constituted one seasonal adverse weather sample as defined in IP 71111.01–05.

b. Findings

No findings were identified.

.3 External Flooding

a. Inspection Scope

The inspectors evaluated the design, material condition, and procedures for coping with the design basis probable maximum precipitation event. The evaluation included a review to check for deviations from the descriptions provided in the UFSAR for features intended to mitigate the potential for flooding from external factors. As part of this evaluation, the inspectors checked for obstructions that could prevent draining, checked

that the roofs did not contain obvious loose items that could clog drains in the event of heavy precipitation, and determined whether barriers required to mitigate a flooding event were in place and operable. Additionally, the inspectors performed a walkdown of the protected area to identify any modification to the site that could inhibit site drainage during a probable maximum precipitation event or allow water ingress past a barrier. The inspectors also reviewed the abnormal operating procedure (AOP) for mitigating the design basis flood event to ensure it could be implemented as written. Documents reviewed are listed in the Attachment.

This inspection constituted one external flooding sample as defined in IP 71111.01–05.

b. Findings

No findings were identified.

.4 Readiness for Impending Adverse Weather Condition—Severe Thunderstorm Warning

a. Inspection Scope

Since severe thunderstorms with potential high winds were forecast in the vicinity of the facility for June 18, June 21, and June 30, 2014, the inspectors reviewed the licensee's overall preparations and protection for the expected weather conditions. On these dates the inspectors walked down outside controlled material and material exclusion zones to ensure that the licensee had taken the necessary actions to limit the likelihood of losing offsite power due to unsecured material impacting electrical equipment during high wind conditions. The inspectors compared the licensee staff's preparations with licensee procedures and determined whether the staff's actions were adequate. During the inspection, the inspectors focused on plant-specific design features and the licensee's procedures used to respond to specified adverse weather conditions. The inspectors also toured the plant grounds to search for any loose debris that could become missiles during a tornado. The inspectors evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant. Additionally, the inspectors reviewed the UFSAR and performance requirements for systems selected for inspection, and verified that operator actions were appropriate as specified by plant-specific procedures. The inspectors also reviewed a sample of CAP items to verify that the licensee identified adverse weather issues at an appropriate threshold and dispositioned them through the CAP in accordance with station corrective action procedures. Documents reviewed are listed in the Attachment.

This inspection constituted three readiness for impending adverse weather condition sample as defined in IP 71111.01–05.

b. Findings

No findings 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:

- 2A Emergency Diesel Generator (EDG) Protected During Reduced Inventory Operations;
- 2A EDG While the 2B EDG was Out-of-Service (OOS) for Planned Maintenance;
- 2B Containment Spray (CS) System While the 2B CS System was OOS for Planned Maintenance; and
- Spent Fuel Pool Cooling Water System Protected During Normal Plant Operation.

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 UFSAR, Technical Specification (TS) requirements, outstanding work orders (WOs), issue reports (IRs), 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 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 CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment.

These activities constituted four partial system walkdown samples as defined in IP 71111.04–05.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

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

- 1A EDG Room;

- 1A and 2A Essential Service Water Room;
- 1B and 2B Essential Service Water Room;
- Containment Elevation 377' Inside Missile Barrier Area;
- Unit 2 Component Cooling Area; and
- Spent Fuel Pool Cooling Pump and Heat Exchanger Rooms.

The inspectors reviewed these areas and assessed whether 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 OOS, 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 determined whether fire hoses and extinguishers were in their designated locations and available for immediate use; whether fire detectors and sprinklers were unobstructed; whether transient material loading was within analyzed limits; and whether fire doors, dampers, and penetration seals were in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's CAP.

These activities constitute six quarterly fire protection inspection samples as defined in IP 71111.05–05.

b. Findings

No findings were identified.

1R08 Inservice Inspection Activities (71111.08P)

From May 5, 2014 through May 16, 2014, the inspectors conducted a review of the implementation of the licensee's Inservice Inspection (ISI) Program for monitoring degradation of the reactor coolant system, steam generator tubes, emergency feedwater systems, risk-significant piping and components, and containment systems.

The inspections described in Sections 1R08.1, 1R08.2, R08.3, IR08.4 and 1R08.5 below constituted one inservice inspection sample as defined in IP 71111.08.

.1 Piping Systems Inservice Inspection

a. Inspection Scope

The inspectors either observed or reviewed the following non-destructive examinations mandated by the American Society of Mechanical Engineers (ASME) Section XI Code to evaluate compliance with the ASME Code Section XI and Section V requirements and if any indications and defects were detected, to determine if these were dispositioned in accordance with the ASME Code or an NRC-approved alternative requirement:

- Ultrasonic (UT) Examination of Pressurizer Welds 2RC–32–02, 03, 04, 05, 11, 16, and 17;

- UT of Piping Welds, 6" Pressurizer Power-Operated Relief Valve "C";
- UT of Feedwater Piping Welds FW-03-019, 020, and 021;
- UT of Reactor Pressure Vessel Closure Studs (27 of 53);
- Magnetic Particle Examination of Steam Generator Upper Head-To-Nozzle Weld 2SG-03-SGN-03;
- Liquid Penetrant (PT) Examination of Essential Service Water Integral Attachment 2SX-05-SW01 to SW02;
- Visual Examination (VT-3) of Essential Service Water Support 2SX16017X; and
- VT-3 of Fuel Pool Cooling and Cleanup Heat Exchanger Support 2FC01A.

The inspectors reviewed the following examinations completed during the previous outage with relevant and/or recordable conditions and/or indications accepted for continued service to determine whether the acceptance was in accordance with the ASME Code Section XI or an NRC-approved alternative:

- Indication (PT) Disposition Rejected During Valve (2CV216) Replacement (WO 1493022-09); and
- Indication (PT) Disposition Rejected During Valve (2CV217) Replacement (WO 1493022-09).

The inspectors either observed or reviewed the following pressure boundary welds completed for risk-significant systems since the beginning of the last refuelling outage to determine whether the licensee applied the pre-service non-destructive examinations and acceptance criteria required by the Construction Code and ASME Code Section XI. Additionally, the inspectors reviewed the welding procedure specification and supporting weld procedure qualification records to determine whether the weld procedures were qualified in accordance with the requirements of the Construction Code and the ASME Code Section IX:

- Weld Repair/Replacement of Class 3, Residual Heat Removal to Chemical Volume Control System Letdown Valve (2RH8734A) per WO 1534205-01;
- Install New Class 2 Safety Injection System 2SI101A/B Valves/Piping per WO 1450738-01;
- Weld Repair/Replacement of Class 2, Reactor Coolant System Seal Weld Valve Bonnet (2RY8051) per WO 1521329-01; and
- Weld Repair/Replacement of Safety Injection System Seal Weld on Class 1 Valve (2SI8905D) per WO 1584030-04.

b. Findings

No findings were identified.

.2 Reactor Pressure Vessel Upper Head Penetration Inspection Activities

a. Inspection Scope

No exams were required this outage. Therefore, no NRC review was completed for this inspection procedure attribute.

The licensee did not perform any welded repairs to vessel head penetrations since the beginning of the preceding outage. Therefore, no NRC review was completed for this inspection procedure attribute.

b. Findings

No findings were identified.

.3 Boric Acid Corrosion Control

a. Inspection Scope

The inspectors performed an independent walkdown of the reactor coolant system and related lines in the containment, which had received a recent licensee boric acid walkdown, and assessed whether the licensee's boric acid corrosion control visual examinations emphasized locations where boric acid leaks could cause the degradation of safety-significant components.

The inspectors reviewed the following licensee evaluations of reactor coolant system components with boric acid deposits to determine whether degraded components were documented in the CAP. The inspectors also evaluated corrective actions for any degraded reactor coolant system components to determine if they met the ASME Section XI Code:

- 2LT-950; Wet Boric Acid at Fitting and;
- RH-002CV8321A Potential Through-Wall Leak at Leak-Off Line.

The inspectors reviewed the following corrective actions related to the evidence of boric acid leakage to determine if the corrective actions completed were consistent with the requirements of the ASME Code Section XI and 10 CFR Part 50, Appendix B, Criterion XVI:

- IR 1522583; Dry Boric Acid at the B/B Connection on 2SI8921B;
- IR 1522682; Dry Boric Acid at the Flange on the 4" Flushing Connection; and
- IR 1484462; Dry and Wet Boric Acid Residue at the Pipe Cap to 2CV057.

b. Findings

No findings of significance were identified.

.4 Steam Generator Tube Inspection Activities

a. Inspection Scope

The NRC inspectors observed acquisition of eddy current (ET) data, interviewed ET data analysts, and reviewed documentation related to the steam generator ISI Program to determine if:

- In-situ steam generator tube pressure testing screening criteria used were consistent with those identified in the Electric Power Research Institute (EPRI) TR-1025132, "Steam Generator In-Situ Pressure Test Guidelines," and that

these criteria were properly applied to screen degraded steam generator tubes for in-situ pressure testing;

- the number and size of steam generator tube flaws/degradation identified were bounded by the licensee's previous outage Operational Assessment predictions;
- the steam generator tube ET examination scope and expansion criteria were sufficient to meet the TSs and EPRI 1003138, "Pressurized Water Reactor Steam Generator Examination Guidelines," Revision 7;
- the steam generator tube ET examination scope included potential areas of tube degradation identified in prior outage steam generator tube inspections and/or as identified in NRC generic industry operating experience applicable to these steam generator tubes;
- the licensee identified new tube degradation mechanisms and implemented adequate extent of condition inspection scope and repairs for the new tube degradation mechanism;
- the licensee implemented repair methods which were consistent with the repair processes allowed in the plant TS requirements and to determine if qualified depth sizing methods were applied to degraded tubes accepted for continued service;
- the licensee implemented an inappropriate "plug on detection" tube repair threshold (e.g., no attempt at sizing of flaws to confirm tube integrity);
- the licensee primary-to-secondary leakage (e.g., steam generator tube leakage) was below three gallons per day or the detection threshold during the previous operating cycle;
- the ET probes and equipment configurations used to acquire data from the steam generator tubes were qualified to detect the known/expected types of steam generator tube degradation in accordance with Appendix H, "Performance Demonstration for Eddy Current Examination," of EPRI 1013706, "Pressurized Water Reactor Steam Generator Examination Guidelines," Revision 7; and
- the licensee performed secondary side steam generator inspections for location and removal of foreign materials.

The licensee did not perform in-situ pressure testing of steam generator tubes. Therefore, no NRC review was completed for this inspection attribute.

b. Findings

No findings were identified.

.5 Identification and Resolution of Problems

a. Inspection Scope

The inspectors performed a review of ISI/steam generator-related problems entered into the licensee's CAP and conducted interviews with licensee staff to determine if:

- the licensee had established an appropriate threshold for identifying ISI/steam generator-related problems;
- the licensee had performed a root cause (if applicable) and taken appropriate corrective actions; and
- the licensee had evaluated operating experience and industry generic issues related to ISI and pressure boundary integrity.

The inspectors performed these reviews to evaluate compliance with 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requirements. Corrective action documents reviewed by the inspectors are listed in the Attachment.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11)

.1 Resident Inspector Quarterly Review of Licensed Operator Requalification (71111.11Q)

a. Inspection Scope

On June 11, 2014, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator requalification training and determined whether 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;
- the 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
- the 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. Documents reviewed are listed in the Attachment.

This inspection constituted one quarterly licensed operator requalification program simulator sample as defined in IP 71111.

b. Findings

No findings were identified.

.2 Resident Inspector Quarterly Observation of Heightened Activity or Risk (71111.11Q)

c. Inspection Scope

On May 2, 2014, the inspectors observed the Unit 2R17 shutdown evolution and reduced reactor coolant system inventory operation. On May 22, 2014, the inspectors also observed the Unit 2R17 startup evolution and associated station response to a failed shutdown rod C-11 lift fuse. These were activities that required heightened awareness or were related to increased risk. The inspectors evaluated the following areas:

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

Performance in these areas was compared to pre-established operator action expectations, procedural compliance, and task completion requirements. Documents reviewed are listed in the Attachment.

This inspection constituted two quarterly licensed operator heightened activity/risk samples as defined in IP 71111.11.

d. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Quarterly Evaluations

a. Inspection Scope

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

- Unit 1A Train of Essential Service Water; and
- Fire Protection Pumps.

The inspectors reviewed events in which ineffective equipment maintenance had 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 components (SSCs)/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.

This inspection constituted two quarterly maintenance effectiveness samples as defined in IP 71111.12-05.

b. Findings

No findings 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:

- Unit 1 Planned Yellow Risk During 1A EDG Maintenance Activity;
- Unit 2 Planned Yellow Risk Due to Shutdown Reduced Inventory Operation;
- Unit 1 and Unit 2 Planned Yellow Risk Due to Bus 242 Outage;
- Unit 2 Planned Yellow Risk Due to 2B Residual Heat Removal Maintenance Work During the A2R17 Refueling Outage;
- Unit 2 Unplanned Yellow Risk After Identifying that Pressurizer Pressure Transmitter 2PT-458 was Not Working Properly During A2R17 Startup Evolution;
- Unit 2 Planned Yellow Risk During 2A EDG Maintenance Activities; and
- Unit 1 Planned Yellow Risk During 1A Essential Service Water Supply to Auxiliary Feedwater Pipe Repair Activity.

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 plant risk was promptly reassessed and managed. The inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst 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. These maintenance risk assessments and emergent work control activities constituted seven samples as defined in IP 71111.13-05.

b. Findings

No findings were identified.

1R15 Operability Determinations and Functional Assessments (71111.15)

.1 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following issues:

- Missed EDG Visual VT2 Surveillance (IR 1651485);
- 2RH01SA Valve Containment Assembly Failed Leak Test (IR 1655885);
- Non-Conforming Safety-Related Valve Actuator Parts (IRs 1658461 and 1658641);
- Unit 1 Essential Service Water to Auxiliary Feedwater Supply Microbiological Induced Corrosion Pinhole Leak (IR1659136);
- Unit 1 1A Containment Spray Pump Change of Acceptance Criteria (IR1669853);
- Unit 2 Shutdown Rod C-11 Lift Fuse Failure During Startup (IR 1662954); and
- Ultimate Heat Sink Unanalyzed Condition Described in Event Notification 50227, "Potential Loss of Ultimate Heat Sink Capacity Due to Low Level" (IR 1675291, and IR 1676076).

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 sample 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.

This operability inspection constituted seven samples as defined in IP 71111.15–05.

b. Findings

Unresolved Item: Issues That Could Adversely Affect the Ultimate Heat Sink

Introduction: The inspectors identified four potential issues of concern after the licensee discovered that station procedures to address a failure of the Braidwood cooling lake dike did not include steps to secure nonsafety-related pumps, although the UFSAR stated and design calculations assumed that all circulating water pumps and nonsafety-related service water pumps would be secured.

Description:

Issue 1: TS 3.7.9, "Ultimate Heat Sink," Limiting Condition for Operation Applicability After Identifying that a Non-Conforming Condition Could Challenge and/or Exceed the Associated Ultimate Heat Sink 30 Day Mission Time

The Braidwood cooling lake dike allows the ultimate heat sink (UHS) level to be maintained greater than the TS minimum level of 590'. A failure of this nonsafety-related dike would cause a loss of level in the UHS to the 590' TS minimum level.

During the inspection period, the licensee discovered that station procedures to address a failure of the Braidwood cooling lake dike did not include steps to secure nonsafety-related pumps, including circulating water pumps and service water pumps, that take a suction from the UHS and discharge to a location outside the UHS.

As a result, and because the UFSAR stated and design calculations assumed that all nonsafety-related pumps, including circulating water pumps and service water pumps, would be secured to conserve UHS inventory following a dike failure, a non-conforming condition was identified.

The licensee concluded that this non-conforming condition did not render the UHS inoperable as discussed in IR 1675291, "Unanalyzed Condition Identified During IR 1674557," and IR 1676076, "Discrepancy in the UFSAR Ultimate Heat Sink Description (Section 2.4.11.6)," based upon the following:

- The issue was process-related and only concerned future planned actions for increasing the maximum UHS temperature;
- All TS 3.7.9, "Ultimate Heat Sink," surveillance requirements were met;
- The Braidwood cooling lake did not actually reach the minimum TS level of 590';
- A cooling lake dike failure did not actually occur; and
- A statement in the UFSAR concerning the ability of the UHS to handle an assumed loss-of-coolant-accident coincident with a design basis seismic event that the licensee believed was erroneous. Specifically UFSAR Section 2.4.11.6, "Ultimate Heat Sink Design Requirements" included the following statement:

...The essential service water cooling pond (ESCP) is an excavated area located within the cooling pond designed to provide a sufficient volume to permit plant operation for a minimum 30-day period without requiring makeup water in accordance with Regulatory Guide 1.27. The ESCP has been reviewed to determine its ability to handle the total heat dissipation requirement of the station assuming a loss of coolant accident (LOCA) coincident with a loss of offsite power on one unit and a concurrent orderly shutdown and cooldown from maximum power to cold shutdown of the other unit using normal shutdown operating procedures, a single active failure, a coincident design basis seismic event...

The inspectors noted that IR 1674557, "Question on Ultimate Heat Sink License Amendment Request Impact on Pumps," documented that the licensee had preliminarily determined that operation of a single nonsafety-related service water pump at full flow would deplete the UHS in about 3.6 days and, as a result, the UHS would not be able to satisfy the 30-day post-accident volume requirements required by the plant's design basis. The licensee concluded that even though procedural guidance did not

explicitly direct that nonsafety-related pumps be secured following a design basis accident, operators would recognize the problem and take actions to ensure that the UHS would still be able to perform its safety function and meet all design basis requirements.

At the end of the inspection period, the licensee planned to more formally document the bases for UHS TS operability consistent with the definition of operability in the site-specific TSs and the licensee's Operability Determination procedure.

The licensee subsequently corrected this non-conforming condition by revising procedures to secure nonsafety-related pumps upon reaching a low lake level condition consistent with plant design calculations. Therefore, the inspectors did not have a current operability concern.

Issue 1 will remain open pending the completion of the inspectors' review of the licensee's past operability determination.

Issue 2: Timeliness of Actions to Inform the Shift Manager and/or Unit Supervisor of an Issue that May Affect Ultimate Heat Sink Operability

On June 25, 2014, the inspectors reviewed IR 1674557, which documented that AOP BwOA ENV-3, "Braidwood Cooling Lake Low Level," did not direct nonsafety-related pumps that take a suction from the UHS and discharge outside of the UHS to be secured following a dike failure. In particular, although the "Operability" section of IR 1674557 was left blank, the "Reviewed" section concluded the following:

There were no equipment deficiencies identified. This is a process issue regarding future planned actions—there are no TS/Technical Requirements Manual/Offsite Dose Calculation Manual/GOCAR [General Operation Corrective Action Requirement] actions applicable; reportability criterion affected; or any SSC [structure, system and component] availability or functionality concerns raised by this issue.

The inspectors determined that although the context of IR 1674557 suggested that this issue only impacted future planned actions that, in fact, the issue could affect the current operability of the UHS. Therefore, the inspectors promptly discussed this issue with the Operations Shift Manager who was not aware of any operability concerns associated with the issue or station actions to address the issue. Later that shift, the Shift Manager determined that the issue was reportable under 10 CFR 50.72(b)(3)(ii)(B), "Unanalyzed Condition."

At the end of the inspection period, it was not clear if the station had adhered to OP-AA-108-115, "Operability Determinations" to inform the Shift Manager and/or Unit Supervisor of this issue in a timely manner.

Issue 2 will remain open pending the licensee's completion of a timeline of events and an inspector review of the station standards and implementation of those standards for this issue.

Issue 3: Implementation of Operations Standing Order Upon Reaching a Low Lake Level Condition Without Performing a 10 CFR 50.59 and/or Generic Letter 86-10 Review

Upon discovery of the non-conforming and unanalyzed condition of the UHS, the licensee implemented an operations standing order that directed the nonsafety-related service water system, fire protection water system, and circulating water system to be secured following a cooling lake dike failure and low lake level of 590'. This operations standing order augmented AOP BwOA ENV-3, which did not direct any of these actions. In developing the subject standing order, the licensee did not perform a 10 CFR 50.59 evaluation and/or an associated review in accordance with Generic Letter 86-10, "Implementation of Fire Protection Requirements."

At the end of the inspection period it was not clear if the licensee's standing order process, or any other process, permitted this type of change without performing a 10 CFR 50.59 and/or associated Generic Letter 86-10 evaluation. Additionally, it was not clear if the licensee's temporary change was adequate (i.e. tripping both units, securing all circulating water and non-essential service water system pumps, and securing all running Fire Protection pumps just prior to reaching a low lake level of 590').

Issue 3 will remain open pending the licensee's completion of a timeline of events and additional inspector review.

Issue 4: Safety Category II Structure, Systems and Component Interaction with the Ultimate Heat Sink

The turbine building and a number of systems and components within the turbine building are designated as Safety Category II SSCs. The licensee defined Safety Category II SSCs as SSCs that were not designed to Safety Category I Standards. Specifically, Braidwood UFSAR Section 3.2.1.2 defined Safety Category II as follows:

Those SSCs which are not designated as Safety Category I are designated as Safety Category II. This category has no public health or safety implication. Safety Category II structures, systems, and components are not specifically designed to remain functional in the event of the safe shutdown earthquake or other design-basis events (including tornado, probable maximum flood, operating basis earthquake, missile impact, or an accident internal to the plant). A reasonable margin of safety is, however, considered in the design as dictated by local requirements. Many Safety Category II items in Category I buildings are supported with seismically designed supports. These items and their supports are not Safety Category I or Seismic Category I as defined by Regulatory Guide 1.29. Structures and major components not listed in Table 3.2-1 as Safety Category I are Safety Category II. Safety Category II systems or portions of systems and components do not follow the requirements of Appendix B to 10 CFR 50. The quality assurance standards for these systems and components follow normal industrial standards and any other requirements deemed necessary by the Licensee.

The licensee determined that a circulating water system line break and/or main condenser expansion joint rupture was not credible based on a review of postulated safe shutdown earthquake loads, and therefore a failure of this system following a design basis event such as a safe shutdown earthquake was not within the current licensing basis.

The inspectors identified that a failure of the Safety Category II circulating water system could impact safety. For example the Braidwood cooling lake dike was also a Safety Category II structure. A failure of the cooling lake dike and establishment of the UHS

level of 590' followed by a circulating water line break/expansion joint failure in the turbine building would result in a condition not currently evaluated (i.e., less useable UHS volume due to the displacement of a fraction of the UHS volume into the turbine building).

At the end of the inspection period it was not clear how a Safety Category II SSC such as the circulating water system could be credited in a manner to not fail during a safe shutdown earthquake or other associated design basis event since, by definition, Safety Category II SSCs are not specifically designed to remain functional during these events.

Additionally, the inspectors planned to review the Safety Category II Lake Screen House structure design to ensure that it could not adversely affect the intake in a manner that would prevent the UHS from performing its intended safety function.

Issue 4 will remain open pending NRC review to ensure that the licensee is in compliance with their current licensing basis. **(URI 05000456/2014003-01; 05000457/2014003-01, Issues That Could Adversely Affect the UHS)**

1R18 Plant Modifications (71111.18)

.1 Plant Modifications

a. Inspection Scope

The inspectors reviewed the following modification:

- Braidwood Technical Requirements Manual Section 3.9 "Refueling Operations," 3.9.a, "Decay Time" Change.

The inspectors reviewed the configuration changes and associated 10 CFR 50.59 safety evaluation screening against the design basis, the UFSAR, and the TS, to verify that the modification did not affect the operability or availability of the affected systems. The inspectors observed, as applicable, ongoing and completed work activities to ensure that the modification was installed as directed and consistent with the design control documents; the modification operated as expected; post-modification testing adequately demonstrated continued system operability, availability, and reliability; and that operation of the modification did not impact the operability of any interfacing systems. As applicable, the inspectors verified that relevant procedure, design, and licensing documents were properly updated. Lastly, the inspectors discussed the plant modification with operations, engineering, and training personnel to ensure that the individuals were aware of how the operation with the plant modification in place could impact overall plant performance. Documents reviewed are listed in the Attachment.

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

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

.1 Post-Maintenance Testing

a. Inspection Scope

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

- Unit 2A EDG Governor Replacement Activity;
- Unit 2A EDG Nonsafety-Related Trip Contact Replacement Activity;
- Unit 2B Auxiliary Feedwater Pump Following Jacket Water Heater Control Switch Repair Activity;
- Unit 2 Pressurizer Pressure Transmitter 2PT-458 Calibration Activity; and
- Unit 2A EDG Partial Disassembly and Inspection Activity.

These activities were selected based upon the SSC's ability to impact 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 TSs, 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.

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

b. Findings

No findings were identified.

.2 Unresolved Item: Unit 2 Pressure Transmitter 2PT-458 Returned to Service Isolated

Introduction: The inspectors identified an unresolved item (URI) regarding a configuration control event in which Unit 2 safety-related pressurizer pressure transmitter 2PT-458 did not respond as expected during a plant startup following the A2R17 refueling outage. Subsequent troubleshooting determined that the pressure transmitter was isolated and inoperable. At the end of the inspection period, the licensee had not determined what caused the pressure transmitter to be isolated.

Description: On May 21, 2014, as Operations was increasing reactor coolant system pressure during startup from A2R17, several control room indications revealed that pressurizer pressure loop 0048 was not responding as expected. Specifically:

- Reactor protection system pressurizer low pressure bistable 16–4 light did not clear upon reaching the reset value;
- Engineered safeguards feature pressurizer low pressure bistable 19–4 light did not clear upon reaching the reset value;
- Main control room annunciator 2–12A1, “Pressurizer Low Reactor Trip Setpoint Alert,” alarm did not clear as expected during reactor coolant system pressurization;
- Main control room annunciator 2–12B1, “Pressurizer Pressure Low,” alarm did not clear as expected during reactor coolant system pressurization;
- Main Control Room Annunciator 2–12C1, “Pressurizer Pressure Control Deviation Low Heaters,” alarm did not clear as expected during reactor coolant system pressurization; and
- The associated instrument loop pressurizer pressure meter pressure indicator did not raise off its 1700 pounds per square inch gauge (psig) lowest indicated range value during the reactor coolant system pressurization.

The licensee determined, based upon the main control room indications identified above, that Unit 2 pressurizer pressure transmitter 2PT–458 had failed and entered AOP Unit 2 INST–2 as required. As a result, Operations entered TS Limiting Condition for Operation Action Statements 3.3.1, and 3.3.2, and revised Unit 2 reactor safety risk from Green to Yellow. Unit 2 risk changed from Green to Yellow because the failure of 2PT–458 resulted in a loss of the automatic function for pressurizer power-operated relief valve 2RY455A with an associated increase in risk, in part, due to credit for this automatic function in an anticipated transient without scram (ATWS) scenario.

On May 23, 2014, Instrument Maintenance workers entered Unit 2 containment to troubleshoot the failed pressure transmitter and identified that one of two isolation valves was closed. This issue was documented in the licensee’s CAP as IR 1663588, “Level 3 CCE-2PT–0458 Found Isolated.”

At the end of the inspection period, the licensee had not completed their causal analysis, and therefore had not determined what had caused 2PT–458 to be improperly isolated. This URI will remain open pending the licensee’s completion and the inspectors’ review of this evaluation. **(URI 05000457/2014002–02, Unit 2 Pressure Transmitter 2PT–458 Returned to Service Isolated)**

1R20 Outage Activities (71111.20)

.1 Refueling Outage Activities

a. Inspection Scope

The inspectors reviewed the Outage Safety Plan and contingency plans for the Unit 2R17 refueling outage (RFO) conducted May 2–22, 2014, to confirm that the licensee had appropriately considered risk, industry experience, and previous site-specific problems in developing and implementing a plan that assured maintenance of defense-in-depth. During the RFO, the inspectors observed portions of the shutdown

and cooldown processes and monitored licensee controls over the outage activities listed below:

- licensee configuration management, including maintenance of defense-in-depth commensurate with the Outage Safety Plan (OSP) for key safety functions and compliance with the applicable TSs when removing equipment from service;
- implementation of clearance activities and confirmation that tags were properly hung and equipment appropriately configured to safely support the work or testing;
- installation and configuration of reactor coolant pressure, level, and temperature instruments to provide accurate indication, accounting for instrument error;
- controls over the status and configuration of electrical systems to ensure that TS and OSP requirements were met;
- controls over switchyard activities;
- monitoring of decay heat removal processes, systems, and components;
- controls to ensure that outage work was not impacting the ability of the operators to operate the spent fuel pool cooling system;
- reactor water inventory controls including flow paths, configurations, and alternative means for inventory addition, and controls to prevent inventory loss;
- controls over activities that could affect reactivity;
- maintenance of secondary containment as required by TSs;
- licensee fatigue management, as required by 10 CFR 26, Subpart I;
- refueling activities, including fuel handling and sipping to detect fuel assembly leakage;
- startup and ascension to full power operation, tracking of startup prerequisites, walkdown of the primary containment to verify that debris had not been left which could block emergency core cooling system suction strainers, and reactor physics testing; and
- licensee identification and resolution of problems related to RFO activities.

Documents reviewed are listed in the Attachment.

This inspection constituted one RFO sample as defined in IP 71111.20–05.

b. Findings

No findings 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 2 Main Steam Safety Valve Trevi Testing (Routine);
- Unit 2 Auxiliary Feedwater Full Flow Testing (Routine);

- Unit 2 Emergency Core Cooling System Full Flow Testing (Routine);
- Unit 1 Containment High Range Radiation Monitor Calibration (Routine);
- Unit 1A Containment Spray ASME Test (IST);
- Local Leak Rate Test Emergency Hatch (Containment Isolation Valve (CIV)); and
- Containment Integrated Leak Rate Test (CIV).

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, sufficient to demonstrate operational readiness, and consistent with the system design basis;
- was plant equipment calibration correct, accurate, and properly documented;
- were as-left setpoints within required ranges; and was the calibration frequency in accordance with TSs, the UFSAR, plant procedures, and applicable commitments;
- was measuring and test equipment calibration current;
- was the test equipment used within the required range and accuracy and were applicable prerequisites described in the test procedures satisfied;
- did test frequencies meet TS requirements to demonstrate operability and reliability;
- were tests performed in accordance with the test procedures and other applicable procedures;
- were jumpers and lifted leads controlled and restored where used;
- were test data and results accurate, complete, within limits, and valid;
- was test equipment removed following testing;
- where applicable for IST activities, was testing performed in accordance with the applicable version of Section XI of the ASME Code, and were reference values consistent with the system design basis;
- was the unavailability of the tested equipment appropriately considered in the performance indicator data;
- where applicable, were test results not meeting acceptance criteria addressed with an adequate operability evaluation, or was the system or component declared inoperable;
- where applicable for safety-related instrument control surveillance tests, was the reference setting data accurately incorporated into the test procedure;
- was equipment returned to a position or status required to support the performance of its safety function following testing;
- were all problems identified during the testing appropriately documented and dispositioned in the licensee's CAP;
- where applicable, were annunciators and other alarms demonstrated to be functional and were annunciator and alarm setpoints consistent with design documents; and
- where applicable, were alarm response procedure entry points and actions consistent with the plant design and licensing documents.

Documents reviewed are listed in the Attachment. This inspection constituted four routine surveillance testing samples; one IST sample, and two CIV samples as defined in IP 71111.22, Sections–02 and–05.

2. RADIATION SAFETY

Cornerstones: Public Radiation Safety and Occupational Radiation Safety

2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01)

This inspection constituted a partial sample as defined in IP 71124.01–05.

.1 Inspection Planning (02.01)

a. Inspection Scope

The inspectors reviewed all licensee performance indicators for the Occupational Exposure Cornerstone for follow-up. The inspectors reviewed the results of Radiation Protection Program audits (e.g., licensee’s quality assurance audits or other independent audits). The inspectors reviewed any reports of operational occurrences related to occupational radiation safety since the last inspection. The inspectors reviewed the results of the audit and operational report reviews to gain insights into overall licensee performance.

b. Findings

No findings were identified.

.2 Radiological Hazard Assessment (02.02)

a. Inspection Scope

The inspectors determined if there had been changes to plant operations since the last inspection that may result in a significant new radiological hazard for onsite workers or members of the public. The inspectors evaluated whether the licensee assessed the potential impact of these changes and had implemented periodic monitoring, as appropriate, to detect and quantify the radiological hazard.

The inspectors reviewed the last two radiological surveys from selected plant areas and evaluated whether the thoroughness and frequency of the surveys were appropriate for the given radiological hazard.

The inspectors conducted walkdowns of the facility, including radioactive waste processing, storage, and handling areas to evaluate material condition and performed independent radiation measurements to verify conditions.

The inspectors selected the following radiologically risk-significant work activities that involved exposure to radiation:

- Radiation Work Permit (RWP) 10015880; Reactor Cavity Decontamination Included Equipment Staging/Setup/Removal;
- RWP 10015847; Snubber Inspections at Auxiliary and Containment;
- RWP 10015902; Steam Generator Eddy Current Testing and Tube Repairs; and

- RWP 10015901; Steam Generator Nozzle Cover Install/Removal.

For these work activities, the inspectors assessed whether the pre-work surveys performed were appropriate to identify and quantify the radiological hazard and to establish adequate protective measures. The inspectors evaluated the Radiological Survey Program to determine if hazards were properly identified, including the following:

- identification of hot particles;
- the presence of alpha emitters;
- the potential for airborne radioactive materials, including the potential presence of transuranics and/or other hard-to-detect radioactive materials;
- the hazards associated with work activities that could suddenly and severely increase radiological conditions and whether the licensee had established a means to inform workers of changes that could significantly impact their occupational dose; and
- severe radiation field dose gradients that could result in non-uniform exposures of the body.

The inspectors observed work in potential airborne areas and evaluated whether the air samples were representative of the breathing air zone. The inspectors evaluated whether continuous air monitors were located in areas with low background to minimize false alarms and were representative of actual work areas. The inspectors evaluated the licensee's program for monitoring levels of loose surface contamination in areas of the plant with the potential for the contamination to become airborne.

b. Findings

No findings were identified.

.3 Instructions to Workers (02.03)

a. Inspection Scope

The inspectors reviewed the following RWPs used to access high radiation areas and evaluated the specified work control instructions or control barriers:

- RWP 10015880; Reactor Cavity Decontamination Included Equipment Staging/Setup/Removal;
- RWP 10015847; Snubber Inspections at Auxiliary and Containment;
- RWP 10015902; Steam Generator Eddy Current Testing and Tube Repairs; and
- RWP 10015901; Steam Generator Nozzle Cover Install/Removal.

For these RWPs, the inspectors assessed whether allowable stay times or permissible dose (including from the intake of radioactive material) for radiologically significant work under each RWP were clearly identified. The inspectors evaluated whether electronic personal dosimeter alarm setpoints were in conformance with survey indications and plant policy.

For work activities that could suddenly and severely increase radiological conditions, the inspectors assessed the licensee's means to inform workers of changes that could significantly impact their occupational dose.

b. Findings

No findings were identified.

.4 Contamination and Radioactive Material Control (02.04)

a. Inspection Scope

The inspectors observed locations where the licensee monitored potentially contaminated material leaving the radiological control area and assessed the methods used for the control, survey, and release from these areas. The inspectors observed the performance of personnel surveying and releasing material for unrestricted use and evaluated whether the work was performed in accordance with plant procedures and whether the procedures were sufficient to control the spread of contamination and prevent the unintended release of radioactive materials from the site. The inspectors assessed whether the radiation monitoring instrumentation had appropriate sensitivity for the types of radiation present.

The inspectors reviewed the licensee's criteria for the survey and release of potentially contaminated material. The inspectors evaluated whether there was guidance on how to respond to an alarm that indicated the presence of licensed radioactive material.

The inspectors reviewed the licensee's procedures and records to verify that the radiation detection instrumentation was used at its typical sensitivity level based on appropriate counting parameters. The inspectors assessed whether or not the licensee has established a de facto "release limit" by altering the instrument's typical sensitivity through such methods as raising the energy discriminator level or locating the instrument in a high radiation background area.

b. Findings

No findings were identified.

.5 Radiological Hazards Control and Work Coverage (02.05)

a. Inspection Scope

The inspectors evaluated ambient radiological conditions (e.g., radiation levels or potential radiation levels) during tours of the facility. The inspectors assessed whether the conditions were consistent with applicable posted surveys, RWPs, and worker briefings.

The inspectors evaluated the adequacy of radiological controls, such as required surveys, radiation protection job coverage (including audio and visual surveillance for remote job coverage), and contamination controls. The inspectors evaluated the licensee's use of electronic personal dosimeters in high noise areas as high radiation area monitoring devices.

The inspectors assessed whether radiation monitoring devices were placed on the individual's body consistent with the licensee's procedures. The inspectors assessed whether the dosimeter was placed in the location of highest expected dose or that the

licensee properly employed an NRC-approved method of determining effective dose equivalent.

The inspectors reviewed the application of dosimetry to effectively monitor exposure to personnel in high radiation work areas with significant dose rate gradients.

The inspectors reviewed the following RWPs for work within airborne radioactivity areas with the potential for individual worker internal exposures:

- RWP 10015880; Reactor Cavity Decontamination Included Equipment Staging/Setup/Removal;
- RWP 10015902; Steam Generator Eddy Current Testing and Tube Repairs; and
- RWP 10015901; Steam Generator Nozzle Cover Install/Removal.

For these RWPs, the inspectors evaluated airborne radioactive controls and monitoring, including the potential for significant airborne levels (e.g., grinding, grit blasting, system breaches, entry into tanks, cubicles, and reactor cavities). The inspectors assessed barrier (e.g., tent or glove box) integrity and temporary high efficiency particulate air ventilation system operation.

The inspectors examined the licensee's physical and programmatic controls for highly activated or contaminated materials (i.e., nonfuel) stored within spent fuel and other storage pools. The inspectors assessed whether appropriate controls (i.e., administrative and physical controls) were in place to preclude inadvertent removal of these materials from the pool.

The inspectors examined the posting and physical controls for selected high radiation areas and very high radiation areas to verify conformance with the occupational performance indicator.

b. Findings

No findings were identified.

.6 Risk-Significant High Radiation Area and Very High Radiation Area Controls (02.06)

a. Inspection Scope

The inspectors discussed with the radiation protection manager the controls and procedures for high-risk, high radiation areas and very high radiation areas. The inspectors discussed methods employed by the licensee to provide stricter control of very high radiation area access as specified in 10 CFR 20.1602, "Control of Access to Very High Radiation Areas," and Regulatory Guide 8.38, "Control of Access to High and Very High Radiation Areas of Nuclear Plants." The inspectors assessed whether any changes to licensee procedures substantially reduced the effectiveness and level of worker protection.

The inspectors discussed the controls in place for special areas that had the potential to become very high radiation areas during certain plant operations with first-line health physics supervisors (or equivalent positions having backshift health physics oversight authority). The inspectors assessed whether these plant operations required communication beforehand with the health physics group, so as to allow corresponding

timely actions to properly post, control, and monitor the radiation hazards including re-access authorization.

The inspectors evaluated licensee controls for very high radiation areas and areas with the potential to become a very high radiation area to ensure that an individual was not able to gain unauthorized access to the very high radiation areas.

b. Findings

No findings were identified.

.7 Radiation Worker Performance (02.07)

a. Inspection Scope

The inspectors observed radiation worker performance with respect to stated radiation protection work requirements. The inspectors assessed whether workers were aware of the radiological conditions in their workplace and the RWP controls/limits in place, and whether their performance reflected the level of radiological hazards present.

b. Findings

No findings were identified.

.8 Radiation Protection Technician Proficiency (02.08)

a. Inspection Scope

The inspectors reviewed radiological problem reports since the last inspection that identified the cause of the event to be radiation protection technician error. The inspectors evaluated whether there was an observable pattern traceable to a similar cause. The inspectors assessed whether this perspective was consistent with the corrective action approach taken by the licensee to resolve the reported problems.

b. Findings

No findings were identified.

2RS2 Occupational As-Low-As-Reasonably-Achievable Planning and Controls (71124.02)

This inspection constituted a partial sample as defined in IP 71124.02–05.

.1 Inspection Planning (02.01)

a. Inspection Scope

The inspectors reviewed site-specific procedures associated with maintaining occupational exposures as-low-as-reasonably-achievable (ALARA), which included a review of processes used to estimate and track exposures from specific work activities.

b. Findings

No findings were identified.

.2 Radiological Work Planning (02.02)

a. Inspection Scope

The inspectors reviewed ALARA work activity evaluations, exposure estimates, and exposure mitigation requirements. The inspectors determined whether the licensee reasonably grouped radiological work into work activities based on historical precedence, industry norms, and/or special circumstances.

The inspectors assessed whether the licensee's planning identified appropriate dose mitigation features, considered alternate mitigation features, and defined reasonable dose goals. The inspectors evaluated whether the licensee's ALARA assessment had taken into account decreased worker efficiency from use of respiratory protective devices and/or heat stress mitigation equipment (e.g., ice vests). The inspectors determined whether the licensee's work planning considered the use of remote technologies (e.g., teledosimetry, remote visual monitoring, and robotics) as a means to reduce dose and the use of dose reduction insights from industry operating experience and plant-specific lessons learned. The inspectors assessed the integration of ALARA requirements into work procedures and RWP documents.

b. Findings

No findings were identified.

.3 Verification of Dose Estimates and Exposure Tracking Systems (02.03)

a. Inspection Scope

The inspectors reviewed the assumptions and basis (including dose rate and person-hour estimates) for the current annual collective exposure estimate for reasonable accuracy for select ALARA work packages. The inspectors reviewed applicable procedures to determine the methodology for estimating exposures from specific work activities and the intended dose outcome.

The inspectors evaluated whether the licensee established measures to track, trend, and, if necessary, reduce occupational doses for ongoing work activities. The inspectors assessed whether trigger points or criteria were established to prompt additional reviews and/or additional ALARA planning and controls.

b. Findings

No findings were identified.

.4 Source Term Reduction and Control (02.04)

a. Inspection Scope

The inspectors used licensee records to determine the historical trends and current status of significant tracked plant source terms known to contribute to elevated facility aggregate exposure. The inspectors assessed whether the licensee had made allowances or developed contingency plans for expected changes in the source term as a result of changes in plant fuel performance issues or changes in plant primary chemistry.

b. Findings

No findings were identified.

.5 Radiation Worker Performance (02.05)

a. Inspection Scope

The inspectors observed radiation worker and radiation protection technician performance during work activities being performed in radiation areas, airborne radioactivity areas, or high radiation areas. The inspectors evaluated whether workers demonstrated the ALARA philosophy in practice (e.g., workers were familiar with the work activity scope and tools to be used, workers used ALARA low-dose waiting areas) and whether there were any procedure compliance issues (e.g., workers were not complying with work activity controls). The inspectors observed radiation worker performance to assess whether the training and skill level was sufficient with respect to the radiological hazards and the work involved.

b. Findings

No findings were identified.

4. **OTHER ACTIVITIES**

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

4OA1 Performance Indicator Verification (71151)

.1 Unplanned Scrams Per 7000 Critical Hours

a. Inspection Scope

The inspectors sampled licensee submittals for the Unplanned Scrams Per 7000 Critical Hours performance indicator (PI) for Braidwood Unit 1 and Unit 2 for the period from the first quarter 2013 through the first quarter 2014. To determine the accuracy of the data reported during those periods, PI definitions and guidance contained in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated August 31, 2013, were used. The inspectors reviewed the licensee's operator narrative logs, IRs, event reports, and NRC Integrated Inspection Reports for the period of January 31, 2013 through March 31, 2014, to validate the accuracy of the submittals. 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.

This inspection constituted two unplanned scrams per 7000 critical hours sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.2 Unplanned Scrams with Complications

a. Inspection Scope

The inspectors sampled licensee submittals for the Unplanned Scrams with Complications PI for Braidwood Unit 1 and Unit 2 for the period from the first quarter 2013 through the first quarter 2014. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated August 31, 2013, were used. The inspectors reviewed the licensee's operator narrative logs, IRs, event reports, and NRC Integrated Inspection Reports for the period January 31, 2013 through March 31, 2014, to validate the accuracy of the submittals. 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.

This inspection constituted two unplanned scrams with complications sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.3 Mitigating Systems Performance Index—Emergency AC Power System

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index (MSPI)—Emergency AC Power System PI for Braidwood Unit 1 and Unit 2 for the period from the second quarter 2013 through the first quarter 2014. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in 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, IRs, event reports and NRC Integrated Inspection Reports for the period of April 1, 2013 through March 31, 2014, 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, whether 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 performance indicator data collected or transmitted for this indicator. Documents reviewed are listed in the Attachment.

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

b. Findings

No findings were identified.

.4 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 second quarter of 2013 through the first quarter 2014. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in NEI 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 April 1, 2013 through March 31, 2014, 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, whether 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 performance indicator data collected or transmitted for this indicator. Documents reviewed are listed in the Attachment.

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

b. Findings

No findings were identified.

.5 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 second quarter 2013 through the first quarter 2014. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in NEI 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 April 1, 2013 through March 31, 2014, 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, whether 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.

This inspection constituted two MSPI heat removal system samples as defined in IP 71151–05.

b. Findings

No findings were identified.

.6 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 second quarter 2013 through the first quarter 2014. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in NEI 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 April 1, 2013 through March 31, 2014, 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, whether 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.

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

b. Findings

No findings were identified.

.7 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 second quarter 2013 through the first quarter 2014. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in NEI 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 April 1, 2013 through March 31, 2014, 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, whether 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.

This inspection constituted two MSPI cooling water system samples as defined in IP 71151–05.

b. Findings

No findings 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 Plan

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 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: identification of the problem was complete and accurate; timeliness was commensurate with the safety significance; 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.

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 were identified.

.2 Daily Corrective Action Plan Reviews

a. Inspection Scope

In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, 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 IR 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 were identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment issues, but also considered the results of daily inspector CAP item screening discussed in Section 40A2.2 above, licensee trending efforts, and licensee human performance results. The inspectors' review nominally considered the 6-month period of January 1, 2014 through June 30, 2014, although some examples expanded beyond those dates where the scope of the trend warranted.

The review also included issues documented outside the normal CAP in major equipment problem lists, repetitive and/or rework maintenance lists, departmental problem/challenges lists, system health reports, quality assurance audit/surveillance reports, self-assessment reports, and Maintenance Rule assessments. The inspectors compared and contrasted their results with the results contained in the licensee's CAP trending reports. Corrective actions associated with a sample of the issues identified in the licensee's trending reports were reviewed for adequacy.

This review constituted one semi-annual trend inspection sample as defined in IP 71152-05.

b. Findings

No findings were identified.

.4 Selected Issue Follow-Up Inspection: Review of Licensee Corrective Actions to Resolve Non-Cited Violation 05000456/2012005-01; 05000457/2012005-01, "Failure to Maintain Watertight Door Safety Function After Routine Passage"

a. Inspection Scope

The inspectors' reviewed the corrective actions associated with NCV 05000456/2012005-01; 05000457/2012005-01, "Failure to Maintain Watertight Door Safety Function After Routine Passage," to ensure that the corrective actions restored compliance with the current licensing basis.

This review constituted one in-depth problem identification and resolution sample as defined in IP 71152-05.

b. Findings

Unresolved Item: Corrective Actions to Address Non-Cited Violation 05000456/2012005-01; 05000457/2012005-01, "Failure to Maintain Watertight Door Safety Function After Routine Passage"

Introduction: The inspectors identified an unresolved item (URI) associated with the licensee's corrective actions to address NCV 05000456/2012005-01; 05000457/2012005-01, "Failure to Maintain Watertight Door Safety Function After Routine Passage."

Description: As discussed in NRC Integrated Inspection Report 05000456/2012005; 05000457/2012005, a Green finding and associated NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified after the inspectors determined that the licensee's guidance that permitted operators to leave the diesel oil storage tank (DOST) room watertight flood doors open and unattended for up to 15 minutes to perform tours, inspections, walkdowns, sampling, or other routine tasks in the DOST rooms was inappropriate.

The licensee addressed this NCV by revising the guidance that allowed the doors to be left open and unattended. During this inspection period, the inspectors became aware that the licensee re-revised the guidance to again allow the DOST doors to be open for longer than the time needed for routine passage based upon a change to the current licensing basis that eliminated the consideration of a circulating water system line break as an initiating event.

The inspectors' reviewed the licensee's corrective actions and associated 10 CFR 50.59 evaluation that implemented this change and determined that the 10 CFR 50.59 failed to evaluate:

- An individual who failed to shut one of the watertight flood doors upon identification of a turbine building internal flooding event. Specifically, if an individual failed to shut one of the flood doors, then a loss of safety function could occur because the barrier separating the two DOST rooms was not designed as a flood barrier and both trains of DOST transfer pumps could become submerged, a condition that the equipment is not qualified for. Depending upon the flooding event, stress could potentially affect the overall success of a plant worker's required action to close the DOST watertight door.
- If the DOST flood doors were seismically qualified in the open position. Particularly, the licensee had not evaluated if the DOST flood doors could still be shut following a design basis loading event (e.g., safe shutdown earthquake).
- If any of the Safety Category II SSCs could fail or fail in a manner that prevented an open DOST flood door from shutting.

Based on the above, the inspectors questioned whether the EDG fuel oil transfer system could have been considered operable with the DOST flood doors open and unattended for any period of time other than routine passage. At the end of the inspection period, the licensee had not completed their 10 CFR 50.59 review. Therefore, this URI will remain open pending the licensee's completion of that review and additional inspector review. **(URI 05000456/2014003-03; 05000457/2014003-03, Corrective Actions to Address NCV 05000456/2012005-01; 05000457/2012005-01, Failure to Maintain Watertight Door Safety Function After Routine Passage)**

4OA5 Other Activities

(Closed) Unresolved Item 05000456/2000006-03; 05000457/2000006-03, Effects of Associated Circuits Not Isolated from Safe Shutdown Equipment

During the triennial fire protection inspection conducted in 2000, the inspectors identified an URI associated with the effects of fire damage on associated circuits related to safe shutdown components. Specifically, the licensee's position was that their licensing basis only required the consideration of a single spurious operation per fire area during a fire.

This did not meet the intent of the requirements of 10 CFR Part 50.48(a). As a result, the NRC Region III staff submitted a Task Interface Agreement to the Office of Nuclear Reactor Regulation (NRR) for an evaluation of the licensing basis with respect to the assumption of a single spurious operation. NRR staff determined that Braidwood Station was in compliance with their licensing basis based on specific language in their licensing basis. The NRC had previously accepted, in a safety evaluation report, that the licensee was only required to consider one spurious operation for each fire zone. However, NRR staff also concluded that from a technical standpoint the assumption of a single spurious operation was not in compliance with 10 CFR 50.48(a). That determination was documented in Task Interface Agreement (TIA) 2013-02, "Final Response to Task Interface Agreement 2013-02, Single Spurious Assumption for Braidwood and Byron Stations Safe-Shutdown Methodology," dated March 31, 2014 (ADAMS Accession No. ML12194A500). Therefore, a violation of regulatory requirements associated with the licensee's assumption of a single spurious operation was not identified at this time. This URI is closed.

40A6 Management Meetings

.1 Exit Meeting Summary

On July 17, 2014, the inspectors presented the inspection results to Ms. M. Marchionda, Braidwood Plant Manager, and other members of the licensee's staff. The licensee acknowledged the issues presented. The inspectors confirmed that proprietary material received during the inspection period that was no longer under review was returned to the licensee and none of the potential input discussed was considered proprietary.

.2 Interim Exit Meetings

Interim exits were conducted for:

- The inspection results for the areas of radiological hazard assessment and exposure controls; and occupational ALARA planning and controls with Ms. M. Marchionda, Braidwood Plant Manager, on May 16, 2014.
- The inspection results for the area of inservice inspection with Ms. M. Marchionda, Braidwood Plant Manager, on May 16, 2014.

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.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

M. Kanavos, Site Vice President
M. Marchionda, Plant Manager
J. Bashor, Engineering Director
P. Boyle, Work Management Director
J. Cady, Radiation Protection Manager
B. Casey, ISI Program Owner
A. Ferko, Operations Manager
B. Finlay, Security Manager
J. Miller, NDES Level III
D. Palmer, Radiation Protection Technical Manager
R. Radulovich, Nuclear Oversight Manager
P. Raush, Regulatory Assurance Manager
M. Shue, Welding Administrator
B. Spahr, Maintenance Director
M. Valdes, Programs Engineering
M. Abbas, NRC Coordinator

Nuclear Regulatory Commission

E. Duncan, Chief, Reactor Projects Branch 3

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

05000456/2014003-01	URI	Issues That Could Adversely Affect the UHS (Section 1R15.1b)
05000457/2014003-01		
05000457/2014003-02	URI	Unit 2 Pressure Transmitter 2PT-458 Returned to Service Isolated (Section 1R19.1b)
05000456/2014003-03	URI	Corrective Actions to Address NCV 05000456/2012005-01; 05000457/2012005-01, "Failure to Maintain Watertight Door Safety Function After Routine Passage" (Section 4OA2.4.b)
05000457/2014003-03		

Closed

05000456/2000006-03	URI	Effects of Associated Circuits Not Isolated From Safe Shutdown Equipment (Section 4OA5)
05000457/2006006-03		

Discussed

05000456/2013005-01	NCV	Failure to Maintain Watertight Door Safety Function After Routine Passage (Section 4OA2.4.b)
05000457/2013005-01		

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 1603631; UAT 141-2 (1AP70E) H2 Winding Temp Indication Reads High; January 3, 2014
- IR 1633647; Unexpected Blue and Red System 345KV Failure Alarms; March 14, 2014
- IR 1636642; Abnormal Noise—1B Isophase Bus Duct Fan; March 21, 2014
- IR 1641084; ComEd WR#52310 Oil Leak From 1W MPT Oil Pump; March 31, 2014
- IR 1673932; 0/1/2 BwOA ENV-1 Entry for Severe Thunderstorm Warning; June 21, 2014
- IR 1677336; RSH Loss of Power; June 30, 2014
- IR 1677341; MCR Entered 0/1/2BwOA ENV-1 Adverse Weather Conditions; June 30, 2014
- IR 1677388; Non-Switchyard Electrical PWR Line Poles Leaning 45 Degrees; July 1, 2014
- 0BwOA ELEC-1; Abnormal Grid Conditions; Revision 8
- 0BwOA ENV-1; Adverse Weather Conditions Unit 0; Revision 117
- 1BwOA ENV-1; Adverse Weather Conditions Unit 1; Revision 99
- 2BwOA ENV-1; Adverse Weather Conditions Unit 2; Revision 99
- OP-AA-108-107-1001; Station Response to Grid Capacity Conditions; Revision 4

1R04 Equipment Alignment

- BwOP DG-1; Diesel Generator Alignment to Standby Condition; Revision 29
- BwOP CS-M2; Operating Mechanical Lineup Containment Spray Unit 2; Revision 9
- BwOP FC-M1; Operating Mechanical Lineup Fuel Pool Cooling Unit 1; Revision 9
- BwOP FC-M2; Operating Mechanical Lineup Fuel Pool Cooling Unit 2; Revision 7

1R05 Fire Protection

- Braidwood Pre-Fire Plan 111; AB 364' Aux. Bldg. General Area—(Center); FZ 11.3-0 Center
- Braidwood Pre-Fire Plan 119; AB 364' Safety Injection Pump 2A Room; FZ 11.3A-2
- Braidwood Pre-Fire Plan 90; AB 401' DG Room 1A and Day Tank; FZ 9.2-1, FZ 9.3-1
- Braidwood Pre-Fire Plan 96; AB 330 Unit 1 Aux Bldg Basement; FZ 11.1A-0
- Braidwood Pre-Fire Plan 97; AB 330 Unit 2 Aux Bldg Basement; FZ 11.1B-0
- Braidwood Pre-Fire Plan 178; FH 401 Fuel Handling Bldg; FZ 12.1-0

1R08 Inservice Inspection Activities

- IR 1424937; 2RH03AB-8": Dry Boric Acid Residue in ASME Bolted Connection; October 10, 2012
- IR 1426368; 2RC8037B Dry Boric Acid at the Body to Bonnet Bolts (Clean); October 15, 2012
- IR 1426375; 2RH030B Dry Boric Acid at the Packing (Clean and Tighten); October 15, 2012
- IR 1426428; RH-002CV8321A Potential Through-Wall Leak at Leak-Off Line; October 15, 2012
- IR 1427910; Containment Liner Metal Reduction Exceeding 10 Percent Metal Loss; October 17, 2012
- IR 1429226; NDE Results for WO 1493022-09-2CV217 Weld 2C-1: October 20, 2012

- IR 1429341; A2R16 (Snubber 2RH05003S Test Failure) Expansion (5) Required; October 21, 2012
- IR 1429511; Work Order Returned to OPS Without VT-3 Performed; October 21, 2012
- IR 1430643; Need to Replace Gaskets and Bolting Under WO No. 1441321-01; October 24, 2012
- IR 1436879; Wet Boric Acid at Fitting to 2LT-0950; November 7, 2012
- IR 1441321; Proactive Replacement of "U" Solenoid Valve of C FP Demin; November 16, 2012
- IR 1476835; Line 2SXC5A-24" Does Not Meet 87.5 Percent Screening Criteria; February 18, 2013
- IR 1562139; Enhancement of RPV Calibration Stud BWD-152 Drawing M98003; September 22, 2013
- IR 1657223; Anomalous Condition Found on the 2D SG Tubesheet; May 7, 2014
- IR 1672310; BwAP 1110-3 Questions; June 17, 2014
- WO 01450738; Add Isolation Valves Upstream of 2SI8801A&B; August 17, 2012
- WO 01400092; MM-(Boric Acid @ Mech. Conn) Clean, VT Bolts, Tighten; August 16, 2012
- Drawing M98003; Reactor Head Stud
- ER-AP-331; Boric Acid Corrosion Control (BACC) Program; Revision 7
- ER-AP-331-1002; Boric Acid Corrosion Control Program Identification, Screening and Evaluation; Revision 8
- ER-AP-335-001; Bare Metal Visual Examination for Alloy 600/82/182 Materials; Revision 3
- ER-AA-335-015; VT-2 Visual Examination; Revision 13
- ER-AA-335-F-02; Vendor NDE Approval Form; Revision 0
- ER-AA-335-002; Liquid Penetrant (PT) Exam; Revision 6
- ER-AA-335-1008; Code Acceptance and Recording Criteria for Nondestructive (NDE) Surface Examination; Revision 3
- EXE-PDI-UT-2; Ultrasonic Inspection of Austenitic Piping Welds in Accordance with PDI-UT-2; Revision 7
- Report No. A2R17-UT-015; UT Examination of 2FW-03-19; May 7, 2014
- Report No. A2R17-UT-007; UT Examination of 2RC-32-02; May 6, 2014
- Report No. A2R17-MT-001; MT Examination of 2SG-03-SGN-03; May 9, 2014
- Report No. A2R17-PT-003; PT Examination of 2SX-05-SW01 to SW02; May 11, 2014
- Report No. A2R17-UT-040; UT Examination of 2FW-05-22; May 13, 2014
- Report No. A2R17-UT-041; UT Examination of 2FW-05-23; May 13, 2014
- Report No. A2R17-UT-042; UT Examination of 2FW-05-24; May 13, 2014
- Report No. A2R17-UT-043; UT Examination of 2FW-05-25; May 13, 2014
- Report No. A2R16-39; PT Examination of 2CV217, W-2C-1 Final; October 20, 2012
- Report No. A2R16-59; PT Examination of 2CV217, W-2C-1 Repair Area; October 23, 2012
- WO 01582330; 2CV8321A Potential Through-Wall Leak at Leak-Off Line; October 17, 2012
- WPS 1-1-GTSM-PWHT; WPS for Manual GTAW/SMAW P1 to P1 Material; Revision 2
- PQR A-001; PQR for WPS 1-1-GTSM-PWHT; October 19, 1998
- PQR A-002; PQR for WPS 1-1-GTSM-PWHT; March 9, 1999
- PQR 1-50C; PQR for WPS 1-1-GTSM-PWHT; January 3, 1984
- WPS 1-1-GT-PWHT-IQ; WPS for Machine/Manual GTAW P1 to P1 Material; Revision 0

1R11 Licensed Operator Regualification Program

- Licensee Operator Regualification Exam on June 11, 2014

1R12 Maintenance Effectiveness

- IR 1405518; 1SX01FA—Drain Plug on Small Gearbox is Rounder Out; August 27, 2012
- IR 1514257; 1SX42AB Pre-Freeze UT Reading Below 87.5%; May 17, 2013
- IR 1516746; 1SXFS01 Degraded Studs Causes Additional Resources; May 22, 2013
- IR 1540847; Missing/Broke Fire Extinguishers; July 29, 2013
- IR 1542646; 1SX188A Possible Degradation; August 1, 2013
- IR 1542895; 1SX27DA—10" Pipe Leak; August 2, 2013
- IR 1560535; Blocked Fire Protection Hose Reel; September 17, 2013
- IR 1562044; U1 SX System Health Indicator Color Change; September 6, 2013;
- IR 1563668; 1SX57A Valve is Deteriorated; September 25, 2013
- IR 1569666; CT—Fire Extinguisher MM—TR—1 Could Not Be Located; October 9, 2013;
- IR 1596356; 1SX01FA Packing Leak; December 12, 2013
- IR 1631448; 1SX01PA Oil Pump Discharge Line Flange Weeping Oil; March 7, 2013
- IR 1632851; Need 1A SX Pump Power Consumption During ASME Surveillance;
March 13, 2014
- IR 1646212; Diesel Driven Fire Pump Trip; April 11, 2014
- IR 1655621; Unsecure Fire Door D-184; May 4, 2014;
- IR 1658359; FM ID'd Incomplete Hot Work Permit; May 10, 2014
- IR 1658405; Fire Door 37 Will Not Latch; May 10, 2014
- IR 1660205; Maintenance Rule (a)(1) Determination Required—FP System; May 15, 2014
- IR 1667715; FP MR HSS Function Lost Due to Both Fire Pumps OOS; June 4, 2014

1R13 Maintenance Risk Assessments and Emergent Work Control

- ACB 11–14 and U2 SATs; SAT 242–1 and 242–2, ESF Power Supply; May 1, 2014
- Protected Equipment List

1R15 Operability Determinations and Functionality Assessments

- IR 1626083; Additional Discovery on MSIV Bypass Closure Logic; February 25, 2014
- IR 1652485; EDG VT–2 of Embedded Diesel Oil Piping Not Per Section XI; April 24, 2014
- IR 1655885; Valve Containment Assembly 2RH01SA Failed Leak Test; May 5, 2014
- IR 1656613; SI to Cold Leg Flow Imbalance; May 7, 2014
- IR 1658461; Non-Safety Related Parts Reserved for Safety-Related AOV Actuator Repairs in A2R17; May 10, 2014
- IR 1659136; 1SX25AA–6" Through-Wall Leak; May 15, 2014
- IR 1659892; MSIV Bypass Valve Failure with Steam Dump Failure; April 22, 2014
- IR 1662954; Blown Lift Coil Fuse in Shutdown Bank C; May 22, 2014
- IR 1669853; Indicated Flow Low During 1A CS Flow Verification Surveillance; June 10, 2014
- IR 1670587; U1 Spray Add TK Projected to be Below Low Level Alarm Point; June 12, 2014
- IR 1670747; 1A CS Flow Verification Test Failure; June 12, 2014
- IR 1670755; UFSAR Contains Pre-AST Methodology for Iodine Removal; June 12, 2014
- IR 1670852; Valve Handwheel Stripped from Stem; June 13, 2014
- IR 1675291; Unanalyzed Condition Identified During IR 1674557; June 25, 2014
- IR 1676076; Discrepancy in the UFSAR Ultimate Heat Sink Description (Section 2.4.11.6);
June 24, 2014
- Event 50189; One Containment Spray Train Chemical Additive Flow Out of Specifications;
June 11, 2014
- 0BwOA ENV–3; Braidwood Cooling Lake Low Level; Revisions 101 and 102
- 0BwOA EMV–4; Earthquake; Revision 111

- 1BwOSR 3.6.7.5.1; Unit 1A Containment Spray Additive Flow Rate Verification; Revisions 1 and 2
- CC-AA-309-1001; Circulating Water Piping Seismic Analysis; Revision 8
- EC 398472; Evaluation of As-Found Results for 1A CS NaOH Additive Flow
- LS-AA-104-1001; Procedure Change for 0BWOA ENV-3—Braidwood Cooling Lake Low Level; Revision 3
- OP-AA-101-113-1004; 1A CS Pump—Low Eductor Flow During 1BwOSR 3.7.6.5.1; Revision 27
- OP-AA-102-104; Unit 0/1/2 Standing Order; Revision 2
- Reg. Guide 1.27; Ultimate Heat Sink for Nuclear Power Plants
- Braidwood Fire Protection Report
- UT Report # A2R17-259; SX/1SX25AA
- UT Report # 14-117; SX/1SX25AA-6”
- WO 01480754 01 & 07; Train A Containment Spray Additive Flowrate Verification; June 13, 2014
- WO 0174202; Perform NDE on 1SX25AA-6”
- ASME Code Case N-513-3
- Regulatory Guide 1.147, Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1; October 2010
- Operability Evaluation 14-003, “Through-Wall Leak Identified on 1SX25AA-6”, Revision 0
- Operability Evaluation 14-002; “NSR Parts on AOV”;Revision 0
- Operations Log; From June 24, 2014 to June 26, 2014
- Sargent & Lundy Letter to ComEd; Revised UFSAR Pages; May 1, 1992
- Letter from ENC Reg Assurance to D. St. Clair; Braidwood Ultimate Heat Sink NTS Open Item 91-7; November 4, 1991
- Drawing M-46; Diagram of Containment Spray; Sheets 1A and 1B

1R18 Plant Modifications

- 10 CFR 50.59 Performed to Changed Unit 2 TRM Core Off-Load Minimum Time

1R19 Post Maintenance Testing

- IR 1661469; OSP-A 2 AF Pump Jacket Water Will Not fill—2AF01PB; May 18, 2014
- IR 1662372; Material Left in 2B AF Pump Room; May 20, 2014
- IR 1670422; 2A DG Overspeed Alarm; June 12, 2014
- IR 1671147; 2A EDG—Step Decrease in Neutral Ground Transformer IR Value; June 13, 2014
- IR 1671180; 2A ECG Increase in Cylinder Exhaust Temperature Spread; June 13, 2014
- IR 1671561; 2PI-DG8040A Found in Degraded Condition Replaced WO 1690855; June 9, 2014
- CAP102 Report; IR 1670422 DG Overspeed Alarm; June 12, 2014
- BwVS900-8; Diesel Generator Engine Analysis; Revision 11
- CC-AA112; Temporary Configuration changes; Revision 20
- CC-AA-309-1001; Aux. Bldg. Flood Level Calculations; Revision 8
- CC-AA-403; Maintenance Specification—Selection and Control of Freeze Seal Location; Revision 7
- EC 398396; Freeze Line 1SX25AA-6” to Repair Through Wall Pinhole Leak Identified on Line 1SX25AA-6; Upstream of Valve 1AF017A
- EC 398404; Freeze Line 1SX68AA-1.5” to Repair Through Wall Pinhole Leak Identified on Line 1SX25AA-6” Upstream of Valve 1AF017A

- MA-AA-716-012; Post Maintenance Testing; Revision 19
- MA-AA-736-610; Application of Freeze Seal to All Piping; Revision 7
- WO 01634350-01; Replace the 2A DG Fuel Pump Rod Ends—2DG01KA; June 18, 2014
- WO 01634350-02; Replace the 2A DG Fuel Pump Rod Ends—2DG01KA; June 12, 2014
- WO 01634350-07; Replace the 2A DG Fuel Pump Rod Ends—2DG01KA; June 13, 2014
- WO 01737992-02; MM 1SX25AA-6” Install/Remove Freeze for Repair of Line
- WO 01737992-03; MM 1SX68AA-1-1/2” Install/Remove Freeze for Repair of Line 1SX25AA-6”
- Part 9900; Technical Guidance; Mechanical—Freeze Plugs; June 14, 1993
- Drawing M-42; Essential Service Water Unit 1—Sheet 3; July 23, 1975

1R20 Refueling and Other Outage Activities

- IR 1642194; Work Hour Rules—Non-Covered Work During A2R17-RP Dept; April 2, 2014
- IR 1642333; Anomalous Drag Force From TP During A2C18 Fuel Receipt; April 2, 2014
- IR 1653201; DC 211 Ground Isolated to Fuse 5 on 2PA23J; May 5, 2014
- IR 1656035; 2A RCS LSIV Leaking By 20 gpm; May 5, 2014
- IR 1656289; 2MP06E Generator Bushing Inspections Four Links on the A and C Phase to Be Degraded; May 5, 2014
- IR 1656798; 2MP06E Bushing Alignment Necessary; May 7, 2014
- IR 1657817; Thimble Plug Tool Not Working; May 8, 2014
- IR 1657872; 2MS5006X Governor Valve Actuator Seized; May 9, 2014
- IR 1657998; Manual SI/RX Trip RFO Annunciator Did Not Actuate During 2BSOSR 3.3.2.9-1; May 15, 2014
- IR 1657929; Bus 256/Cub 6 SAT Ground Overcurrent Relay Found OOT; May 9, 2014
- IR 1658053; Bus 242/142 Reserve Feed UV Relay Failure; May 9, 2014
- IR 1658452; Contactor Found with Excessive Arcing—2AP32E; May 10, 2014
- IR 1658703; Deficiencies Found During the Performance of MA-AA-725-103; May 11, 2014
- IR 1659259; Generator Negative Sequence Relay Failure; May 13, 2014
- IR 1659527; 345 kV BT 10-11 Bus 11 Disconnect is Difficult to Operate; May 13, 2014
- IR 1659704; Degraded PZR Heaters Will Require Silver Solder for Repairs; May 14, 2014
- IR 1660195; 2RY456 Did Not Pass As-Left Leak Test Per 2BwOSR 3.4.11.3 When Valve was Open; May 15, 2014
- IR 1662508; Generator BRG 9 Metal TX Not Responding; May 21, 2014
- IR 1662570; Rod Control Non-Urgent Failure Alarm Received During Rod Control Testing; May 21, 2014
- IR 1662678; 2PT-258 Failure; May 21, 2014
- IR 1662739; A2R17—NRC Walkdown of Containment; May 21, 2014
- 2BwOSR 5.5.8.CV-8; Comprehensive Inservice Testing Requirements for Unit 2 Charging Pumps and Safety Injection System Check Valve Stroke Test; Revision 6
- 2BwOSR 5.5.8.RH-6; Residual Heat Removal System Check Valve Stroke Test; Revision 6
- 2BwOSR 5.5.8.SI-11; Comprehensive Inservice Testing Requirements for Unit 2 Safety Injection Pumps and Safety Injection System Check Valve Stroke Test; Revision 5
- EC 370156; Evaluate New Location for Lead Shielding Blankets Stored at Elevation 426’; Revision 0
- MA-AA-716-008; Work Package Planning, Briefing & Transition Form; Revision 9
- MA-AA-793-044; Portable Pressure Equipment Calibration Data Sheet (Typical); Revision 3 and 4
- PI-AA-120; Issue Identification and Screening Process; Revision 0
- WC-AA-104; Mult EPN; SI to Cold Leg Check Valve Surv. 2B@VSR 5.5.8.SI-1; Revision 20 and 20a

- WO 1560743 01; Lubricate Hoist Motor Bearing; October 21, 2013
- WO 1610401 01; IST—CO—2SI8841A/B & CO-2SI8949A/C—U2 RH Hot Leg; May 7, 2014
- WO 1611214 01; 02 and 03; IST—2SI88191A/B/C/D/2SI8926—SI Cold Leg Check Valve; May 7, 2014
- WO 1611954 01; IST—2CV8546/8481A/B & 2SI8815/8900A-D—CV Cold Leg Check Valve
- WO 1701641, Need to Vent RWST Suction Line Using Quills at 2SI126 A and B; April 13, 2014
- WO 1735284; K643A Failed to Latch During 2BS)SR 3.3.2.9—3; May 4, 2014
- A2R17 Refueling Outage Turnover; Tuesday May 2014
- A2R17 Start-Up PORC Package
- OCC Issue List—A2R17
- A2R17 Outage Milestones; May, 2014

1R22 Surveillance Testing

- IR 1658524; 2BWOSR 3.6.2.1—2 Has a Discrepancy in the Acceptance Criteria; May 11, 2014
- IR 1658711; Wrong Parts Ordered for 2PC104M Impacting Outage Schedule; May 12, 2014
- BwISR 3.3.1.10—M240; Operational Test and Channel Verification/Calibration for Loop P-04578, Revision 14
- BwMS 3350—005; Containment Airlock Surveillance Support; Revision 11
- BwMSR 3.7.1.1; Main Steam Safety Valves Operability Test (Setpoint Verification Using the Furmanite Trevitest System); Revision 12
- 2BwOSR 3.6.2.1.1; Primary Containment Type B Local Leakage Rate Tests of the Equipment Hatch Airlock Door Gasket Interspaces; Revision 6
- 2BwOSR 3.6.2.1—3; Primary Containment Type B Local Leakage Test of Emergency Personnel Hatch Airlock; Revision 12
- 2BwOSR 3.6.2.1—4; Primary Containment Type B Local Leakage Rate Tests of the Emergency Hatch Airlock Door Gasket Interspaces; Revision 12
- EC 398472; Evaluation of 1A CS NaOH Spray Additive Test Results; June 12, 2014
- Regulatory Guide 1.163, Performance-Based Containment Leak-Test Program, September 1995
- SY—AA—101—117; Processing and Escorting of Personnel and Vehicles; Revision 22
- Appendix J to Part 50—Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors
- Letter from Entergy Operations to USNRC; License Amendment Request—Containment Building emergency Escape Air Lock Testing and Exemption from Certain Requirements of 10 CFR 50, Appendix J; January 21, 2014

2RS1 Radiological Hazard Assessment and Exposure Controls

- IR 1656875; Unit—2 Loop Vent Containing Primary Vent and Drain Hose Fell to the Floor in IMB Causing Contamination; May 6, 2014
- IR 1659239; Greater than 200 PCi/liter Tritium in the Lake Sample Taken from the Blowdown Skid PR10J; May 13, 2014
- IR 1660284; Worker Received ED Alarm at Unit—2 Seale Table Room; May 15, 2014
- IR 1660341; Braidwood Unit—2 R17 Level One Personnel Contamination Event (PCE) No. 14—007; May 15, 2014
- IR 1660321; Braidwood Unit—2 R17 Level One PCE 14—004; May 15, 2014
- IR 1660331; Braidwood Unit—2 R17 Level One PCE 14—005; May 15, 2014
- IR 1660335; Braidwood Unit—2 R17 Level One PCE 14—006; May 15, 2014
- RP—AA—203; Exposure Control and Authorization; Revision 3

- RP-AA-460; Control for High and Locked High Radiation Areas; Revision 25
- RP-AA-461; Radiological Controls for Contaminated Water Diving Operation; Revision 5
- RWP 10015880; Reactor Cavity Decontamination Included Equipment Staging/Setup/Removal; Revision 0
- RWP 10015847; Snubber Inspections at Auxiliary and Containment; Revision 0
- RWP 10015902; Steam Generator Eddy Current Testing and Tube Repairs; Revision 0
- RWP 10015901; Steam Generator Nozzle Cover Install/Removal; Revision 1
- Particulate Radionuclide Analysis of Reactor Cavity Decon Results HPGe Analysis; May 15, 2014
- Unit 2 Containment Seal Table Room-401' Radiation Survey; May 5, 2014
- Unit 2 Containment Reactor Cavity Radiation Survey Map; May 15, 2014
- CT-AA-160-100; Revision 4; Cooling Lake Sample Analytical Results; May 13, 2014

2RS2 Occupational As-Low-As-Reasonably-Achievable Planning and Controls

- RWP 10015880; ALARA Plan; Reactor Cavity Decontamination Included Equipment Staging/Setup/Removal; Revision 0
- RWP 10015847; ALARA Plan; Snubber Inspections at Auxiliary and Containment; Revision 0
- RWP 10015902; ALARA Plan; Steam Generator Eddy Current Testing and Tube Repairs; Revision 0
- RWP 10015901; ALARA Plan; Steam Generator Nozzle Cover Install/Removal; Revision 1
- RP-AA-400; ALARA Program; Revision 11
- Evaluation of the Incore Sump Entry and Alternatives RWP10015846
- RWP 10015846; ALARA Plan: A2R17 Incore Sump Entries
- Station ALARA Committee Meeting May 15, 2014; Dose Reduction Through Ownership and Accountability

4OA1 Performance Indicator Verification

- IR 1496523; NRC ID'd Loss of Safety FCN Not Reported for DOST Doors; April 2, 2013
- IR 1501601; 1SX104B Stuck In Closed Position; April 13, 2013
- IR 1505643; Known Gas Void Trended Upstream of 2SI8822A—2SI18EA; April 23, 2013
- IR 1505644; Known Gas Void Trended Upstream of 2SI8822B—2SI18EB; April 23, 2013
- IR 1516937; SI ACCUM Level Channel Deviation; May 23, 2013
- IR 1540192; 2A SX Pump O/B Bearing Weeping Oil—2SX01PA; July 26, 2013
- IR 1543972; 1SX231A Is Extremely Hard to Operate & May Not Be Full Open; August 6, 2013
- IR 1557084; 1CV8436 is Sticking Closed; September 11, 2013
- IR 1560145; NRC Question on Snubber 1SI0102 Assembly; September 16, 2013
- IR 1562044; U1 SX System Health Indicator Color Change; September 6, 2013
- IR 1562046; U2 SX System Health Indicator Color Change; September 21, 2013
- IR 1580043; 1B DG Roll Up Door on Work Windows; October 24, 2013
- IR 1584388; Level Loss of U-1 RWST; November 13, 2013
- IR 1587096; PMT Failed; November 19, 2013
- IR 1587103; PMT Failed; November 19, 2013
- IR 1587113; PMT Failed; November 19, 2013
- IR 1583178; 2SX2183D Is Stuck Full Open; November 9, 2013
- IR 1594782; NRC Questioned if the 1B SX Pump Operability Question; December 9, 2013
- IR 1595881; 2A EDG—Upper LO Cooler Reversing Head Oil Leak; December 11, 2013
- IR 1600508; 2B DG Lower L.O. Cooler Leak; December 23, 2013
- IR 1649986; SX PP Availability During A2R17 with 0SX115B Closed; April 17, 2014
- IR 1659136; Pinhole Upstream of 1AF017A; May 12, 2014

- IR 1663442; Known Gas Void Trended at 1SI06BA; May 23, 2014

4OA2 Problem Identification and Resolution

- IR 1642316; First Lake Softening For 2014; April 2, 2014
- IR 1647563; 1A SG AF Flow Indicator Drifting High—1FI-AF011A; April 15, 2014
- IR 1649043; L—BYR/BRW UFSAR Statement 5.3.2.1 is Misleading; April 18, 2014
- IR 1656071; A2R17 LL: Meeting Room Location for Mode 3 Walkdown Briefing; May 5, 2014
- IR 1656448; IEMA Inspector Observation—Door D-383; May 6, 2014
- IR 1657088; IEMA Inspector Observation—2SXFS02-3; May 7, 2014
- IR 1660351; IEMA Concern—OPR060J; May 15, 2014
- IR 1660849; IEMA Concern Over OPR Deficiency Actions; May 16, 2014
- IR 1661326; 24 HR Hold for Relay Calibration Abbreviated; May 18, 2014
- IR 1661386; A2R17 NRC ISI Observation—Closure of IR 1562139; May 16, 2014
- IR 1662034; Concerns with Close-Out of 2B AF Pump A2R17 PM, May 20, 2014
- IR 1662739; A2R17—NRC Containment Walkdown; May 21, 2014
- IR 1663900; Exciter Field Voltage Reading High (2ET-MP029); May 24, 2014
- IR 1666000; NRC Questions on Use of Air Hoses for Frazil Ice Conditions; May 30, 2014
- IR 1670234; IEMA Provided Observation for 2RE-AR21 Procedure; June 10, 2014
- IR 1672283; Update B&B Site Procedure for Multiple Dropped Rods; June 17, 2014
- IR 1666963; Potential Additional UFSAR Changes Needed as a Result of MUR; June 2, 2014
- IR 1667440; Holtec COC Issue—FHD Pressure Limit; May 28, 2014
- IR 1667444; T-HUT Modification Delays Due to Radiological Conditions; June 3, 2014
- IR 1667469; Corrective Actions from OC INPO LOOP Report; June 3, 2014
- IR 1667869; 1SX25AA—6” Unexpected Increase of Leakage when Hose Clamp Loosened; June 4, 2014
- IR 1668270; MSR Response During Maintenance; June 6, 2014
- IR 1668352; 1SX25AA—6” Leakage Observation and NDE Results / Clamp Off; June 5, 2014
- IR 1668403; 2CV 182 PM Deferral Not Technically Justified; June 6, 2014

4OA3 Event Followup

- 1BwOA ROD—3; Dropped or Misaligned Rod, Revision 105

LIST OF ACRONYMS USED

AC	Alternating Current
ADAMS	Agencywide Documents Access Management System
ALARA	As-Low-As-Reasonably-Achievable
AOP	Abnormal Operating Procedure
ASME	American Society of Mechanical Engineers
ATWS	Anticipated Transient Without Scram
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CIV	Containment Isolation Valve
DOST	Diesel Oil Storage Tank
EDG	Emergency Diesel Generator
EPRI	Electric Power Research Institute
ET	Eddy Current Testing
IP	Inspection Procedure
IR	Issue Report
ISI	Inservice Inspection
IST	Inservice Testing
kV	Kilovolt
MSPI	Mitigating Systems Performance Index
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
OOS	Out-of-Service
OSP	Outage Safety Plan
PARS	Publicly Available Records System
PI	Performance Indicator
psig	Pounds Per Square Inch Gauge
PT	Dye Penetrant Test
RFO	Refueling Outage
RWP	Radiation Work Permit
SSC	Systems, Structures, and Components
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
UHS	Ultimate Heat Sink
URI	Unresolved Item
UT	Ultrasonic Test
WO	Work Order

M. Pacilio

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Sincerely,

/RA/

Eric R. Duncan Chief
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Division of Reactor Projects

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