

November 13, 2007

Mr. Christopher M. Crane
President and Chief Nuclear Officer
Exelon Nuclear
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: BRAIDWOOD STATION, UNITS 1 AND 2 NRC INTEGRATED INSPECTION
REPORT 05000456/2007005; 05000457/2007005

Dear Mr. Crane:

On September 30, 2007, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Braidwood Station, Units 1 and 2. The enclosed report documents the inspection results, which were discussed on October 11, 2007, with Mr. T. Coutu and other members of your staff.

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

Based on the results of this inspection, one NRC-identified finding of very low safety significance was identified. The finding involved a violation of NRC requirements. However, because of its very low safety significance, and because the issue was entered into your corrective action program, the NRC is treating the issue as a Non-Cited Violation in accordance with Section VI. A. of the NRC Enforcement Policy.

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

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

Sincerely,

/RA/

Richard A. Skokowski, Chief
Branch 3
Division of Reactor Projects

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

Enclosure: Inspection Report 05000456/2007005; and 05000457/2007005
w/Attachment: Supplemental Information

cc w/encl: Site Vice President - Braidwood Station
Plant Manager - Braidwood Station
Regulatory Assurance Manager - Braidwood Station
Chief Operating Officer
Senior Vice President - Nuclear Services
Vice President - Operations Support
Vice President - Licensing and Regulatory Affairs
Director Licensing
Manager Licensing - Braidwood and Byron
Senior Counsel, Nuclear, Mid-West Regional
Operating Group
Document Control Desk - Licensing
Assistant Attorney General
Illinois Emergency Management Agency
State Liaison Officer
Chairman, Illinois Commerce Commission

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Regulatory Assurance Manager - Braidwood Station
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Vice President - Operations Support
Vice President - Licensing and Regulatory Affairs
Director Licensing
Manager Licensing - Braidwood and Byron
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Letter to C. Crane from R. Skokowski dated November 13, 2007

SUBJECT: BRAIDWOOD STATION, UNITS 1 AND 2 NRC INTEGRATED INSPECTION
REPORT 05000456/2007005; 05000457/2007005

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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: 05000456/2007005 and 05000457/2007005

Licensee: Exelon Generation Company, LLC

Facility: Braidwood Station, Units 1 and 2

Location: Braceville, IL

Dates: July 1 through September 30, 2007

Inspectors: S. Ray, Senior Resident Inspector
G. Roach, Resident Inspector
M. Bielby, Senior Operations Engineer
D. Lords, Reactor Engineer
M. Mitchell, Health Physicist
R. Ng, Resident Inspector, Byron
D. Reeser, Senior Operations Engineer
D. Smith, Project Engineer
M. Perry, Illinois Emergency Management Agency (IEMA)

Observers: J. Wong, Summer Intern

Approved by: R. Skokowski, Chief
Branch 3
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000456/2007005, 05000457/2007005; 07/01/2007 - 09/30/2007; Braidwood Station, Units 1 & 2; Refueling and Other Outage Activities.

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

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Barrier Integrity

- Green. A finding of very low safety significance and associated Non-Cited Violation of Technical Specification 5.4.1 was identified by the inspectors for failure to have and follow procedures, which met the surveillance requirements of Technical Requirements Manual (TRM), Section 3.9.d.1. Specifically to verify that both the spent fuel pool crane electrical interlocks and physical stops were operable, with the purpose to prevent crane travel with loads greater than 2000 pounds over fuel assemblies. This was required to be completed within seven days prior to crane use. The inspectors identified that loads greater than 2000 pounds were regularly moved with the crane with the electrical interlocks bypassed and the physical stops removed.

The finding was greater than minor because, if left uncorrected, it could have become more significant as additional heavy loads were moved with no interlocks in place. The finding affected the attribute of maintaining functionality of spent fuel cladding in the Barrier Integrity cornerstone. Using the SDP Phase 1 Screening Worksheet of IMC 0609, the inspectors determined that the finding screened as Green because it only affected the fuel barrier. The licensee entered the issue into its corrective action program, temporarily suspended crane operation, and modified its procedures and practices to meet the TRM. The finding had a cross-cutting aspect in the area of Human Performance in the work practices component. Personnel failed to follow the TRM because implementing procedures did not require both the electrical interlocks and physical stops to be in place within seven days prior to crane use (H.4(b)). (Section 1R20)

B. Licensee-Identified Violations

None.

REPORT DETAILS

Summary of Plant Status

Unit 1 was operated at or near full power until September 15, 2007, when a gradual power coastdown was initiated in preparation for a refueling outage. On September 30, 2007, Unit 1 was shutdown from about 94 percent power and the generator taken off line for the refueling outage.

Unit 2 was operated at or near full power until a manual reactor trip was initiated due to loss of condenser vacuum on August 23, 2007. The unit was brought critical on August 24 and synchronized to the grid on August 25. Unit 2 reached full power on August 28, 2007, and remained at or near full power for the rest of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

Readiness for Impending Adverse Weather Conditions

a. Inspection Scope

The inspectors monitored and reviewed the licensee's overall preparations for impending severe thunderstorm, high wind, and hot temperature conditions that occurred several times during the inspection period. The inspectors conducted several walkdowns of the offsite power transformers and onsite transmission tower areas, monitored cooling lake temperature and level, and reviewed licensee procedures for coping with the conditions. The inspectors also monitored the daily scheduling of surveillance and other work activities to ensure that the additional risk from pending severe weather was taken into account. The inspectors verified that minor issues identified during the inspection were entered into the licensee's corrective action program. Documents reviewed during this inspection are listed in the Attachment.

This inspection constituted one sample of the inspection requirement for site readiness for impending adverse weather conditions.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial Walkdowns

a. Inspection Scope

The inspectors performed partial walkdowns of the accessible portions of risk-significant system trains during periods when the train was of increased importance due to redundant trains or other equipment being unavailable. The inspectors utilized the valve and electric breaker checklists to determine whether the components were properly positioned and that support systems were aligned as needed. The inspectors also examined the material condition of the components and observed operating parameters of equipment to determine whether there were any obvious deficiencies. The inspectors reviewed Issue Reports (IRs) associated with the train to determine whether those documents identified issues affecting train function. The inspectors used the information in the appropriate sections of the Technical Specifications (TS) and the Updated Final Safety Analysis Report (UFSAR) to determine whether the licensee had maintained the functional requirements of the system. The inspectors also reviewed the licensee's identification of and controls over the redundant risk-related equipment required to remain in service. The inspectors verified that minor issues identified during the inspection were entered into the licensee's corrective action program. Documents reviewed during this inspection are listed in the Attachment.

The inspectors completed three samples of the quarterly requirement by walkdowns of the following trains:

- 1B containment spray (CS) system train in preparation for a 1A CS work window;
- 1A safety injection (SI) system train in preparation for a 1B SI work window; and
- 2B diesel generator (DG) during emergent work on the 2A DG.

b. Findings

No findings of significance were identified.

.2 Complete Walkdown

a. Inspection Scope

The inspectors performed a complete walkdown of the Unit 2 essential service water (SX) system. The SX system was chosen due to its high risk significance at Braidwood Station. In addition to walkdowns, the inspectors reviewed the following documentation to verify that the system was properly maintained in accordance with design basis documents:

- selected operating procedures regarding system configuration;
- the UFSAR, system drawings, and other selected design bases documents regarding the system; and
- IRs for the system initiated within the last year.

The inspectors verified that minor issues identified during the inspection were entered into the licensee's corrective action program. Documents reviewed during the inspection are listed in the Attachment. This inspection represented one sample of the semiannual requirement.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Quarterly Inspection

a. Inspection Scope

The inspectors conducted fire protection walkdowns that were focused on availability, accessibility, and the condition of fire fighting equipment, the control of transient combustibles and ignition sources, and on the condition and operating status of installed fire barriers. The inspectors selected fire areas for inspection based on their overall contribution to internal fire risk, as documented in the Individual Plant Examination of External Events. Also reviewed was the revised Individual Plant Examination of External Events, which contained additional insights on selected fire areas that impact equipment potentially causing plant transients, or adversely affecting safe shutdown capability. The inspectors used the Fire Protection Report, Revision 22, to determine: that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed; that transient material loading was within the analyzed limits; and that fire doors, dampers, and penetration seals appeared to be in satisfactory condition.

The inspectors completed eight samples of the quarterly inspection requirement during the following walkdowns:

- Unit 1 auxiliary feedwater tunnel (Zone 18.3-1);
- Unit 1 auxiliary building 451 and 467 foot elevations (Zone 11.7-1);
- Unit 2 auxiliary building 451 and 467 foot elevations (Zone 11.7-2);
- Unit 1 auxiliary building 383 foot elevation (Zone 11.4-1);
- Unit 2 auxiliary building 383 foot elevation (Zone 11.4-2);
- Unit 1 upper cable spreading room (Zone 3.3A-1,2);
- Unit 2 upper cable spreading room (Zone 3.3B-1,2); and
- fuel handling building (Zone 12.1-0).

The inspectors verified that minor issues identified during the inspection were entered into the licensee's corrective action program. Documents reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

.2 Annual Inspection of Fire Brigade Performance

a. Inspection Scope

The inspectors observed the licensee's fire brigade response to several simulated fires in conjunction with the 2007 Threat Based Scenario Full Scale Exercise. The fire drill portion of the scenario included fighting multiple fires, coordination with multiple offsite fire departments and other responders, and coordination with the licensee's Emergency Response Organization. The scenario also included use of the alternate fire brigade equipment area outside of the power block, simulated use of alternate fire suppression water supplies, and simulated use of fire protection equipment for supplemental spent fuel pool cooling. The inspector's evaluation included the following criteria:

- proper number of fire brigade members, including a brigade leader, responded;
- protective equipment, including self-contained breathing apparatus, was donned properly;
- adequate fire fighting equipment was brought to the scene;
- command and control, communications, and procedure usage was appropriate;
- checks for victims and fire propagation were conducted;
- attacks on the fire were conducted in accordance with training and procedures;
- drill objectives were met; and
- a critique was conducted in which any deficiencies identified by the inspectors were also identified and discussed by the licensee evaluators or participants.

The inspectors verified that minor issues identified during this inspection were entered into the licensee's corrective action program. This inspection constituted one sample of the annual requirement. Documents reviewed as part of this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

External Flood Protection Features

a. Inspection Scope

The inspectors reviewed Braidwood's flood analysis and design basis documents to identify design features important to flood protection, and flood protection measures in place to prevent or mitigate effects of external flooding. For this sample, the inspectors focused on areas susceptible to ground water intrusion following a significant rain event, in particular the 377 foot elevation of the steam tunnels, and the 346 foot elevation residual heat removal and CS pump rooms in the auxiliary building. The inspectors examined the room walls and ceilings, leak detection sumps, normal sumps, and the effectiveness of the auxiliary building floor drains. This review represented one annual inspection sample. Documents reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

The inspectors observed flow measurement, setting, and flushing of service water to the Units 1 and 2 component cooling heat exchangers and safety-related cubicle coolers. This testing was completed in accordance with the licensee's Generic Letter 89-13 program. The inspectors determined whether there were any significant flow degradations or adverse trends in performance of the heat exchangers observed. This inspection was completed during a time of high heat sink temperature due to a period of hot summer weather. The inspectors also reviewed the most recent surveillance which measured the depth of the SX cooling basin (ultimate heat sink) to determine whether it still met the original design depth assumed in the UFSAR. Documents reviewed during this inspection are listed in the Attachment. This inspection represented two annual samples.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Regualification Program (71111.11)

.1 Facility Operating History

a. Inspection Scope

The inspectors reviewed the plant's operating history from July 2005 through July 2007 to identify operating experience that was expected to be addressed by the Licensed Operator Regualification Training (LORT) program. The inspectors assessed whether the identified operating experience had been addressed by the facility licensee in accordance with the station's approved Systems Approach to Training (SAT) program to satisfy the requirements of 10 CFR 55.59(c), "Regualification Program Requirements."

b. Findings

No findings of significance were identified.

.2 Licensee Regualification Examinations

a. Inspection Scope

The inspectors performed a biennial inspection of the licensee's LORT test/examination program for compliance with the station's SAT program which would satisfy the requirements of 10 CFR 55.59(c)(4), "Evaluation." The inspectors reviewed operating examination material consisted of seven operating tests, each containing two or four

dynamic simulator scenarios (as appropriate) and ten job performance measures (JPMs). The seven written examinations reviewed consisted of a Section A, Plant and Control Systems, administered using a static simulator, and a Section B, Administrative Controls/Procedure Limits, administered in a classroom. The Section A consisted of 15 questions, and Section B, 20 questions. The senior reactor operator (SRO) Section A examination contained a minimum of one SRO level question, and the Section B examination, three SRO level questions. The inspectors reviewed the annual requalification operating test and biennial written examination material to evaluate general quality, construction, and difficulty level. The inspectors assessed the level of examination material duplication from week-to-week during the current year operating test. The examiners assessed the amount of written examination material duplication from week-to-week for the written examination administered in 2006. The inspectors reviewed the methodology for developing the examinations, including the LORT program two year sample plan, probabilistic risk assessment insights, previously identified operator performance deficiencies, and plant modifications.

b. Findings

No findings of significance were identified.

.3 Licensee Administration of Requalification Examinations

a. Inspection Scope

The inspectors observed the administration of a requalification operating test to assess the licensee's effectiveness in conducting the test to ensure compliance with 10 CFR 55.59(c)(4), "Evaluation." The inspectors evaluated the performance of two crews in parallel with the facility evaluators during four dynamic simulator scenarios. The inspectors also evaluated various licensed crew members concurrently with facility evaluators during the administration of several JPMs. The inspectors assessed the facility evaluators' ability to determine adequate crew and individual performance using objective, measurable standards. The inspectors observed the training staff personnel administer the operating test, including conducting pre-examination briefings, evaluations of operator performance, and individual and crew evaluations upon completion of the operating test. The inspectors evaluated the ability of the simulator to support the examinations. A specific evaluation of simulator performance was conducted and documented under Section 1R11.8, "Conformance With Simulator Requirements Specified in 10 CFR 55.46," of this report.

b. Findings

No findings of significance were identified.

.4 Examination Security

a. Inspection Scope

The inspectors observed and reviewed the licensee's overall licensed operator requalification examination security program related to examination physical security

(e.g., access restrictions and simulator considerations) and integrity (e.g., predictability and bias) to verify compliance with 10 CFR 55.49, "Integrity of Examinations and Tests." The inspectors also reviewed the facility licensee's examination security procedure, any corrective actions related to past or present examination security problems at the facility, and the implementation of security and integrity measures (e.g., security agreements, sampling criteria, bank use, and test item repetition) throughout the examination process.

b. Findings

No findings of significance were identified.

.5 Licensee Training Feedback System

a. Inspection Scope

The inspectors assessed the methods and effectiveness of the licensee's processes for revising and maintaining its LORT Program up to date, including the use of feedback from plant events and industry experience information. The inspectors reviewed the licensee's quality assurance oversight activities, including licensee training department self-assessment reports. The inspectors evaluated the licensee's ability to assess the effectiveness of its LORT program and their ability to implement appropriate corrective actions. This evaluation was performed to verify compliance with 10 CFR 55.59(c), "Requalification Program Requirements" and the licensee's SAT program.

b. Findings

No findings of significance were identified.

.6 Licensee Remedial Training Program

a. Inspection Scope

The inspectors assessed the adequacy and effectiveness of the remedial training conducted since the previous biennial requalification examinations and the training from the current examination cycle to ensure that they addressed weaknesses in licensed operator or crew performance identified during training and plant operations. The inspectors reviewed remedial training procedures and individual remedial training plans. This evaluation was performed in accordance with 10 CFR 55.59(c), "Requalification Program Requirements" and with respect to the licensee's SAT program.

b. Findings

No findings of significance were identified.

.7 Conformance With Operator License Conditions

a. Inspection Scope

The inspectors reviewed the facility and individual operator licensees' conformance with the requirements of 10 CFR Part 55. The inspectors reviewed the facility licensee's program for maintaining active operator licenses and assessment of compliance with 10 CFR 55.53(e) and (f). The inspectors reviewed the licensee's procedural guidance and process for tracking on-shift hours for licensed operators, and which control room positions were granted watch-standing credit for maintaining active operator licenses. The inspectors reviewed the facility licensee's LORT program to assess compliance with the requalification program requirements as described by 10 CFR 55.59(c). In addition, medical records for ten licensed operators were reviewed for compliance with 10 CFR 55.53 (i).

b. Findings

No findings of significance were identified.

.8 Conformance with Simulator Requirements Specified in 10 CFR 55.46

a. Inspection Scope

The inspectors assessed the adequacy of the licensee's simulation facility (simulator) for use in operator licensing examinations and for satisfying experience requirements as prescribed in 10 CFR 55.46, "Simulation Facilities." The inspectors also reviewed a sample of simulator performance test records (i.e., transient tests, malfunction tests, steady state tests, and core performance tests), simulator discrepancies, and the process for ensuring continued assurance of simulator fidelity in accordance with 10 CFR 55.46. The inspectors reviewed and evaluated the discrepancy process to ensure that simulator fidelity was maintained. Open simulator discrepancies were reviewed for importance relative to the impact on 10 CFR 55.45 and 55.59 operator actions as well as on nuclear and thermal hydraulic operating characteristics. The inspectors conducted interviews with members of the licensee's simulator staff about the configuration control process and completed the Inspection Procedure 71111.11, Appendix C, checklist to evaluate whether or not the licensee's plant-referenced simulator was operating adequately as required by 10 CFR 55.46(c) and (d).

b. Findings

No findings of significance were identified.

.9 Annual Operating Test Results and Biennial Written Examination Results

a. Inspection Scope

The inspectors reviewed the pass/fail results of the 2006 individual biennial written examinations, and the annual operating tests (required to be given annually per 10 CFR 55.59(a)(2)) administered by the licensee during calendar year 2007. The

overall written examination and operating test results were compared with the significance determination process in accordance with NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process."

Sections 1 through 9 discussed above together constituted one sample of the biennial inspection requirement.

b. Findings

No findings of significance were identified.

.10 Quarterly Review of Testing/Training Activity

a. Inspection Scope

The inspectors observed operating crew performance during a graded out-of-the-box simulator set. Details of the scenarios used are withheld due to exam security considerations.

The inspectors evaluated crew performance in the following areas:

- clarity and formality of communications;
- ability to take timely actions in the safe direction;
- prioritization, interpretation, and verification of alarms;
- procedure use;
- control board manipulations;
- oversight and direction from supervisors; and
- group dynamics.

Crew performance in these areas was compared to licensee management expectations and guidelines.

The inspectors verified that the crew completed the critical tasks listed in the simulator guide. The inspectors also compared simulator configurations with actual control board configurations. For any weaknesses identified, the inspectors observed the licensee evaluators to determine whether they also noted the issues and discussed them in the critique at the end of the session. Documents reviewed are listed in the Attachment. This review constituted one sample of this inspection requirement.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

Routine Inspection

a. Inspection Scope

The inspectors reviewed the licensee's overall maintenance effectiveness for selected plant systems. This evaluation consisted of the following specific activities:

- observing the conduct of planned and emergent maintenance activities where possible;
- reviewing selected IRs, open work orders, and control room log entries in order to identify system deficiencies;
- reviewing licensee system monitoring and trend reports;
- attending various meetings throughout the inspection period where the status of maintenance rule activities were discussed;
- conducting partial walkdowns of the selected system; and
- interviewing appropriate system engineers.

The inspectors also reviewed whether the licensee properly implemented Maintenance Rule, 10 CFR 50.65, for the affected systems. Specifically, the inspectors determined whether:

- the system was scoped in accordance with 10 CFR 50.65;
- performance problems constituted maintenance rule functional failures;
- the system had been assigned the proper safety significance classification;
- the system was properly classified as (a)(1) or (a)(2); and
- the goals and corrective actions for the system were appropriate.

The above aspects were evaluated using the maintenance rule program and other documents listed in the Attachment. The inspectors also verified that the licensee was appropriately tracking reliability and/or unavailability for the systems. Documents reviewed in this inspection are listed in the Attachment.

The inspectors completed two samples in this inspection requirement by reviewing the following systems and equipment performance issues:

- main steam system [(a)(1) system]; and
- feedwater system [(a)(1) system].

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed the licensee's management of plant risk during emergent maintenance activities or during activities where more than one significant system or train was unavailable. The activities were chosen based on their potential impact on increasing the probability of an initiating event or impacting the operation of safety-significant equipment. The inspectors verified that the evaluation, planning, control, and work in progress met the requirements of 10 CFR 50.65, "Maintenance Rule." Specifically, the inspectors verified that the equipment was identified and controlled where appropriate, work was being conducted properly, and significant aspects of plant risk were being communicated to the necessary personnel.

Documents reviewed during this inspection are listed in the Attachment.

The inspectors completed six samples by reviewing the following activities:

- emergent work for leak on 15B feedwater heater shell drain tank relief;
- emergent work for Unit 1 control rod urgent failure;
- emergent work due to a trip on the 1B DG with severe weather in the vicinity;
- planned work on 1B SI pump with the Unit 0 service air compressor out of service;
- emergent work due to 2A DG slow start; and
- emergent work due to Unit 1 containment emergency hatch local leak rate test (LLRT) failure.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors evaluated plant conditions and selected IRs for risk-significant components and systems in which operability issues were questioned. These conditions were evaluated to determine whether the operability of components was justified. The inspectors compared the operability and design criteria in the appropriate section of the UFSAR to the licensee's evaluations presented in the IRs and other documents to verify that the components or systems were operable. The inspectors also conducted interviews with the appropriate licensee system engineers and conducted plant walkdowns, as necessary, to obtain further information regarding operability questions. Documents reviewed as part of this inspection are listed in the Attachment.

The inspectors completed four samples by reviewing the following operability evaluations and conditions:

- refueling water storage tank vortexing concerns;
- steam generator relief valve capacity to maintain margin-to-overfill during a steam generator tube rupture casualty;
- 2B DG field flash problem; and
- non-conservatism in steam generator tube rupture methodology regarding decay heat.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17)

Annual Review

.1 Unit 1 Digital Electro-Hydraulic Main Turbine Controls

a. Inspection Scope

The inspectors continued with design reviews and limited observations of the Unit 1 Digital Electro-Hydraulic Controls upgrade project during this inspection period. The inspection activities during this inspection period consisted mainly of attendance at a Plant Operating Review Committee meeting where operating characteristics were reviewed and observing operators use the new controls on the simulator. Cable termination and system testing will be completed during future inspection periods and the NRC inspection activities will continue. This activity was not considered a completed inspection sample. Documents reviewed as part of this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

.2 Installation of the 500,000 Gallon Radwaste Storage Tank

a. Inspection Scope

The inspectors observed various phases of the construction of a new 500,000 gallon radwaste storage tank designed to reduce the amount of tritiated water to be released to the environment. The inspection activities included construction observations, drawing and safety evaluation reviews and attendance at several Plant Operating Review Committee meetings where the tank was discussed. Although the project was not quite finished by the end of the inspection period, the activity is considered a complete inspection sample. Documents reviewed as part of this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed post-maintenance testing activities associated with important mitigating systems, barrier integrity, and support systems to ensure that the testing adequately demonstrated system operability and functional capability. The inspectors used the appropriate sections of the TS and UFSAR, as well as work orders for work performed, to evaluate the scope of the maintenance and to determine whether the post-maintenance testing was performed adequately, demonstrated that the maintenance was successful, and that operability was restored. The inspectors determined whether the tests were conducted in accordance with licensee procedures, including establishing the proper plant conditions and prerequisites, that the test acceptance criteria were met; and that the results of the tests were properly reviewed and recorded. The activities were selected based on their importance in demonstrating mitigating systems capability and barrier integrity. The inspectors verified that minor issues identified during the inspection were entered into the licensee's corrective action program. Documents reviewed as part of this inspection are listed in the Attachment.

Six samples were completed by observing post-maintenance testing of the following components:

- Exelon pond pump operation following flow totalizer repair;
- 1A CS pump following planned maintenance;
- 1B DG following repair of control air line leak;
- 0B diesel-driven fire pump following planned maintenance;
- 2A reactor containment fan cooler following planned maintenance; and
- 2A DG following governor actuator replacement.

b. Findings

No findings of significance were identified.

1R20 Refueling and Other Outage Activities (71111.20)

a. Inspection Scope

The inspectors observed several activities associated with receipt, inspection, and storage of new fuel in preparations for the Unit 1 refueling outage scheduled for October 2007. The inspectors verified that minor issues identified during the inspection were entered into the licensee's corrective action program. Documents reviewed as part of this inspection are listed in the Attachment. This inspection covered only refueling preparations and the remainder of the refueling activities will be inspected in the next quarter. Thus, this inspection does not represent a completed sample.

b. Findings

Introduction: The inspectors identified a Non-Cited Violation (NCV) of TS having a very low safety significance (Green) for the licensee reactor services personnel failing to

have and follow procedures, which met the requirements of the Technical Requirements Manual (TRM) to verify that crane interlocks and physical stops prevent spent fuel building crane travel with loads greater than 2000 pounds over fuel assemblies.

Description: On July 16, 2007, the inspectors observed licensee reactor services personnel perform 0BwOS TRM 3.9.d.1, a procedure that implemented TRM surveillance requirement 3.9.d.1 to test the spent fuel building crane electrical interlocks and mechanical stops within seven days prior to crane use. The inspectors noted that the personnel did not complete the entire procedure before moving loads, which included loads greater than 2000 pounds. The inspectors later discussed the observation with the fuel handling supervisor and others and ascertained that:

- the crane's electrical interlocks were installed in a position that prevented the crane from traveling from the new fuel canister unloading mezzanine to the new fuel storage vaults;
- in order to move new fuel to the new fuel storage vaults, the personnel regularly operated with the electrical crane interlocks bypassed;
- the electrical interlocks were usually bypassed continuously when performing new fuel operations, even when moving loaded fuel shipping canisters weighing greater than 2000 pounds;
- the crane's mechanical stops, which would prevent crane movement over all except a small portion of the spent fuel pool, had been removed for several years; and
- licensee procedures were written to allow operation of the crane without interlocks and stops, contrary to the requirements in the TRM.

Thus, loads of greater than 2000 pounds were being moved in the spent fuel building by the crane with neither the electrical interlocks or mechanical stops in place. In addition to being required by the TRM, the interlocks and stops were described in the UFSAR and the licensee's response to NUREG 0612, "Control of Heavy Loads at Nuclear Power Plants."

Licensee corrective actions included temporarily suspending crane operations in the spent fuel pool building, conducting a thorough review of the licensing and design basis for the various interlocks and heavy loads control program, installing the physical crane stops, and suspending the practice of moving the loaded new fuel shipping containers with the electrical crane interlocks bypassed. The licensee also changed the TRM to allow movement of heavy loads, with the exception of fuel casks, with only one of the motion control methods in place. These and other corrective actions were being tracked by IR 651354.

Analysis: Although the inspectors did not observe the personnel actually move any heavy loads over the spent fuel pool, operating the crane without the interlocks and stops could increase the probability of an accident involving damage to spent fuel due to a crane malfunction or human error. The inspectors concluded that the issue was a performance deficiency involving a challenge to barrier integrity warranting a significance evaluation. The finding was greater than minor because, if left uncorrected, it could have become more significant as additional heavy loads were moved with no interlocks in place. The finding affected the attribute of maintaining functionality of

spent fuel cladding in the Barrier integrity cornerstone. Using the SDP Phase 1 Screening Worksheet of Inspection Manual Chapter (IMC) 0609, the inspectors determined the finding screened as Green because it only affected the fuel barrier. The finding had a cross-cutting aspect in the area of Human Performance in the work practices component. Personnel failed to follow the TRM because implementing procedures did not require both the electrical interlocks and physical stops to be in place within seven days prior to crane use (H.4(b)). For example, Procedures 0BwOS TRM 3.9.d.1, OU-AP-200, and BwMP 3300-024 all had steps and acceptance criteria that allowed either the interlocks or stops to be operable, but not necessarily both. In addition, even though procedures required at least one of the two control methods be operable, it was the practice of the fuel handlers to operate the crane, including lifting heavy loads, with neither operable.

Enforcement: Technical Specification 5.4.1 required that written procedures be established, implemented, and maintained covering the areas recommended by Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Section 2.k of Appendix A of the Guide required procedures for preparation for refueling and refueling equipment operation. This requirement was partially implemented by TRM Surveillance Requirement 3.9.d.1, which required that the licensee verify that crane interlocks and physical stops prevent crane travel with loads greater than 2000 pounds over spent fuel assemblies. Contrary to this, on July 16, 2007, and on numerous instances before that date, the licensee operated the spent fuel building crane with loaded fuel shipping canisters weighing greater than 2000 pounds without verifying that interlocks and physical stops were in place. In fact, the interlocks were bypassed and the physical stops were not installed. TRM Section 1.5.c stated that violations of the surveillance requirements shall be treated the same as plant procedure violations. Because this violation was of very low safety significance and it was entered into the licensee's corrective action program, this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 05000456/2007005-01; 05000457/2007005-01).

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed surveillance testing activities associated with important mitigating systems, barrier integrity, and support systems to ensure that the testing adequately demonstrated system operability and functional capability. The inspectors used the appropriate sections of the TS and UFSAR to determine whether the surveillance testing was performed adequately and that operability was restored. The inspectors determined whether the testing met the frequency requirements; that the tests were conducted in accordance with the procedures, including establishing the proper plant conditions and prerequisites; that the test acceptance criteria were met; and that the results of the tests were properly reviewed and recorded. Activities were selected based on their importance in demonstrating Mitigating Systems Capability, Barrier Integrity and the Initiating Events cornerstones. Documents reviewed as part of this inspection are listed in the Attachment.

Five samples were completed by observing and evaluating the following surveillance tests:

- 1A auxiliary feedwater pump American Society of Mechanical Engineers test (inservice test);
- 2A DG monthly surveillance (routine);
- Unit 1 solid state protective system bi-monthly surveillance (routine);
- 2B DG bypass of automatic trips surveillance (routine); and
- Unit 2 primary containment emergency airlock LLRT (isolation valve).

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed the installation of temporary modifications that could affect the operability of risk significant equipment, the probability of an initiating event, or an unauthorized radioactive material discharge. For each temporary modification, the inspectors reviewed the associated design change documentation, performed a walkdown of the installation, and reviewed the affected TS and UFSAR sections. The inspectors also reviewed the licensee's plans and schedules for removing the temporary modification or making it permanent. Documents reviewed during this inspection are listed in the Attachment. This review constituted two samples of this inspection requirement. The following modifications were reviewed:

- Engineering Change 366773; Gag Closed Relief Valve 1DV021B and Lock Open Valve 1HD014B - allow inflatable plug to be installed in OTE63AB-6; and
- leakrate monitoring collar installation on 2SX27DA-10 (SX piping).

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspector observed the licensee performance during an operations crew out-of-the-box examination scenario on the simulator. The inspectors observed event classification and notification activities performed by the crew. The inspectors also attended the post-drill critiques for the scenario. The focus of the inspectors activities was to note any weaknesses and deficiencies in the drill performance and ensure that the licensee evaluators noted the same issues and entered them into the corrective

action program. As part of the inspection, the inspectors reviewed the scenario package and other documents listed in the Attachment. This review represented one inspection sample.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Public Radiation Safety

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems (71122.01)

Review of Blowdown Line Operations and Tritium Remediation Efforts

a. Inspection Scope

The inspectors continued to monitor the licensee's activities resulting from previous inadvertent leaks of tritiated liquid from the blowdown line to the Kankakee River. The inspection activities included the following:

- periodic inspections of all vacuum breaker vaults;
- periodic inspections of remediation system pump operations at the Exelon Pond and vacuum breaker 1;
- installation of a third remediation system on the west side of the turbine building;
- efforts to reduce tritium concentrations in secondary plant systems; and
- participation in Community Information Meetings.

In addition, the inspectors instituted a program to accompany licensee employees and contractors during their collection of water samples at 23 monitoring locations of interest. The inspectors verified by direct observation that the water samples were being taken from the locations specified, that proper sampling protocols were followed, and that split samples were properly obtained and labeled. The inspectors took direct custody of the split samples and maintained a chain of custody as the samples were sent to the U.S. Government's contract laboratory in Oak Ridge, Tennessee. The inspectors also reviewed the results of earlier split samples to ensure that the results from the licensee's and NRC's contract laboratories matched within normal statistical variance.

The inspectors verified that minor issues identified during these inspection activities were entered into the licensee's corrective action program. Documents reviewed are listed in the Attachment. This inspection did not represent a completed inspection sample.

b. Findings

No findings of significance were identified.

2PS3 Radiological Environmental Monitoring Program (REMP) and Radioactive Material Control Program (71122.03)

.1 Inspection Planning

a. Inspection Scope

The inspectors reviewed the most current annual Radiological Environmental Operating Report (REMP), dated May 14, 2007, and licensee assessment results to evaluate if the REMP was implemented as required by the Radiological Effluent Technical Specifications (RETS) and the Offsite Dose Calculation Manual (ODCM). The inspectors reviewed the report for changes to the ODCM with respect to environmental monitoring and commitments in terms of sampling locations, monitoring and measurement frequencies, land use census, interlaboratory comparison program, and data analysis. The inspectors reviewed the ODCM to identify environmental monitoring stations and evaluated licensee self-assessments, audits, licensee event reports, and inter-laboratory comparison program results. The inspectors reviewed the UFSAR for information regarding the environmental monitoring program and meteorological monitoring instrumentation. The inspectors also reviewed the scope of the licensee's audit program to determine if it met the requirements of 10 CFR 20.1101(c). This review represented one sample. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

.2 Onsite Inspection

a. Inspection Scope

The inspectors walked down selected air sampling stations (greater than 20 percent) and approximately five percent of the thermoluminescent dosimeter monitoring stations to determine whether they were located as described in the ODCM and to determine the equipment material condition.

The inspectors observed the collection and preparation of a variety of environmental samples including drinking water, surface water, and air. The environmental sampling program was evaluated to determine if it was representative of the release pathways as specified in the ODCM and if sampling techniques were performed in accordance with station procedures.

The inspectors evaluated the condition of the meteorological instruments, using observations and record reviews, and assessed whether the equipment was operable, calibrated, and maintained in accordance with guidance contained in the UFSAR, NRC Safety Guide 23, and licensee procedures. The inspectors assessed whether the meteorological data readout and recording instruments, including computer interfaces and data loggers that measure and record wind speed, wind direction, delta temperature, and atmospheric stability measurements, were available on the licensee's computer system and whether this information was available in the control room.

The inspectors reviewed each event documented in the Radiological Environmental Operating Report that involved missed samples, inoperable samplers, lost thermoluminescent dosimeters, or anomalous measurements for the cause and corrective actions.

The inspectors reviewed the ODCM for significant changes that resulted from land use census modifications, or sampling station changes made since the last inspection. This included a review of technical justifications for changed sampling locations. The inspectors assessed whether the licensee performed reviews required to ensure that the changes did not affect their ability to monitor the impacts of radioactive effluent releases on the environment.

The inspectors reviewed the calibration and maintenance records for eight air samplers to evaluate operating parameters. The inspectors reviewed results of the vendor's inter-laboratory comparison program and quality assurance programs to assess the adequacy of environmental sample analyses performed by the licensee.

The inspectors reviewed quality assurance audit results of the REMP to determine whether the licensee met the TS/ODCM requirements. Documents reviewed are listed in the Attachment.

These reviews represent six samples.

b. Findings

No findings of significance were identified.

.3 Unrestricted Release of Material From the Radiologically Restricted Area

a. Inspection Scope

The inspectors observed the access control location where the licensee monitored potentially contaminated material leaving the radiologically controlled area and inspected the methods used for control, survey, and release of material from this area. The inspectors observed the performance of personnel surveying and releasing material for unrestricted use to verify that the work was performed in accordance with plant procedures.

The inspectors evaluated whether the radiation monitoring instrumentation was appropriate for the radiation types present and was calibrated with appropriate radiation sources that represented the expected isotopic mix. The inspectors reviewed the licensee's criteria for the survey and release of potentially contaminated material and verified that there was guidance on how to respond to an alarm indicating the presence of licensed radioactive material. The inspectors evaluated the licensee's equipment to determine if radiation detection sensitivities were consistent with the NRC guidance contained in IE Circular 81-07 and IE Information Notice 85-92 for surface contamination and Health Physics Position-221 for volumetrically contaminated 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, such as counting times and background radiation levels. The inspectors assessed whether the licensee had established a "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.

These reviews represent two samples.

b. Findings

No findings of significance were identified.

.4 Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed the licensee's self-assessments, audits, condition reports, and special reports related to the radiological environmental monitoring program since the last REMP inspection to determine if identified problems were entered into the corrective action program for resolution. The inspectors also assessed whether the licensee's self-assessment program was capable of identifying and addressing repetitive deficiencies or significant individual deficiencies that were identified by the problem identification and resolution process.

The inspectors also reviewed selected corrective action documents related to the REMP that affected environmental sampling and analysis and meteorological monitoring instrumentation. Staff members were interviewed and documents were reviewed to determine if the following activities were being conducted in an effective and timely manner commensurate with their importance to safety and risk:

- Initial problem identification, characterization, and tracking;
- Disposition of operability/reportability issues;
- Evaluation of safety significance/risk and priority for resolution;
- Identification of repetitive problems;
- Identification of contributing causes;
- Identification and implementation of effective corrective actions;
- Resolution of NCVs tracked in the corrective action system; and
- Implementation/consideration of risk significant operational experience feedback.

This review represented one sample.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification (71151)

.1 Mitigating System Performance Indexes (MSPIs) Performance Indicators (PIs)

a. Inspection Scope

Cornerstone: Mitigating Systems

The inspectors sampled the licensee's MSPI and PI submittals for the periods listed below. The inspectors used MSPI and PI definitions and guidance contained in Nuclear Energy Institute Document 99-02; "Regulatory Assessment Performance Indicator Guideline," Revision 5, to verify the accuracy of the data. The following MSPIs and PIs were reviewed for a total of six samples:

Unit 1

- safety system functional failures PI;
- high pressure injection system MSPI; and
- emergency AC [alternating current] power system MSPI.

Unit 2

- safety system functional failures PI;
- high pressure injection system MSPI; and
- emergency AC power system MSPI.

The inspectors reviewed licensee IRs, electronic logs, and other records for the period from July 1, 2006, through June 30, 2007, for each area specified above. The inspectors independently re-performed calculations where applicable. The inspectors compared the information acquired for each MSPI and PI to the data reported by the licensee. The inspectors verified that minor issues identified during the inspection were entered into the licensee's corrective action program. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

Cornerstones: Barrier Integrity, Occupational Radiation Safety, and Public Radiation Safety

.2 Radiation Safety Performance Indicator Verification

a. Inspection Scope

The inspectors reviewed, at a minimum, the most recent 12 months of licensee event reports, licensee data reported to the NRC, plant logs, and NRC inspection reports to verify the following performance indicators reported by the licensee for the 2nd Quarter of 2007:

- reactor coolant system (RCS) activity, Units 1 and 2;
- occupational exposure control effectiveness; and
- RETS/ODCM radiological effluent occurrence.

The inspectors verified that the licensee accurately reported performance as defined by the applicable revision of Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5.

These performance indicator reviews constituted four inspection samples. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

As required by Inspection Procedure 71152, Identification and Resolution of Problems, and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed screening of all items entered into the licensee's corrective action program. This screening was accomplished by reviewing the description of each new IR and attending selected daily management review committee meetings. Documents reviewed are listed in the Attachment to this report. Minor issues entered into the licensee's corrective action program as a result of the inspectors' observations are generally denoted in the Attachment. These activities were part of normal inspection activities and were not considered separate samples.

b. Findings

No findings of significance were identified.

.2 Annual Review of Operator Workarounds

a. Inspection Scope

The inspectors reviewed the licensee's operator workaround program. Since there were no current formalized operator workarounds, the inspectors also reviewed operator challenges, control room distractions, standing orders, leakage catch basins, and selected IRs to verify that none of those issue rose to the level of an operator workaround which could cause an impact on the operators' ability to implement abnormal and emergency operating procedures. This activity represented one inspection sample of the selected issue follow-up inspection requirement. In particular, it completed the annual requirement for a review of operator workarounds. The inspectors verified that minor issues identified during the inspection were entered into the licensee's corrective

action program. Documents selected for a more detailed review are listed in the Attachment.

b. Findings

No findings of significance were identified.

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

.1 Grid Electrical Disturbance

a. Inspection Scope

The inspectors reviewed the plant's response to a grid disturbance event on the evening of August 4, 2007. The disturbance was the result of the loss of three Midwest fossil plants within a short period of time. Grid frequency dropped and, as a result, the output of both Braidwood units increased slightly. The inspectors observed control room activities, discussed the event with operators and reviewed control room logs. Operators rapidly noted the power increases and took prompt action to limit the power increase and return the units to less than 100 percent power. The inspectors verified that hourly and shiftly calorimetric power did not exceed licensed limits on either unit. Documents reviewed in this inspection are listed in the Attachment. This inspection represents one sample.

b. Findings

No findings of significance were identified.

.2 Increase in Unit 1 RCS Unidentified Leakage Indication

a. Inspection Scope

The inspectors reviewed the licensee's response to indications of increased RCS unidentified leakage on August 19-20, 2007. The inspectors verified that the licensee actions were in accordance with commitments detailed in the response to the NRC regarding inspection of Alloy 600/82/182 pressurizer butt welds. The inspectors observed that the unidentified leakage increase was not sustained for 72 hours and that the temporary increase was within the statistical expectations for the measurement techniques. Documents reviewed as part of this inspection are listed in the Attachment. This inspection represented one sample of the inspection procedure.

b. Findings

No findings of significance were identified.

.3 Unit 2 Manual Reactor Trip Due To Loss of Condenser Vacuum

a. Inspection Scope

On the afternoon of August 23, 2007, during a period of sudden high winds, operators manually tripped the Unit 2 reactor due to lowering condenser vacuum. Sudden winds in the cooling lake had apparently raised waves high enough to cause a high differential pressure across the circulating water pumps intake traveling screens. Two of the three operating circulating water pumps on Unit 2 tripped on high differential pressure and, although operators quickly began reducing power, condenser vacuum entered the "not acceptable" region of operating procedures and operators initiated a manual reactor trip. The plant responded as designed. One NRC inspector was in the control room at the time of the trip and another responded a short time later. The inspectors verified that the expected automatic actions had taken place and that operators performed the actions required by their emergency procedures. The auxiliary feedwater pumps started as expected.

Due to the high winds, electrical power was lost to several areas near the plant, including numerous emergency sirens. In accordance with 10 CFR 50.72 the licensee reported the manual reactor protection system actuation, the automatic actuation of the auxiliary feedwater system, and the loss of more than 25 percent of its emergency sirens to the NRC. Power to all of the sirens were restored by the evening of September 24, 2007. Documents reviewed as part of this inspection are listed in the Attachment. This inspection represents one sample.

b. Findings

No findings of significance were identified.

.4 (Closed) LER 05000456/2007001-00 Unit 1 Reactor Trip Following a 345 kV [kilovolts] Transmission Line Lightning Strike

This event, which occurred on June 27, 2007, was previously discussed in Inspection Report 05000456/2007004; 05000457/2007004, Section 4OA3.1. The inspectors reviewed the LER and the root cause report for the trip. Although the direct cause of the trip was loss of the 1D reactor coolant pump due to the electrical transient from the lightning strike, the trip probably would not have happened had a fuse in the pump's protective circuit not have been defective. The licensee was aware of industry problems with that particular model of fuse and had instituted a program for their replacement. However, this particular fuse had not been replaced because the licensee determined that the risk of replacing the fuse while online was greater than waiting until the next outage. During the shutdown, the licensee replaced this and similar fuses to address the industry issue.

The inspectors determined that the licensee's actions were reasonable and did not constitute a performance deficiency. As additional corrective actions, the licensee modified its procedures to monitor the integrity of this and similar fuses and they also intended to take other design or alternate actions to address potential reactor coolant

pump protective circuit vulnerabilities. Documents reviewed as part of this inspection are listed in the Attachment. This inspection represented one sample. This LER is closed.

4OA6 Meetings

.1 Exit Meeting

The inspectors presented the inspection results to Mr. T. Coutu, and other members of licensee management at the conclusion of the inspection on October 11, 2007. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

.2 Interim Exit Meetings

Interim exit meetings were conducted for:

- Licensed Operator Requalification Training Program with Mr. M. Smith, Acting Plant Manager, on August 31, 2007.
- Radiological Environmental Monitoring Program (REMP) and Radioactive Material Control Program Inspection with Mr. T. Koutu, Site Vice President on August 31, 2007.
- Licensed Operator Requalification Training Annual Operating Test with Mr. G. Dudek, Training Director, on September 6, 2007, via telephone.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

T. Coutu, Site Vice President
L. Coyle, Plant Manager
K. Aleshire, Emergency Preparedness Manager
D. Burton, Licensed Operator Requalification Training Group Lead
S. Butler, Operations Training Manager G. Dudek, Site Training Director
R. Gadbois, Maintenance Director
D. Gullott, Regulatory Assurance Manager
J. Knight, Nuclear Oversight Manager
T. McCool, Operations Director
J. Moser, Radiation Protection Manager
J. Petty, Licensing Engineer
M. Smith, Engineering Director
T. Tierney, Chemistry, Environmental, and Radioactive Waste Manager

Nuclear Regulatory Commission

R. Skokowski, Chief, Reactor Projects Branch 3

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

05000456/2007005-01; 05000457/2007005-01	NCV	Failure to Meet TRM Requirements for Spent Fuel Building Crane Interlocks and Physical Stops (Section 1R20)
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Closed

05000456/2007005-01; 05000457/2007005-01	NCV	Failure to Meet TRM Requirements for Spent Fuel Building Crane Interlocks and Physical Stops (Section 1R20)
05000456/2007-001-00	LER	Unit 1 Reactor Trip Following a 345 KV Transmission Line Lightning Strike (Section 4OA3.4)

Discussed

None.

LIST OF DOCUMENTS REVIEWED

The following is a list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspectors reviewed the documents in their entirety but rather that selected sections of 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

0BwOA ENV-1; Adverse Weather Conditions Unit 0; Revision 105
1BwOA ENV-1; Adverse Weather Conditions Unit 1; Revision 5
2BwOA ENV-1; Adverse Weather Conditions Unit 2; Revision 5
EN-BR-402-0005; Extreme Heat Implementation Plan; Revision 1
IR 651476; 0BwOA ENV-1 Entered Due to Thunderstorm Warning; July 18, 2007
IR 651741; Probabilistic Risk Assessment On Line Risk Status Change to Yellow; July 19, 2007
IR 659054; Trailer in Close Proximity to 345 KV Unit 2 Main Power Tower; August 9, 2007 [IEMA-Identified]

1R04 Equipment Alignment

Partial Walkdowns

BwOP CS-E1; Electrical Lineup - Unit 1 Containment Spray System Electrical Lineup; Revision 2
BwOP CS-M1; Operating Mechanical Lineup Unit 1; Revision 8
BwOP SI-E1; Electrical Lineup - Unit 1 Operating; Revision 9
BwOP SI-M1; Operating Mechanical Lineup Unit 1; Revision 16
BwOP DG-E4; Electrical Lineup - Unit 2 2B Diesel Generator; Revision 5
BwOP DG-M4; Operating Mechanical Lineup Unit 2 2B Diesel Generator; Revision 11
Drawing M-46 Sheet 1A; Diagram of Containment Spray; Revision AY
Drawing M-46 Sheet 1B; Diagram of Containment Spray; Revision AZ
Drawing M-46 Sheet 1C; Diagram of Containment Spray Unit 1; Revision AV
IR 640340; 1LT-CS021 Drain Valve Needs Corrected Label; June 14, 2007
IR 644079; 1CS040B Difficult to Operate; June 25, 2007
IR 645917; 1CS043B Has a Leak; June 29, 2007
IR 656958; Unit 1 Containment Spray Additive Tank Low Level Alarm Received; August 3, 2007

Complete Walkdown

BwOP SX-E2; Electrical Lineup - Unit 2 Essential Service Water System; Revision 8
BwOP SX-M2; Operating Mechanical Lineup Unit 2; Revision 25
M - 42 Sheet 1A; Diagram of Essential Service Water Units 1 & 2; Revision BH
M - 42 Sheet 1B; Diagram of Essential Service Water Units 1 & 2; Revision BB
M - 42 Sheet 2A; Diagram of Essential Service Water Units 1 & 2; Revision AU
M - 42 Sheet 2B; Diagram of Essential Service Water Units 1 & 2; Revision AW
M - 42 Sheet 4; Diagram of Essential Service Water Units 1 & 2; Revision BB
M - 42 Sheet 6; Diagram of Essential Service Water; Revision T
M - 126 Sheet 1; Diagram of Essential Service Water Unit 2; Revision BN
M - 126 Sheet 2; Diagram of Essential Service Water Unit 2; Revision AJ
M - 126 Sheet 3; Diagram of Essential Service Water Unit 2; Revision AJ

BwVSR 3.7.9.3; Braidwood Cooling Lake Hydrographic Survey; Revision 2
IR 668259; Placard For Floor Plate Access to 2SX001B; September 5, 2007
[NRC-Identified]

1R05 Fire Protection

Byron/Braidwood Nuclear Stations Fire Protection Report; Amendment 22;
December 2006
Fire Protection Report; Figure 2.3-5; Floor at Elevation 467 Auxiliary Building Ventilation
Room; Amendment 12
Fire Protection Report; Figure 2.3-13; Floor Plan at Elevation 383; Amendment 18
Braidwood Station Pre-Fire Plan; 1S-41; Unit 1 Diesel Driven Auxiliary Feedwater
Pump - Elevation 383
Braidwood Station Pre-Fire Plan; 1S-42; Unit 1 Diesel Driven Auxiliary Feedwater
Pump Day Tank Room - Elevation 383
Braidwood Station Pre-Fire Plan; 2S-41; Unit 2 Diesel Driven Auxiliary Feedwater Pump -
Elevation 383
Braidwood Station Pre-Fire Plan; 2S-42; Unit 2 Diesel Driven Auxiliary Feedwater Pump
Day Tank Room - Elevation 383
Fire Protection Report; Figure 2.3-8; Main Floor Plan Elevation 451'; Amendment 18
Braidwood Station 2007 Threat Based Scenario Full Scale Exercise Manual,
July 11, 2007
BwAP 1450-9; Use of the MSA Custom Air V Escape Self Contained Breathing
Apparatus; Revision 1
Fire Protection Report; Figure 2.3-7; Upper Cable Spreading Room Elevation 463;
Amendment 18
IR 650195; Lessons Learned During Braidwood July 2007 EP [Emergency
Preparedness] Drill; July 15, 2007
IR 650196; Anecdotal Evidence During Braidwood July 2007 EP Drill
IR 652112; EP Threat-Based Exercise - Fire Response Lessons Learned; July 20, 2007
[Partially NRC-Identified]
IR 659406; IEMA Identified Appendix R Light Ready Light, Bus 133X Closure Bolt;
August 10, 2007 [IEMA-Identified]
IR 667339; NRC Identified Loose Thermafiber Insulation at Ceiling; August 31, 2007
[NRC-Identified]
IR 668121; IEMA Resident Issues Identified in Field; September 5, 2007 [IEMA-
Identified]
IR 668256; D-383 Found Partially Blocked Open Without a Plant Barrier Impairment by
NRC; September 5, 2007 [NRC-Identified]
IR 671069; IEMA Reported Fire Door, D-184, Not Closed as Required;
September 13, 2007 [IEMA-Identified]
IR 673438; Safety - Latter Safety Chains Too Tight; September 20, 2007
[IEMA-Identified]

1R06 Flood Protection Measures

IR 660583; NRC/IEMA Walkdown Identified Discrepancies; August 14, 2007
[NRC/IEMA-Identified]
IR 664691; Water Present in 1B/1C Main Steam Isolation Valve Rooms;
August 26, 2007
IR 665014; Ground Water In 2B Main Steam Isolation Valve Room; August 27, 2007

IR 665588; Revised Probabilistic Risk Assessment Flooding Document Not Provided to Risk Management in Timely Manner; August 28, 2007

1R07 Heat Sink Performance

1BwOSR CC-2; Unit One Component Cooling Water Heat Exchanger Essential Service Water Flush; Recision 6
2BwOSR CC-2; Unit Two Component Cooling Water Heat Exchanger Essential Service Water Flush; Recision 6
BwVSR 3.7.9.3; Braidwood Cooling Lake Hydrographic Survey; Revision 1; Performed March 23, 2006
IR 657314; 1SX124B Very Difficult to Operate; August 4, 2007

1R11 Licensed Operator Requalification Program

Scenario #0761; [title withheld due to exam security considerations]; Revision 0
Scenario #0762; [title withheld due to exam security considerations]; Revision 0
Braidwood LORT End of Cycle Reports; Cycle 5, 2006 – Cycle 4, 2007
IR 560934; Braidwood LORT Pre-NRC 71111.11 Inspection (Self-Assessment);
Braidwood LORT Two-Year Plan, 2006/2007 Training Program; Revision 0
Braidwood Simulator Modifications and Hardware Upgrades; 2005-2006
Completed Simulator Work Requests Report; August 15, 2007
Curriculum Review Committee Meeting Minutes; 2006 - 2007
Differences Between Braidwood Simulator and Station - Simulator Review Board 06-4; December 13, 2006
Exelon Simulator Minor Maintenance Report; August 15, 2007
Nuclear Oversight Quarterly Report (Operations Functional Area); January – June 2007
OP-AA-112-101, Shift Turnover and Relief; Revision 3
Open and Closed Simulator Work Requests; August 2006 – August 2007
Requalification Annual Operating Tests; 2007
Requalification Biennial Written Examinations; 2006
Simulator Core Performance Tests; dated various
Simulator Fleet Performance Indicators; June – July 2007
Simulator Malfunction Tests; dated various
Simulator Steady State Tests; dated various
Simulator Transient Tests; dated various
Ten Licensed Operators' Medical Records; dated various
TQ-AA-106; Licensed Operator Requalification Training Program; Revision 8
TQ-AA-106-102, LORT Classroom Attendance Sheets; Cycle 6, 2006 – Cycle 4, 2007; Revision 0
TQ-AA-106-119, LORT Evaluation Failure Checklist; August 2005 – August 2007; Revision 0
TQ-AA-210-4101; Remedial Training Notification and Action on Failure; August 2005-August 2007; Revision 1
TQ-AA-210-4102; Performance Review Committee Data Sheet; August 2005-August 2007; Revision 3
TQ-AA-210-5101; Training (Classroom and Simulator) Observation; 2006 – 2007; Revision 5
TQ-AA-210-5103; Trainee Reaction – Multiple Topics; Cycle 1, 2006 – Cycle 4, 2007; Revision 1
TQ-AA-210-5106; Evaluation Summary; Cycle 1, 2006 – Cycle 4, 2007; Revision 0

TQ-AA-301-0301; Simulator Work Request Prioritization Maintenance, Modification, and Enhancements; Revision 3
TQ-AA-303; Controlling Simulator Core Updates and Thermal Hydraulic Model Updates; Revision 5

1R12 Maintenance Effectiveness

Plan of the Day - Day of the Week Agenda; Maintenance Rule Status and Projections; September 6, 2007
Braidwood Station's Maintenance Rule Periodic (a)(3) Assessment #7
November 2005 - April 2007; July 27, 2007
BwLP 2500-134; The Turbine Driven Steam Generator Feedwater Pump Electro-Hydraulic Controller Speed Reference Circuitry, and Transient Speed Droop Checks; Revision 13
BwOP FW-24; Filling and Venting an Isolated Feedwater Loop; Revision 11
Scoping Significance - Summary Report for Feedwater System; September 13, 2007
IR 360206; 1A Steam Generator PORV [Power Operated Relief Valve] Trouble Alarm Did Not Clear on Return to Service; August 4, 2005
IR 360691; 1MS019A Extremely Hard to Operate on Return to Service; August 7, 2005
IR 433638; Cannot Verify 1MS019D Full Closed; December 14, 2005
IR 479139; Main Steam Safety Valve Trevitest Results (Unit 1 - A1R12); April 15, 2006
IR 503242; Evaluate Impulse Pressure Transmitters 1PT-0505 & 1PT-0506; June 24, 2006
IR 539599; 2MS004E Valve Fails to Stroke; October 3, 2006
IR 540180; 1MS018D Hand Pump Station Concern; October 5, 2006
IR 543854; Results of Main Steam Safety Valve Trevitesting pre A2R12; October 13, 2006
IR 546570; 2C Steam Generator PORV Hydraulic Pump Running Continuously (2MS018C); October 20, 2006
IR 546570-04; Apparent Cause Evaluation for Maintenance Rule Functional Failure of 2MS018C; March 30, 2007
IR 593712; Valve 2MS018B Stroke Trend; February 20, 2007
IR 621066; Hand-pump O Rings, Backing Rings Mis-Oriented -1MS018B- 3 Way; April 24, 2007
IR 648794; Maintenance Rule (A)(1) Classification Warranted MS4 Performance Criterion; July 10, 2007
IR 650350; Untimely (A) (1) Classification of the Main Steam System; July 16, 2007
IR 652661; 2MS019C Found Stuck Open During Surveillance; July 23, 2007
IR 655253; Environmental Qualification Overhaul of the Steam Generator PORV Actuators; July 30, 2007
IR 656532; MS4 Performance Criterion Exceeded 2MS019C Repeat Failure; August 2, 2007
IR 671168; 2PS-MS165 As Found Value Out of Tolerance, Safety; Trend Code B4; September 13, 2007
ER-AA-310-1004; Maintenance Rule - Performance Monitoring; Revision 5
MA-AP-734-440; Repair/Overhaul of the MS018 Pneumatic/Hydraulic Actuator; Revision 3

BwMS 3355-002; Inspection and Lubrication of the MS019 Valve (PORV Manual Upstream Isolation Valves); Revision 2
Main Steam System Failure Report September 2006 through September 2007

1R13 Maintenance Risk Assessments and Emergent Work Control

Troubleshooting Log for IR 657453/WR 246556; Unit 1 Rod Drive Cabinet 1RD02J; August 6, 2007
1BwOA ROD-2; Failure of Rods to Move - Unit 1; Revision 100
M - 152 Sheet 15; Manufacturer's Supplemental Diagram of Diesel Generator Control Diagram Shutdown System; Revision H
20E-1-4030DG54; Schematic Diagram Diesel Generator 1B Starting Sequence 1DG01KB Part 4; Revision D
OP-AA-106-101-1006; Issue Resolution Documentation Form; 1B Diesel Generator; August 15, 2007
EN-AA-407; Response to Unplanned Discharges, Spills, and Venting of Licensed Radionuclides to Groundwater, Surface Water or Soil; Revision 0
IR 655181; 15B Shell Drain Tank Relief Leaking Outside; July 30, 2007
IR 655765; Issues Identified During Tritium Event Response; July 31, 2007
IR 661039; 80# Regulator Diaphragm Failure on 1DG5230B; August 15, 2007
IR 662989; Paragon Returns Probabilistic Risk Assessment of White; August 21, 2007
IR 668430; 2A DG Exceeded 10 Seconds During Slave Start; September 6, 2007
IR 668739; Chart Recorder Settings Not Appropriate For Test; September 6, 2007
IR 669776; Spare Governor Actuator Was Not Available for 2A Diesel Generator; September 7, 2007
IR 670349; Unit 1 Emergency Hatch Airlock Door Leakage; September 12, 2007
IR 670480; Potential Improvement Opportunity for Diesel Generator Start Time Measurement; September 7, 2007
IR 670620; Potential Adverse Trend in diesel Generator Control Systems Performance; September 12, 2007
Protected Equipment Signs for 1SI01PB Placement Locations; August 21, 2007

1R15 Operability Evaluations

IR 638446; Licensed Operator Re-qualification Training Out-of-Box Exam Failures; September 19, 2007
IR 652913; Proposed Change to Refueling Water Storage Tank (RWST) Empty Setpoint; July 23, 2007
IR 672998; 2B DG Failed to Field Flash Properly; September 19, 2007
IR 673275; Need to Replace 65X and 65IDLE Relays in 2PL08J Panel; September 20, 2007
20E-2-4021B; Relaying & Metering Diagram Diesel Generator 2B - 2DG01KB Generator Control & Engine Governor Control System Part 2; Revision U
OP-AA-108-115; Operability Determinations; Revision 3
2BwEP-3; Steam Generator Tube Rupture Unit 2; Revision 101
TB-07-6; Westinghouse Technical Bulletin - Credited Relief Capacity of Atmospheric Steam Relief System; May 31, 2007
IR 662874; Potential Issue With Westinghouse Modeling of Steam Generator PORV; August 21, 2007
BRW EC [Engineering Change] 366605; Implement Results of RWST Vortex Testing; Revision 0

IR 672819; Non-Conservatism in Steam Generator Tube Rupture Methodology; September 18, 2007
Operability Evaluation 07-008; Potential Issue With Westinghouse Modeling of Steam Generator PORV Relief Capacity; Revision 1

1R17 Permanent Plant Modifications

EC 362141; Installation of New 500,000 Gallon Radwaste Storage Tank; Revision 0
EC 349301; Incorporation of Grid Frequency Response Function and Setpoint Change for System Frequency Low Relay 0SSL-SY077 for Digital Electro-Hydraulic (DEH) Upgrade; Revision 1
Digital Electro-Hydraulic Upgrade Project Overview
OP-AA-106-101-1006; Issue Resolution Documentation Form - Grid Frequency Response of Turbine Control System; 2006-16

1R19 Post-Maintenance Testing

IR 658613; Observations Made During 1A CS Walkdown by NRC/PED; August 7, 2007 [partially NRC-Identified]
IR 665493; NRC Concerns During 0B Fire Pump Run; August 28, 2007 [NRC-Identified]
IR 660803; 1B Diesel Generator Tripped During Slow Start Sequence; August 15, 2007
IR 661039; 80# Regulator Diaphragm Failure on 1DG5230B; August 15, 2007
IR 663096; 2AP10EH - 2C RCFC Breaker Did Not Close When Demanded; August 22, 2007
IR 666615; 2A RCFC Backdraft Damper Indication Dual with Fan Secured; August 31, 2007
2BwOSR 3.3.2.8-610A; Unit 2 Engineered Safeguards Feature Actuation System Instrumentation Slave Relay Surveillance; Revision 3
BwAP 1110-1A2; Fire Suppression Water Supply Required Compensatory Measures Action Response; Revision 6
0BwOS FP.2.2M-2; Diesel Driven Fire Pump Surveillance; Revision 10
M - 52, Sheet 5; Diagram of Fire Protection at Lake Screen House Units 1&2; Revision AN
1BwVSR 5.5.8.CS.1; American Society of Mechanical Engineers (ASME) Surveillance Requirements for 1A Containment Spray Pump and Check Valves 1CS003A and 1CS011A; Revision 7
IR 658763; 1PI-CS003 Erratic Indication During ASME Surveillance; August 9, 2007
IR 668430; 2A Diesel Generator Exceeded 10 Seconds During Slave Start; September 6, 2007
IR 669776; A Spare Governor Actuator Was Not Available for 2A Diesel Generator; September 10, 2007
IR 670480; Potential Improvement Opportunity Diesel Generator Start Time Measurement; September 12, 2007
IR 670620; Potential Adverse Trend in Diesel Generator Control Systems Performance; September 12, 2007

1R20 Refueling and Other Outage Activities

0BwOS TRM 3.9.d.1; Crane Travel - Spent Fuel Storage Pool Surveillance; Revision 2
BwMP 3300-024; Control of Heavy Load Movement; Revision 9
OU-AP-200; Administrative Controls During Fuel Handling Activities for Byron and Braidwood; Revision 7

OU-AP-201; New Fuel Receipt and Inspection; Revision 3
IR 651224; Braidwood IEMA Identified Typo in Corporate Procedure OU-AP-201;
July 18, 2007 [IEMA-Identified]
IR 651354; NRC concern With Bypassing Fuel Handling Building Crane Interlocks;
July 18, 2007 [NRC-Identified]
IR 651425; Fuel Receipt Was Suspended; July 18, 2007 [IEMA-Identified]
IR 651928; Surveillance of a TRM Not Appropriate; July 19, 2007
IR 652156; Fuel Building Crane Bypass with Hot Fuel in Pool; July 19, 2007
IR 663653; Site, corporate Procedures Reference BwAP 370-3 (Superceded);
August 22, 2007 [IEMA-Identified]

1R22 Surveillance Testing

2BwVSR 5.5.8.AF.1; Unit Two Motor Driven Auxiliary Feedwater Pump ASME Quarterly
Surveillance; Revision 8
2BwOSR 3.8.1.2-1; 2A Diesel Generator Operability Surveillance; Revision 21
BwOP DG-11; Diesel Generator Startup; Revision 33
BwOSR 3.3.1.4-1; Unit One Solid State Protective System (SSPS), Reactor Trip Breaker,
and Reactor Trip Bypass Breaker Bi-Monthly Surveillance (Train A); Revision 22a
2BwOSR 3.8.1.13-2; 2B Diesel Generator Bypass of Automatic Trips Surveillance;
Revision 6
2BwOSR 3.6.2.1-4; Unit Two Primary Containment Type B Local Leakage Rate Tests of
the Emergency Hatch Airlock Door Gaskets Interspaces; Revision 7
EC 366516; Evaluate Use of General Warning Circuit Jumper for 1B SSPS During 1A
SSPS bi-Monthly Surveillance Test
IR 349529; Line Plugged Upstream of 2AF018A; July 1, 2005
IR 643343; SSPS Train B General Warning; June 22, 2007
IR 645256; Documentation of 1B SSPS General Warning Troubleshooting;
June 28, 2007
IR 646549; Instrument Maintenance Department to Develop Troubleshooting Package
for SSPS Testing; July 2, 2007
IR 656585; Unit 2 Emergency Hatch Local Leak Rate Test Abnormal Readings;
August 2, 2007

1R23 Temporary Plant Modifications

EC 366773; Gag Closed Relief Valve 1DV021B and Lock Open Valve 1HD014B - Allow
Inflatable Plug to be Installed in OTE63AB-6; Revision 1
IR 656332; EC 366773 Revision 1 Has No Tracking For Authorization; August 1, 2007
IR 649361; Increase in Number of TCCP [Temporary Configuration Control Program]
Installations; July 12, 2007
IR 652776; TCCP Extensions Rejected - Plant Health Committee Did Not Approve
Rescheduling; July 12, 2007
OP-AA-108-111; Adverse Condition Monitoring and Contingency Plan - Monitoring Plan
for Through Wall Leakage on the 2SX27DA-10 Essential Service Water (SX) Supply to
the 2A Diesel Generator; May 11, 2007
IR 634082; 2SX27DA - Increased Essential Service Water Leakage During SX Crosstie
Flush Surveillance; May 26, 2007
Temporary Configuration Control Changes Summary; September 4, 2007

1EP6 Drill Evaluation

Scenario #0761; [title withheld due to exam security considerations]; Revision 0
Scenario #0762; [title withheld due to exam security considerations]; Revision 0
IR 672750; Training: Licensed Operator Requalification Training Simulator Scenario Enhancement; September 18, 2007

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems

IR 648274; No Flow Indicated From Vacuum Breaker #1 Remediation Pump #6; July 9, 2007 [NRC-Identified]
IR 657594; Vacuum Breaker #1 Remediation Well Pumps found Off; August 6, 2007 [IEMA-Identified]
IR 657646; NRC Identified Catch Containments Full and Well #8 Cap Missing; August 6, 2007 [NRC-Identified]
IR 668197; IEMA - Question on National Pollution Discharge Elimination System Reportability for Lake Overflows; September 5, 2007 [IEMA-Identified]
IR 666816; IEMA Inspector Identified - Primary Water Storage Tank Manway Buckets Full After Storm; August 31, 2007 [IEMA-Identified]
IR 664369; North Oil Separator Remediation Hose Damaged; August 24, 2007 [IEMA-Identified]

2PS3 Radiological Environmental Monitoring Program (REMP) and Radioactive Material Control Program

2006 Annual Radiological Environmental Operating Report; May 14, 2007
AR 434569; Chemistry, Radwaste, Effluent and Environmental Monitoring Audit Report NOSA-BRW-06-04; April 5, 2006
AR 475838; Abnormal Tritium Readings in Radiological Environmental Monitoring Program Wells; April 6, 2006
AR 508677; Tritium Discharge to Lake is Near Administrative Level; July 12, 2006
AR 554845; Problem With Compositor on VB-1 and Weekly Surveillance; November 3, 2006
AR 559565-04; Check-in Self-assessment Radiological Environmental Monitoring Program and Radioactive Material Control Report; August 10, 2007
AR 634115; Lake Exceeds Administrative limit for Tritium; May 26, 2007
AR 659477; Missed Radiological Environmental Monitoring Program Samples Not Entered Into Corrective Action Program; August 10, 2007
AR 663385; Elevated Tritium Result at site perimeter Ditch (BD-38); August 22, 2007
AR 663903; Loss of Offsite Power and Meteorological Tower; August 23, 2007
CY-BR-170-301; Offsite Dose Calculation Manual (ODCM); Revision 3
IR 546096; Abnormal Conditions at the Meteorology Shack; October 19, 2006
IR 560743; Check-in Self-assessments Radioactive Material Control; November 21, 2006
IR 666759; More Detail Needed on BD-52 Radiological Environmental Monitoring Program Well Closure; August 31, 2007
IR 666777; Provide Enhanced Cesium in Sediment Information in Annual Radiological Environmental Operating Report; August 31, 2007
IR 666804; Include Iodine 131 in Annual Radiological Environmental Operating Report Tables for Fish and Vegetation; August 31, 2007
RP-AA-503; Unconditional Release Survey Method; Revision 1
NEI 99-02; Regulatory Assessment Performance Indicator Guide; Revision 5

4OA1 Performance Indicator Verification

NEI 99-02; Regulatory Assessment Performance Guideline; Revision 5
LS-AA-2200; Mitigating System Performance Index (MSPI) Data Acquisition and Reporting, Revision 1
Reactor Oversight Program MSPI Basis Document Braidwood Nuclear Generating Station; Revision 5
Braidwood's Archival Operations Narrative Logs; July 1, 2006 through June 30, 2007
IR 575415; 1DG01KA Failed to Achieve Rated Speed & Volts in 10 Seconds; January 4, 2007
IR 624431; 1DG01KA - Cannot Change Load on 1A Diesel Generator; May 2, 2007
IR 642615; 1B Centrifugal Charging Pump - Return to Service Delayed; June 20, 2007
IR 642858; Limiting Condition for Operation Exit Delayed Due To Low Oil Level in 1CV01PB; June 21, 2007
IR 660953; MSPI Issue Identified During NRC Annual Audit; August 15, 2007
[NRC-Identified]

4OA2 Identification and Resolution of Problems (71152)

IR 645527; 1FK-0530D - 1C Steam Generator Feedwater Bypass Controller Swings in Auto; June 28, 2007
IR 647038; 1B Essential Service Water Relay Cycling Not Going to Continuous Backwash; July 3, 2007
IR 651026; Entry Into TS 3.7.5 Following Reactor Trip; June 27, 2007
IR 651891; Station Catch Container Log Does Not Accurately Reflect Status; July 17, 2007 [NRC-Identified]
Braidwood Catch Basin Report; July 17, 2007
Braidwood Catch Basin Report; July 23, 2007
Operator Work Around Status Update in Plan of the Day Handout; July 2, 2007
Standing Order 04-003; Peer Review of degraded or Non-Conforming Technical Specification Equipment; February 24, 2006
Standing Order 05-006; Filter Change Operations for 1/2PR11J; July 18, 2005
Standing Order 06-001; Operations Shutdown Cooling, Residual Heat Removal, and Alternate Decay Heat Removal Philosophy Document; February 3, 2006
Standing Order 06-005; Steady State Manual Control Rod Operations; December 13, 2006
OP-AA-102-102; Operator Work Around Program; Revision 1
RP-AA-502; Catch Containment Program; Revision 1
0BwOS XXC-Q1; Catch Containment Quarterly Surveillance; Revision 1

4OA3 Event Followup

Exelon Nuclear Letter RS-07-027, 5928-07-20044 to the NRC; Supplemental Response Regarding Inspection and Mitigation of Alloy 600/82/182 Pressurizer Butt Welds; February 21, 2007
IR 657301; Unit 2 Plant Response to Grid Disturbance; August 4, 2007
IR 657301; Power Transient Due to Grid Disturbance; August 4, 2007
IR 662210; RCS Leak Rate Went Up By Greater Than 0.1 Gallons Per Minute; August 19, 2007
IR 662260; RCS Leakrate Results Elevated; August 20, 2007
IR 644888; Unit 1 Reactor Trip; June 27, 2007

IR 663871; High Pressure Heater 27A Shell Side Relief Lifted; August 23, 2007
IR 663872; High Pressure Heater 27A Tube Side Relief Lifted; August 23, 2007
IR 663874; High Pressure Heater 27B Tube Side Relief Lifted; August 23, 2007
IR 663899; Indications of the High Pressure Heater 27B Shell Side Relief Lifting;
August 23, 2007
IR 663914; Two Circulating Water Pump Trips Lead to Reactor Trip; August 23, 2007
IR 664068; Loss of Greater Than 25 Percent Emergency Sirens; August 23, 2007
LER 2007-001-00; Unit 1 Reactor Trip Following a 345 KV Transmission Line Lightning
Strike; August 27, 2007

Other Inspector-Identified Minor Issues

IR 646832; IEMA Inspectors Noticed Two Loose Fasteners on Direct Current Bus;
July 3, 2007
IR 648765; IEMA and NRC Identified Instrument Air Leak on Fitting to 1FT-VQ009;
July 10, 2007
IR 657668; Improve Plan For Steam Generator blowdown Resin removal From the
Auxiliary Building; August 8, 2007
IR 661401; IEMA Inspector Found Rag on 1DG5218A; August 16, 2007
IR 668164; IEMA - Effect of Securing Treated Water on Showers and Eyewash Stations;
September 5, 2007
IR 668359; 2SI161 Boric Acid Leakage; September 5, 2007

LIST OF ACRONYMS USED

AC	Alternating Current
ADAMS	Agencywide Documents Access and Management System
ASME	American Society of Mechanical Engineers
BwAP	Braidwood Administrative Procedure
BwEP	Braidwood Emergency Procedure
BwIP	Braidwood Instrument Procedure
BwMP	Braidwood Maintenance Procedure
BwMS	Braidwood Maintenance Surveillance
BwOA	Braidwood Abnormal Operating Procedure
BwOP	Braidwood Operating Procedure
BwOS	Braidwood Operating Surveillance
BwOSR	Braidwood Operating Surveillance Requirement Procedure
BwVSR	Braidwood Engineering Surveillance Requirement Procedure
CFR	Code of Federal Regulations
CS	Containment Spray
DG	Diesel Generator
EC	Engineering Change
EP	Emergency Preparedness
IEMA	Illinois Emergency Management Agency
IMC	Inspection Manual Chapter
IR	Issue Reports
JPM	Job Performance Measure
KV	Kilovolts
LER	Licensee Event Report
LLRT	Local Leak Rate Test
LORT	Licensed Operator Requalification Training
MSPI	Mitigation System Performance Index
MSR	Moisture Separator Reheater
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
PARS	Publicly Available Records
PI	Performance Indicator
PORV	Power Operated Relief Valve
RCS	Reactor Coolant System
REMP	Radiological Environmental Monitoring Program
RETS	Radiological Environmental Technical Specifications
RWST	Refueling Water Storage Tank
SAT	Systems Approach to Training
SDP	Significance Determination Process
SI	Safety Injection
SRO	Senior Reactor Operator
SSPS	Solid State Protection System
SX	Essential Service Water
TCCP	Temporary Configuration Control Change
TRM	Technical Requirements Manual
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report

