April 23, 2004

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 05000456/2004003;
05000457/2004003

Dear Mr. Crane:

On March 31, 2004, 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 findings which were discussed on April 15, 2004, with Mr. T. Joyce and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and to 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, two licensee-identified violations are listed in Section 4OA7 of this report.

If you contest the subject or severity of the Non-Cited Violation, 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, 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 facility.

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Sincerely,

/RA/

Ann Marie Stone, Chief
Branch 3
Division of Reactor Projects

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

Enclosure: Inspection Report 05000456/2004003 05000457/2004003
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
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REGION III

Docket Nos:	50-456; 50-457
License Nos:	NPF-72; NPF-77
Report No:	05000456/2004003; 05000457/2004003
Licensee:	Exelon Generation Company, LLC
Facility:	Braidwood Station, Units 1 and 2
Location:	35100 S. Route 53 Suite 84 Braceville, IL 60407-9617
Dates:	January 1 through March 31, 2004
Inspectors:	S. Ray, Senior Resident Inspector N. Shah, Resident Inspector D. Nelson, Radiation Specialist C. Phillips, Senior Operator Licensing Examiner C. Roque-Cruz, Reactor Engineer D. Tharp, Reactor Engineer T. Tongue, Project Engineer
Observers:	P. Smith, Illinois Emergency Management Agency
Approved by:	Ann Marie Stone, Chief Branch 3 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000456/2004003, 05000457/2004003; 01/01/04 - 03/31/04; Braidwood Station, Units 1 & 2; Routine Integrated Inspection Report.

This report covers a 3-month period of baseline resident inspection and an announced baseline inspection on radiation protection. The inspection was conducted by Region III inspectors and the resident inspectors. No findings of significance were identified.

A. Inspector-Identified and Self-Revealed Findings

There were no inspector-identified or self-revealing findings during this inspection.

B. Licensee-Identified Violations

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

REPORT DETAILS

Summary of Plant Status

Unit 1 started the inspection period at 29 percent of full power while conducting repair and testing of a feedwater isolation valve. The unit was restored to full power on January 3, 2004. On February 4 through 6, 2004, Unit 1 was reduced to 90 percent of full power for testing of the ultrasonic feedwater flow instrumentation. Unit 1 operated at or near full power for the remainder of the inspection period.

Unit 2 was operated at or near full power for the entire inspection period except for the following power reductions: to 96 percent on January 21, 2004, due to a problem with a moisture separator reheater controller; to 95 percent on January 25, 2004, in order to swap feedwater pumps; to 90 percent on January 26 through 30, 2004 for testing of the ultrasonic feedwater flow instrumentation; and to 85 percent on February 8, 2004 for turbine valve testing.

1. REACTOR SAFETY

Cornerstone: Initiating Events, Mitigating Systems, and Barrier Integrity

1R04 Equipment Alignment (71111.04)

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, as well as other documents listed in the Attachment, to verify that the components were properly positioned and that support systems were lined up as needed. The inspectors also examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors reviewed outstanding work orders (WOs) and condition reports (CRs) associated with the train to verify that those documents did not reveal issues that could affect train function. The inspectors used the information in the appropriate sections of the Technical Specification (TS) and the Updated Final Safety Analysis Report (UFSAR) to determine the functional requirements of the system. The inspectors also reviewed the licensee's identification of and the controls over the redundant risk related equipment required to remain in service. The inspectors completed three samples of this requirement by walkdowns of the following trains:

- 2A auxiliary feedwater (AF) pump in preparation for taking the 2A centrifugal charging (CV) pump out of service;
- 1B diesel generator (DG) in preparation for taking the 1A DG out of service; and
- 1A safety injection (SI) train and its associated cubicle and oil coolers in preparation for taking the 1B SI train out of service.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

Quarterly Area Walkdowns

a. Inspection Scope

The inspectors conducted fire protection walkdowns which 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 with later additional insights, their potential to impact equipment which could initiate a plant transient, or their impact on the plant's ability to respond to a security event. The inspectors used the documents listed in the Attachment to verify 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 verified that minor issues identified during the inspection were entered into the licensee's corrective action program.

The inspectors completed nine samples of this inspection requirements during the following walkdowns:

- 1A DG and day tank rooms (zones 9.2-2 and 9.3-1);
- 1A DG fuel oil storage tank room (zone 10.2-1);
- 2A DG and day tank rooms (zones 9.2-2 and 9.3-2);
- 2A DG fuel oil storage tank room (zone 10.2-2);
- 1B AF pump room (zone 11.4A-1);
- 2B AF pump room (zone 11.4-A-2);
- auxiliary building 383 foot elevation general area (zone 11.4-0);
- 1A SI pump room (zone 11.3A-1); and
- 2A SI pump room (zone 11.3A-2).

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

Annual Inspection of External Flood Protection Barriers and Procedures

a. Inspection Scope

The inspectors conducted an annual review of external flooding vulnerabilities and protective measures. The inspection included a review of the external flooding design features described in the UFSAR and a walkdown of external plant areas, including roofs, to verify that water from significant rainfall would not encroach on safety related areas of the plant. The inspectors verified that there were not excessive amounts of debris that could block roof drains, storm drains, or runoff paths, and that there did not appear to be any major changes to the ground elevations such as buildups or sinkholes that could effect runoff. The inspectors also verified that the flood protection curb around the auxiliary building was intact. As part of this inspection, the inspectors reviewed the licensee documents listed in the Attachment. This inspection constituted one sample of this requirement.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

Quarterly Review of Testing/Training Activity

a. Inspection Scope

The inspectors observed the operating crew performance during an evaluated simulator out-of-the-box scenario. 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 as presented in the Exelon procedures listed in the Attachment.

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. The inspectors verified that minor issues identified during the inspection were entered into the licensee's corrective action program. For any weaknesses identified, the inspectors observed the licensee evaluators to verify that they also noted

the issues and discussed them in the critique at the end of the session. This inspection constituted one sample.

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 risk-significant event initiating, mitigating, and barrier integrity systems. This evaluation consisted of the following specific activities:

- observing the conduct of planned and emergent maintenance activities where possible;
- reviewing selected CRs, open WOs, and control room log entries in order to identify system deficiencies;
- reviewing licensee system monitoring and trend reports;
- a partial walkdown of the selected system; and
- interviews with the appropriate system engineer.

The inspectors also reviewed whether the licensee properly implemented the Maintenance Rule, 10 CFR 50.65, for the system. 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.

As part of this inspection, the inspectors attended a periodic licensee Equipment Reliability Management Review Meeting where maintenance effectiveness was a principle subject. The inspectors also verified that minor issues identified in this inspection were entered into the licensee's corrective action program.

The inspectors completed three samples in this inspection requirement by reviewing the following systems:

- direct current (DC);
- fuel pool cooling; and
- containment spray.

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 inspections were conducted to verify that evaluation, planning, control, and performance of the work were done in a manner to reduce the risk and minimize the duration where practical, and that contingency plans were in place where appropriate.

The licensee's daily configuration risk assessments records, observations of operator turnover and plan-of-the-day meetings, observations of work in progress, and the documents listed in the Attachment were used by the inspectors to verify that the equipment configurations were properly listed, that protected equipment were identified and were being controlled where appropriate, that work was being conducted properly, and that significant aspects of plant risk were being communicated to the necessary personnel. The inspectors verified that the licensee controlled emergent work in accordance with the expectations in the procedures listed in the Attachment.

In addition, the inspectors reviewed selected issues that the licensee entered into its corrective action program to verify that identified problems were being entered into the program with the appropriate characterization and significance.

The inspectors completed seven samples by reviewing the following activities:

- troubleshooting, replacement, and testing of Unit 1 DG load sequencing relay TSRA;
- online planned maintenance of instrument inverter 211;
- replacement and testing of Unit 2 K647 SI slave relay after it failed to remain latched when the SI signal was reset during a surveillance test;
- planning and preparation for a radioisotope tracer test on both unit's feedwater systems;
- response to calcium carbonate fouling of the 1B essential service water strainer and both trains of reactor containment fan coolers (RCFCs) in Unit 1;
- response to calcium carbonate fouling of the 2B essential service water strainer and 1D RCFC; and
- response to calcium carbonate fouling of the 2A train of RCFCs.

b. Findings

No findings of significance were identified.

1R14 Operator Performance During Non-Routine Evolutions and Events (71111.14)

a. Inspection Scope

The inspectors completed one sample by reviewing the control room operator response to an event involving unexpected isolation of the moisture separator reheaters (MSR) second stages on Unit 2, causing an automatic load reduction to 96 percent, followed by operators returning the MSRs to service and returning to full load conditions.

For this event, the inspectors observed control room activities, interviewed plant operators and other personnel, and reviewed plant records including control room logs, operator turnovers and condition reports. The inspectors verified that personnel errors did not contribute to the event, that the event was entered into the licensee corrective action program, and that the operator response to the event was in accordance with the applicable plant procedures. Documents reviewed as part of this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors evaluated plant conditions and selected CRs 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 CRs and documents listed in the Attachment to verify that the components or systems were operable. The inspectors also conducted interviews with the appropriate licensee system engineers to obtain further information regarding operability questions.

As part of this inspection, the inspectors attended a periodic licensee Plant Health Committee meeting and a periodic operational execution management review meeting where some of the operability concerns were discussed.

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

- Operability Determination 03-004 (CR 164897) on elevated discharge pressures associated with the Unit 1 SI pumps;

- CR 199206 and its associated root cause investigation, as well as adverse condition monitoring plans in response to a large calcium carbonate precipitation event in the raw water systems;
- CR 199336 regarding broken lock washers discovered in the 1A DG;
- various condition reports describing fouling of several of the Units 1 and 2 emergency core cooling system pump lube and gear oil coolers due to a large calcium carbonate precipitation event in the raw water systems;
- CR 202627 regarding Unit 2 containment temperature approaching the TS limit of 120 degrees Fahrenheit including Engineering Change Request 347470 regarding using computer points rather than main control board indications for Unit 1 containment temperature; and
- CR 207044 regarding leakage from service water flange 2FE-SX031 during installation of a freeze seal on valve 0SX172.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17)

Annual Review

a. Inspection Scope

The inspectors evaluated the permanent plant modification installed under Engineering Change Request 42493 to install two new model DC-to-DC power supplies in the 1A DG control panel. This modification was chosen because it affected a risk-significant mitigating system.

Prior to the inspection, the inspectors reviewed the list of the top 40 proposed modifications, attended two readiness review meetings for the 1A DG work window, and reviewed the risk assessment and protected equipment for the work. During the inspection, the inspectors reviewed the design change package and associated WO for installation, observed the pre-job brief and actual installation of the modification, and reviewed the post-modification testing. The inspectors verified that the modification did not appear to introduce any new system vulnerabilities, did not create any new system interface problems, and that the testing verified that the system performed as designed with the most conservative initial conditions expected. Documents reviewed as part of this inspection are listed in the Attachment. The inspectors verified that minor issues identified during the inspection were entered into the licensee's corrective action system. This activity constituted one inspection sample of the annual requirement.

b. Findings

No findings of significance were identified.

1RST Post-Maintenance and Surveillance Testing - Pilot (71111.ST)

a. Inspection Scope

The inspectors reviewed post-maintenance and surveillance testing activities associated with important mitigating, barrier integrity, and support systems to ensure that the testing adequately verified system operability and functional capability. For post-maintenance testing, the inspectors used the appropriate sections of the TS and UFSAR, as well as the WOs for the work performed, to evaluate the scope of the maintenance and to verify that the post-maintenance testing was performed adequately, demonstrated that the maintenance was successful, and that operability was restored. For surveillance testing, the inspectors verified that the testing met the TS, the UFSAR, and licensee procedural requirements, and demonstrated that the equipment was capable of performing its intended safety functions. The inspectors verified that 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. The activities were selected based on their importance in verifying mitigating systems capability and barrier integrity. The inspectors verified that minor issues identified during the inspection were entered into the licensee's corrective action system. Documents reviewed as part of this inspection are listed in the Attachment.

Note that this inspection is a pilot for a proposed consolidated procedure combining the previous Post-Maintenance Testing (71111.19) and Surveillance Testing (71111.22) procedures.

Five samples were completed by observing post-maintenance testing after the following activities:

- work window on Unit 1 fuel pool cooling pump including rotating element and bearing replacement;
- work window on the 1A DG;
- work window on the 211 instrument inverter;
- 18-month preventive maintenance on the 0B diesel-driven fire pump; and
- work window on the 1A containment spray pump.

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

- discharge testing of DC battery bus 223
- slave relay testing of the train A automatic SI relay K608;
- 1A AF pump quarterly American Society of Mechanical Engineers testing;
- 1B AF pump monthly testing;
- 2A DG bypass of automatic trips surveillance; and
- 2B DG monthly testing.

Although DC battery bus 223 was a nonsafety-related component, the associated testing was similar to that performed on the safety-related DC battery buses.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed temporary modifications to verify that they did not have a unanalyzed affect on the safety functions of important safety systems. As part of this inspection, the inspectors reviewed the 10 CFR 50.59 screenings, appropriate UFSAR sections and TS to verify that system operability/availability were not affected. The inspectors verified that the installation was consistent with the design documents, that the installations were properly flagged, and that the appropriate post-installation testing was accomplished. Documents reviewed as part of this inspection are listed in the Attachment. The inspectors verified that minor issues identified during this inspection were entered into the licensee's corrective action program. This inspectors completed three samples of this inspection requirement by performing the following activities:

- walkdown of the auxiliary building looking for undocumented or unauthorized temporary modifications;
- review of Temporary Modification 344077 on the 1A and 1C SI accumulator power supplies; and
- installation of a freeze seal to facilitate maintenance on the Unit 2 component cooling water heat exchanger.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors observed operator performance during an evaluated simulator drill. The inspectors observed event classification, NRC notifications, and other aspects of drill performance to identify weaknesses and ensured that the licensee evaluators had also noted the same weaknesses. The inspectors verified that deficiencies noted during the drill, by either the inspectors or licensee evaluators, were entered into the licensee's corrective action program. The inspectors also attended the post drill critique for the simulator crew. Documents reviewed as part of this inspection are listed in the Attachment. This activity constituted one inspection sample.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiologically Significant Areas (71121.01)

.1 Review of Licensee Performance Indicators (PIs) for the Occupational Exposure Cornerstone

a. Inspection Scope

The inspectors reviewed the licensee's records to determine if any occupational exposure control cornerstone PIs had been identified during the previous five calender quarters. If PIs had been identified, the inspectors would have determined whether or not the conditions surrounding the PIs had been evaluated and identified problems had been entered into the corrective action program for resolution. This review represented one sample.

b. Findings

No findings of significance were identified.

.2 Plant Walkdowns and Radiation Work Permit Reviews

a. Inspection Scope

The inspectors walked down and surveyed (using an NRC survey meter) selected areas in the Units 1 and 2 auxiliary buildings to verify that the prescribed radiation work permit, procedure, and engineering controls were in place, that licensee surveys and postings were complete and accurate, and that air samplers were properly located. This review represented one sample.

b. Findings

No findings of significance were identified.

Cornerstone: Public Radiation Safety

2PS2 Radioactive Material Processing and Transportation (71122.02)

.1 Radioactive Waste System

a. Inspection Scope

The inspectors reviewed the liquid and solid radioactive waste system description in the UFSAR for information on the types and amounts of radioactive waste (radwaste) generated and disposed. The inspectors reviewed the scope of the licensee's audit program with regard to radioactive material processing and transportation programs to

verify that it met the requirements of 10 CFR 20.1101(c). This review represented one sample.

b. Findings

No findings of significance were identified.

.2 Radioactive Waste System Walkdowns

a. Inspection Scope

The inspectors performed walkdowns of the liquid and solid radwaste processing systems to verify that the systems agreed with the descriptions in the UFSAR and the Process Control Program, and to assess the material condition and operability of the systems. The inspectors reviewed the status of radioactive waste process equipment that was not operational and/or was abandoned in place. The inspectors reviewed the licensee's administrative and physical controls to ensure that the equipment would not contribute to an unmonitored release path or be a source of unnecessary personnel exposure.

The inspectors reviewed changes to the waste processing system to verify the changes were reviewed and documented in accordance with 10 CFR 50.59 and to assess the impact of the changes on radiation dose to members of the public. The inspectors reviewed the current processes for transferring waste resin into shipping containers to determine if appropriate waste stream mixing and/or sampling procedures were utilized. The inspectors also reviewed the methodologies for waste concentration averaging to determine if representative samples of the waste product were provided for the purposes of waste classification in 10 CFR 61.55. This review represented one sample.

b. Findings

No findings of significance were identified.

.3 Waste Characterization and Classification

a. Inspection Scope

The inspectors reviewed the licensee's radiochemical sample analysis results for each of the licensee's waste streams, including dry active waste, spent resins and filters. The inspectors also reviewed the licensee's use of scaling factors to quantify difficult-to-measure radionuclides (e.g., pure alpha or beta emitting radionuclides). The reviews were conducted to verify that the licensee's program assured compliance with 10 CFR 61.55 and 10 CFR 61.56, as required by Appendix G of 10 CFR Part 20. The inspectors also reviewed the licensee's waste characterization and classification program to ensure that the waste stream composition data accounted for changing operational parameters and thus remained valid between the annual sample analysis updates. This review represented one sample.

b. Findings

No findings of significance were identified.

.4 Shipment Preparation

a. Inspection Scope

The inspectors observed surveying, placarding, vehicle checks, emergency instructions, disposal manifest, shipping papers provided to the driver, and licensee verification of shipment readiness for a shipment of radioactive dry active waste to a waste disposal site. The inspectors reviewed the training records provided to personnel responsible for the conduct of radioactive waste processing and radioactive shipment preparation activities. The review was conducted to verify that the licensee's training program provided training consistent with NRC and Department of Transportation requirements.

b. Findings

No findings of significance were identified.

.5 Shipping Records

a. Inspection Scope

The inspectors reviewed five non-excepted package shipment manifests/documents completed in 2002/2003 to verify compliance with NRC and Department of Transportation requirements (i.e., 10 CFR Parts 20 and 71, and 49 CFR Parts 172 and 173). This review represented one sample.

b. Findings

No findings of significance were identified.

.6 Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed condition reports and a self assessment that addressed radioactive waste and radioactive materials shipping program deficiencies since the last inspection, to verify that the licensee had effectively implemented the corrective action program and that problems were identified, characterized, prioritized and corrected. The inspectors also verified that the licensee's self-assessment program was capable of identifying repetitive deficiencies or significant individual deficiencies in problem identification and resolution.

The inspectors also reviewed corrective action reports from the radioactive material and shipping programs since the previous inspection, interviewed staff and reviewed documents to determine if the corrective measures were being conducted in an effective

and timely manner commensurate with their importance to safety and risk. This review represented one sample.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

Cornerstones: Initiating Events and Mitigating Systems

Reactor Safety Strategic Area

a. Inspection Scope

The inspectors reviewed documents listed in the Attachment to verify that the licensee had corrected reported PI data, in accordance with the criteria in Nuclear Energy Institute 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 2. The data reported by the licensee was compared to a sampling of control room logs, CRs, and other sources of data generated since the last verification. The inspectors completed six samples by verifying the following PIs:

Unit 1

- unplanned scrams per 7000 critical hours for the period from October 1, 2002, to December 31, 2003;
- unplanned scrams with loss of normal heat removal for the period from October 1, 2002, to December 31, 2003; and
- safety system unavailability, pressurized water reactor residual heat removal system, from October 1, 2002, to December 31, 2003.

Unit 2

- unplanned scrams per 7000 critical hours for the period from October 1, 2002, to December 31, 2003;
- unplanned scrams with loss of normal heat removal for the period from October 1, 2002, to December 31, 2003; and
- safety system unavailability, pressurized water reactor residual heat removal system, from October 1, 2002, to December 31, 2003.

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 discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that they were being entered into the licensee's corrective action system at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. Minor issues entered into the licensee's corrective action system as a result of 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 finding of significance were identified.

.2 Review of Licensee Focused Area Self Assessments (FASAs) (Annual Sample)

Introduction

The licensee had instituted a practice of performing FASAs prior to major NRC inspections in order to determine its readiness for the inspection and correct any problems noted. The inspectors selected this area for review to assess the quality of those FASAs and the effectiveness and timeliness of any corrective actions taken as the result of deficiencies identified in the FASAs. The inspectors selected six FASAs performed in 2003. These FASAs were performed by the licensee in preparation for NRC inspections in the areas of safety system design inspection, fire protection, licensed operator requalification training program, inservice inspection activities, emergency preparedness, and radiological environmental monitoring program. As part of this inspection, the inspectors verified that minor issues identified were entered into the licensee's corrective action program.

a. Effectiveness of Problem Identification

(1) Inspection Scope

The inspectors reviewed the scope of the six FASAs and the deficiencies and recommendations identified. The inspectors compared the deficiencies to any NRC findings from the subsequent inspections.

(2) Issues

Overall the licensee identified a total of 18 deficiencies in the six FASAs. In the associated NRC inspections, the NRC identified a total of three findings/violations. However, two of the findings were in areas that were outside the scope of the FASAs. One NRC finding, in the fire protection area, was

associated with a design calculation specifically reviewed during the associated FASA. The inspectors determined that a more thorough licensee review of the status of that calculation might have identified the finding before the NRC inspection.

The inspectors determined that the licensee did not routinely go back and review the scope, depth, results, and corrective actions associated with the pre-NRC inspection FASAs after the NRC inspections were over. The licensee was missing opportunities to capture lessons learned to improve future FASAs.

The licensee's Nuclear Oversight (NOS) group routinely reviewed completed FASAs for quality and compliance with the licensee's procedural guidance. The inspectors noted that NOS had written 18 CRs in 2003 associated with its reviews of FASAs. The inspectors discussed the quality of FASAs with the NOS manager and were told that NOS considered the quality of FASAs as an area needing significant improvements.

b. Prioritization and Evaluation of Issues

(1) Inspection Scope

The inspectors reviewed the action tracking items (ATIs) initiated as a result of the FASAs reviewed to determine if all deficiencies identified in the FASAs had associated ATIs, if the ATIs had been assigned reasonable due dates based on the significance of the issue, and if ATIs were being completed in a timely manner.

(2) Issues

No significant issues were identified with the prioritization and evaluation of the issues identified in the FASAs. The inspectors reviewed a total of 54 ATIs initiated as a result of the six FASAs reviewed. The inspectors determined that 40 of those had been closed on their original schedule. Generally the items were closed prior to the associated NRC inspection. An additional eight ATIs had been closed, but only after due date extensions. The due date extensions were generally justified and reasonable. One ATI was canceled with the appropriate justification. Five ATIs were still open. None were overdue but two had due date extensions. The inspectors reviewed the open ATIs and determined that they were appropriately prioritized and scheduled.

c. Effectiveness of Corrective Actions

(1) Inspection Scope

The inspectors reviewed ATIs initiated as a result of the FASAs to determine if they appeared to be effective in correcting the associated problem.

(2) Issues

The inspectors determined that two of the 54 ATIs reviewed were closed without the action actually being accomplished. The fire protection FASA identified, among other observations and deficiencies, the need to update the pre-fire plan to eliminate duplication and to revise a reference. The licensee initiated ATIs 159022-03 and 159022-07, with due dates of September 26, 2003, for those issues. The ATIs were assigned to the operations department. Both ATIs were closed on their due dates with the notation that new ATIs had been initiated to re-assign the actions to the fire marshal with new due dates of February 27, 2004. However, the inspectors determined that the new ATIs had never been created. Even if the fire marshal knew about the expected actions, they would probably not have been completed, because the fire marshal had retired and been replaced subsequent to the action being assigned. After informing the fire protection engineer about this issue, the inspectors verified that new ATIs were initiated and entered the fact that the original ATIs had been improperly closed into the corrective action program.

4OA3 Event Followup (71153)

The inspectors completed four inspection samples in this area.

.1 (Closed) Licensee Event Report (LER) 05000457/2003-003-00: Inadvertent Auxiliary Feedwater Engineering Safety Features Actuation Due to Placing a Clearance Order Ahead of the Outage Schedule.

This event was previously discussed in Inspection Report 05000456/2003008; 05000457/2003008, Section 4OA3.4. The inspectors reviewed the LER, related CRs, and other associated documents as listed in the Attachment. The inspectors verified that all corrective actions in the LER were in the licensee's corrective action tracking process. As discussed in the previously mentioned report, this event was considered a minor issue with no adverse consequences.

.2 (Closed) LER 05000457/2003-004-00: Unit 2 Reactor Trip and Auxiliary Feedwater Emergency Actuation Due to Cascading Feedwater Pump Trips Caused by Lack of Preventative Maintenance.

The inspectors reviewed the LER, related CRs, and other associated documents as listed in the Attachment. The inspectors also discussed the event with appropriate members of the licensee's engineering and operating staff.

This issue was previously described in Sections 1R14 and 4OA3.5 of Inspection Report 05000456/2003006; 05000457/2003006. As stated in that report, the inspectors determined that a performance deficiency was not a significant contributor to this event and thus, no finding was involved.

The licensee's corrective actions, as described in the LER, included inspections of control cabinets for foreign material, replacement of plastic tie-wraps with a more suitable type, replacement of the 2B feedwater pump speed control circuit card and

improved procedures for monitoring and preventive maintenance of the speed control circuit cards.

The inspectors determined that no new significant safety issues were identified in the LER.

.3 (Closed) LER 05000457/2003-005-00: Setpoint Drift Causes Three of Three Pressurizer Safety Valve Lift Tests to Exceed TS Tolerance.

The inspectors reviewed the LER, related CRs, and other associated documents as listed in the Attachment.

In the LER the licensee reported that all three of the pressurizer safety valves tested at an offsite facility after the fall 2003 Unit 2 refueling outage were found to be slightly outside of their TS $\pm$ 1 percent tolerance. However, all three were within the $\pm$ 3 percent tolerance specified by the American Society of Mechanical Engineers for that application. The vendor inspected the valves and identified no material condition issues. The inspectors determined that a performance deficiency did not contribute to this event.

At the time of discovery, the licensee had already replaced the safety valves with refurbished valves having setpoints within the TS band. The licensee's corrective actions, as described in the LER, included a revision of the safety analyses to support relaxation of the tolerance in the TSs for the lift setpoint and submission of a license amendment request to revise the TSs.

The enforcement aspects of this event are described in Section 4OA7 of this report.

.4 Potential Operation of Unit 1 Above the Licensed Thermal Power Limit

On March 1, 2004, the licensee reported via the Emergency Notification System that it had determined that Unit 1 had potentially exceeded its maximum licensed thermal power level of 3586.6 megawatts thermal, as stated in License Condition 2.C.(1), by up to 1.07 percent on at least one occasion between June 1999 and September 2003. The issue involved signal noise problems in the ultrasonic feedwater flow detectors. This was the same issue as previously reported and discussed in an Event Notification dated August 31, 2003, and updated on September 2, 2003, LER 05000457/2003-002-00, Inspection Report 05000456/2003006; 05000457/2003006, Section 4OA3.4, and Inspection Report 05000456/2003008; 05000457/2003008, Sections 4OA3.2 and 4OA7.

The new information in this notification was that Unit 1 may have been affected enough to have exceeded its licensed limit rather than only Unit 2 as previously reported. This was based on new testing at both the Braidwood and Byron stations that indicated that the feedwater flow error could have been greater than originally reported. Because of questions regarding the accuracy of the ultrasonic flow instrumentation, the licensee had removed them from service on both units in September 2003.

As previously discussed in Inspection Report 05000456/2003008; 05000457/2003008, Section 4OA3.2, the inspectors determined that the issue was not a licensee

performance deficiency and was, therefore, not a finding. As discussed in that report, the inspectors determined that the potential overpower did not significantly challenge either the reactor coolant or fuel integrity barriers and was of very low safety significance. The potential overpower condition was within the bounds of the assumptions in the accident analysis in the UFSAR. The licensee entered the issue into its corrective action program as CR 205273 and intended to revise LER 05000457/2003-002 with the new information by March 31, 2004. The enforcement aspects of this issue are discussed in Section 4OA7 of this report.

4OA6 Meetings

.1 Exit Meeting

The inspectors presented the inspection results to Mr. T. Joyce and other members of licensee management at the conclusion of the inspection on April 15, 2004. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

.2 Interim Exit Meeting

An interim exit was conducted for:

- Radiation Protection inspection with Mr. M. Pacilio on January 9, 2004.

4OA7 Licensee-Identified Violations

The following violations of very low safety significance were identified by the licensee and are violations of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Policy, NUREG 1600, for being dispositioned as Non-Cited Violations.

Cornerstone: Mitigating Systems

Technical Specification 3.4.10 required that three pressurizer safety valves shall be operable with lift settings greater or equal to 2460 pounds per square inch and less than or equal to 2510 pounds per square inch. With two or more pressurizer safety valves inoperable, the TS required that the plant be shutdown to Mode 3 in 6 hours and Mode 4 in 12 hours. Contrary to the above, as described in LER 05000457/2003-005-00 (see Section 4OA3.3), on December 10, 2003, the licensee discovered that three out of three pressurizer safety relief valves on Unit 2 had setpoints slightly outside of the TS limits. The setpoints were measured after the valves had been removed during a refueling outage. However, based on engineering judgement, it is likely that the valves were outside the TS value during operation in excess of the time allowed for conducting a shutdown. This violation was of very low safety significance because the condition was bounded by the accident analysis in the UFSAR. The licensee entered this event into its corrective action program as CR 18994. Prior to measuring the setpoint, the licensee had already replaced the three valves with spare valves that had setpoints within the TS limits. In addition, the licensee had already submitted a TS amendment request to relax the relief valve lift tolerance.

Cornerstone: Barrier Integrity

Condition 2.C(1) of the Unit 1 Operating License required that reactor core power levels not exceed 3586.6 megawatts thermal (100 percent rated power). Contrary to the above, as discussed in Section 4OA3.4 of this report, on March 1, 2004, the licensee identified that Unit 1 may have exceeded its licensed power level by as much as 1.07 percent, owing to incorrectly measured feedwater flows using ultrasonic flow detectors. Based on the readings from the flow venturies and engineering judgement, the inspectors determined that it is likely that actual overpower conditions had existed between June 1999 and September 2003. The violation was of very low safety significance because the condition was bounded by the accident analysis in the UFSAR. This item was entered into the licensee's corrective action program as CR 205273. The licensee had suspended using the ultrasonic flow detectors in question in September 2003.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee
T. Joyce, Site Vice President
K. Polsen, Plant Manager
G. Dudek, Operations Manager
C. Dunn, Site Engineering Director
R. Gilbert, Nuclear Oversight Manager
J. Moser, Radiation Protection Manager
K. Root, Regulatory Assurance Manager
E. Stefan, Regulatory Assurance - NRC Coordinator
B. Stoffels, Maintenance Manager

Nuclear Regulatory Commission
A. Stone, Chief, Reactor Projects Branch 3

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

None.

Closed

05000457/2003-003-00	LER	Inadvertent Auxiliary Feed Water Engineering Safety Feature Actuation Due to Placing a Clearance Order Ahead of the Outage Schedule (Section 4OA3.1)
05000457/2003-004-00	LER	Unit 2 Reactor Trip and Auxiliary Feedwater Emergency Actuation Due to Cascading Feedwater Pump Trips Caused by Lack of Preventative Maintenance (Section 4OA3.2)
05000457/2003-005-00	LER	Setpoint Drift Causes Three of Three Pressurizer Safety Valve Lift Tests to Exceed TS Tolerance (Sections 4OA3.3 and 4OA7)

Discussed

05000457/2003-002-00	LER	Licensed Maximum Power Level Exceeded Due to Inaccuracies in Feedwater Ultrasonic Flow Measurements Caused by Signal Noise Contamination (Sections 4OA3.4 and 4OA7)

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.

1R04 Equipment Alignment

Braidwood's Archival Operations Narrative Logs - search for "1B DG"; After January 20 and Before January 29, 2004

BwOP AF-E2; Electrical Lineup - Unit 2 Operating; Revision 6

BwOP AF-M2; Operating Mechanical Lineup Unit 2; Revision 7

BwOP DG-E2; Electrical Lineup - Unit 1 1B DG; Revision 2E4

BwOP DG-M2; Operating Mechanical Lineup Unit 1 1B DG; Revision 10

BwOP SI-E1; Electrical Lineup - Unit 1 Operating; Revision 8

BwOP SI-M1; Operating Mechanical Lineup Unit 1; Revision 15

BwOP SX-M1; Operating Mechanical Lineup Unit 1; Revision 22

1BwOSR 3.8.1.2-2; 1B DG Operability Monthly and Semi-Annual Surveillance; Revision 9

Drawing M-122; Diagram of Auxiliary Feedwater - Unit 2; Revision AT

WO 588486; Minor Leakage Through Valve Stem, Repair or Replace Valve

Drawing M-124; Diagram of Condensate (Make-up and Overflow) Unit 2; Revision AY

1R05 Fire Protection

Byron/Braidwood Fire Protection Report; Revision 20

Braidwood Station Pre-Fire Plans

CR 193810; Degraded Incandescent Light Cover in 2A DG Day Tank Room; January 6, 2004 [NRC-Identified]

Exelon Nuclear Procedure OP-AA-201-004; Fire Prevention for Hot Work; Revision 5

Exelon Nuclear Procedure OP-AA-201-009; Control of Transient Combustible Material; Revision 2

WO 99263261 01; Perform Semi-Annual Surveillance BwHS 4009-072 for Unit 1 Fire Suppression Input Cabinet 1PA40J; November 20, 2002

WO 99271793 01; Perform Semi-Annual Fire Suppression Panel 2PA40J Surveillance Per BwHS 4009-075 and BwHS 4009-07581; August 21, 2002

WO 99282678 01; Perform MA-BR-EM-5-FP004 CO^2 Puff Test on Unit 2 Diesel Driven AF Pump Room and Day Tank Room; November 5, 2002

WO 00388707 01; Perform an Air Puff Test of the Unit 1 Diesel Driven AF Pump Room and Day Tank CO^2 System Per Procedure MA-BR-EM-5-FP004)1S-41 and 1S-42); August 21, 2003

1R06 Flood Protection Measures

Regulatory Guide 1.102; Flood Protection for Nuclear Power Plants; Revision 1

UFSAR Section 2.4.2; Floods; Revision 9

BwVS 220-1; Flood Seals Visual Inspection; Revision 1

1R11 Licensed Operator Requalification Program

Requalification Simulator Scenario Guide; Normal Operations Out-of-the-Box #0411; Revision 0

CR 195074; Simulator Instructor Affects Out-of-the-Box Evaluation; January 14, 2004

CR 195345; NRC Identified Equipment Status Tags Placed in Simulator Not the Same as Main Control Board; January 15, 2003 [NRC-Identified]

Exelon Nuclear Procedure OP-AA-101-111; Roles and Responsibilities of On-Shift Personnel; Revision 0

Exelon Nuclear Procedure OP-AA-103-102; Watchstanding Practices; Revision 1

Exelon Nuclear Procedure OP-AA-103-103; Operation of Plant Equipment; Revision 0

Exelon Nuclear Procedure OP-AA-103-104; Reactivity Management Controls; Revision 0

Exelon Nuclear Procedure OP-AA-104-101; Communications; Revision 0

1R12 Maintenance Effectiveness

Braidwood's Archival Operations Narrative Logs; Unit 1 January 1, 2002 12:00:00 AM and before January 5, 2004 11:59:59 PM

Braidwood's Archival Operations Narrative Logs; Unit 2 January 1, 2002 12:00:00 AM and before January 5, 2004 11:59:59 PM

CR 109490; Rightmost Positive Post of Battery 211 Cell 21 Discolored; May 25, 2002

CR 118891; Battery 211 Terminal Corrosion; August 10, 2002

CR 121978; Parts With New Technical Support Center Security Battery Were Not "Like for Like;" September 9, 2002

CR 135759; Problems Noted in Battery 211 Quarterly Surveillances; December 13, 2002

CR 140726; Excessive Corrective Maintenance of DC Ground Detectors; January 17, 2003

CR 145304; Several Issues Noted with 1DC07E Material Condition; February 12, 2003

CR 150910; Weak Guidance (1/2BwOS DC-Q4) - Clarify Battery Operability; March 26, 2003

CR 151540; Followup Action to Notice of Violation - Battery Parameters; March 31, 2003

CR 154546; Repeat Maintenance - Various Battery Charger 112 Maintenance Problems; April 17, 2003

CR 155743; 125 vdc Battery 112 Surveillance Failed - High Float Current; April 25, 2003

CR 170010; Enhancements for [Residual Heat Removal] RH and Containment Spray Pump Lube Oil Sample Techniques

CR 181223; Operating Experience 17085 Review at Braidwood Identified Similar Problem; October 16, 2003

CR 183039; DC Battery Charger Voltage Drift; October 27, 2003

CR 195370; NRC Observations During Unit 2 250 volts DC Battery Testing; January 14, 2004 [NRC-Identified]

CR 202489; Loose Danger Tag Under 2CV8384A Valve Found by NRC; February 18, 2004 [NRC-Identified]

CR 209109; NRC Identified Scaffolding, Leaks, and Fastener Issues; March 17, 2004 [NRC-Identified]

Exelon Nuclear Procedure ER-AA-310; Implementation of the Maintenance Rule; Revision 2

Exelon Nuclear Procedure ER-AA-2202; System Health Indicator Program; Revision 3

Expert Panel Meeting; March 10, 2003

Meeting Handout; Equipment Reliability Management Review Meeting; January 6, 2004

Maintenance Rule Expert Panel Scoping Determination; Containment Spray; March 12, 2004

NES-MS-04.1; Seismic Prequalified Scaffolds; Revision 4

1R13 Maintenance Risk Assessments and Emergent Work Control

Braidwood Archival Operations Narrative Logs; January 8, 2004

Braidwood Archival Operations Narrative Logs; January 29, 2004

1BwOSR 3.3.2.8-608A; Unit 1 [Engineered Safety Features Actuation System] ESFAS Instrumentation Slave Relay Surveillance; Revision 1

BwVP 850-26; Feedwater Venturi Calibration With Header; Revision 0

Special Test Procedure 04-001; Feedwater Measurement Using Tracer Techniques; Revision 0

Fragnet; 1B RCFC SX Coil; Version 59

Fragnet 1B SX Strainer With Cubicle Cooler; Revision 7

Fragnet; SX System Emergency Work Window; Revision 8

Fragnet; Unit 1 RCFC SX Coils; February 12, 2004

Fragnet; 1D RCFC SX Coil; February 13, 2004

Fragnet; 2A/2C RCFC SX Coils; February 17, 2004

Fragnet; 1A/1C RCFC SX Coils; February 21, 2004

CR 194054; Eagle Timer “TSRA” Fails During Surveillance; January 8, 2004

CR 194721; TSRA Failure Implementation Lessons Learned; January 12, 2004

CR 198280; NRC Concerns With Special Test Procedure 04-001 Feedwater Flow Test With Tracer; January 29, 2004 [NRC-Identified]

CR 198302; K647 Latching Relay Failed to Stay Relatched; January 29, 2004

CR 198423; NRC Question on the Need for a Full 50.59 Screening for Tracer Testing; January 30, 2004 [NRC-Identified]

CR 199100; 1B SX Pump Room Cubicle Cooler Flow Lower Than Rounds Requirement; February 3, 2004

CR 199165; NOS Identified Feedwater Tracer Testing Procedure Issues; February 2, 2004

CR 200601; Flow to 1B Train RCFC Coils Below Minimum; February 9, 2004

CR 200901; Repeat Maintenance - 1A SX Strainer Backwash Valve Not Functional; February 10, 2004

CR 201831; Inadequate SX Flow to 1A RCFC Train; February 15, 2004

CR 202011; Inverter Replacement Ferrel Resonance Transformer is Not Available Due to Problems; February 16, 2004

CR 202258; Lessons Learned For On-line RCFC Tube Cleaning; February 15, 2004

Independent Technical Review 03-033; TS Amendment No. 129 and Review of Associated TS Basis Revision (i.e. Revision No. 45); December 1 5, 2003

Safety Evaluation by the Office of Nuclear Reactor Regulation Related to Amendment No. 135 to Facility Operating License No. NPF-37

Protected Equipment Signs for Instrument Bus 211

50.59 Review Cover Sheet Form; 1BwOSR 3.3.2.8-608A, Revision 1; January 8, 2004

Exelon Letter from Jury; Request for TS Change Extension of Completion Time for Instrument Bus Inverters; October 16, 2002

Adverse Condition Monitoring and Contingency Plan; Lake Chemistry Monitoring Plan; February 3, 2004

1R14 Operator Performance During Non-Routine Evolutions and Events

Braidwood's Archival Operations Narrative Logs; January 21, 2004

BwOP MS-8; Removing and Restoring MSR 2nd Stage Reheater at Load; Revision 11

CR 196691; Repeat Maintenance: Unit 2 MSR Transient Due To Card Fault (Loss of 4 Percent Power); January 21, 2004

Operator Aid 01-011; Unit 2 Beacon Load Follow Sheets; Revision 24

1R15 Operability Evaluations

CR 164897; Both Safety Injection [SI] Pump Discharge Pressure Main Control Board Indications Read About 450 Pounds Per Square Inch; June 25, 2003

CR 163929; SI Pump Discharge Pressure at 500 Pounds Per Square Inch; June 19, 2003

CR 196206; Lake Chemistry Trend - Total Alkalinity/Hardness and Calcium; February 2, 2004

CR 199035; three Cracked Lock Washers found on the 1A DG; February 2, 2004

CR 199100; 1B SX Pump Room Cubicle Cooler Flow Lower Than Rounds Requirement; February 3, 2004

CR 199206; Lake Chemistry Trend - Calcium Carbonate Issue; February 3, 2004

CR 199336; Broken Lock Washer Cannot be Replaced on the 1A DG; February 4, 2004

CR 199834; Conservative Decision Making; February 5, 2004

CR 200638; 1A SX Pump Cubicle Cooler Flow Less Than Administrative Limit; February 9, 2004

CR 201496; Low SX Flow Through 2VA02SB (2B RH Pump Cubicle Cooler); February 12, 2004

CR 201831; Inadequate SX Flow to 1A RCFC Train; February 15, 2004

CR 202627; RCFC Inlet Temperature Difference Versus Computer Points; February 19, 2004

CR 202915; Questions on ECR 347470 (Containment Temperature Indication); February 20, 2004

CR 204227; 1B Centrifugal Charging [CV] Pump Lube Oil Cooler As-Found Data; February 25, 2004

CR 204229; 1B CV Pump Gear Lube Oil Cooler (1CV02SB) As-Found Data; February 25, 2004

CR 205565; Repair of Heat Exchanger 1FC01A Deferred; March 2, 2004

CR 206831; Review Condition of 1A CV Pump Gear Oil Cooler 1CV02SA; March 8, 2004

CR 207021; Lessons Learned - Unit 2 Component Cooling Heat Exchanger; March 8, 2004

CR 207044; 2FE-SX031 Flange connection Leak During OSX172 Freeze; March 8, 2004

CR 207429; Suspect Bolting (Flange in Line 2SX02B-30"); March 9, 2004 [NRC Identified]

CR 207813; Question From NRC Regarding Flood Analysis Basis; March 9, 2004 [NRC Identified]

CR 207848; Review Condition of 1A SI Pump Lube Oil Cooler 1SI01SA; March 11, 2004

Engineering Change Request (ECR) 339308 000; Develop Tube Plugging Criteria for GL 89-13 Heat Exchangers; November 22, 2002

ECR 342019 001; Rescale 2T-VP030 Though 2T-VP033 Per ATI 148920-05; November 5, 2003

ECR 343817 000; Acceptance Criteria for As-Found Heat Exchanger Tube Blockage of the Clean-Only GL 89-13 Coolers at Braidwood; July 11, 2003

ECR 363363; Verify Acceptability of Normal Fire Protection System Pressure in Essential Service Water System Piping and Heat Exchanger for Short Duration During a Freeze Seal When Repairing 0SX172; February 23, 2004

Independent Technical Review 03-004; Revise Incore Decay Time Requirement Specified in Technical Requirements Manual Limiting Condition of Operation 3.9.a, “Decay Time,” for A1R10; March 6, 2003

Independent Technical Review 03-029; Revise Incore Decay Time Requirement Specified in Technical Requirements Manual Limiting Condition of Operation 3.9.a, “Decay Time,” for A2R10; October 7, 2003

WO 578249 02; Rescale U2 RCFC Inlet Temperature Loops Per ECR 342019; October 30, 2003

WO 578249 04; Rescale U2 RCFC Inlet Temperature Loops Per ECR 342019; October 31, 2003

Meeting Handout; Plant Health Committee; January 12, 2004

Adverse Conditioning Monitoring and Contingency Plan - Essential Service Water Cubicle Cooler Flows and Essential Service Water Strainer Differential Pressures; February 3, 2004

Charts of Lake Chemistry (pH, calcium hardness, total hardness, total alkalinity, phosphonate, chlorophyll, and acid trucks added); January 1, 2003, through February 25, 2004

Handout for Operational Execution Management Review Meeting; March 23, 2004

Handouts for Plant Operational Review Committee Meeting on Lake Chemistry Issues Root Cause from CR 199206; March 18 and 25, 2004

1R17 Permanent Plant Modifications

Braidwood Top 40 Modifications; December 3, 2004

Engineering Change Package ECR 42493 (Work Order 99119727-01); Install New DC-DC Converter Power Supplies; February 3, 2004

WO 99119727-03; Installer Testing of Replacement DC-DC Power Supplies

Fragnet for 1A DG 2-Year Maintenance; Revision 5

CR 199370; Frayed Ground Wire Found at 1PL07J; February 4, 2004

CR 200956; Enhancement CR for 1PL07J DC-DC Converter Replacement; February 11, 2004 [NRC-Identified]

1RST Post-Maintenance and Surveillance Testing - Pilot

BwOP CS-5; Containment Spray System Recirculation to the [Refueling Water Storage Tank] RWST; Revision 12

BwOP DG-11; DG Startup; Revision 26

BwOP DG-12; DG Shutdown; Revision 18

BwOP FC-1; Fuel Pool Cooling System Startup; Revision 17

BwOP FP-8; Test Mode Startup and Shutdown of the Diesel Driven Fire Pump; Revision 4

0BwOS FP.2.2.M-2; Diesel Driven Fire Pump Surveillance; Revision 4

1BwOSR 3.3.2.8-608A; Unit 1 ESFAS Instrumentation Slave Relay Surveillance (Train A Automatic SI- K608); Revision 1

1BwOSR 3.7.5.4-2; Unit One Diesel Driven AF Pump Surveillance; Revision 7

1BwOSR 3.8.1.2-1; Unit 1 1A DG Operability Monthly and Semi-Annual Surveillance; Revision 11

2BwOSR 3.8.7.1-1; Unit 2 Division 21 ESF Onsite Power Distribution Weekly Surveillance; Revision 0

1BwVSR 5.5.8.AF.1; Unit 1 Motor Driven AF Pump American Society of Mechanical Engineers Quarterly Surveillance; Revision 6

1BwVSR 5.5.8.CS.1; American Society of Mechanical Engineers Surveillance Requirements for 1A Containment Spray Pump and Check Valves 1CS003A, 1CS011A; Revision 3

Fragnet 1FCGRP1; Spent Fuel Pool Pump Work; January 9, 2003

Exelon Nuclear Procedure MA-AA-716-012; Post Maintenance Testing; Revision 1

Technical Specification 3.7.5; AF System; Amendment 98

WO 99255787 02; 250 Volt DC Non Engineered Safety Feature System Performance Test; January 7, 2004

WO 00651823 01; Diesel Driven AF Pump Monthly Surveillance; January 26, 2004

WO 0372060; Replace Rotating Element/Install New Bearings on 1FC01P

WO 436989 01; Replace Caps, Clean, Inspect, Tune and Pull Test on Fast-on Terms, Clean/Inspect Inverter Bus 211 2IP05E Replace Capacitors; March 8, 2004

WO 47077 01; 2A DG Bypass of Automatic Trips; March 10, 2004

CR 197620; Repeat Maintenance; Problems Encountered During Repair of Fuel Pool Cooling Pump; January 25, 2004

CR 198262; 1FC01P Outboard Pump Bearing Oil Bubbler Found Empty; January 29, 2004

CR 207483; Annunciator Window 1-1 Failed to Light During Surveillance; March 10, 2004

CR 207658; Lessons-Learned During 2A DG Testing; March 10, 2004

CR 208062; Unauthorized Operator Aid - 2A DG Jacket Water Standpipe Level Glass; March 12, 2004 [NRC-Identified]

1R23 Temporary Plant Modifications

Braidwood Plan-of-the-Day handout on Temporary Configuration Changes; February 5, 2004

Exelon Nuclear Procedure CC-AA-112; Temporary configuration Changes; Revision 7

Exelon Nuclear Procedure CC-AA-403; Maintenance Specification; Selection and Control of Freeze Seal Location; Revision 2

CR 203463; Candy Wrapper Found in the Radiologically Controlled Area; February 23, 2004 [NRC-Identified]

CR 206151; Field Copy of transient Combustible Permit Not Updated; March 4, 2004 [NRC-Identified]

ECR 337504; Fuel Handling Building Outage Power Feed; October 1, 2002

ECR 342879; Determine Means of Permanently Storing Temporary Cable for the Polar Crane Cross-Tie Above the Demineralizer Valve Aisle; Canceled February 2, 2004

ECR 344077; Provide Instrument Optimization Values for Unit 1 SI Accumulator Level Loops; August 8, 2003

Exelon Nuclear Procedure CC-AA-103; Configuration Change Control; Revision 5

Exelon Nuclear Procedure CC-AA-112; Temporary Configuration Changes; Revision 7

Exelon Nuclear Procedure MA-BR-726-486; Installation and Removal of Temporary Power for Polar Crane; Revision 0

Exelon Nuclear Procedure MA-MW-736-610; Application of Freeze Seal to All Piping; Revision 0

Transient Combustible Permit 03-T-32; Temporary Power Cables for Polar Crane Cross-Tie; March 12, 2003

WO 130167; Remove Polar Crane Cross-Tie Cable From 401 Foot Elevation Auxiliary Building; February 2, 2004

WO 603091; Remove Temporary Configuration Change Engineering Change 344077 Optimize SI Accumulator Tank Pressure Indication; Canceled February 20, 2004

1EP6 Drill Evaluation

CR 209548; Emergency Response Organization Improvement Items From 3/17/2004 Performance Indicator Drill; March 19, 2004

CR 209555; Emergency Response Organization Enhancement Items From 3/17/2004 Performance Indicator Drill; March 19, 2004

CR 209560; Emergency Response Equipment Issues From 3.17.2004 Performance Indicator Drill; March 19, 2004

Requalification Simulator Scenario; Abnormal Operations Out-of-the-Box #0421; Revision 0

2PS2 Radioactive Material Processing and Transportation

Focus Area: Dose Reduction; Exelon Nuclear

Check-In Self-Assessment Report Radiation Protection Braidwood Station; Radioactive Material Transportation; December 3, 2003

Exelon Nuclear Procedure RW-AA-100; Process Control Program for Radioactive Wastes; Revision 2

BwRP 5600-13; 10 CFR Part 61 Waste Stream Sampling and Analysis; Revision 0

Exelon Nuclear Procedure RP-AA-600; Radioactive Material/Waste Shipments; Revision 5

Exelon Nuclear Procedure RP-AA-601; Surveying Radioactive Waste Shipments; Revision 2

Exelon Nuclear Procedure RP-AA-602; Packaging of Radioactive Material Shipments; Revision 5

Shipment No RMS03-091; Contaminated Equipment, Low Specific Activity (LSA) II; November 20, 2003

Shipment No RWS03-092; Contaminated Equipment, LSA II; January 7, 2004

Shipment No RWS03-001; Dewatered Resin, LSA II; August 25, 2003

Shipment No RWS03-012; Filters, LSA II; February 27, 2003

Shipment No RWS03-016; Filters, LSA II; December 6, 2003

2002 Radioactive Effluent Release Report; April 25, 2003

BwRP 5600-13T7; Scaling Factor Determination Cover Sheet (Annual); January 5, 2004

CR 150194; Radioactive Shipment Laundry Sealand Has Holes in Top; March 19, 2003

CR 173360; 10 CFR Part 61 Samples Discarded; August 25, 2003

CR 176097; Small Amount of Water Found in Dry Active Waste Sealand; September 4, 2003

CR 192410; Radioactive Material Transportation Assessment Deficiencies; December 23, 2003

CR 193163; Radioactive Material Shipping Program Review; January 2, 2004

CR 193772; Catch Basin Used During Work Still in Place After Work Close' January 6, 2004 [NRC-Identified]

4OA1 Performance Indicator Verification

Braidwood's Archival Operations Narrative Logs, Unit 1; April 15, 2003

Braidwood's Archival Operations Narrative Logs, Unit 1; May 1, 2003

Braidwood's Archival Operations Narrative Logs, Unit 2; November 3, 2003

Braidwood's Archival Operations Narrative Logs, Unit 2; November 18, 2003

Braidwood's Archival Operations Narrative Logs, Unit 2; December 3, 2003

Braidwood's Archival Operations Narrative Logs, Unit 2; December 4, 2003

Braidwood's Archival Operations Narrative Logs; Unit 1 RH; After October 1, 2002 and Before December 31, 2003

Braidwood's Archival Operations Narrative Logs; Unit 2 RH; After October 1, 2002 and Before December 31, 2003

Braidwood 1 3Q/2003 Performance Summary

Braidwood 2 3Q/2003 Performance Summary

CR 134960; 1A RH Pump Inappropriately Logged as Available; December 10, 2002

CR 139477; Potential TS Action Entry Missed (Component Cooling to RH Heat Exchanger Flow); January 15, 2003

CR 142555; 1B RH Pump Inoperable for Longer Than 7 Day Limiting Condition for Operations (LCO)Time Clock; February 3, 2003

CR 142839; 1RH01PB Work Window Exceeded Its Planned 113 Hour Duration; February 4, 2003

CR 149155; Previous Events Did Not Prevent Exceeding TS Allowed Outage Time for 1B RH; March 14, 2003

CR 160672; Missed/Differing LCO Entries for 1/2PA14J Work; May 14, 2003

CR 187895; 2A RH Pump Declared Inoperable (Wetted Motor) Unplanned LCO; November 23, 2003

CR 188874; Unit 2 Reactor Trip on 2D Steam Generator Low Level; December 3, 2003

CR 193490; Some System Monitoring Plans do Not Monitor All Maintenance Rule Functions; January 2, 2004

Expert Panel Meeting; RH; January 14, 2002

Expert Panel Meeting; RH; February 25, 2002

Expert Panel Meeting; RH; July 29, 2002

Expert Panel Meeting; RH; September 23, 2002

Expert Panel Meeting; RH; October 28, 2002

Maintenance Rule - Performance Monitoring; User Parameters; Unit 1 RH Train A and Train B

Maintenance Rule - Performance Monitoring; User Parameters; Unit 2 RH Train A and Train B

System Performance Monitoring Plan; RH

4OA2 Identification and Resolution of Problems

Braidwood Station Fire Protection Self-Assessment Report; May 16, 2003

CR 132322; FASA - Pre-NRC [Safety System Design Inspection] SSDI; November 19, 2002

CR 139582; Emergency Preparedness FASA; January 15, 2003

CR 140239; Emergency Preparedness Quarter 1 FASA - 2nd Tier Performance Indicators; January 20, 2003

CR 146794; NRC Order Establishing Interim Inspection of Reactor Pressure Vessel Heads; February 28, 2003

CR 148998; Chemistry Department Mask Qualified Individuals Less Than 50 Percent Requirement; March 13, 2003

CR 149688; Potential Trend in Work Management Department Event Free Clock Resets; March 18, 2003

CR 152772; FASA Identified Deficiency - Insensitivity to Fire Safety; April 7, 2003

CR 158963; Incomplete Inadvertent Fire System Actuation Effect Report; May 15, 2003

CR 159015; Effect of Valve Spurious Opening Not Described in Fire Protection Report; May 15, 2003

CR 159022; Track Completion of Fire Protection FASA Observations; May 15, 2003

CR 161967; Problems With Completion of the Reactivation Log (Operations); June 5, 2003

CR 164134; Licensed Operator Requalification Training Senior Reactor Operator Job Performance Measures Exam Bank Inadequacies; June 20, 2003

CR 165050; Issues Identified During Radiological Environmental Monitoring Program FASA; June 26, 2003

CR 165578; Pre-NRC SSDI FASA - Issues With Fire Protection to Essential Service Water System Cross-tie to 1B CV System Pump; June 30, 2003

CR 165589; Pre-NRC SSDI FASA - Issues With CV System Clean-up System Modification; June 30, 2003

CR 168885; Nuclear Oversight Identified Various Issues With the SSDI FASA; July 24, 2003

CR 180433; Nuclear Oversight Identified - FASA Procedure Adherence - Emergency Preparedness; October 10, 2003

CR 195738; Action Items Incorrectly Closed Without Required Action Complete; January 16, 2004 [NRC-Identified]

CR 199722; FASA Did Not Identify Issue With Degraded Voltage Calculation; January 29, 2004 [NRC-Identified]

Focused Area Self-Assessment Report [FASA]; Radiological Environmental Monitoring Program; June 26, 2003

FASA Report; Reactor Vessel Head Bare Metal Visual Exam (A1R10 Pre NRC Inspection Assessment); March 26, 2003

FASA Report; Braidwood 2003 Licensed Operator Requalification Training; June 20, 2003

FASA Report; Safety System Design and Performance Capability - Permanent Plant Modifications; June 30, 2003

4OA3 Event Followup

Braidwood's Active Operations Narrative Logs; December 3, 2003

CR 184790; Inadvertent ESFAS of AF During Clearance Order Hang; November 5, 2003

CR 188874; Unit 2 Reactor Trip on 2D Steam Generator Low Level; December 3, 2003

CR 189406; Tac Pac Circuit Boards for Feedwater Controls Not Available; December 6, 2003

CR 189536; Foreign Material Exclusion a Contributing Factor in 2FW01PC Trip; December 8, 2003

CR 189943; As-Found Setpoint of Pressurizer Safety Valves was Out-of-Tolerance Low; December 10, 2003

CR 190436; Root Cause For AF Engineering Safety Features Actuation Rejected By the Plant Operating Review Committee; December 12, 2003

CR 192411; Heat Degradation of Tie-Wraps in Feedwater Pump Control Panels; December 23, 2003

CR 198578; Unit 2 Ultrasonic Flow Instrument Correction Factor Unexpected Shift; January 30, 2004

CR 199479; As-Left Setpoints for Pressurizer Safety Valves; February 2, 2004

CR 199684; TACH-PAC Circuit Deficiency for 2B Feedwater Pump Electro-Hydraulic Speed Control; January 21, 2004

CR 200867; Byron Feedwater Flow Tracer Test Preliminary Results - Braidwood Impact; February 9, 2004

CR 205273; Potential Overpower Condition on Unit 1 and Unit 2; March 1, 2004

NRC Event Number 40298; Braidwood 2 AF Support System Actuation During Outage; November 5, 2003

NRC Event Number 40370; Plant Had an Automatic Reactor Trip from 100 Percent Power due to Steam Generator Low Level; December 3, 2003

NRC Event Number 40559; 24-Hour Condition of Licensee Report Involving Potential Violation of Maximum Power Level; March 1, 2004

LER 05000457/2003-003-00; Inadvertent AF Engineering Safety Feature Actuation Due to Placing a Clearance Order Ahead of the Outage Schedule; January 5, 2004

LER 05000457/2003-004-00; Unit 2 Reactor Trip and AF Emergency Actuation Due to Cascading Feedwater Pump Trips Caused by Lack of Preventative Maintenance; February 2, 2004

LER 05000457/2003-005-00; Setpoint Drift Causes Three of Three Pressurizer Safety Valve Lift Tests to Exceed TS Tolerance; February 9, 2004

LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
AF	Auxiliary Feedwater
ATI	Action Tracking Item
BwOP	Braidwood Operating Procedure
BwOS	Braidwood Operating Surveillance Procedure
BwOSR	Braidwood Operating Surveillance Requirement Procedure
BwRP	Braidwood Radiation Protection Procedure
BwVS	Braidwood Engineering Surveillance Procedure
BwVSR	Braidwood Engineering Surveillance Requirement Procedure
CFR	Code of Federal Regulations
CR	Condition Report
CV	Chemical and Volume Control
DC	Direct Current
DG	Diesel Generator
ECR	Engineering Change Request
ESFAS	Engineered Safety Features Actuation System
FASA	Focused Area Self-Assessment Report
IR	Inspection Report
LER	Licensee Event Report
LCO	Limiting Condition for Operation
LSA	Low Specific Activity
MSR	Moisture Separator Reheaters
NOS	Nuclear Oversight
NRC	Nuclear Regulatory Commission
PI	Performance Indicator
RCFC	Reactor Containment Fan Coolers
RH	Residual Heat Removal
SDP	Significance Determination Process
SI	Safety Injection
SSDI	Safety System Design Inspection
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
WO	Work Order