

February 6, 2006

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 05000456/2005010; 05000457/2005010

Dear Mr. Crane:

On December 31, 2005, 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 January 9, 2006, with Mr. G. Boerschig 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.

There was one finding of very low safety significance identified in this report. This issue, which was reviewed under the NRC traditional enforcement process, was determined to be a Severity Level IV violation of NRC requirements. Because this violation was a Severity Level IV violation and it was entered into your corrective action program, the NRC is treating this issue as a Non-Cited Violation in accordance with Section VI.A.1 of the NRC's Enforcement Policy.

If you contest the subject or severity of a 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, D.C. 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, D.C. 20555-0001; and the Resident Inspector Office at the Braidwood facility.

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). ADAMS is 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 05000456/2005010; 05000457/2005010
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

DOCUMENT NAME: E:\Filenet\ML060380242.wpd

Publicly Available Non-Publicly Available Sensitive Non-Sensitive

To receive a copy of this document, indicate in the concurrence box "C" = Copy without attach/encl "E" = Copy with attach/encl "N" = No copy

OFFICE	RIII	RIII	RIII		
NAME	SOrth (Sec. 40A3.1)	ABoland (Sec. 40A3.1)	RSkokowski: dtp		
DATE	02/01/06	02/01/06	02/06/06		

OFFICIAL RECORD COPY

ADAMS Distribution:

GYS

JBH1

RidsNrrDirslrib

GEG

KGO

NXS

CAA1

C. Pederson, DRS (hard copy - IR's only)

DRPIII

DRSIII

PLB1

JRK1

ROPreports@nrc.gov (inspection reports, final SDP letters, any letter with an IR number)

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 50-456; 50-457

License Nos: NPF-72; NPF-77

Report No: 05000456/2005010; 05000457/2005010

Licensee: Exelon Generation Company, LLC

Facility: Braidwood Station, Units 1 and 2

Location: Braceville, IL

Dates: October 1 through December 31, 2005

Inspectors: N. Shah, Senior Resident Inspector
G. Roach, Resident Inspector
E. Bonano, Health Physicist
M. Holmberg, Senior Engineering Inspector
J. House, Senior Radiation Specialist
R. Jickling, Emergency Preparedness Analyst
R. Ng, Resident Inspector
S. Orth, Health Physics Team Lead
B. Palagi, Senior Operations Engineer
T. Ploski, Senior Emergency Preparedness Inspector
W. Slawinski, Senior Radiation Specialist
W. Snell, Senior Health Physicist
M. Wilk, Reactor Engineer
J. Roman, Illinois Emergency Management Agency

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

Enclosure

SUMMARY OF FINDINGS

IR 05000456/2005010, 05000457/2005010; 10/01/2005 - 12/31/2005; Braidwood Station, Units 1 & 2; Emergency Action Level and Emergency Plan Changes.

This report covers a 3-month period of baseline resident inspection and announced baseline inspections on emergency preparedness. The inspection was conducted by the resident inspectors, regional emergency preparedness inspectors, regional health physicists, and regional engineering inspectors. One finding associated with a Severity Level IV Non-Cited Violation was identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 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 3, dated July 2000.

A. Inspector-Identified and Self-Revealed Findings

Cornerstone: Emergency Preparedness

- Severity Level IV. The inspectors identified that the licensee had changed its standard emergency action level (EAL) scheme by revising one EAL's criteria for an Unusual Event declaration that addressed an unplanned radiological release in excess of effluent radiation monitor readings unless the release could be determined to be below Offsite Dose Calculation Manual limits within 15 minutes for releases that could not be terminated in 60 minutes or less. The inspectors determined that this EAL change decreased the effectiveness of the emergency plan, and that the licensee did not obtain prior NRC approval for this change, contrary to the requirements of 10 CFR 50.54(q). The licensee is evaluating the options to correct the EAL.

This finding was more than minor because extending the time period required for the appropriate emergency classification of a radiological release could adversely affect the performance of both onsite and offsite emergency actions. Because the issue affected the NRC's ability to perform its regulatory function, it was evaluated with the traditional enforcement process as specified in Section IV.A.3 of the Enforcement Policy. According to Supplement VIII of the Enforcement Policy, this finding was determined to be a Severity Level IV because it involved a failure to meet a requirement not directly related to assessment and notification. Further, this problem was isolated to one EAL and was not indicative of a functional problem with the EAL scheme. Additionally, because the violation was a Severity Level IV and the licensee entered this issue into its corrective action program this finding is being treated as a Severity Level IV Non-Cited Violation of 10 CFR 50.54(q). (Section 1EP4)

B. Licensee-Identified Violations

No findings of significance were identified.

REPORT DETAILS

Summary of Plant Status

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

Unit 2 operated at or near full power throughout the inspection period.

1. **REACTOR SAFETY**

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope

The inspectors performed a walkdown of selected plant areas to review the licensee's preparations for cold weather conditions. The areas selected were those considered "at risk" based on a review of the Updated Final Safety Analysis Report (UFSAR), Technical Specifications (TS) and other design basis documents. The specific areas observed were:

- Units 1 and 2 rod control spot cooler systems;
- Units 1 and 2 condensate and refueling water storage tanks' (RWST) heating systems; and
- turbine building ventilation louvers.

The inspectors also reviewed Issue Reports (IRs) generated since January 1, 2004, for the station heating system and for the diesel generator, turbine building, auxiliary building and miscellaneous ventilation systems. Specifically, the inspectors noted whether there were any adverse trends for components associated with these systems that potentially impacted the licensee's cold weather preparations.

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

b. Findings

No findings of significance were identified.

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 listed 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 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 TS and the 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. Documents reviewed during this inspection are listed in the Attachment.

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

- 2A containment spray pump;
- 2B emergency diesel generator (EDG); and
- 1B residual heat removal system.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

Quarterly Inspection

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 or their potential to impact equipment which could initiate a plant transient or be required for safe shutdown. The inspectors used the Fire Protection Report, Revision 21, to determine: whether 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 nine samples of this inspection requirement during the following walkdowns:

- Unit 1 and 2 remote shutdown panel spaces;
- Unit 1 auxiliary electrical equipment space;
- Unit 2 auxiliary electrical equipment space;
- auxiliary building 364' elevation general area;
- Units 1 and 2 turbine and motor driven feedwater pump areas;
- Units 1 and 2 main control room;
- Units 1 and 2 condensate and condensate booster pump areas;
- Units 1 and 2 turbine building 401' elevation general area; and
- auxiliary building radwaste spaces on 401' and 426' elevations.

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.

1R11 Licensed Operator Requalification Program (71111.11)

.1 Annual Operating Test Results

a. Inspection Scope

The inspector reviewed the overall pass/fail results of the annual operating examination which consisted of Job Performance Measure and simulator operating tests (required to be given per 10 CFR 55.59(a)(2)) administered by the licensee. The operating testing was conducted in August, September, and October 2005. In addition, the inspectors reviewed the overall pass/fail results for the biennial written examination (also required to be given per 10 CFR 55.59(a)(2)) administered by the licensee. The written tests were administered in June, and July 2005. The overall results were compared with the significance determination process in accordance with NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process." This represented one sample

b. Findings

No findings of significance were identified.

.2 Quarterly Review of Testing/Training Activity

a. Inspection Scope

The inspectors observed operating crew performance during evaluated simulator out-of-the-box scenario, Braidwood Station Licensed Operator Requalification Simulator Scenario Number 0561, "Design Basis SGTR / Faulted Steam Generator," Revision 0.

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. Those documents reviewed during this inspection 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 (WOs), 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 was discussed;

- a partial walkdown of the selected system; and
- interviews with the appropriate system engineer.

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

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

- Unit 1 and Unit 2 reactor coolant systems subsequent to 1A reactor coolant pump excessive seal leakage outage; and
- instrumentation and control systems subsequent to repeated feedwater flow control system transients.

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 determine whether 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 assessment records, observations of operator turnover and plan-of-the-day meetings, and observations of work in progress, 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.

In addition, the inspectors reviewed Braidwood Station Operator Annual Aggregate Review, dated November 2005, to determine whether problems were being entered into the corrective action program with the appropriate characterization and significance.

The inspectors completed four samples by reviewing the following activities:

- 1A EDG engine trip circuit check valve leak-by resulting in engine trip during cooldown mode of shutdown cycle;
- 2A EDG start-up to rated frequency and voltage in excess of 10 seconds and subsequent common cause review;
- direct current bus 111 intermittent grounds; and
- online replacement of Unit 2 digital electrical hydraulic control differential pressure switch 2PDS-TO091.

Those documents reviewed during this inspection are listed in the Attachment.

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 two samples by observing the following events:

- Unit 2 turbine digital electrical hydraulic control system power supply failure; and
- grounded circuit cards in the Unit 2 2PM05J main control room reactor plant status panel annunciator system.

The inspectors observed the control room response, interviewed plant operators and reviewed plant records including control room logs, operator turnovers, and IRs. The inspectors verified that the control room response was consistent with station procedures and that identified discrepancies were captured in the corrective action program. Corrective action 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 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 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 and conducted plant walkdowns, as necessary, to obtain further information regarding operability questions.

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

- review for Braidwood applicability of Palo Verde Nuclear Generating Station Operating Experience (OPEX) concerning potential air binding of emergency core cooling system (ECCS) injection pumps during transition from refueling water storage tank to ECCS sump recirculation;
- impact of Lake Screen House forebay silting and Bryozoa formation on circulating water (CW), essential service water, and fire protection systems;
- sensing line leak on Unit 1 high pressure turbine first stage pressure transducer 1PT-505; and
- Unit 1A steam generator power operated relief valve seat leakage.

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds (71111.16)

Semi-annual Review of Cumulative Effect of Operator Workarounds

a. Inspection Scope

The inspectors completed a semi-annual review of the cumulative effect of operator workarounds. This inspection consisted of observing plant operators performing routine rounds during plant walkdowns and attending a Plant Operation's Review Committee meeting on November 30, 2005. This review constituted one sample of this inspection requirement.

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 the WOs for the 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 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 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 by reviewing the documents in the Attachment.

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

- 1A EDG test run following local control panel 1PL07J annunciator maintenance and engine pneumatic trip system check valve replacement;
- 2A EDG test run following repair of starting air system solenoid valves;
- 2B containment spray pump operability testing following preventative maintenance outage;
- 1PT-505 pressure switch calibration testing following sensing line repair;
- 1B EDG test run following repair of trip circuit check valves; and
- 1B containment spray K644B slave relay test post maintenance outage.

b. Findings

No findings of significance were identified.

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, as well as the WOs for the work performed, to evaluate the scope of the maintenance and to determine whether the surveillance testing was performed adequately, demonstrated that the maintenance was successful, 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. The activities were selected based on their importance in demonstrating mitigating systems capability, barrier integrity and the initiating events cornerstone. The inspectors verified that minor issues identified during the inspection were entered into the licensee's corrective action program by reviewing the documents in the Attachment.

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

- 2A EDG bypass of auto engine/generator trips in emergency mode;
- 2A auxiliary feedwater pump suction pressure switch calibration verification;
- Unit 1 anticipated transient without scram mitigation system surveillance;
- calibration of the 1RF010 unit 1 reactor cavity drain leak detection sump;
- in-service test (American Society of Mechanical Engineers test) of the 2A safety injection pump; and
- Unit 2 containment emergency hatch local leak rate test and administrative review of selected Unit 2 post outage local leak rate tests.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed the following temporary modification:

- freeze seal of component cooling water system piping in support of 0CC9432 valve repair.

For the above modification, the inspectors reviewed the associated design change paperwork, attended applicable prejob briefings and observed installation and/or removal. The inspectors also reviewed contingency plans, as applicable, for modifications supporting continued component operability or reliability. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's corrective action program. Those documents reviewed during this inspection are listed in the Attachment. This review constituted one sample of this inspection requirement.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP4 Emergency Action Level (EAL) and Emergency Plan Changes (71114.04)

a. Inspection Scope

The inspectors performed a screening review of Revisions 14 and 15 of the Braidwood Station Emergency Plan Annex to determine whether the changes made in Revisions 14 and 15 decreased the effectiveness of the licensee's emergency planning. This screening review of Revisions 14 and 15 was not documented in a Safety Evaluation

Report and does not constitute an approval of the changes. Therefore, the changes are subject to future NRC inspection to ensure that the emergency plan continues to meet NRC regulations.

These activities completed one inspection sample.

b. Findings

Introduction: The licensee changed one Emergency Action Level (EAL) that addressed events related to unplanned radiological releases. This change was determined to decrease the effectiveness of the licensee's emergency plan, however, the licensee did not submit this change to NRC for prior approval. This is a violation of 10 CFR 50.54(q) and, because it impacted the regulatory process, traditional enforcement was applied. Since this issue was entered into the licensee's corrective action program and because this item involved a failure to meet a regulatory requirement not directly related to assessment or notification, this issue was determined to be a Severity Level IV Non-Cited Violation (NCV).

Description: The licensee's site-specific EALs were based on the guidance in NUMARC/NRSP-007. In 1995, the licensee upgraded the RU2 EAL threshold value to include criteria for confirming the validity of the effluent radiation monitor release indications within 15 minutes by comparison with greater than or equal to two times the Offsite Dose Calculation Manual limit. An Unusual Event would not be declared if the comparison did not support the effluent monitors' indication of a release. Revision 13 to the Braidwood Station Emergency Plan Annex reflected this 15-minute criteria and appeared as follows:

Revision 13 RU2 EAL Threshold Value in Part:

Unplanned Radiological release in excess of Table R1 "Unusual Event" value unless releases can be determined to be below available Table R2 "Unusual Event" thresholds within 15 minutes.

Revisions 14 and 15 RU2 Threshold Value in Part:

Unplanned radiological release in excess of Table R1 "Unusual Event" threshold for ≥ 60 minutes UNLESS release can be determined to be below available Table R2 "Unusual Event" thresholds within this period.

Discussions with the licensee emergency preparedness staff and inspection of the 10 CFR 50.54(q) review records indicated this change was made to rearrange the EAL with the more accurate indicators first and due to control room crews' interpretation that they had 75 minutes to declare an Unusual Event in this EAL. Also, the licensee's 10 CFR 50.54(q) review indicated that the change did not decrease the effectiveness of the emergency plan.

In contrast, the inspectors determined that the change to this indicator represented a decrease in effectiveness of the emergency plan because the re-worded EAL threshold removed the NRC's 1995 approved 15-minute requirement and replaced it

with a 60-minute requirement for determining whether releases were below specified effluent monitor thresholds.

The requirements of 10 CFR 50.54(q) allows the licensee to make changes to the emergency plan without Commission approval as long as the change does not decrease the effectiveness of the emergency plan. The inspectors noted that this change could potentially delay the declaration of an Unusual Event by as much as 45 minutes. However, since the licensee had concluded in its 10 CFR 50.54(q) review that the change to this EAL threshold did not decrease the effectiveness of the emergency plan, this change was not submitted to the NRC for review prior to implementation of the revised EAL threshold.

Analysis: The inspectors determined that the failure to request NRC approval of the EAL change was a performance deficiency. Furthermore the failure to request NRC approval of the EAL change potentially impeded the NRC's regulatory process and was therefore, in accordance with Section 2.2.e of Appendix B to NRC Manual Chapter 0609, evaluated using the guidance in Section IV of NUREG-1600, General Statement of Policy and Procedure for NRC Enforcement Actions (Enforcement Policy), rather than the NRC Significance Determination Process (SDP). This finding was more than minor because extending the time period required for the appropriate emergency classification of a radiological release could adversely affect the performance of both onsite and offsite emergency actions. The finding was not suitable for SDP evaluation, but have been reviewed by NRC management. The finding was therefore dispositioned as a Severity Level IV violation according to Supplement VIII (Emergency Preparedness) of the Enforcement Policy because it involved licensee failure to meet an emergency planning requirement (namely, 10 CFR 50.54(q)) not directly related to assessment of and notification.

Enforcement: 10 CFR 50.54(q) states, in part, that the "licensee may make changes to these plans without Commission approval only if the changes do not decrease the effectiveness of the plans. Proposed changes that decrease the effectiveness of the approved emergency plans may not be implemented without application to and approval by the Commission." Contrary to this, in Revision 14 of the Braidwood Station Emergency Plan Annex, the licensee made a change to its standard EAL scheme that reduced the effectiveness of the emergency plan. This change was not submitted to the NRC for approval prior to implementation. The licensee entered this issue into their corrective action program as Condition Report (CR) 00437193.

Changing an emergency plan commitment without prior NRC approval impacts the NRC's ability to perform its regulatory function and is therefore processed through traditional enforcement, as specified in Section IV.A.3 of the Enforcement Policy, issued May 1, 2000, (65 FR 25388). According to Supplement VIII of the Enforcement Policy, this finding was determined to be a Severity Level IV because it involved a failure to meet a requirement not directly related to assessment and notification. Further, this problem was isolated to one EAL and was not indicative of a functional problem with the licensee's EAL scheme. Additionally, because this was a Severity Level IV violation and the licensee entered this issue into its corrective action program, this finding is being

treated as Non-Cited Violation (Severity Level IV) consistent with Section VI.A.1 of the Enforcement Policy. (NCV 05000456/2005010-01; 05000457/2005010-01)

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors observed licensee performance during an unannounced, evaluated emergency response drill. Observations included manning of the Technical Support Center, turnover of command and control to the Technical Support Center, event classification and notification, and development of protective action recommendations. The inspectors also observed Operations Support Center activities. The inspectors checked to see 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 portions of the post drill critique for the Technical Support Center and Operations Support Center crews. 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.

4. OTHER ACTIVITIES

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 determine whether they were being entered into the licensee's corrective action program 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 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 Sample - Issues related to Containment Spray and Circulating Water Systems

Introduction

The inspectors reviewed the adequacy of the licensee's corrective actions regarding several apparent, recurring issues associated with the containment spray (CS) and CW systems, occurring since November 2004. The inspectors reviewed the cause of multiple events to determine if the licensee's corrective actions were effective at preventing repeat failures. Those documents reviewed during this inspection are listed in the Attachment. This activity completed one sample.

a. Prioritization and Evaluation of Issues

(1) Inspection Scope

The inspectors assessed the licensee's evaluation and disposition of performance issues, and application of risk insights regarding the tripping of the 1B CW pump on January 28 and the 2A CW pump on February 17, 2005. The inspectors also reviewed the licensee's maintenance rule a(1) determination for the CW system dated May 27, 2005, and a July 2005 common cause analysis addressing several pump and motor issues associated with various systems.

(2) Observations

The inspectors noted that each CW pump trip event was captured in an IR and was assigned a priority consistent with its significance. The inspectors also noted that similar CW pump trips had occurred in 1998 and in October 2004. The licensee had identified several possible event initiators for these trips, but had not determined which ones were most probable. The licensee was planning to perform a root cause evaluation to determine the most likely cause of the CW pump trips. This root cause was part of the licensee's a(1) evaluation and was being tracked by IRs 295475 and 298584.

The inspectors noted that the July 2005 common cause evaluation had appropriately reviewed the pump and motor issues, including whether similar issues had occurred in the industry. Other than the CW pump tripping issues discussed above, there were no common cause issues related to the other pumps or motors. Additionally, the corrective actions taken to address each of the other pump and motor problems were considered adequate. The results of this evaluation were presented to the station Plant Health Committee for review. Overall, the inspectors determined that the licensee was adequately addressing this issue.

b. Effectiveness of Corrective Actions

(1) Inspection Scope

The inspectors reviewed the licensee's actions to address recurring issues with CS pump limit switch failures and a potential common cause failure mechanism involving the CW pump motor ammeters.

(2) Observations

On March 28, 2005, during post-maintenance testing of the 1A CS pump, a failure of a limit switch prevented the testing from being completed, resulting in additional, unplanned unavailability. Although the failed limit switch prevented manual start of the pump during testing, it did not prevent the pump from performing its safety-function (i.e., auto-start) during an actual event. The licensee was aware of previous, similar problems with CS limit switches, occurring in 1996 and 2004, that had also resulted in unplanned unavailability. The inspectors noted that for these earlier occurrences, the licensee had not performed a cause analysis and had therefore missed an opportunity to prevent recurrence. Following the March 2005 event, the licensee performed an apparent cause evaluation and had addressed the extent of condition for all containment spray valve limit switches.

On November 14, 2004, the 2A CW pump tripped due to a failure of the motor ammeter. The cause of the failure was overheating of the ammeter lead which caused it to become disconnected. However, in investigating the issue, the licensee identified that the ammeters currently installed in the CW pumps were significantly less reliable than those originally installed. In 2001, the licensee replaced the originally installed ammeters with those made by another manufacturer. This replacement was necessary due to the unavailability of the original Electric ammeters. Since it was considered a "like-for-like" replacement, no parts evaluation was performed for this change. In investigating the above failure, the licensee identified that the new ammeters had a service life of about 3 years, compared to 10 years for the original ammeters. In particular, the licensee discovered that the new ammeters had an industry history of overheating, resulting in the failure of soldered connections. It was possible that this information would have been identified earlier, had a parts evaluation been performed prior to replacement. The licensee was evaluating the adequacy of the preventative maintenance program for these ammeters and whether more reliable ammeters were available in the industry. These actions were being tracked under IR 273286. The inspectors concluded that the licensee was reasonably addressing this issue.

.3 Semiannual Review for Trends

a. Inspection Scope

The inspectors reviewed all IRs generated during the time period between June 1 and November 30, 2005, in an attempt to identify potential trends involving adverse human or equipment performance. This inspection was part of the requirements of Inspection Procedure 71152 for monitoring plant status but was not considered an inspection procedure sample. Documents reviewed which indicated previously unrecognized trends are listed in the Attachment. The inspectors verified that minor issues identified during this inspection were entered into the licensee's corrective action program.

The screening was accomplished by grouping IRs into broad categories during daily screening. These groups included, but were not limited to, items involving the same issue, same equipment/components, or the same program. For the period of review, the inspectors also obtained lists of all completed or ongoing licensee common cause investigations, all IRs where the title indicated a trend or potential trend, all systems

currently in the maintenance rule (a)(1) status, and the licensee's most recent System Health Indicator Program (SHIP) report. These documents were considered licensee-identified trends. The following items were eliminated from the scope of this inspection:

- IRs dealing with company policies, administrative issues, and other minor issues;
- IRs associated with established licensee trending programs/processes, such as the rework program, that were previously reviewed during the semi-annual trend evaluation discussed in Inspection Report 2004-04;
- single IRs with no repeat occurrences or common issues;
- IRs that discussed NRC-identified trends from previous inspection activities;
- IRs that discussed strictly programmatic problems, as the inspection specifically focused on human and equipment performance issues;
- IRs involving Security, Radiation Protection, ISI and Emergency Preparedness issues, that were reviewed by regional specialists during ongoing inspection activities;
- IRs that were duplicates of other IRs involving the same event or failure; and
- IRs generated as a result of a special licensee initiative to specifically look for issues in a certain area.

The daily review of equipment issues included all safety related systems and those systems and components identified as risk significant by the licensee's probabilistic risk assessment model. In addition a focused review of the safety injection, CW, and rod control systems was performed by the inspectors. Potential trends identified by the inspectors were provided to the licensee for discussion and additional followup.

b. Finding and Observations

The inspectors determined that licensee employees were writing IRs with a low threshold that employees at all levels of the organization were writing IRs, and that IRs were written for all issues of significance. The inspectors noted a large number of IRs for employee identified equipment issues. Collectively, this provided one indication of an effective safety conscious work environment.

The majority of the trends were identified by the licensee. Each trend was documented in an IR and evaluated to determine if a common cause evaluation was necessary. The licensee-identified trends were identified by a combination of the work groups involved with the issues, department or station corrective action program coordinators, department managers, and the nuclear oversight group, indicating that multiple groups were looking for trends.

The following potential trends were identified wholly or in part by NRC inspection:

- poor control of temporary power cords (IR 352191);
- several instances of inadequate engineering technical rigor (IR 390585);
- several instances of station heaters requiring repair (IR 426859).

All NRC identified trends have been entered into the licensee's corrective action program. No violations of NRC requirements were identified.

4OA3 Event Followup (71153)

The inspectors completed two inspection samples in this area.

.1 Offsite Tritium Contamination From Prior Circulating Water Vacuum Breaker Leaks

a. Inspection Scope

On November 30, 2005, the inspectors were notified that the licensee had measured tritium levels as high as 58,000 picoCuries per Liter (pCi/L), in shallow, monitoring wells located at the northern edge of the owner controlled area. The inspectors evaluated the extent and possible cause of these unexpected sample results. Additionally, the NRC performed an independent analysis of split samples taken from some of the licensee's monitoring wells and collected independent samples from some residents nearest to the site boundary.

b. Findings

Introduction: The inspectors noted an unresolved item regarding whether the licensee had fully characterized the extent of the tritium contamination, whether the source of the contamination was properly identified, whether the licensee had correctly evaluated the integrity of the blowdown line, whether corrective actions were appropriately developed to prevent future releases from the blowdown line, and whether the licensee adequately evaluated potential mitigative actions for the tritium already released. Because this inspection effort was contingent on the licensee's planned actions as stated above, this issue is being tracked as an Unresolved Item.

Description: On November 30, 2005, the inspectors were notified that the licensee had measured tritium levels as high as 58,000 pCi/L in shallow, monitoring wells located at the northern edge of the owner controlled area. Three homes and a larger parcel of vacant land with undeveloped lots were located near the area where the tritium was identified. Additional home sites were also located to the North and Northeast. On December 12, 2005, the licensee held a public meeting to discuss the tritium contamination with those residents living in or near the potentially affected areas. This meeting was attended by NRC staff from the resident and regional offices.

The licensee contacted several of the homeowners with drinking water wells and drilled monitoring wells to determine the extent of the tritium contamination. The NRC performed an independent analysis of split samples taken from some of the licensee's monitoring wells and collected independent samples from some residents nearest to the site boundary. The NRC initial sample results were consistent with the licensee's results. As of December 30, 2005, the licensee had identified levels of tritium between 1400 - 1600 pCi/L in one residential drinking water well. The tritium levels found in the residential drinking water well were below the Environmental Protection Agency (EPA) drinking water standard of 20,000 pCi/L which equates to an annual dose of 4 millirem and is below NRC dose limits. The other residential well samples had no measurable tritium above normal background. In addition, tritium levels as high as 225,000 - 250,000 pCi/L were measured in non-residential, deep wells (about 25 feet) both onsite and offsite.

The inspectors discussed the potential origin of the tritium contamination with licensee staff. The tritium likely originated from past leakage of the vacuum breakers on the CW blowdown line. This line normally carried non-radioactive CW discharge back to the Kankakee River, but also served as a dilution pathway for planned liquid radioactive releases. The line was about five miles long and had eleven vacuum breakers. These breakers compensated for potential voiding from liquid surges. In November 1998 and December 2000 respectively, significant leakage from two of these breakers flooded a portion of the plant site with several million gallons of water in each occurrence. Each leak occurred over a period of several days coincident with ongoing, liquid radioactive releases through the blowdown line. The licensee sampled, collected, and returned the water from the 2000 event back into the blowdown line, but at the time of the inspections was unable to determine if any action was taken for the 1998 event. A small leak of a few gallons also occurred from another vacuum breaker in May 2005, but the licensee recovered most of this leakage before it could escape to the environment.

The inspectors reviewed the licensee's root cause report for the 2000 vacuum breaker release event. This event was caused by damage to the float assembly of the vacuum breaker valve due a lack of surge protection and an inadequate preventative maintenance program. Specifically, the valves were missing an internal surge check valve, which protected the float assembly from damage due to periodic liquid surges inside the pipe. These check valves had never been installed and subsequent preventative maintenance activities had not identified this condition. Although the vacuum breakers were inspected on an annual basis, there was little to no guidance regarding the inspection requirements or documentation of the inspection results. The licensee subsequently replaced all the vacuum breaker valves (including installing the internal surge check valves) and developed a more formal program for inspection of the vacuum breaker valves. The inspection frequency was also changed from annually to semi-annually.

Since the groundwater contamination was identified on November 30, 2005, the licensee has suspended liquid radioactive discharges. During that time, radioactive liquids were being stored onsite in temporary storage tanks. The radioactive discharges will not resume until the blowdown line integrity is verified. On December 21, 2005, the inspectors observed the transfer of radioactive liquid into the temporary tanks.

The licensee planned to perform monitoring of the blowdown line integrity using a vendor supplied and operated acoustical leak detection system. On December 22, 2005, a regional engineering specialist reviewed the licensee's testing procedure and observed the installation of test equipment to perform the acoustic leak detection for the portion of the blowdown line between vacuum breakers 0CW-060 and 0CW-138. The licensee expected to complete the testing of the complete blowdown line by the end of February 2006.

The licensee continued to perform groundwater monitoring to properly characterize the extent of the offsite tritium contamination. In addition to the monitoring wells already installed, the licensee planned to install additional wells to evaluate the vertical characterization of the aquifer. Monitoring wells were also planned along the length of the blowdown line towards the river. Concurrent with these actions, the licensee was also performing a root cause evaluation to confirm that the source of the tritium was the

vacuum breaker leaks and to evaluate the adequacy of corrective actions for prior leaks, and was developing plans for potential mitigation of the tritium. The actions were being tracked by licensee IR 428868, dated November 30, 2005.

The inspectors planned further reviews to determine whether the licensee had fully characterized the extent of the tritium contamination, whether the source of the contamination was properly identified, whether the licensee had correctly evaluated the integrity of the blowdown line, whether corrective actions were appropriately developed to prevent future releases from the blowdown line, and whether the licensee adequately evaluated potential mitigative actions for the tritium already released. Because this inspection effort was contingent on the licensee's planned actions as stated above, this issue is being tracked as an Unresolved Item (URI 05000456/2005010-02; 05000457/2005010-02).

.2 (Closed) Licensee Event Report (LER) 05000456/2005002-00: Feedwater Isolation Valve 1FW039A Fails to Stroke In the Required Time Due to Failure of Valve Air Regulator to Maintain Set Pressure.

On August 3, 2005, the licensee identified that feedwater isolation valves 1FW039A-D had not been stroke time tested in accordance with the In-Service Testing Program. In 1998, the testing frequency of these valves was changed from every cold shutdown to quarterly (i.e., every 92 days). However, the station predefined surveillance program was not changed to reflect this, resulting in these valves only being tested every cold shutdown. Subsequently the predefined surveillance program was revised to reflect the new testing frequency. Surveillance Requirement 3.0.3 was also entered, which required that the valves be stroke timed within 92 days from the date of discovery of the missed surveillance.

On September 6, 2005, the 1FW039A failed a stroke time test, with a measured stroke time of 6.58 seconds vs. the TS limit of 6.0 seconds. The other feedwater valves met their stroke time requirements. In accordance with TS 3.6.3, Condition C, the 1FW039A valve was closed and declared inoperable, the upstream isolation valve (1FW041A) was closed, and administrative actions were taken to ensure that both valves remained closed. The cause of the failed stroke time was foreign material (i.e., small piece of wire and hard plastic) found inside the regulator main seat area. This material was believed to have been introduced during prior maintenance on the valve in October 2001. The material caused the regulator supply pressure to exceed its setpoint, resulting in additional time for the actuator and solenoid valves to exhaust the supplied air allowing the valve to close. The regulator was subsequently replaced and on September 10, 2005, the 1FW039A passed its time test.

These valves were required to isolate upon receipt of a phase A containment isolation signal. These valves also automatically closed when a safety injection signal was used to initiate feedwater isolation to mitigate the effects of high energy line breaks both inside and outside containment. The valves also fail closed on loss of electrical control power or air. These valves were normally maintained closed, as they were not required to be opened for any required functions. Since these valves were normally closed, the failure to perform the required surveillance testing on the 1FW039A-D and the

subsequent stroke time failure of 1FW039A, did not have an affect on either the containment or feedwater isolation functions.

The failure to perform required surveillance testing of the 1FW039A-D valves and the subsequent failure of the 1FW039A valve to meet its required stroke time were considered violations of minor significance that are not subject to enforcement action in accordance with Section IV of the NRC's Enforcement Policy. The licensee documented this problem in IRs 359689 and 370649. This LER is closed.

4OA6 Meetings

.1 Exit Meeting

The inspectors presented the inspection results to Mr. G. Boerschig and other members of licensee management at the conclusion of the inspection on January 9, 2006. 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:

- Operator Requalification Program Examination Result Review via telephone conversation with Mr. C. Dunn on October 27, 2005.
- Emergency Preparedness inspection with Mr. Scott McCain and Ms. Kim Aleshire by telephone call on December 28, 2005.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

K. Polson, Site Vice President
G. Boerschig Plant Manager
K. Aleshire, Emergency Preparedness Manager
D. Ambler, Regulatory Assurance Manager
M. Andrews, Chemistry Supervisor
J. Bauer, Licensing Manager
D. Burton, Licensed Operator Requalification Training Group Lead
S. Butler, Licensing Engineer
M. Cichon, Regulatory Assurance
S. Clark, Maintenance Planning Manager
G. Dudek, Operations Director
C. Dunn, Training Manager
C. Gayheart, Operations Training Director
G. Heisterman, Mechanical Maintenance Manager
J. Kuczynski, Chemistry Manager
R. Leasure, Radiation Protection Manager
F. Lentine, Design Engineering Manager
S. McCain, Corporate Emergency Preparedness Manager
J. Moser, Radiation Protection Manager
M. Olson, Simulator Coordinator
A. Ronstadt, Site Maintenance Rule Coordinator
J. Ruth, Examination Developer
M. Sears, Steam Generator Program Manager
M. Smith, Site Engineering Director
P. Summers, Nuclear Oversight Manager
M. Trusheim, Work Control Manager

Nuclear Regulatory Commission

R. Skokowski, Chief, Reactor Projects Branch 3

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

05000456/2005010-01	NCV	10 CFR 50.54(q) Violation for Decreasing the Effectiveness of the Emergency Plan by Changing EAL RU2 Threshold That Address Radiological Effluents Without Prior NRC Approval or Adequate 10 CFR 50.54(q) Review
05000456/457/2005010-02	URI	Tritium Contamination from Past Vacuum Breaker Leaks on Circulating Water Blowdown Line

Closed

05000456/2005010-01 NCV 10 CFR 50.54(q) Violation for Decreasing the Effectiveness of the Emergency Plan by Changing EAL RU2 Threshold That Address Radiological Effluents Without Prior NRC Approval or Adequate 10 CFR 50.54(q) Review

05000456/2005002-00 LER Feedwater Isolation Valve 1FW039A Fails to Stroke In the Required Time Due to Failure of Valve Air Regulator to Maintain Set Pressure

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 or portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

1R01 Adverse Weather Protection

0BwOS XFT-A1; Unit Common Freezing Temperature Equipment Protection Surveillance; Revision 13
0BwOS XFT-A2a; Unit Common Station Heat Area Heaters Freezing Temperature Equipment Protection Surveillance; Revision 1
0BwOS XFT-A4; Unit Common Freezing Temperature Equipment Protection Inside Surveillance; Revision 1
0BwOS XFT-A3; Unit Common Cold Weather Surveillance; Revision 5

1R04 Equipment Alignment

BwOP DG-E4; Electrical Lineup - Unit 2 2B DG; Revision 4
BwOP DG-M4; Operating Mechanical Lineup Unit 2 2B DG; Revision 10
BwOP RH-E1; Electrical Lineup-Unit 1 Operating; Revision 6 Continuous Use
BwOP RH-M2; Operating Mechanical Lineup Unit 1 1B Train; Revision 8 Reference Use
BwOP SI-1; Safety Injection System Startup; Revision 17
2BwVSR 5.5.8.SI.1; American Society of Mechanical Engineers Surveillance Requirements for the 2A Safety Injection Pump; Revision 4
EC 344003; Review Scaling for DSAT Level Instruments (2LT-CS021, 2LIS-CS046A, and 2LIS-CS046B; August 21, 2003
IR 379623; 2CS023, NA0H Spillage Under Grab Sample Valve; September 27, 2005
IR 379648; 2CS081B, Spillage from Venting Operations; September 27, 2005
WO 847242 01; September American Society of Mechanical Engineers Surveillance Requirements for 2A Safety Injection Pump; December 6, 2005

1R05 Fire Protection

Braidwood Fire Protection Report 2.4.2.3 Control Room (Fire Zone 2.1-0); Amendment 21; December 2004
Byron/Braidwood Fire Protection Report 2.3.5.9; Unit 1 Auxiliary Electrical Equipment room (Fire Area 5.5-1); Amendment 21; December 2004
Byron/Braidwood Fire Protection Report 2.3.5.10; Unit 2 Auxiliary Electrical Equipment Room (Fire Area 5.5-2); Amendment 18; December 1998
Byron/Braidwood Fire Protection Report 2.3.8.4; Turbine Building, Grade Level - Unit 1 (Fire Zone 8.3-1); Amendment 17; December 1996
Byron/Braidwood Fire Protection Report 2.3.8.5; Turbine Building, Grade Level - Unit 2 (Fire Zone 8.3.2); Amendment 21; December 2004
Byron/Braidwood Fire Protection Report 2.3.11.12; Auxiliary Building General Area Level 364'-0" (Fire Zone 11.3.0); Amendment 18; December 1998
Byron/Braidwood Fire Protection Report 2.3.14; Radwaste Areas; Amendment 13; December 1990

Figure 2.3-8, Sheet 1 of 4; Byron Braidwood Station Fire Protection Report; Main Floor at Elevation 451'-0"

Figure 2.3-8, Sheet 3 of 4; Byron Braidwood Station Fire Protection Report; Main Floor at Elevation 451'-0"

Figure 2.3.10, Sheet 3 of 4; Byron/Braidwood Fire Protection Report Mezzanine Floor Plan Elevation 426'-0"

Figure 2.3.12, Sheet 2 of 4; Byron/Braidwood Fire Protection Report Grade Floor Elevation 401'-0"; Amendment 12; December 1989

Figure 2.3.12, Sheet 3 of 4; Byron/Braidwood Fire Protection Report Grade Floor Elevation 401'-0"; Amendment 15; December 1992

Figure 2.3.12, Sheet 4 of 4; Byron/Braidwood Fire Protection Report Grade Floor Elevation 401'-0"; Amendment 19; December 2000

Figure 2.3.14, Sheet 1 of 4; Byron Braidwood Station Fire Protection Report; Basement Floor Plan Elevation 364'-0"

Figure 2.3.14, Sheet 3 of 4; Byron Braidwood Station Fire Protection Report; Basement Floor Plan Elevation 364'-0"

Figure 2.3.15, Sheet 1 of 1; Byron Braidwood Station Fire Protection Report; Floor Plan Elevation 346'-0"

Figure 2.3.22, Sheet 2 of 2; Byron Braidwood Station Fire Protection Report; Section B-B

Figure 2.3.25, Sheet 1 of 2; Byron Braidwood Station Fire Protection Report; Section E-E

Figure 2.3.25, Sheet 2 of 2; Byron Braidwood Station Fire Protection Report; Section E-E

Figure 2.3.26, Sheet 1 of 2; Byron Braidwood Station Fire Protection Report; Section F-F

Figure 2.3.26, Sheet 2 of 2; Byron Braidwood Station Fire Protection Report; Section F-F

Table 2.2-2; 5.5.1 Unit 1 Auxiliary Electrical Equipment Room; Amendment 13; December 1990

Table 2.2-2; 5.5.2 Unit 2 Auxiliary Electrical Equipment Room; Amendment 13; December 1990

Table EP-MW-114-100-F-01; Nuclear Accident Reporting System Form, Utility Message 1; Revision B e 2.2-2; 11.3-0 Auxiliary Building, General Area, Elevation 364'-0"; Amendment 18; December (98

1R11 Licensed Operator Requalification Program

IR 350861; 1A Reactor Coolant Pump #1 Seal Leakoff Flow High; July 7, 2005
 AIT 372165; Root Cause Analysis 1A RC Pump Excessive Seal Leakage Results in U1 Forced Outage; October 11, 2005

1R12 Maintenance Effectiveness (71111.12Q)

1BwGP 100-3A9; FW Pump Speed Controller vP Program for Unit 1; Revision 3
 2BwGP 100-3A9; FW Pump Speed Controller vP Program for Unit 2; Revision 3
 Braidwood Quarterly SHIP Report; 3rd Quarter 2005
 OP-AA-108-11; Adverse Condition Monitoring and Contingency Plan - 1FW Control Valve Spiking; Revision 0
 Drawing FW-2, U1 SGWLC; October 21, 2002; Revision 3
 Drawing FW-3, U2 SGWLC; August 15, 2002; Revision 5

Drawing 20E-2-4030FW15; Schematic Diagram FW Pumps 2A, 2B, 2C Recirculation Isolation Valves 2FW027A, B, C FW Pump 2A Regulating Valve 2FW016; February 17, 1983

Drawing 20E-2-4030FW27; Schematic Diagram Steam Generator FW Pump 2B Turbine Speed Control; March 17, 1983

Exelon Nuclear Log; IR 397089; November 10, 2005

IR 285216; Root Cause Report U2 Reactor Trip on LO-2 Steam Generator Level; Assignment #15

IR 289010; Root Cause Concern with FW Regulating Valve Settings; January 9, 2005

IR 289369; Calibration Differences Between U1 and U2 SF/FF Mismatch; January 10, 2005

IR 289567; Feed Flow Channel Failed Low Causing Feed Transient; January 11, 2005

IR 294658; Demonstrate the Power Uprate Impact on FW Response; January 27, 2005

IR 305701; B4 Trend Code: 2FQY-0543 As-Found OOT (2D Flow Feed Flow); February 25, 2005

IR 305867; IMD Work Impacts Unit 2 FW Flow; February 26, 2005

IR 2FT-0531 Spiked and Caused Nozzle Flow High on 2C Steam Generator; March 5, 2005

IR Westinghouse 7300 Card Shows Signs of Heat Degradation; March 16, 2005

IR 315821; Heat Related Degradation Found on Resistors on 2P&-0544A; March 22, 2005

IR 317628; 2F-531 Spike Causes Unexpected Nozzle Flow High Alarm; March 27, 2005

IR 323114; U2 Steam Flow Channel Failure; April 10, 2005

IR 326225; Broken Instrument Supply Air Line to Feed Regulating Valve 2FW 530

IR 330642; FW Regulating Bypass Controller De-Energized; May 1, 2005

IR 330649; Valve 2FW530A Strokes too Slowly; May 1, 2005

IR 333931; During CD/CB Swap FWRV Oscillations Occurred; May 1, 2005

IR 334692; 2PSA-FW210 Found Loosely Mounted While Calibrating 2PS-FW207; May 12, 2005

IR 336654; Followup Investigation of U2 FWRV Transient; May 19, 2005

IR 341119; Intermittent 2D Steam Generator FW Nozzle Flow High Alarm June 5, 2005

IR 350604; 2D Steam Flow Channel Spiked High Then Returned to Normal; July 6, 2005

IR 360565; 1D Steam Generator FW Flow Spiked Low; August 5, 2005

IR 371130; 2FI-532 2C Steam Generator Steam Flow Spiked; September 8, 2005

IR 397089; 1F-0540 Channel Dropped 400 KLB/HR Momentarily; November 10, 2005

Maintenance Rule - Performance Criteria; FW System

1R13 Maintenance Risk Assessments and Emergent Work Control

AD-AA-101-1002; 2BwOS TS-M1, U2 Turbine Oil Trips Surveillance; Revision 9

BwOP DC-23-111; Attachment B, Condensed Listing of DC Bus 111/113 Breakers; Revision 0

1AF01PB Protected Equipment Listing

Drawing 20#-1-4030DC05; Schematic Diagram 125V DC Dist. Center Bus 111 Part 1 1DC05E; Sheet 7; September 5, 1978

Drawing 20E02-4030DC05; Schematic Diagram - 125V DC Engineered Safety Feature Dist Center Bus 211 Part 1 (2DC05E) and 125V DC Engineered Safety Feature Dist.

PNL 211 (2DC05EA) Front; Sheet 7; January 12, 1979

Drawing M-152; Manufacturer's Supplemental Diagram of DG Control Diagram Shutdown system Units 1&2; Sheet Number 15
EC 358161; Revise Wiring for Differential Pressure Switches 1PDS-T0093 and 2PDS-T0091; November 28, 2005
IR 379431; 1A DG Tripped 42 Seconds into Cooldown Cycle; September 29, 2005
IR 380517; 1A DG Tripped While in Cooldown on High Jacket Water Temperature; September 30, 2005
IR 385062; 2A DG Slow Start During Performance of Slave Relay Surveillance; October 12, 2005
LS-AA-105; Operability Evaluation 1A DG Pre-Lube Pump Vibration Following Pump Start-Up at End of 1A DG Run; Revision 1
System/Component 2PDS-T0091; Issue Resolution Documentation Form; November 28, 2005
WO 851775; 1A DG Tripped During Cooldown Cycle; October 3, 2005
MA-AA-716-004; Troubleshooting Log; Revision 3

1R14 Operator Performance During Non-Routine Evolutions and Events

Byron Procedure 1BOA ELEC-7; Loss of Annunciator Unit 1; Revision 0
Byron IR 136997; Formal Guidance for Loss of All Annunciators Requested; December 20, 2002
WO 860214 01; U2 DEH-Vidar Stopped Scanning

1R15 Operability Evaluations

BwAR 1-BP-3.5; Low Power Trips Blocked P7; Revision 0
BwAR 1 BP-3.6; Low Turb IMP Press Permissive P13; Revision 0
BwAR 2-6-A7; RWST Level LO-3; Revision 8E2
2BwEP ES-1.3; Transfer to Cold Leg Recirculation Unit 2; Revision 104
BwMP 3300-091; Lake Screen House Diver Related Inspection; Revision 11
1BwOA INST-2; Operation with Failed Instrument channel Unit 1; Revision 101
IR .84767; Inspection of 1C Forebay, Shows Sediment Exceeds Action Level; October 11, 2005
IR 385083; SX Train Chem Feed Affected by 1C CW Pumps Forebay Issues; October 12, 2005
IR 385139; Multiple Issues/Systems Affected - Forebay Silt/Material; October 12, 2005
IR 385460; OPEX - Palo Verde Shutdown Due to RWT Vortexing Design Issue; December 16, 2005
IR 385644; Evaluate PRE 42050, Palo Verde Issue, For Braidwood Applicability; October 11, 2005
IR 388688; 1C CW Pump Not Inspected During Forebay Diver Inspection; October 21, 2005
IR 388880; BRY0Z0A Discovered on OB Fire Protection Pumps; October 21, 2005
IR 389916; Inspection of 1B Forebay Shows Sediment Exceeds Action Level; October 23, 2005
IR 390512; Inspection of Forebay Shows Sediment Exceeds Action Level; October 26, 2005
IR 391843; Unsatisfactory Results from Diver Inspection of Forebay for Sedimenta; October 28, 2005
IR 393931; Clean 0CW05MB Strainer; November 2, 2005

IR 431474; 1A Steam Generator Power Operated Relief Valve Has Steam Leak By; December 7, 2005

IR 433638; Cannot Verify 1MS019D Full Closed; December 14, 2005

Adverse Condition Monitoring and Contingency Plan; SX Cubicle Cooler and RCFC Flows Revision; September 26, 2005

Adverse Condition Monitoring and contingency Plan; 1PT-0505 Impulse Line Leakage Monitoring; November 7, 2005

1R19 Post-Maintenance Testing

BwOP RP-25; Aligning MCB Controlling Channels for Work Activities; Revision 3
2BwOSR 3.3.2.8-611B (WO 852756-01); U2 Train B Slave Relay Surveillance, K611B; October 13, 2005

2BwOSR 3.8.1.2-1 (WO 857661): U2 2A DG Operability Surveillance; October 13, 2005
1BwOSR 3.8.1.2-1; Unit One 1A DG Operability Surveillance; Revision 15

IR 327970; Pressure Leakage on 1PDS-T0071B (Potential A&C); April 22, 2005

IR 390663; 2CS003B CS Pump Discharge Check Valve Fails American Society of Mechanical Engineers Surveillance; October 26, 2006

IR 392411; Impulse Pressure 1PT-505 Drifting Lower Over Time; October 31, 2005

IR 433918; Inconsistencies in Wording/Times in BwOP/BwVSR; December 14 2005

WO 433764 16; Post Maintenance Testing American Society of Mechanical Engineers Run 2B CS Pump; October 26, 2005

WO 708221 01; 1P-0505 Cal of Turb Impulse Pressure Loop 0505 (Mode 1 > 10 percent Power); September 20, 2005

WO 852427 01; Train B K644B CS Slave Relay Surveillance; December 15, 2005

WO 852430 01; American Society of Mechanical Engineers Surveillance Requirements for 1B DS Pump and Check Valves; December 15, 2005

1R22 Surveillance Testing

BwISR 3.3.2.10-217; Operational Test/Surveillance Calibration of Auxiliary Feedwater Pump Suction Loop 2P-AF051; Revision 2

BwIS\$ 3.4.15.3-201; Surveillance Calibration of Reactor Cavity Leak Detection Loop; Revision 1

2BwOSR 3.3.2.3; Unit Two Undervoltage Simulated Start of 2A Auxiliary Feedwater Pump Surveillance; Revision 2

1BwOS ATWS-SA1; Unit One Anticipated Transient Without Scram Mitigation System Surveillance; Revision 5

2BwOSR 3.8.1.13-1; 2A DG Bypass of Automatic Trips Surveillance; Revision 2

Drawing 20E-1-4030FW65; Braidwood Station - Unit 1; Schematic Diagram Anticipated Transient Without Scram Mitigation System

Drawing 20E-1-4031RF03; Loop Schematic Diagram Containment Floor Equipment Drain Leak Detection Part 3, Panel 1PA20JB; June 23, 1079

IR 260025; AMS Armed Light cleared Early; October 4, 2005

WO 603782 01; U2 LLRT of Emergency Personnel Hatch Airlock; April 9, 2005

WO 618443 01; U2 LLRT CV 8100/8112/8113 P28 Seal Return; April 15, 2005

WO 646573 01; U2 LLRT PC P74 Spare; March 23, 2005

WO 646606 01; U2 LLRT Re 9160 A&B/9157 P65 RCDT to GW/N2; April 15, 2005

WO 646146+ 01; U2 LLRT Component Cooling 9435/9416/9414 P21 Reactor Coolant Pump Motor BRG RTN; April 14, 2005

WO 876360 01; U2 Primary Containment Type B LLRT of Emergency Hatch Airlock DR Gasket; December 28, 2005

WO 831885 01; U2 Train A Slave Relay Surveillance 3.3.2.8-611A; October 12, 2005

WO 845809 01; 2A DG Operability Monthly Section-5 (DSC Check SI Relay Quarterly; October 12, 2005

1R23 Temporary Plant Modifications

ER 9902999; Double Freeze Seals for Replacing Valve 0009432; June 20, 2000

WO 99159752 02; Reroute Inlet/Outlet Piping for Thermal Relief Valve OCC9432; October 5, 2005

1EP6 Drill Evaluation

EP-AA-111-F-02; Braidwood Plant Based Par Flowchart; Revision B

EP-AA-112; Emergency Response Organization/Emergency Response Facility Activation and Operation; Revision 10

EP-AA-112-200-F-01; Station Emergency Director Checklist; Revision A

EP-AA-112-200-F-02; TSC Director Checklist; Revision B

EP-MW-114-100-F-01; Nuclear Accident Reporting System Form, Utility Message 1; Revision B

EP-MW-114-100-F-01; Nuclear Accident Reporting System Form, Utility Message 2; Revision B

EP-MW-114-100-F-01; Nuclear Accident Reporting System Form, Utility Message 3; Revision B

IR 399061; EP Drive in Drill Failure; November 15, 2005

IR 429429; Emergency Response Organization Member Response During Drive in Drill - Facility Response; December 1, 2005

IR 429439; Knowledge Weakness in Use of Other People in Emergency Response Organization Positions; December 1, 2005

IR 429447; Knowledge Weakness in 60-Minute Emergency Response Organization Response Criteria; December 1, 2005

LS-AA-1150; Reactor Plant Event Notification [EN] Worksheet, EN 2005-006; Revision 0

WO 729924 01; IM 1F-RF010 Cal of Reactor Cavity Leak Detect Electronics; September 27, 2005

4OA2 Identification and Resolution of Problems

0BwOS XFT-A3; Unit Common Cold Weather Surveillance; Revision 5

2BwOSR 3.5.2.2-2; U2 ECCS Venting and Valve Alignment Surveillance; Revision 10

ACE concerning 1/2 VQ005B LLRT Failures; January 30, 2005

ACE concerning 2A (2CW01PA) Circulating Water Pump Tripped related to IR 273286; February 17, 2005

ACE concerning Troubleshooting of Intermittent Tripping of the 1B Circulating Water Pump Results in Indeterminate Causes related to IR 298584 and 295475; June 6, 2005

CCA related to 326811; Issues Related to Pumps and Motors; July 6, 2005

Maintenance Rule Status & Projections; November 3, 2005

IR 288067; Shutdown Banks D, D, & E Would Not Move on Manual Demand; January 6, 2005

IR 293814; 1CV8153B Stroke Time Exceeded Alert Limit; January 25, 2005

IR 295475; 1B Circ Water Pump Tripped During Attempted Start; January 28, 2005

IR 297146; Limit Switch and Limit Plate Dis-engaged on 1CS040A; March 28, 2005

IR 298584; No Problem Found During 1B CW Pump Troubleshooting; February 1, 2005
IR 305422; Taking 14-Months to Replace 2RD05E Fuse BYA Fuse Block; February 25, 2005
IR 318048; 2AF005H Failed Full Open in MIR after Unit 2 Trip; March 28, 2005
IR 322932; 1CC9437B Exceeded Alert Stroke Time; April 9, 2005
IR 329699; Out of Tolerance During Inspection of Reactor Trip Breaker; April 28, 2005
IR 330381; Damaged Wiring Discovered in Rod Control Cabinet; April 29, 2005
IR 330525; Received Reflash of General Warning Alarm While Racking; April 30, 2005
IR 331134; Degraded Rod Drive Cables Noted in Cable Trays; May 2, 2005
IR 331162; 2B SI Accumulator Indicated Level Drop; May 2, 2005
IR 331544; Degraded Rod Drive Cable (K-6) in Cable Tray; May 3, 2005
IR 331874; U2 P/A Converter Malfunction on Bank D; May 4, 2005
IR 332642 Assignment #02; Oxidation/Corrosion Found on Back of Termination Connections in Card Racks of RD Power Cabinets 2RD03J and 2RD05J; June 9, 2005
IR 332762; IST Relief Valve 2SI8851 Failed Pressure Test; May 4, 2005
IR 332890; PRT Level Increase - Reason Unknown; May 7, 2005
IR 333070; System Engineer Needs to Investigate Other Stations RD Cooling; May 9, 2005
IR 333070 Assignment #2; System Engineering Needs to Investigate Other Stations RD Cooling; November 9, 2005
IR 335903; Negative Trend Identified in O.2 Reactivity Management PI; May 17, 2005
IR 333787; Gas Sampling Required for Next 2BwOSR 3.5.2.2-2; May 10, 2005
IR 333808; Gas Detected While Venting 2SI059A; May 10, 2005
IR 339688; 2SI059A Had Air./Gas Vented for 30 to 45 Seconds; May 31, 2005
IR 340064; CW1 Performance Criteria Exceeded Due to 1B CW Pump Trips; June 1, 2005
IR 340064 Assignment #04; CW1 Performance Criteria Exceeded Due to 1B CW Pump Trips; August 26, 2005
IR 340089; FME Event - Exciter Ring Resistor Lead Nut Missing; June 1, 2005
IR 340122; Trash Rake Stuck at Bottom of 2B Forebay; June 1, 2005
IR 340644; 1CW096B Tripping Thermals; June 3, 2005
IR 340856; U1 BYA Breaker Not Restored to Cubicle in Timely Manner; June 3, 2005
IR 341251 Assignment #02; Complete CCA For Multiple Chemistry Action Level Entries; July 8, 2005
IR 342187; 1SI01PA Dry Boric Acid Leak @ Discharge Flange (Clean/Tighten); June 8, 2005
IR 342931; Trash Rake Stuck at Bottom of 2B Forebay; June 10, 2005 (Duplicate IR 340122)
IR 342967; 2SI001B Has Dry, White & Brown Boric Acid Packing Leak; June 10, 2005
IR 343906; Small Amount of Gas Vented During ECCS Surveillance; June 14, 2005
Apparent Cause Evaluation IR 343906; Small Amount of Gas Vented During ECCS Surveillance; June 14, 2005
IR 345730; 2SI059A Air/Gas Venting Sample Not Analyzed; June 20, 2005
IR 346235; Unit 2 RWST Level Lowering - Possible Valve Leak-by; June 22, 2005
IR 348450; Develop Contingency WO for Replacing Screen Wash Shear Pin; June 28, 2005
IR 349024; Multiple Screens are Damaged on Upper/River End; June 30, 2005
IR 349748 Assignment #05; Follow-up to CA02 - Update Status of NALCO Investigation; September 8, 2005

IR 349765; Unexpected Alarm "Rod Control Non-Urgent Failure;" July 2, 2005
 IR 350546; 2LT-0953 Sluggish Response; July 6, 2005
 IR 352191; NRC Concern - Poor control of temporary power & cords; July 12, 2005
 IR 352503 Assignment #05; Complete CCA For Trend Associated with Issues in RP;
 September 9, 2005
 IR 353895; Rake (0CW04F) Does Not Go Full Up and Down; July 17, 2005
 IR 356461 Assignment #05; Document Approved CCA Report on Waste Gas System;
 October 7, 2005
 IR 356469 Assignment #02; Complete CCA for Trend in Plant Process Computers;
 October 4, 2005
 IR 358058 Assignment #02; Complete CCA for NRC Violations; September 21, 2005
 IR 362345 Assignment #04; Complete CCA on Clearance Order Low Level Issues;
 October 14 2005
 IR 364435; ROD H-6 Had DRPI Data B Failure; August 18, 2005
 IR 364456; Evaluate TS Entry Requirements for Inoperable DRPI; August 18, 2005
 IR 364936; Check Valve Orientation Not Per Vendor Recommendation; August 19, 2005
 IR 367638; High Thrust Bearing Temperature on 0B CW Makeup Pump; August 28,
 2005
 IR 371113; 1B CW Pump ACM Reaches Temperature Threshold; September 7, 2005
 IR 371235; 1B CW Pump Shaft Bearing Temperature Trending Up; September 8, 2005
 IR 371248; NRC Questions on Previous Actions with CW Blowdown Vacuum Breakers;
 September 8, 2005
 IR 373865; U2 CW Blowdown Booster Pump Breaker Not Closed; September 15, 2005
 IR 383098; 1RY8028 Failed as Left LLRT; November 6, 2005
 IR 383463; Evaluation of 1RY8028 LLRT Results; November 6, 2005
 IR 384767; Inspection of 1C Forebay Shows Sediment Exceeds Action Level;
 October 11, 2005
 IR 385568; RD System Lessons Learned Apply to Braidwood from B2R12; October 13,
 2005
 IR 387090; 1A Forebay Diver Inspection: Excessive Silt and Bio Growth; October 17,
 2005
 IR 389692; 1B CW Pump Impeller Plate Missing; October 24, 2005
 IR 390585; Potential trend in NRC identified IRS with technical rigor; October 26, 2005
 IR 392495; Multiple CW Make Up Pump Trips Due to Screen Delta P; October 31, 2005
 IR 392607; Relief Valve Broken Off Vacuum Breaker 0CW075; October 31, 2005
 IR 393312; 1B Circulating Water [CW] Pump Troubleshooting (1CW01PB);
 November 1, 2005
 IR 393606; Attempted Pressurization of 1SI04TA for 25 Minutes; November 2, 2005
 IR 394152; 1A FW Pump Motor to Gear Coupling Discrepancies; November 3, 2005
 IR 394771; U1 Amertap Found Without Balls; November 4, 2005
 IR 395289; Amertap Balls on U2 Disappeared Between 11/5 and 11/6; November 6,
 2005
 IR 399253; 5 percent Deviation Between 2LI-956 and 2LI-957; November 16, 2005
 IR 426859; Potential trend - many station heaters needed repair in 2005; November 22,
 2005
 IR 428129; 1CW01PB-M, 1B CW Motor Has Increased High Frequency Vibes;
 November 28, 2005
 Braidwood Quarterly SHIP Report; 3rd Quarter 2005
 Drawing M-44; Diagram of CW Make-up Units 1 & 2; Sheet 3A

Drawing M-136; Diagram of SI Unit 2; Sheet 1; May 5, 1976
Drawing M-136; Diagram of SI Unit 2; Sheet 4; May 5, 1976
NRC OPEX; Gas in ECCS System Overview
Generic Letter 97-04; Assurance of Sufficient Net Positive Suction Head for ECCS and Containment Heat Removal Pumps
High Safety Significant Status of In-Scope Functions
Maintenance Rule - Evaluation History; RD System
Maintenance Rule - Expert Panel Scoping Determination; RD System
Maintenance Rule - Performance Criteria; RD System
Maintenance Rule - Performance Criteria; CW System
Plant Health Committee Presentation Regarding Corrosion on Exposed Metal Surfaces in the RD Power and Logic Cabinets; March 2005
Plant Health Committee Material Condition Improvement Plan; Gas Water Mixture was Reported at 2SI059A; May 23, 2005
Westinghouse Technical Bulletin ESBUTB-96-03-R0; RHR Pump Operating Recommendations; June 20, 1996

4OA3 Event Followup

IR 328451; Tritium Indicated in Samples Taken from Onsite Culvert; April 1, 2005
IR 336401; CW BD Vacuum Breaker 0CW058 Pilot Valve Leaking 20 DPM; May 18, 2005
IR 370649; 1FW039A Fails to Stroke in the Required Time; September 6, 2005
IR 371248; NRC Questions on Previous Actions with CW Blowdown Vacuum Breakers; September 8, 2005
IR 428868; Elevated Tritium Levels in ON-Site Monitoring Wells; November 30, 2005
IR 431913; Possible Historic CW Blowdown Leakage from Oine 0PS01A; December 8, 2005
IR 434367; Erroneous Sample Result from Offsite Lab; December 14, 2005
IR 435383; Notice of Violation for Tritium in Ground Water; December 16, 2005
IR 435424; 0CW138 1" Valve Body Cracked Very Small CW Blowdown Leak; December 19, 2005
IR 435786; Inadequate Planning for No Release Policy; December 20, 2005
IR 437172; Elevated Tritium Concentrations for Near Vacuum Breaker 7; December 27, 2005
IR 440340; Elevated Tritium Found at Vacuum Breaker 4; January 7, 2006
Special Procedure SPP 05-012; CW BD Piping Leak Test to Verify no Leakage from CW BD Concrete Piping; December 15, 2005
PIF A1998-0432; CR for 1998 Leakage from Vacuum Breaker 3; December 4, 1998
PIF A2000-04281; PIF for 2000 Leak from Vacuum Breaker 2; November 6, 2000
AT 38237/CR A2000-04281; CW Blowdown Line Vacuum Breaker Failure due to Low Stress, High Cycle Fatigue, Resulting in Flooding of Owner Controlled Property and Discharge Outside of NPDES Approved Path; November 6, 2000

NRC Identified

IR 381897; Minor Discrepancy Identified in the Fire Protection Report; October 4, 2005 [Fire Protection]
IR 381916; Minor Discrepancy Identified in Fire Protection Report; October 4, 2005 [Fire Protection]

IR 381970; NRC Questions Brigade Access to OVC02FB Manual Deluge Valves; October 4, 2005 [Fire Protection]
IR 385824; 2A DG Common Mode Failure Review Documentation Concern; October 13, 2005 [Maintenance Risk Assessments and Emergent Work Control]
IR 388595; Implementation Activities Associated with TRM Change; October 21, 2005 [Surveillance Testing]
IR 390585; Potential Trend in NRC Identified IRS with Technical Rigor; October 26, 2005 [Identification and Resolution of Problems - Trend Review]
IR 390590; EOC Review Weak for Calcium Carbonate in FP System; October 26, 2005 [Operability Evaluation]
IR 390663; 2CS003B CS Pump Discharge Check Valve Failed AME Surveillance; October 26, 2005 [Post Maintenance Testing]
IR 391078; NRC Identified Cigarette Butts Accumulated at H2 Tank Farm; October 27, 2005 [Fire Protection]
IR 396929; LL Procedure changes to Caution Operators of SX Strainer DP; November 9, 2005 [Operability Evaluations]
IR 433923; 1MS019D Has Minor Packing Leak; December 14, 2005
IR 426859; Potential Trend - Many Station Heaters Needed Repair in 2005; November 22, 2005 [Adverse Weather
IR 426879; Broken Louvers, Further Action Required; November 22, 2005
IR 433918; Inconsistencies in Wording/Times in BwOP/BwVSR; December 12, 2005 [Surveillance Testing]
IR 433923; 1MS019D Has Minor Packing Leak; December 14, 2005 [Operability Evaluation]
IR 436433; NRC Question on Fire Extinguisher Inspection; December 22, 2005 [Fire Protection]
IR 436926; NRC Questions Status of Port. Dry Chemical Extinguisher, T-4-28

LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
BwAR	Braidwood Annunciator Response Procedure
BwMP	Braidwood Maintenance Procedure
BwOA	Braidwood Abnormal Operations Procedure
BwOP	Braidwood Operating Procedure
BwOS	Braidwood Operations Surveillance Procedure
BwOSR	Braidwood Operating Surveillance Requirement Procedure
BwVSR	Braidwood Engineering Surveillance Requirement Procedure
CFR	Code of Federal Regulations
CS	Containment Spray
CW	Circulating Water
EAL	Emergency Action Level
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
EP	Emergency Preparedness
IR	Issue Reports
LER	Licensee Event Report
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
OPEX	Operating Experience
PARS	Publicly Available Records
RWST	Refueling Water Storage Tank
SDP	Significance Determination Process
SHIP	System Health Indicator Program
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
WO	Work Order