January 28, 2002

NOED No. 01-6-005

Mr. Oliver D. Kingsley, President
Exelon Nuclear
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: BRAIDWOOD STATION, UNITS 1 AND 2
NRC INSPECTION REPORT 50-456/01-13(DRP); 50-457/01-13(DRP)

Dear Mr. Kingsley:

On December 29, 2001, the NRC completed an inspection at your Braidwood Station, Units 1 and 2. The enclosed report documents the inspection findings which were discussed on January 8, 2002, with Mr. J. von Suskil 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. Specifically, this inspection focused on resident and regional specialist inspection activities.

Based on the results of this inspection, one finding of very low safety significance (Green) was identified. This issue was determined to involve a violation of NRC requirements. However, because of its very low safety significance and because it was entered into your corrective action program, the NRC is treating this issue as a Non-Cited Violation, in accordance with Section V1.A.1 of the NRC's Enforcement Policy.

If you contest 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 Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, Region III, Resident Inspector and the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be 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/NRC/ADAMS/index.html (the Public Electronic Reading Room).

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 50-456/01-13(DRP);
50-457/01-13(DRP)

cc w/encl: J. Skolds, Chief Operating Officer
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REGION III

Docket Nos:	50-456; 50-457
License Nos:	NPF-72; NPF-77
Report Nos:	50-456/01-13(DRP); 50-457/01-13(DRP)
Licensee:	Exelon Generation Company, LLC
Facility:	Braidwood Station, Units 1 and 2
Location:	35100 S. Route 53 Suite 84 Braceville, IL 60407-9617
Dates:	November 20 through December 29, 2001
Inspectors:	C. Phillips, Senior Resident Inspector N. Shah, Resident Inspector R. Jickling, Plant Support Inspector J. Roman, Illinois Department of Nuclear Safety
Approved by:	Ann Marie Stone, Chief Branch 3 Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000456-01-13(DRP), 05000457-01-13(DRP); on 11/20-12/29/01, Exelon Generation Company, LLC; Braidwood Station; Units 1 & 2. Post Maintenance Testing.

This report covers a 6-week routine resident inspectors inspection and a baseline emergency preparedness inspection. The inspection was conducted by resident and specialist inspectors. One Green finding was identified. This finding involved a Non-Cited Violation. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609, "Significance Determination Process" (SDP). The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at http://www.nrc.gov/NRR/OVERSIGHT/index.html. Findings for which the SDP does not apply are indicated by "No Color" or by the severity level of the applicable violations.

A. Inspector Identified Findings

Cornerstone: Initiating Events and Mitigating Systems

- Green. When placing shutdown cooling in service at the start of a forced outage on November 7, 2001, the 2B residual heat removal pump seized and was inoperable. The licensee determined that the failure of the 2B residual heat removal pump was due to a combination of a maintenance error which left the clearance between the pump impeller and the stuffing box extension wear ring less than that required and temperature transients when placing the RH pump in the shutdown cooling mode at a high temperature.

  This finding was determined to be of very low safety significance because the B train of residual heat removal was inoperable for less than the Technical Specification allow outage time. A Non-Cited Violation of Technical Specification 5.4.1 was identified. (Section 1R19).

B. Licensee Identified Violations

Violations of very low significance which were identified by the licensee have been reviewed by the inspectors. Corrective actions taken or planned by the licensee appear reasonable. These violations are listed in Section 40A7 of this report.

Report Details

Summary of Plant Status

Both units operated at full power throughout the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems and **Emergency Preparedness**

1R04 Equipment Alignment (71111-04)

a. Inspection Scope

The inspectors verified the alignment of the following systems while the alternate trains were out-of-service for planned maintenance:

- Unit 1B emergency diesel generator.

The inspectors also verified the alignment of the Units 1 and 2 outside and auxiliary building fire protection ring headers, during scheduled maintenance on the fire protection pumps.

The inspectors performed a partial walkdown of the accessible portions of these systems and observed the system (electrical and mechanical) lineup and selected, system operating parameters (i.e., pump and bearing lube oil levels, room temperature, electrical breaker position, etc). The inspectors reviewed the Updated Final Safety Analysis Report (UFSAR), Technical Specifications, system drawings, condition reports and station procedures, as applicable. As necessary, the inspectors also interviewed licensee engineering, maintenance and operations staff.

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.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111-05)

a. Inspection Scope

The inspectors observed a fire drill on November 26, 2001. The inspectors evaluated the performance of the fire brigade in accordance with the inspection module against the criteria established in Fire Drill Scenario No. 20.11.12.01, “Electrical Fire 0wx04J,”

OP-AA-201-003, “Fire Drill Performance,” Revision 3; and “Braidwood Fire Protection Report,” Section 3.2, Amendment 13.

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 assessment and management of plant risk for planned maintenance and/or surveillance activities:

- Reseating of the 2D safety injection accumulator check valve;
- Scheduled maintenance on the 1A emergency diesel generator; and
- Train B of the control room emergency ventilation system

The licensee’s attempt to reseat the 2D safety injection accumulator check valve was considered risk significant, as it could have isolated the accumulator. If this had occurred, the licensee would have entered a one-hour Limiting Condition for Operation, as required by Technical Specification 3.5.1.

The inspectors attended shift briefings and daily status meetings to verify that the licensee took actions to maintain a heightened level of awareness of the plant risk status among plant personnel. The inspectors also evaluated the availability of redundant train equipment. In particular, the inspectors observed whether licensee operating and engineering staff were aware of the licensee’s revised probabilistic risk assessment model which was issued on June 28, 2000. The inspectors also reviewed Nuclear Station Procedure WC-AA-103, “On-Line Maintenance,” Revision 3, and evaluated licensee compliance with that procedure.

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.

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-Routine Plant Evolutions and Events (71111-14)

a. Inspection Scope

The inspectors evaluated personnel performance in response to non-routine plant evolutions and events. Specifically, the inspectors verified that licensee personnel responded in accordance with station procedures and training, that problems with the licensee’s response were entered into the corrective actions program, that the corrective actions were appropriate, and as applicable, that the licensee notified offsite agencies

and documented the events in Licensee Event Reports (LERs) as discussed in Section 4OA3.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111-15)

a. Inspection Scope

The inspectors reviewed and evaluated the following operability evaluations:

- 1B residual heat removal (RH) pump (CR 82711)

The inspectors also reviewed the technical adequacy of the evaluations against the Technical Specification, UFSAR, and other design information; determined whether compensatory measures, if needed, were taken; and determined whether the evaluations were consistent with the requirements of LS-AA-105, "Operability Determination Process," Revision 0.

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.

b. Findings

The licensee identified that the 10 CR 50.59 screening performed for a change to a procedure described in the UFSAR was inadequate, in that, a full evaluation was required.

As discussed in Section 1R19, on November 7, 2001, the 2B RH pump seized and became inoperable. The licensee determined that the failure resulted from (1) a maintenance error which caused the as-left clearance between the pump impeller and stuffing box extension wear ring to be less than required and (2) temperature transients when placing the RH pump in the shutdown cooling mode at a high temperature. The licensee performed an extent of condition and determined that the 1B RH pump would be susceptible to the same failure because the as-left clearance between the impeller and wear ring was also less than required.

The licensee performed an operability evaluation and determined that change to Braidwood Operating Procedure BWOP RH-6, "Placing The RH System In Shutdown Cooling," was necessary to ensure operability. On November 15, 2001, the licensee revised the procedure to delay placing RH in shutdown cooling until the reactor coolant system was below 260 degrees Fahrenheit. This would minimize the temperature transient and prevent the failure. On November 26, 2001, the licensee documented in CR 00083865 that the 10 CFR 50.59 screening performed for the procedure change was inadequate. Specifically, the original screening assumed that there was no impact on the UFSAR and did not identify that UFSAR Section 5.4.7.2.7 assumed that RH was

placed into service for shutdown cooling at 350 degrees Fahrenheit for the natural circulation without letdown analysis.

The operability evaluation stated that reducing the temperature at which RH was placed on shutdown cooling would increase steaming to the atmosphere during some accident scenarios. This would result in the release of greater amounts of activity which could impact calculated offsite dose rates. The operability evaluation stated that a 50 to 80 percent margin between the calculated offsite dose rates for the impacted accident scenarios and the legal limit existed; therefore, the additional steaming caused by placing shutdown cooling on at a lower temperature was not a problem. However, 10 CFR 50.59 requires that the licensee evaluate whether or not a change to a procedure described in the UFSAR will have more than a minimal amount of impact on the consequences of an accident before the procedure change is implemented. This issue is an unresolved item (URI 50-456/457/01-13-01(DRP)) pending determination on whether the changes to BwOPRH-6 resulted in more than a minimal amount of impact on the consequences of any accident scenarios described in Chapter 15 of the UFSAR.

1R16 Operator Workarounds (71111-16)

a. Inspection Scope

The inspectors accompanied a station auxiliary operator during routine rounds of the Unit 1 auxiliary building to observe whether there were any challenges or workarounds that may affect the operator's ability to control the plant and respond to transients.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing (71111-19)

a. Inspection Scope

The inspectors reviewed the post-maintenance testing associated with the following components:

- Unit 1B RH pump

For each activity, the inspectors reviewed the applicable sections of the Technical Specification and UFSAR, and observed portions of the maintenance work. The inspectors also evaluated the adequacy of work controls (including Foreign Material Exclusion controls), reviewed post-maintenance test data, and conducted walkdowns to verify system restoration after the testing was completed.

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.

b. Findings

A finding of very low safety significance (Green) was self revealed when the 2B RH pump seized and became inoperable on November 7, 2001. The licensee was in the process of placing shutdown cooling in service at the start of a forced outage when the pump failed. The licensee determined that the failure of the 2B RH pump was due to (1) a failure to follow maintenance procedures for the as-left clearance between the 2B RH pump impeller and the stuffing box extension wear ring and (2) placing the RH pump in service for shutdown cooling at a high temperature. The inspectors determined that this failure to follow procedures was a Non-Cite Violation of Technical Specification 5.4.1.

As documented in Condition Report 00082906, the licensee identified that in 1996 the as-left clearance between the pump impeller and the stuffing box extension wear ring was less than required by the work package reassembly instructions due to a math error. In addition, the licensee's procedure allowed operators to place RH in shutdown cooling at 360 degrees Fahrenheit which caused thermal heat up transients resulting in permanent deformation of the stuffing box extension. The reduced as-left clearance and placing the RH pump in service for shutdown cooling at a high temperature caused the seizure. The licensee also identified that Westinghouse Technical Bulletin ESBU-TB-9603-R0, "RH Pump Operating Recommendations," stated that a rapid temperature increase from normal system temperature to 350 degrees Fahrenheit will cause a temporary reduction in the impeller to wear ring clearance. The bulletin also stated that this condition makes the pump vulnerable to seizure if other adversities existed. The licensee took no action after the receipt of this bulletin to address the rapid heat-up of the impeller and the stuffing box extension when initiating shutdown cooling.

The licensee's corrective actions included changing the Braidwood maintenance procedure for the reassembly of the RH pump to require documentation of the math performed to calculate the clearance and to change the shutdown cooling procedure to include a pump warm up when placing shutdown cooling in service.

This finding was considered more than minor, as the failure to follow a procedure resulted in the failure of the 2B RH pump which had an actual impact on safety. The inspectors entered the significance determination process using Manual Chapter 0609, Appendix A, "Significance Determination For Reactor Inspection Findings For At-Power Situations." The inspectors determined that the failure of the 2B RH pump impacted the mitigation system cornerstone only. The inspectors answered no to all five questions in the Phase I analysis under the mitigating systems cornerstone which resulted in the finding screening out as very low safety significance (Green). The inspectors also entered the significance determination process using Manual Chapter 0609, Appendix G, "Shutdown Operations - Pressurized Water Reactor Hot Shutdown Operation." Since more than two heat removal paths consisting of any combination of reactor coolant system loops and RH systems existed at all times, the issued screened out as very low safety significance (Green).

Technical Specification 5.4.1, states, in part, that applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978 shall be establihsed and maintained. Paragraph 9.a. of this Regulatory Guide, states, in part, that

maintenance that can affect the performance of safety-related equipment should be performed in accordance with written procedures. Work package 950017181-01 included BwMP 3100-046, "Residual Heat Removal Pump Disassembly, Inspection, and Reassembly," Revision 7. Procedure BwMP 3100-046, Step F.4.d.1. required the clearance between the stuffing box extension and the impeller to be greater than .025 inches. Contrary to this, on February 1, 1996, licensee personnel failed to perform maintenance on the safety-related 2B RH pump in accordance with written procedures described in maintenance work package 950017181-01. Specifically, the clearance between the stuffing box extension and the pump impeller was left at 0.19 inches when the minimum procedurally required clearance was 0.25 inches. However, because this violation was of very low risk significance, was non-repetitive, and was captured in the licensee's corrective action program (CR 82906), it is considered a Non-Cited Violation consistent with Section VI.A of the NRC enforcement policy (NCV 50-456/457-01-13-02(DRP)).

1R23 Temporary Plant Modifications (71111-23)

a. Inspection Scope

The inspectors evaluated the licensee's installation of the following temporary modifications:

- Increase the setpoint of the Unit 2 reactor head vent high temperature switches;
- Lift the leads of Units 1 and 2 core exit thermocouples in panels 1PA51J, 1PA52J, 2PA51J and 2PA51J; and
- Temporary leak sealant repair of Unit 1 pressurizer steam space sample line.

Specifically, the inspectors reviewed the UFSAR to determine whether the licensee adequately addressed system operability, design requirements, configuration control, risk significance, and post-installation testing.

The inspectors also 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.

b. Findings

No findings of significance were identified.

1EP2 Alert and Notification System (ANS) Testing (71114-02)

a. Inspection Scope

The Regional Plant Support inspector discussed with Emergency Preparedness (EP) staff the design, equipment, and periodic testing of the public ANS for the Braidwood reactor facility emergency planning zone to verify that the system was properly tested and maintained. The inspector also reviewed procedures and records for a 9 month period ending September 2001 related to ANS testing, annual preventive maintenance, and non-scheduled maintenance. The inspector reviewed the licensee's criteria for

determining whether each model of siren installed in the emergency planning zone would perform as expected if fully activated. Records used to document and trend component failures for each model of installed siren were also reviewed to ensure that corrective actions were taken for test failures or system anomalies.

b. Findings

No findings of significance were identified.

1EP3 Emergency Response Organization (ERO) Augmentation Testing (71114-03)

a. Inspection Scope

The Regional Plant Support inspector reviewed the licensee's ERO augmentation testing to verify that the licensee maintained and tested its ability to staff the ERO during an emergency in a timely manner. Specifically, the inspector reviewed semi-annual, off-hours staff augmentation drill procedures, related January 11, December 9 and December 18, 2001, drill records, primary and backup provisions for off-hours notification of the Braidwood reactor facility emergency responders, and the current ERO rosters for Braidwood. The inspector reviewed and discussed the facility EP staff's provisions for maintaining ERO call out lists.

b. Findings

No findings of significance were identified.

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies (71114-05)

a. Inspection Scope

The Regional Plant Support inspector reviewed the Nuclear Oversight staff's 2001 audits and field observations to ensure that these audits complied with the requirements of 10 CFR 50.54(t) and that the licensee adequately identified and corrected deficiencies. The inspector also reviewed the EP staff's self-assessments and critiques to evaluate the EP staff's efforts to identify and correct weaknesses and deficiencies. Additionally, the inspector reviewed a sample of EP items, CRs, and ARs related to the facility's EP program to determine whether corrective actions were acceptably completed.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

40A1 Performance Indicator Verification (71151)

a. Inspection Scope

The inspectors reviewed whether the licensee was accurately reporting data for the following performance indicators:

- High pressure safety injection system unavailability;
- Safety system functional failures; and
- Unplanned power changes.

The inspectors reviewed system operating logs and licensee monthly operating reports submitted to the NRC, and interviewed licensee engineering and operations staff to determine whether the performance indicator data was being collected and reported consistent with the guidance contained in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 1.

The Regional Plant Support inspector verified that the licensee had accurately reported these indicators: ANS, ERO Drill Participation, and Drill and Exercise Performance, for the EP cornerstone. Specifically, the inspector reviewed the licensee's PI records, data reported to the NRC, and condition reports for the period January 2001 through September 2001 to identify any occurrences that were not identified by the licensee. Records of relevant control room simulator training sessions, periodic ANS tests, and excerpts of drill and exercise scenario and evaluations were also reviewed.

b. Findings

No findings of significance were identified.

4OA3 Event Follow-up (71153)

The inspectors reviewed licensee event reports and other items using Inspection Procedure 71153.

(Closed) LER 50-456/2001-001-00: Three main steam safety valves exceeded the Technical Specification limit by greater than 3%. During testing from September 19-20, 2001, the licensee identified that 3 of the 20 steam generator safety relief valves had lifted 3-4% above their required setpoint. Two of the valves had apparently failed due to oxide bonding between the nozzle and disk seating surfaces, while the third apparently failed due to setpoint drift. Additionally, the licensee determined that the test data was within the acceptance criteria for the applicable accident scenarios discussed in the UFSAR. Subsequently, the licensee adjusted and successfully retested the affected relief valves. The inspectors determined that the licensee's evaluation and testing were acceptable and that the remaining safety relief valves were capable of performing their required safety function. Consequently, this item was considered of very low safety significance and no findings were identified.

(Closed) LER 50-457/2001-002-00: Main steam isolation valves (MSIVs) not stroke tested as required. This issue is discussed in Section 4OA5 of this report, under URI 50-456/457/01-10-03.

4OA5 Other

(Closed) URI 50-456/457/01-10-03(DRP): Failure to perform required testing of the Units 1 and 2 MSIVs. On September 26, 2001, the licensee identified that both units' MSIVs were not tested in Mode 3 as required by Technical Specifications. Because Unit 1 was already shutdown for a planned refueling outage, the licensee requested a Notice of Enforcement Discretion (NOED No. 01-6-005) for Unit 2. The NRC approved this NOED on September 27, 2001. The licensee determined the Mode 3 testing requirement was specifically stated in the Improved Technical Specifications, which was implemented in February 19, 1999. Prior to this date, the licensee's Technical Specification did not explicitly require that the testing be performed in Mode 3; with testing typically occurring in Modes 4 or 5. The inspectors determined that the root cause was an administrative oversight during the change process to the Improved Technical Specifications. Subsequently the inspectors observed that the Units 1 and 2 MSIVs were successfully tested in Mode 3 on October 6 and November 16, 2001, respectively. The failure to perform the testing in Mode 3 as required in TS 3.7.2.1 constituted a violation of minor significance that is not subject to enforcement actions in accordance with Section IV of the NRC's Enforcement Policy. This violation was captured in the licensee's corrective action program (CR 76608).

4OA6 Meetings

.1 Exit Meeting

The inspectors presented the inspection results to Mr. J. von Suskil and other members of licensee management at the conclusion of the inspection on January 8, 2002. The licensee acknowledged the findings presented. No proprietary information was identified.

.2 Interim Exit Meeting

The inspectors presented the results of the Emergency Preparedness program and performance indicators inspection, to Mr. K. Schwartz and other members of licensee management at the conclusion of the inspection on December 21, 2001. The licensee acknowledged the findings presented. No proprietary information was identified.

4OA7 Licensee Identified Violations

The following finding of very low significance was identified by the licensee and is a violation of NRC requirements. This violation met the criteria of Section VI of the NRC Enforcement Manual, NUREG-1600 for being dispositioned as a Non-Cited Violation (NCV).

NCV Tracking Number	Requirement Licensee Failed to Meet
NCV 50-456/457-01-13-03	Technical Specification 5.4.1 requires, in part, that written procedures be established, implemented, and maintained covering those activities listed in Regulatory Guide 1.33, Appendix A, Revision 2, February 1978. Section 8 of Appendix A to this Regulatory Guide requires, in part, that procedures of a type appropriate to the circumstances be provided to ensure that measuring and testing devices are properly controlled, calibrated and adjusted. On November 28, 2001, the licensee identified that measurement and test equipment were not being properly recorded as required by Step 4.7.3 of station procedure MA-AA-716, "Control of Portable Measurement and Test Equipment Program," Revision 1. Reference condition report No. 84419. This is being treated as a Non-Cited Violation.

KEY POINTS OF CONTACT

Licensee

K. Aleshire, Emergency Preparedness Coordinator
J. Bailey, Regulatory Assurance - NRC Coordinator
G. Baker, Security Manager
S. Butler, Corrective Action Program Coordinator
G. Dudek, Operations Manager
C. Dunn, Engineering Director
A. Ferko, Regulatory Assurance Manager
M. Finney, Radiation Protection Engineering Supervisor
R. Graham, Work Management Director
L. Guthrie, Maintenance Director
F. Lentine, Design Engineering Manager
K. Schwartz, Plant Manager
J. von Suskil, Site Vice President

Nuclear Regulatory Commission

M. Chawla, Project Manager, NRR
A. Stone, Chief, Reactor Projects Branch 3

LIST OF ITEMS OPENED AND CLOSED

Opened

50-456/457/01-13-01	URI	Potential inadequate 10 CFR 50.59 evaluation for 1B RH pump
50-456/457/01-13-02	NCV	Failure to perform RH pump maintenance in accordance with procedure
50-456/457/01-13-03	NCV	Failure to properly record M&TE

Closed

50-456/457/01-13-02	NCV	failure to perform RH pump maintenance
50-456/457/01-13-03	NCV	failure to properly record M&TE
50-456/2001-001-00	LER	MSSVs exceeded the Technical Specification limit
50-457/2001-002-00	LER	MSIVs not stroke tested in Mode 3 as required
50-456/457/01-10-03	URI	Failure to perform required testing of the MSIVs

LIST OF ACRONYMS AND INITIALISMS USED

ADAMS	Agencywide Documents Access and Management System
ANS	Alert and Notification System
AR	Action Request
BwAR	Braidwood Annunciator Response Procedure
BwMP	Braidwood Maintenance Procedure
BwOP	Braidwood Operating Procedure
BwOSR	Braidwood Operability Surveillance Requirement
BwVS	Braidwood Engineering Surveillance
CC	Component Cooling Water
CFR	Code of Federal Regulations
CR	Condition Report
DG	Diesel Generator
EP	Emergency Preparedness
ERO	Emergency Response Organization
LER	Licensee Event Report
M&TE	Measurement and Test Equipment
MSIV	Main Steam Isolation Valve
NOED	Notice of Enforcement Discretion
NRC	Nuclear Regulatory Commission
NRR	Nuclear Reactor Regulations
OOS	Out-of-Service
PARS	Publicly Available Records
PI	Performance Indicator
RH	Residual Heat Removal
ROP	Reactor Oversight Process
SDP	Significant Determination Process
SI	Safety Injection
UFSAR	Updated Final Safety Analysis Report
VIO	Violation

LIST OF DOCUMENTS REVIEWED

1R04 Equipment Alignment

BwOP DG-1	Diesel Generator Alignment to Standby Condition	Revision 13 Reference Use
BwOP DG-E2	Electrical Lineup -1B Diesel Generator	Revision 2E4 Reference Use
BwOP DG-M2	Operating Mechanical Lineup 1B D/G	Revision 9 Reference Use
BwOP FP-M6	Operating Mechanical Lineup Unit 0 Aux Bldg Ring Hdr Operating	Revision 2
BwOP FP-M1	Operating Mechanical Lineup Unit 0 Lsh and Outside Ring Hdr Operating	Revision 6
M-97	Diagram of Diesel Generator Room 1A & 1B Ventilation System Unit 1	April 12, 1996
AR 00083325	Maintenance Configuration Control During FP Work (PI&R)	November 18, 2001
CR A2001-00815	Unintentional Rotation of U1 C/D Traveling Screens During Maintenance (PI&R)	March 19, 2001
CR 00075347	2CV8519 Found Open (PI&R)	October 19, 2001
CR 00075650	Lowering Level Trend in Unit 1 RWST (PI&R)	September 17, 2001
CR 00077043	OOS Air Isolation Valve Found Open on RTS (PI&R)	October 12, 2001
CR 00077672	Paperwork for TMOD EC 332832 Was Not Completed Properly (PI&R)	December 5, 2001

1R13 Maintenance Risk Assessments And Emergency Work Control

BwVSR SI-1	ECCS Injection Line Depressurization with Optional Leakage Test of SI9849A/B/C/D and SI8956A/B/C/D	Revision 0
WO 00384177	ECCS Inj Line Depress w/Optional Lk	November 28, 2001

1R14 Personnel Performance During Nonroutine Plant Evolutions And Events

LER 457/01-002-00	MSIVs Not Stroke Timed in Mode 3 as Required	November 26, 2001

CR 00076608	MSIV's Not Stroke Timed in Mode 3 as Required	September 26, 2001
WO 00366963	MSIV Full Stroke Test 1BwOSR 3.7.2.1	October 6, 2001
WO 99162844 01	MSIV Full Stroke Test 1BwOSR 3.7.2.1	September 22, 2001
WO 99228191 01	MSIV Full Stroke Test Unit 2	November 16, 2001

1R15 Operability Evaluations

AR 00083865	Inadequate 50.59 Screening for Placing RH In Service	November 13, 2001
BRW-S-2001-614	50.59 Screening Form BwOP RH-6	Revision 0
ATI 00081944	2B Residual Heat Removal Pump Failure Due to Contact Between Pump Impeller and Stuffing Box Extension Upper Wear Ring	November 15, 2001
ESBU-TB-96-3-RO	Westinghouse Technical Bulletin, "RH Pump Operating Recommendations"	June 20, 1996
BwOP RH-6	Placing the RH System in Shutdown Cooling	Revision 24

1R19 Post Maintenance Testing

SPP-01-016	Residual Heat Removal Pump 2RH01PB Post Maintenance Testing	Revision 0
WO 00373399	ASME Srv Rqmts for Residual Heat Removal Pump	November 15, 2001
4561018800400	IEB 88-04: Potential Safety-Related Pump Loss	May 5, 1988
ITR 01-081	Revise Technical Requirements Manual (TRM) Miscellaneous Test Requirement TSR 2.5.c.4 to Provide Additional Flexibility in Satisfying the Surveillance Requirement While Meeting the Original Intent	November 13, 2001
CR 00081944	2B RH Pump Tripped on Phase C Overcurrent	November 7, 2001
CR 00082906	Math Error in Work Package Resulting in Below Spec Clearance	November 10, 2001
CF A2001-00037	M&TE Not Properly Logged in EWCS (PI&R)	January 5, 2001

AR 00084419	M&TE Used in WOs not Properly Documented in Passport (PI&R)	November 28, 2001
MA-AA-716-040	Control of Portable Measurement and Test Equipment Program	Revision 1

1R23 Temporary Plant Modifications

CC-AA-404	Maintenance Specification: Application Selection, Evaluation and Control of Leak Sealant Injection and Temporary Leak Repair	Revision 2
NES-MS-03.3	Injected Leak Sealant Application	Revision 0
Part 9900 Technical Guidance	On-Line Leak Sealing Guidelines for ASME Code Class 1 and 2 Components	No Date
WO 00369393-01	Install Furmanite Clamp on 1PS01BA - 3/8	October 26, 2001
WO 00369393-03	Fittings Leaking on 1PS01BA - 3/8, Install TMod (ECC333613)	October 26, 2001
WO 00382512-01	Incorporate Setpoint Scaling Temporary Modification No. 333958 Revision 1	November 21, 2001
WO 00382513	Incorporate Setpoint Scaling Temporary Modification No. 333958 Revision 1	November 21, 2001
TMod DCP 9900659	Lift Leads of Core Exit Thermocouples in Panels 2PA51J, 2PA52J	Revision 0
TMod DCP EC42446	Lift Leads of Core Exit Thermocouples in Panels 2PA51J, 2PA52J	Revision 1
TMod DCP EC333958	Revise Setpoints for Reactor Head Vent Temperature Switches TSH-RC017 and 2TSH-RC018	Revision 0
CC-AA-112	Temporary Configuration Changes	Revision 4
LS-AA-106	Plant Operations Review Committee	Revision 0
AR 00083400	Reactor Head Vent High Temperature Alarm	November 19, 2001
EC 0000333958-001	Revise Setpoint of Reactor Head Vent Temp Switches 2TSH-RC017 and 2TSH-RC018	November 20, 2001
BwAR 2-14-E4	RX Head Vent Temp High	Revision 7

71151 Performance Indicator Verification

RS-AA-122-14	Performance Indicator - Unplanned Power Changes per 7000 Critical Hours	Revision 2
RS-AA-122-103	Performance Indicator - Safety System Functional Failures	Revision 2
RS-AA-122-104	Performance Indicator - Safety system Unavailability (HPSI/HPCI, RHR, AFW/RCIC, EDG)	Revision 3
CS-AA-2080	Monthly Performance Indicator Data Elements for Safety System Functional Failures	June 25, 2001
LS-AA-2030	Monthly Performance Indicator Data Elements for Unplanned Power Changes per 7000 Critical Hours	June 25, 2001
LS-AA-2050	Monthly Performance Indicator Data Elements for Safety System Unavailability-High Pressure Injection (BWR) or High Pressure Safety Injection (PWR)	June 25, 2001
	Exelon Nuclear Performance Summary: Braidwood P.2: Power History Curves	Revision 1
AR 00088344	Unresolved Issues Resulted After NRC Resident Rev. of HPSI Sys	December 28, 2001
RS-AA-122-109	Performance Indicator - ERO Drill Participation	January-July 2001
RS-AA-122-110	Performance Indicator -ANS Reliability Monthly	January-July 2001
LS-AA-2110	Monthly Performance Indicator Data Elements for ERO Drill Participation	June 2001
LS-AA-2130	Monthly Performance Indicator Data Elements for ANS Reliability	August - September, 2001
EP-AA-120-1001	NRC DEP PI Data Summary	January - September 2001
	Drill/ Exercise Nuclear Accident Reporting System Forms	January - September, 2001
	Braidwood 2001 EP Drill/Exercise Schedule	
AR 74592	Improper Implementation of EP Drill/Exercise PI	July 1, 2001

1EP2 Alert and Notification System (ANS) Testing

	Braidwood Off-Site Siren Test Plan	Revision 2
	Siren Daily Operability Data Sheets	
	Siren Monthly Operability Reports	2001
	Exelon Semi-Annual Siren Report	January 1 - June 30, 2001
CR 00084351	Siren Monthly Reporting Data	November 29, 2001

1EP3 Emergency Response Organization (ERO) Augmentation Testing

Section B	Exelon Nuc. Standardized Rad. Emergency Plan	Revision 11
Section E	Exelon Nuc. Standardized Rad. Emergency Plan	Revision 11
	Dialogic Comm. Corp. Hot Site Agreement	January 19, 2001
EP-AA-112-100	Att. 2 - ERO Augmentation	Revision 2
EP-AA-112-1001	Att. 2 - Conduct Of Augmentation Drills	Revision 0
	Braidwood ERO Quarterly Roster	December 13, 2001
	Questions and Answers Regarding ERO Call-Outs and the Computerized DCC Communicator Sys.	May 10, 2001
	Report On ERO Off-Hours Augmentation Drill -	January 10, 2001
	Report On ERO Off-Hours Augmentation Drill -	January 11, 2001
	Report On ERO Off-Hours Augmentation Drill -	December 9, 2001
	Report On ERO Off-Hours Augmentation Drill -	December 18, 2001

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies

	Public Notice of October 23, 2001, Off Site Agency Meeting	

	Generic Corporate Performance Areas - Emergency Preparedness	January - June, 2001
NOA-BW-01-1Q	Nuc. Oversight Continuous Assessment Report Braidwood Gen. Station	January - March, 2001
	Braidwood Overall Program Self Evaluation EP.1 and EP.2	January - June, 2001
CR A2000-01013	Insufficient Oversite of Respiratory Prog. in IMD	March 8, 2000
CR A2000-01257	Critical Path Workers Denied Respirators Due to Process Failure	March 19, 2000
CR A2001-00094	Common Cause Identified For Off Hours Call Out Failures	January 11, 2001
CR A2001-00445	ARs/HSKeeping Requests Not Completed For Greater Than Six Months	February 8, 2001
CR A2001-00478	N. O. Identified EP Is Not Initiating ARs For GSEP Revisions	December 17, 2000
CR A2001-00491	ERDS System Problems During Quarterly Test	February 15, 2001
CR A2001-00870	Loss of ENS Phone Line in the Control Room	March 23, 2001
CR A2001-00479	NOS Continuous Assessment Program Does Not Meet the Requirements of 10 CFR 50.54(t)	March 23, 2001
CR A2001-01201	Injury While Working In Crosstown Area	April 24, 2001
CR A2001-01479	ERDS Quarterly Test Unable to Transmit Data to NRC Via the U2 Modem	May 17, 2001
CR A2001-01662	Lack of Comms. Ability In GSEP Assembly Area	June 6, 2001
CR A2001-01926	GSEP Van Failed During Integrated Drill	June 27, 2001
CR A2001-02080	Shutdown of Multiple TSC Computer Room Servers	July 16, 2001
CR A2001-02185	NRC Question of Dedicated Phone Line in Control Room	July 26, 2001
CR A2001-02289	Monthly Comm. Drill EOF GSEP Radio Not Able to Communicate	August 6, 2001

CR A2001-02300	EP Equipment Problems Observed During Annual Exercise	August 8, 2001
CR A2001-02306	Demo. Criteria Evaluated As Unsatisfactory During Annual EP Drill	August 8, 2001
CR 00076166	Safety Issue: P.A. System Cannot Be Heard In The CSRs	September 4, 2001
CR 00028481	MMD Personnel Not Mask Fit Qualified	November 10, 2001
AR 00035774	Braidwood Plant Support 4Q 2000 Observations	
AR 00036196	Plant Support FOs For NOA BW-00-4Q Assessment AR 36187	
AR 00041561	Braidwood Plant Support 1Q 2001 Observations	
AR 00076875	Plant Support FOs For NOA-BW-01-4Q Assessment Ar 76870	
AR 00082115	EP Improvement Items Ident. From October EP Activities	