

April 27, 2001

Mr. Oliver D. Kingsley, President
Exelon Nuclear
Exelon Generation Company, LLC
1400 Opus Place, Suite 500
Downers Grove, IL 60515

SUBJECT: BRAIDWOOD NUCLEAR POWER STATION
NRC INSPECTION REPORT 50-456/01-05(DRP); 50-457/01-05(DRP)

Dear Mr. Kingsley:

On March 31, 2001, the NRC completed an inspection at your Braidwood Units 1 and 2. The enclosed report documents the inspection findings which were discussed 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 compliance with the Commission's rules and regulations, and with the conditions of your license. Within these areas the inspection consisted of a selective examination of procedures and representative records, observations of activities, and interviews with personnel. Specifically, this inspection focused on resident inspection activities.

On March 31, 2001, the local International Brotherhood of Electrical Workers (IBEW) union contract with ComEd expired. Because negotiations between the union and Exelon (ComEd) management indicated that an agreement was not likely prior to expiration of the contract, the NRC conducted an inspection to evaluate the licensee's strike contingency plans. This inspection, conducted prior to the expiration of the contract at Braidwood, verified that the licensee's plans met all of the requirements of the Technical Specifications and Federal Regulations in the event that a strike were to occur.

Based on the results of this inspection, the inspectors identified one issue of very low safety significance with no actual degradation cornerstone (No Color). This issue was determined to involve a violation of NRC requirements. However, because of the 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 VI.A.1 of the NRC's Enforcement Policy. If you deny this Non-cited violation, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region III; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Braidwood facility.

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).

We will gladly discuss any questions you have concerning this inspection.

Sincerely,

/RA/

Michael J. Jordan, Chief
Projects Branch 3
Division of Reactor Projects

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

Enclosure: Inspection Report 50-456/01-05(DRP);
50-457/01-05(DRP)

cc w/encl: J. Skolds, Chief Operating Officer
W. Bohlke, Senior Vice President, Nuclear Services
C. Crane, Senior Vice President - Mid-West Regional
Operating Group
J. Cotton, Senior Vice President - Operations Support
J. Benjamin, Vice President - Licensing and Regulatory Affairs
H. Stanley, Operations Vice President
R. Krich, Director - Licensing
R. Helfrich, Senior Counsel, Nuclear
DCD - Licensing
J. von Suskil, Site Vice President
K. Schwartz, Plant Manager
A. Ferko, Regulatory Assurance Manager
M. Aguilar, Assistant Attorney General
Illinois Department of Nuclear Safety
State Liaison Officer
Chairman, Illinois Commerce Commission

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).

We will gladly discuss any questions you have concerning this inspection.

Sincerely,

/RA/

Michael J. Jordan, Chief
Projects Branch 3
Division of Reactor Projects

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

Enclosure: Inspection Report 50-456/01-05(DRP);
50-457/01-05(DRP)

cc w/encl: J. Skolds, Chief Operating Officer
W. Bohlke, Senior Vice President, Nuclear Services
C. Crane, Senior Vice President - Mid-West Regional
Operating Group
J. Cotton, Senior Vice President - Operations Support
J. Benjamin, Vice President - Licensing and Regulatory Affairs
H. Stanley, Operations Vice President
R. Krich, Director - Licensing
R. Helfrich, Senior Counsel, Nuclear
DCD - Licensing
J. von Suskil, Site Vice President
K. Schwartz, Plant Manager
A. Ferko, Regulatory Assurance Manager
M. Aguilar, Assistant Attorney General
Illinois Department of Nuclear Safety
State Liaison Officer
Chairman, Illinois Commerce Commission

DOCUMENT NAME: G:\brai\bra 2001-05 drp.wpd

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

OFFICE	RIII	RIII				
NAME	TTongue:dtp	MJordan				
DATE	04/26/01	04/27/01				

OFFICIAL RECORD COPY

ADAMS Distribution:

AJM

DFT

MLC

GEG

HBC

CJP3

C. Ariano (hard copy)

DRPIII

DRSIII

PLB1

JRK1

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 50-456/01-05(DRP); 50-457/01-05(DRP)

Licensee: Exelon Generation Company

Facility: Braidwood Nuclear Power Station, Units 1 and 2

Location: 35100 S. Route 53
Suite 84
Braceville, IL 60407-9617

Dates: February 18 through March 31, 2001

Inspectors: C. Phillips, Senior Resident Inspector
N. Shah, Resident Inspector
R. Jickling, Emergency Preparedness Analyst
J. Belanger, Senior Physical Security Inspector
J. Roman, Illinois Department of Nuclear Safety

Approved by: Michael J. Jordan, Chief
Projects Branch 3
Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000456-01-05, 05000457-01-05; on 02/18-03/31/01; Exelon Nuclear, Braidwood Nuclear Power Station; Units 1 & 2; Post Maintenance Testing; Resident Operations Report.

The inspection was conducted by resident, regional emergency preparedness and physical security inspectors. The inspection identified one No Color issue which was a Non-Cited Violation. The significance of issues is indicated by their color (Green, White, Yellow, Red) using IMC 0609, "Significance Determination Process. Findings for which the Significance Determination Process does not apply are indicated by "No Color" or by the severity level of the applicable violation. 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>.

A. Inspector Identified Findings

Cornerstone: Barrier Integrity

- No Color. The inspectors identified a Non-Cited Violation of Technical Specification 5.4.1.a for failure to have work instructions appropriate for the circumstances. Post maintenance testing for leakage associated with replaced seals on the 0A hydrogen recombiner was not planned. Because the inspectors identified the inadequate post maintenance testing before the completion of the scheduled maintenance there was no degraded cornerstone.

The violation was considered significant because had the seals failed, the containment barrier would have failed, and during a design basis accident, excessive leakage of containment post accident atmosphere would have bypassed the designed filtered ventilation system. However, the subsequent testing of the seals determined them operable and the reactor containment was not degraded (Section 1R19).

B. Licensee Identified Violations

No findings of significance were identified.

Report Details

Plant Status

Unit 1 operated at full power throughout the inspection period. On February 17, 2001, the licensee reduced Unit 2 power to 35 percent to support the repair of the Unit 2A steam generator feedwater drain valve. This valve was experiencing severe leakage requiring that sealant be injected into the valve body. Because the valve was located inside the Unit 2 containment, the power reduction was necessary to alleviate work area radiation levels. On February 19, 2001, Unit 2 was restored to 100 percent power following completion of the work. On February 27, 2001, at 11:52 a.m. the licensee reduced Unit 2 power to 90 percent due to a feedwater transient when the normal level control valve for the 22C flash tank stuck 20 percent open. The cascading heater drain flow resulted in a high level and an isolation of the 23C and 24C feedwater heaters. The 22C flash tank emergency drain valve was placed in service, the feedwater heaters were returned to service and Unit 2 was returned to 100 percent power at 5:10 p.m. on February 27, 2001.

1. REACTOR SAFETY

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

1R06 Flood Protection Measures

a. Inspection Scope

The inspectors reviewed applicable portions of the following documents to identify the Braidwood station design basis for flood protection and to identify those areas susceptible to either internal or external flooding:

- Byron/Braidwood Stations Updated Final Safety Analysis Report (UFSAR), Sections 2.4, 3.4, 9.2, and 9.3;
- NUREG-0876, "Safety Evaluation Report Related to the Operation of Byron Station Units 1 and 2" (Note: Section 9.3 of this report regarding internal flooding events also applied to Braidwood station);
- NRC Regulatory Guide 1.102, "Flood Protection for Nuclear Power Plants," Revision 1;
- NRC Standard Review Plans 3.4.1, "Flood Protection," Revision 2; and 3.6.1, "Plant Design for Protection Against Postulated Piping Failures in Fluid Systems Outside Containment," Revision 2;
- Braidwood calculation 3C*-0685-002, "Auxiliary Building Flood Level Calculations," Revision 13;
- "Probabilistic Screening Study of Auxiliary Building Flooding at Byron/Braidwood Stations," dated November 16, 1999, performed by Scientech Corporation; and
- Byron and Braidwood stations Individual Plant Examinations, Volume 2, dated March 1997.

These documents indicated that Braidwood was susceptible to internal flooding, but at low risk for external flooding. On this basis, the inspectors selected the Units 1 and 2

essential service water pump rooms for further evaluation, owing to their location (lowest level in the auxiliary building) and their high risk ranking in the Braidwood station plant specific risk analysis.

The inspectors reviewed the following documents related to the maintenance and testing of structures, systems, and components important to flood protection:

- CC-AA-201, "Plant Barrier Control Program," Revision 3;
- Braidwood Administrative Procedure, BwAP 1110-3, "Plant Barrier Impairment Program," Revision 10;
- Braidwood Maintenance Procedure, BwMP 3100-094, "Removal and Installation of Flood Seal Opening Barriers," Revision 0E1";
- Braidwood maintenance department Memorandum 200-18, dated February 22, 1999, "Floor Plug Removal"; and
- Braidwood operation department Memoranda 1200, dated January 26, 2001, "Unit 1 Approved Rounds"; and 1-92, dated June 26, 2000, "Unit 2 Approved Rounds."

The inspectors accompanied a station equipment operator performing routine rounds of the Unit 2 turbine and auxiliary buildings to observe whether the condition of flood seals and watertight doors was being routinely reviewed. Additionally, the inspectors performed a walkdown of the Units 1 and 2 essential service water pump rooms looking at equipment below the postulated floodline, penetrations in floors and walls, room drains and sumps, flooding detection sumps, and watertight doors.

In their design basis documents, the licensee credited operator actions in isolating the source of flooding within 30 minutes. The inspectors reviewed the following procedures to verify that guidance was available for coping with flooding events:

- Braidwood Flood Response Procedure, 1BwFR-Z.2, "Response to Containment Flooding–Unit 1," Revision 1A;
- Braidwood Emergency Procedure, 2BwEP-1, "Loss of Reactor or Secondary Coolant–Unit 2," Revision 1A;
- Braidwood Abnormal Operating Procedure, 1BwOA PRI-6, "Component Cooling Malfunction–Unit 1," Revision 56A;
- 1BwOA PRI-1, "Excessive Primary Plant Leakage–Unit 1," Revision 55;
- 2BwOA PRI-8, "Essential Service Water Malfunction–Unit 2," Revision 8;
- 2BwOA ENV-4, "Earthquake–Unit 2," Revision 54;
- 0BwOA ENV-4, "Earthquake–Unit 0," Revision 56;
- Braidwood Annunciator Response Procedure, BwAR 0PL02J-2-A2, "Containment Floor Drain Sump 1 Level High-High," Revision 5E1;
- BwAR 0PL01J-9-B4, "Residual Heat Removal 2B Leak Detection Sump Level High," Revision 5;
- BwAR 0PL01J-9-A1, "Essential Service Water Pump 1A Leak Detection Sump Level High," Revision 5E1; and
- BwAR 0PL01J-8-A7, "Component Cooling Pumps Leak Detection Sump 1 Level High," Revision 6.

The inspectors also interviewed selected members of the licensee's operations and training staff to determine if operators had received training for identifying and responding to internal flooding events.

The inspectors reviewed the following selected issues that the licensee had entered into its corrective action program to verify that identified problems were being entered into the program with the appropriate characterization and significance. This review included those findings made during a licensee self-assessment of the flood protection program, conducted from February 10-25, 2001. Specifically, the following items were reviewed:

- Condition Report (CR) A1999-02514, "Emergent entry into an orange risk condition with degraded ability to close 0SX165A or 0SX165B";
- CR A1999-02562, "Discrepancy between the flood analysis and the UFSAR";
- CR A2000-00972, "Degraded flood seals not recorded in DEQUIP [degraded equipment] or PBI [plant barrier impairment] logs";
- CR A2000-01251, "Flood seal check missed for the 0200 hour";
- CR A2000-00971, "Excessive time required to repair flood seals";
- CR A2000-00973, "Lack of internal flooding mitigation procedural guidance";
- CR A2000-00795, "Lack of contingency actions for flood prevention"; and
- CR A2000-01277, "UFSAR contains conflicting descriptions of auxiliary building flood analysis."

The following out-of-tolerances (OOTs) were generated as a result of this inspection:

- CR A2001-00688, "Possible enhancements to UFSAR, Section 9.3.3.2";
- CR A2001-00667, "NRC observations during Unit 2 rounds"; and
- CR A2001-00726, "Process improvement for addressing the aggregate effects of flood barrier degradation."

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance

a. Inspection Scope

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

- CR A2000-02158, "Review and update Generic Letter 89-13 Braidwood engineering procedure, BwVP 850-15, per Byron assessment";
- CR A2000-00209, "Capture lessons learned/operating experience review of NON LS-00-013 [XX] missed examination of intergranular stress corrosion cracking welds"; and
- CR A2000-00276, "Increased radiation levels in Unit 1 fuel pool heat exchanger room."

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation

a. Inspection Scope

The inspectors reviewed the licensee's implementation of the maintenance rule, 10 CFR 50.65, as it pertained to identified performance problems with the following system:

- Unit 1 and 2 engineered safety features actuation (EF)

The inspectors interviewed the stations maintenance rule coordinator and reviewed the following documents to evaluate the licensee's monitoring and trending of equipment performance, the established performance criteria, the appropriateness of 10 CFR 50.65 a(1) goals and corrective actions, and whether identified problems were being entered into the licensee's corrective action and maintenance rule programs with the appropriate characterization and significance:

- CR A1999-00134, "Unplanned limiting condition for operation (LCO) entry due to 2P-457 failure";
- CR A1999-00221, "2N-NR8037 found out-of-tolerance (OOT) during comparator and rate drawer calibration";
- CR A1999-00315, "Erratic output of 2PT-0514";
- CR A1999-00592, "2TY-0421A and 2TY-0422H were found OOT";
- CR A1999-00909, "Transmitter time response information not available";
- CR A1999-01167, "2C steam generator hi-2 level causing a P-14 EF";
- CR A1999-01206, "2FT-0435 found OOT high during 18 month calibration 2FT-0435-EF";
- CR A1999-01208, "2FT-0426 found OOT high";
- CR A1999-01218, "Comparator 2TB-0431H as found values OOT 2TB-0431H";
- CR A1999-01228, "2TY-0441S Found OOT high during calibration for SSCR [scaling setpoint change request] 98-049";
- CR A1999-01339, "Rework Rosemount transmitters in Unit 2 containment stainless steel pipe plugs in spare conduit hole";
- CR A1999-01663, "OOT instrument, 2PY-PC005B";
- CR A1999-02051, "Failure of K611 slave relay surveillance";
- CR A1999-02333, "Slave relay K609 failure to latch during testing";
- CR A1999-02929, "Solid state protection system slave relay's response time untested";
- CR A1999-03263, "Incorrect acceptance criteria for reactor coolant flow - reactor trip response time testing";
- CR A1999-03300, "Timer start reset train A contact cycle time outside of preferred time but within acceptance";
- CR A2000-00287, "Reactor trip logs printing";
- CR A2000-01202, "Failed K602B relay";
- CR A2000-01205, "Train B solid state protection system K602 failed to energize";
- CR A2000-02058, "Main control board recorder is acting erratic";

- CR A2000-02715, "Drawing 20E-1-4030EF11 incorrect";
- CR A2000-02798, "20E-2-4030EF41 contains as-built error";
- CR A2000-03023, "2B steam generator steam flow mismatch annunciator alarm/reset";
- CR A2000-03528, "Proposed revision to BRW-SE-2000-770";
- CR A2000-03655, "Feedwater flow channel failure and entry into 1BWOA INST 2";
- CR A2000-04526, "Reactor coolant pump bus 156 undervoltage";
- CR A2000-04668, "Failed slave relay surveillance";
- EF Maintenance Rule evaluation history from January 1, 1999, to January 1, 2000;
- EF Maintenance Rule evaluation history from January 1, 2000, to March 8, 2001;
- Nuclear Station Procedure ER-AA-310 Maintenance Rule, Revision 0;
- Unit 1 Emergency Procedure 1BwEP ES-1.1 SI (safety injection) Termination Unit 1;
- 0BwOA PRI-5 Control Room Inaccessibility;
- Maintenance Rule expert panel scoping determination for EF;
- Maintenance Rule - performance criteria for EF;
- UFSAR, Sections 7.3, 15.5, and 15.6;
- Technical Specifications 3.3.2;
- Braidwood System Training manual - Chapter 61 EF; and
- NRC Maintenance Rule data request - EF.

The inspectors reviewed the following CRs to verify that identified problems had the appropriate characterization and significance, and that the licensee's corrective actions were adequate and completed in a timely manner:

- CR A1999-00296, "2PT-0546 found OOT during surveillance";
- CR A1999-00665, "OOT - 2PT-0506 - found during surveillance";
- CR A1999-00941, "Nuclear Resistance Amplifier Card (2TY-0441A3) was found OOT during surveillance";
- CR A1999-01268, "2PT-0548 found OOT during surveillance (EF)";
- CR A1999-01907, "Potential maintenance rule reclassification of EF2 [maintenance rule function 2] criteria";
- CR A1999-02457, "EF2 exceeds maintenance rule availability criteria";
- CR A1999-03447, "Capture sessions/operating experience review of NON LS-99-046 [IG] Axial Power Range Monitor 15 percent high flux Trip inoperable";
- CR A2000-00118, "Improved Technical Specifications/old Technical Specifications cross-reference error";
- CR A2000-00211, "Higher than normal resistance reading during slave relay surveillance";
- CR A2000-01142, "Future supply of solid state protection system power supplies uncertain";
- CR A2000-02552, "Procedures for fires requiring main control room evacuation could be enhanced to address spurious EF Signals"; and
- CR A2000-03291, "Slave relay contact loading issues."

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments And Emergency Work Control

a. Inspection Scope

The inspectors reviewed the licensee's assessment and management of plant risk for planned maintenance and/or surveillance activities on the following systems or components:

- Unit 0 component cooling pump; and
- Unit 1B essential service water pump

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, and evaluated the availability of redundant train equipment. The inspectors reviewed Nuclear Station Procedure WC-AA-103, "On-Line Maintenance," Revision 0, and evaluated licensee compliance with that procedure.

The inspectors reviewed the following documents in order to perform the evaluations listed above during this inspection:

- Control room logs, dated March 5-9, 2001;
- CR 2000-02580, "0CC01P (Unit 0 component cooling water pump)-high copper in inboard motor bearing oil sample taken April 10, 2000";
- Work request 990193872-01, "Disassemble and inspect the 0CC01P inboard motor bearing";
- Work request 990224947-01, "Change grease in 0CC01P coupling and perform inspection of coupling internals."

The inspectors reviewed the following selected issues that the licensee had entered into its corrective action program to verify that identified problems were being entered into the program with the appropriate characterization and significance, and that the licensee's corrective actions were adequate and completed in a timely manner:

- CR A2000-03111, "Procedure discrepancies associated with logging risk re-evaluation details";
- CR A2000-01343, "Operations personnel draining reactor coolant system without a pre-job brief";
- CR A2000-01279, "Risk evaluation for emergent condition not documented as required by procedure";
- CR A2000-03077, "Change in unit risk level not logged as required by OP-AA-101-402";
- CR A2000-03665, "Change in unit risk level not logged";
- CR A2000-04566, "Corrective actions not performed and ineffective for high production risk screening";
- CR A2000-01324, "Risk review for unscheduled surveillance not logged"; and
- CR A2000-00637, "Group 4 cold leg injection monitor lights malfunction."

b. Findings

No findings of significance were identified.

1R014 Personnel Performance During Non-routine Plant Evolutions and Events

a. Inspection Scope

The inspectors reviewed the licensee personnel performance in responding to planned and unplanned non-routine plant evolutions and during events and transients. This inspection consisted of observations of licensee personnel response, review of operator logs and other pertinent documentation, and interviews with licensee staff.

The following evolutions were reviewed by the inspectors:

- Planned reduction in Unit 2 power to 35 percent to support the repair of the Unit 2A steam generator drain valve;
- Entry into LCO 3.6.5 for Unit 2 containment high temperature; and
- An unexpected trip of the Unit 2 spent fuel pool cooling (FC) pump.

On February 17, 2001, the licensee reduced Unit 2 power to 35 percent to support the repair of the Unit 2A steam generator drain valve. This valve was experiencing severe leakage requiring that sealant be injected into the valve body. Because the valve was located inside the Unit 2 containment, the power reduction was necessary to alleviate work area radiation levels. On February 19, 2001, Unit 2 was restored to 100 percent power following completion of the work.

On March 6, 2001, the licensee identified that the Unit 2 containment temperature was 122 degrees F, above the Technical Specification (i.e., LCO 3.6.5) limit of 120 degrees F. This LCO requires that containment temperature be reduced within 8 hours or the unit must start entry into Mode 3 (hot shutdown). The high temperature resulted when the Unit 2B and D reactor containment fan coolers (RCFCs) were isolated due to high motor stator temperatures. Normally, containment cooling is achieved by a combination of the RCFC and containment chillers. However, during this event, the containment chillers were unavailable due to planned maintenance and the RCFCs (two trains, two fans per train) were the only cooling mechanism. Subsequently, the 2B and 2D RCFCs were restarted and containment temperature dropped below the Technical Specification value. The total time in LCO 3.6.5 was about 40 minutes.

On March 21, 2001, an unanticipated trip of the Unit 2 FC pump (2FC01P) occurred. This required the control room operators to implement 0BWOA.REFUEL-3, "Loss of Spent Fuel Pit Cooling," Revision 0. This procedure lists required actions to take after a loss of spent fuel pit cooling in order to control spent fuel pool temperature. The inspectors observed the control room operators' response to this event and noted no adverse affect on spent fuel pool temperature. The event duration was about 1.5 hours.

As appropriate, the inspectors reviewed operator logs and interviewed selected, operating staff involved in the events to determine whether proper controls were implemented. Additionally, the inspector attended management planning meetings for the planned Unit 2 power reductions and observed control room operator performance.

The following documents were reviewed during this inspection:

- Control room operating logs dated February 17-20, March 6-8, and March 21, 2001;
- Braidwood Reactivity Maneuver form, NF-AAAP-230, "Unit 2 Load Drop to 35 percent and Return to Full Power Starting On February 17, 2001," Revision 0;
- CR A2001-00360, "Beacon run for the Unit 2 throttle valve/governor valve ramp did not meet expectations";
- CR A2001-00714, "Entry into LCO 3.6.5 for Unit 2 containment high temperature";
- CR A2001-00692, "High RCFC motor stator temperatures";
- CR A2001-00843, "2FC01P pump trip"; and
- CR A2001-00899, "Potential rework—sparks were observed coming from motor on 2FC01P."

In addition, the inspectors reviewed selected issues that the licensee entered into its corrective action program to verify that identified problems were being entered into the program with the appropriate characterization and significance. The inspectors reviewed the corrective actions for issues documented in the following CRs:

- CR A2001-00511, "Unit 2 #4 governor valve oscillation on power decension";
- CR A2000-02799, "Unit 2 containment temperature exceeded 120 degrees"; and
- CR A2001-00512, "2FW540 oscillations in auto."

b Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed and evaluated the operability evaluations associated with the following CRs:

- CR A2001-00738, "Unit 2 steam generator hi-hi level (P-14) setpoint calculation review"; and
- CR A2001-00402, "Deficiency identified in CO₂ tank seismic design calculation."

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

The inspectors reviewed the following documents in order to perform the above evaluations during this inspection:

- Byron and Braidwood Unit 2 Review of P-14 setpoint uncertainty calculation, position paper;
- Nuclear design information transmittal, BB-EPED-0208, dated December 18, 1996;

In addition, the inspectors reviewed the following CRs to verify that identified problems had the appropriate characterization and significance, and that the licensee's corrective actions were adequate and completed in a timely manner.

- CR A2000-03693, "Discovery that 1PS9352A (1A SI accumulator sample isolation valve) leaks by"; and
- CR A2000-04061, "Unit 2A SI pump flow to the A/D hot legs was measured at 656.02 gallons per minute."

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds

a. Inspection Scope

The inspectors interviewed the operations department operator workaround coordinator and station engineering personnel. The inspectors also reviewed the following operating procedures to identify any proceduralized operator workarounds that could impact the ability of operators to respond in a correct and timely manner to plant transients:

- Braidwood Operating Procedure, BwOP CC-1, "Component Cooling Water System Startup," Revision 8E3;
- BwOP CC-8, "Isolation of Component Cooling Between Units 1 and 2," Revision 14;
- BwOP AF-7, "Auxiliary Feedwater Pump _B (Diesel) Startup On Recirc," Revision 16;
- BwOP AF-11, "Filling The Steam Generators Utilizing the Motor Driven Auxiliary Feedwater Pump _A," Revision 5E1;
- BwOP SI-1, "SI System Startup," Revision 11;
- BwOP SX-1, "Essential Service Water Pump Startup," Revision 7;
- BwOP SX-7, "Swapping Essential Service Water Pumps," Revision 10;
- BwOP MS-9, "Opening The Main Steam Isolation Valves," Revision 4E1;
- BwOP RC-1, "Startup of a Reactor Coolant Pump," Revision 10;
- Braidwood General Procedure, 1BwGP 100-1, "Plant Heatup," Revision 14; and
- 1BwGP 100-2, Plant Startup," Revision 16.

The following CR was generated due to inspector observations during these inspections:

- CR A2001-00831, "1BwGP 100-1 errors identified by NRC."

In addition, the inspectors reviewed the following CR to verify that identified problems had the appropriate characterization and significance, and that the licensee's corrective actions were adequate and completed in a timely manner.

- CR A2001-00767, “1A SI accumulator missed sample on planned RCFC surveillance containment entry”

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications

a. Inspection Scope

The inspectors evaluated the following permanent plant modifications:

- Use of the spare leads in lieu of the current, active leads for the Unit 2 reactor coolant loop C temperature wide range, resistance temperature detector (2TE-RC024A); and
- Installing piping and valving to allow the use of fire protection water as an alternate source of cooling to the Unit 1A centrifugal charging pump.

The modification to the Unit 2 reactor coolant wide range temperature detector was performed after the licensee identified that one of the normal electrical leads for this detector had failed. Although each detector has an associated, previously installed spare lead which can be used if the active leads fail, a design change was necessary to specify the alternate wiring details.

The modification to the Unit 1A centrifugal charging pump was performed as part of the licensee’s efforts to reduce the core damage frequency from internal flooding of the auxiliary building due to a loss of the service water system. The loss of essential service water would result in a loss of cooling flow to the oil coolers of the centrifugal charging pump and its associated gearbox. This would result in pump failure and a loss of injection flow to the reactor coolant pump seals. A loss of seal injection flow would result in reactor coolant pump seal failure and a loss of reactor coolant inventory.

For each modification, the inspectors determined if potential unresolved safety questions and/or risk evaluations were evaluated by the licensee, if the associated design and licensing documents and/or station procedures were being revised, and if the modification was correctly installed.

The following documents were reviewed during this inspection:

- 10 CFR 50.59, Safety Evaluation BRW-FCS-2001-129, dated February 16, 2001, regarding the use of the spare leads for the Unit 2 reactor coolant loop C wide range temperature indication;
- Document Change Request 990887, dated February 12, 2001, “Generic Alternate Wiring Details for Wide Range Hot and Cold Leg Resistance Temperature Detectors”;
- Work Request 99025674-01, “Troubleshoot the Unit 2 Reactor Coolant Loop C Wide Range Reactor Coolant Outlet Temperature Indicators (2T-0413A/2TE-RC24A);

- Work Request 990205598-01, "Install Modification D20-1-00-330 (1A Charging Pump Fire Protection Water Supply To Cooler Isolation Valve)";
- Work Request 990205598-03, "Install and Replace U-Bolt";
- Work Request 990205598-02, "Install and Remove Freeze On Line 1SX58AA-2";
- 10 CFR 50.59, Safety Evaluation BRE-SE-2000-621, regarding modification to provide fire protection water as an alternate cooling source for the Units 1 and 2A charging pumps;
- Letter from J. B. Steele, dated November 14, 2000, regarding Design Change D20-1-00-330.; and
- Station Drawing 20E-2-4111A, "External Wiring Diagram for Process Instrument and Control Rack Protection Channel 1, Cabinet 1 (2PA02J)," dated November 3, 1999; and
- Station Drawing 20E-2-4031RC25, "Loop Schematic Diagram Wide Range Temperature (Hot Leg) Protection I (2TE-RC024A, 2TE-RC025A) Protection Cabinet 1 (2PA01J)," dated August 18, 2000.

In addition the inspectors reviewed selected issues that the licensee entered into its corrective action program to verify that identified problems were being entered into the program with the appropriate characterization and significance. The inspectors reviewed the corrective actions for permanent plant modifications documented in the following CRs:

- CR A2000-02646, "Design Change DCP9900236 not sent to the plant Operations review committee for review, per procedure";
- CR A2000-02733, "UFSAR revisions for design basis documentation impact";
- CR A2000-04203, "Error in issued design change drawing"; and
- CR A2001-00205, "Unit 2B auxiliary feedwater diesel time delay relay setting discrepancy."

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

The inspectors reviewed post-maintenance testing following completion of maintenance activities on the following systems:

- Unit 0 component cooling pump;
- Unit 1A charging pump; and
- Unit 0A hydrogen recombiner.

The inspectors reviewed applicable sections of the UFSAR and the Technical Specifications for these systems, and observed portions of the maintenance activities. The inspectors evaluated post-maintenance test data, and conducted walkdowns to determine if the systems were properly restored.

The following documents were reviewed to perform the above evaluations during this inspection:

- Work request 990245154-01, "ASME surveillance requirements for component cooling water pump 0CC1P";
- Braidwood Engineering Surveillance procedure 0BwVSR 5.5.8.CC.1, "ASME Surveillance Requirements for Component Cooling Pump 0CC1P and Discharge Check Valves," Revision 0;
- Design change test D20-1-00-330-1, "Provide Alternative Cooling to the Unit 1A CV Pump Oil Coolers Modification Test," Revision 0;
- BwOP CV-19, "Switching Charging Pumps," Revision 8;
- Work request 990071069-01, "Periodic Preventive Maintenance Activities";
- Braidwood Electrical Maintenance Surveillance Procedure, BwHSR 3.6.8.2, "Thermal Hydrogen Recombiner 18 Month Surveillance," Revision 1;
- Braidwood Engineering Surveillance Procedure, BwVS 290-2-OG, "Gaseous Leak Testing Of The Hydrogen Recombiner System," Revision 2;
- BwHSR 4002-119, "Hydrogen Recombiner Surveillance," Revision 1; and
- Braidwood Operating Surveillance Procedure 0BwOSR 3.6.8.1-1, "Unit Common 0A Hydrogen Recombiner Refueling Internal Surveillance," Revision 0.

The following CRs were generated due to inspector observations during this inspection:

- CR A2001-00625, "Model work request 950100958 for preventive maintenance identification number 5216 on the 0A hydrogen recombinder contains inadequate post maintenance testing";
- CR A2001-00632, "Potential NRC concern on the surveillance test BwVS 290-2-G"; and
- CR A2001-00707, "Deficiencies in pressure testing techniques/procedures."

The inspectors reviewed the following CRs to verify that identified problems had the appropriate characterization and significance, and that the licensee's corrective actions were adequate and completed in a timely manner.

- CR A2000-04675, "Damage to pump casing caused by incorrect maintenance practices";
- CR A2000-04153, "The A train of the EF sequence timer was wired wrong";
- CR A2000-03818, "Technical Specification post maintenance tests not requested where required";
- CR A2000-04673, "Unit common component cooling pump breakdown bushing was installed incorrectly"; and
- CR A2000-04687, "Rework associated with Unit 0 component cooling pump."

b. Findings

The inspectors identified a Non-cited violation due to inappropriate post maintenance testing associated with replacement of elastomer seals on the 0A hydrogen recombinder, which resulted in a no-color finding.

During a pre-maintenance review of work request 990071069-01, "Periodic preventive maintenance activities," the inspectors identified that elastomer seals in the hydrogen

recombiner piping outside the containment boundary and outside the containment isolation valves were scheduled to be replaced without any form of post maintenance leak testing of the seals. Because this piping was outside the containment isolation valve boundary 10 CFR Part 50, Appendix J, requirements for containment leak rate testing did not apply. However, in the UFSAR, Appendix E.77, the licensee committed to periodic testing (18 months) and recording of the leakage from the hydrogen recombiner piping outside containment. This piping was identified as having the potential to contain highly radioactive gases during a post accident condition. This issue had the potential to become a more significant safety concern because excess leakage from the hydrogen recombiner piping would come directly from containment post accident atmosphere and potentially bypass the ventilation system designed to filter post accident leakage. Because the inspectors notified the licensee of the inadequate post-maintenance testing before the completion of the scheduled maintenance, the licensee was able to perform an appropriate post modification test on the seal and determined them to be operable. Thus, there was no actual degradation of the barrier integrity cornerstone; however, the inappropriate post maintenance testing on the seals was considered to be more than a minor violation (No-Color Finding).

Technical Specification 5.4.1.a, states in part that written procedures shall be established, implemented and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Paragraph 9.a states, "maintenance that can affect the performance of safety-related equipment should be properly pre-planned and performed in accordance with written procedures, documented instructions, or drawings appropriate to the circumstances."

Contrary to the above, on March 1, 2001, the inspectors identified that written maintenance procedures to replace seals in the safety-related OA hydrogen recombiner piping were not appropriate to the circumstances in that the testing associated with the replacement of the seals in the hydrogen recombiner piping was not properly pre-planned. This violation is being treated as a Non-Cited Violation consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 50-456/01-05-01). This violation was documented by the licensee in CR A2001-00625.

During the review of CR A 2001-00625, the licensee determined the root cause of this violation was that the model work request from which this specific work request was written from did not contain a requirement to perform a leak test. The licensee planned to update the model work request and review any outstanding work requests on hydrogen recombiners. In addition, the electronic work control system erroneously did not show the hydrogen recombiner piping as an American Society of Mechanical Engineers code boundary. Had the piping been correctly indicated as a code boundary in the electronic work control system an additional review by site engineering would have been performed on the work request package which might have caught the oversight. The licensee planned to correct the error in electronic work control system and perform a review to attempt to identify other equipment that was incorrectly coded.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors evaluated the licensee's implementation of BwMP 3300-052, "18 Month Visual Inspection of All Non-Electro Thermal Link Safety-Related Fire Dampers" Revision 4. The inspectors witnessed surveillance testing, reviewed test data and determined if the associated structures, systems, and components met the requirements of the Technical Specifications, UFSAR, and applicable licensee procedures.

In addition the inspectors reviewed selected issues that the licensee entered into its corrective action program to verify that identified problems with were being entered into the program with the appropriate characterization and significance. The inspectors reviewed the corrective actions for surveillance testing documented in the following CRs:

- CR A1999-00277, "Reactor coolant system leakrate surveillance error codes";
- CR A1999-01040, "Incorrect test report packages found in micro-electronic surveillance and calibration surveillance work request package";
- CR A1999-01574, "Nuclear Oversight identified improper crediting of Technical Specification surveillance within electronic work control system";
- CR A1999-02141, "Preconditioning in auxiliary feedwater system surveillance";
- CR A1999-02629, "NRC observation of emergency core cooling system vent and valve surveillance comments";
- CR A2000-03567, "Unplanned entry into TRM 3.3.I due to 1FI-AF014A main control room flow indicator pegged low";
- CR A2000-01010, "Nuclear Oversight found a surveillance closed as complete without meeting the requirements to close";
- CR A2000-01070, "Batteries for the diesel driven fire pump";
- CR A2000-01205, "Train B solid state protection system K602 failed to energize";
- CR A2000-01610, "Full flow surveillance instruments were OOT on post calibration";
- CR A2000-01928, "Missed surveillance 1BwOSR 3.8.1.1";
- CR A2000-02636, "The diesel driven fire pump does not develop adequate discharge pressure";
- CR A2000-02893, "Nuclear Oversight identified issue with actions documented on surveillance";
- CR A2000-02954, "Operating department surveillance with acceptance criteria that does not drive resolution of problem";
- CR A2000-03016, "Unit 0 diesel driven fire pump battery surveillance not within acceptance criteria";
- CR A2000-04662, "Rod insertion limit alarm didn't clear during control rod movable quarterly surveillance";
- CR A2001-00006, "Engineering self assessment identifies NRC commitment not met";
- CR A2001-00144, "Direct current battery 211 individual cell specific gravity deviation > administrative limit";
- CR A2001-00269, "Potential inoperability of the non-accessible ventilation system while performing electrical maintenance department surveillance"; and
- CR A2000-01283, "Blown diode on Unit 1B emergency diesel generator exciter."

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors evaluated the following temporary modification activity:

- Work Request 990247102-01, "Repair packing leak on the Unit 2A steam generator shell side drain valve."

This activity consisted of the injection of leak sealing compound into the Unit 2A steam generator shell side drain valve (2FW090). This valve, which was located on the secondary (i.e., non-radiological) side, was experiencing severe packing leakage. The licensee considered this a high risk activity as it was performed at power, inside containment, and under adverse environmental (i.e., high temperature/humidity) and radiological conditions. The inspectors attended portions of the work planning and management oversight meetings (including the Plant Operational Review Committee meetings) and reviewed the work documentation and station logs, to determine if adequate work controls were implemented. The licensee planned to replace the valve during the Unit 2 refueling outage scheduled for April 2002.

The following documents were reviewed:

- Engineering Request ER9903962, "Evaluate 'Furmanite' Repair of Packing Leak on 2FW09A";
- Furmanite Engineering Procedure LSP-PKNG-01, "Packing Gland Injection Procedure," Revision 0;
- Furmanite Engineering Procedure LSP-KILL-01, "Valve Kill Procedure, Drill End-Cap for Injection," Revision 0;
- CC-AA-404, "Maintenance Specification: Application Selection, Evaluation and Control of Leak Sealant Injection and temporary Leak Repair," Revision 1;
- CC-AA-404, Attachment 1, Temporary Leak Injection Permit," Revision 1, dated January 10 and 15, 2001 (Note: A separate permit was filled out for each Furmanite procedure listed above); and
- 10 CFR 50.59 Safety Evaluation BRW-SE-2001-41, dated January 17, 2001, regarding repair of valve 2FW090A.

In addition the inspectors reviewed selected issues that the licensee entered into its corrective action program to verify that identified problems were being entered into the program with the appropriate characterization and significance. The inspectors reviewed the corrective actions for temporary modification issues documented in the following CRs:

- CR A2000-04093, "Failure to follow procedure before removing temporary modification 99-2-19";
- CR A2001-00135, "Nuclear oversight identified temporary modification tags not in compliance with procedure CC-AA-112";

- CR A2000-00743, “Unauthorized ball valve and Chicago fitting installed downstream of valve 2CB007A”;
- CR A2000-03094, “Nuclear Oversight identified that SPP-99-028 did not independently verify installation and removal of test equipment”;
- CR A2000-03502, “Nuclear Oversight identifies three of three reviewed temporary modifications not being aggressively monitored and driven to closure”;
- CR A2000-00164, “Numerous procedure violations of OP-AA-101-308, “Equipment-in-Use Program”; and
- CR A2000-00583, “Potential trend—equipment-in-use tag violations.”

b. Findings

No findings of significance were identified.

1EP2 Alert and Notification System (ANS) Testing

a. Inspection Scope

The inspector discussed with Emergency Preparedness (EP) staff the design, equipment, and periodic testing of the public ANS for the Braidwood Generating Station Emergency Planning Zone (EPZ) to verify that the system was properly tested and maintained. The inspector also reviewed procedures and records for the 24 month period ending December 2000 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 EPZ 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

a. Inspection Scope

The 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 year 1999 and 2000 drill records, primary and backup provisions for off-hours notification of Braidwood Station’s emergency responders, and the current ERO rosters for Braidwood Station. The inspector reviewed and discussed the Station EP staffs’ provisions for maintaining and distributing ERO call out lists.

b. Findings

No findings of significance were identified.

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies

a. Inspection Scope

The inspector reviewed and discussed Nuclear Oversight staffs' 1999 and 2000 audits and the station EP staff's 1999, 2000, and 2001 Focus Area Self-Assessment (FASA) reports to ensure that these audits complied with the requirements of 10 CFR 50.54(t) and that the licensee adequately identifies and corrects deficiencies. The inspector also reviewed a sample of Condition Reports (CR) related to the Plant's EP program in order to determine whether related corrective actions were acceptably completed as indicated.

b. Findings

No findings of significance were identified.

c. **OTHER ACTIVITIES**

4OA1 Performance Indicator (PI) Verification

a. Inspection Scope

The inspector verified that the licensee had accurately reported the performance indicators: Alert and Notification System (ANS), Emergency Response Organization (ERO) Drill Participation, and Drill and Exercise Performance (DEP), for the emergency preparedness cornerstone. Specifically, the inspector reviewed the licensee's PI records, data reported to the NRC, and Condition Reports for the 1999, 2000, and 2001 calendar years 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 evaluations were also reviewed.

b. Findings

No findings of significance were identified.

4OA5 Other

IP 92709 Licensee Strike Contingency Plans

a. Inspection Scope

On March 31, 2001, the local International Brotherhood of Electrical Workers (IBEW) union contract with ComEd expired. Because negotiations between the union and Exelon (ComEd) management indicated that an agreement was not likely prior to expiration of the contract, the NRC conducted an inspection to evaluate the licensee's strike contingency plans. This inspection, conducted prior to the expiration of the contract at Braidwood, verified that the licensee's plans met all of the requirements of the Technical Specifications and Federal Regulations in the event that a strike were to occur.

The inspectors evaluated the licensee's strike contingency plan and verified that all Technical Specifications and Code of Federal Regulation requirements were met. In particular, the inspectors verified that in the unlikely event of a strike, the licensee's strike contingency plan ensured that personnel were sufficient in number and qualifications to maintain the safe operation of the facility, including implementation of the site emergency plan. Specifically, the inspectors verified that in the areas of plant management, operations, maintenance, security, chemistry, radiation protection, surveillance and calibrations, and administrative controls, strike contingency personnel met all qualification requirements.

The inspectors reviewed the licensee's safeguards contingency plan and verified that the equipment and personnel required by the plan were available and sufficient to ensure that reactor operation and facility security would be maintained.

The inspectors verified that support from local agencies if needed was adequate to ensure unimpeded access of strike contingency workers, medical care services, local fire department services, and support goods. Emergency communication equipment and the Emergency Notification System were verified to be available.

A discussion was held between the Braidwood Site Vice-President and the NRC Branch Chief responsible for Braidwood to ensure that in the unlikely event of a strike, remaining Braidwood personnel were prepared to continue the safe operation of the facility.

b. Findings

No findings of significance were identified.

4OA6 Meetings

.1 Exit Meeting

The inspectors presented the preliminary results of the emergency preparedness program and performance indicators inspection to Mr. K. Schwartz and other members of licensee management and staff on March 23, 2001. The licensee acknowledged the information presented and did not identify any information discussed as proprietary. The inspectors presented the resident inspection results to Mr. von Suskil and other members of licensee management at the conclusion of the inspection on March 30, 2001. The licensee acknowledged the finding presented. All proprietary documents were returned to the licensee.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

K. Aleshire	Emergency Preparedness Coordinator
J. Bailey	Regulatory Assurance - NRC Coordinator
J. Coughlin	Radiation Protection
C. Dunn	Engineering Director
A. Ferko	Regulatory Assurance Manager
M. Finney	Radiation Protection
D. Galanis	Design Engineering
L. Gerovac	Emergency Preparedness Trainer
D. Goldsmith	Radiation Protection Manager
R. Graham	Operations Manager
L. Guthrie	Maintenance Director
J. Harvey	Manager, Nuclear Operations Supervisor
K. Ihnen	Nuclear Oversight Assessment Manager
F. Lentine	Design Engineering Manager
K. Schwartz	Station Manager
T. Simpkin	Regulatory Assurance
M. Smith	System Engineering Manager
D. Stobaugh	Corporate Emergency Preparedness
J. von Suskil	Site Vice President

NRC

M. Jordan	Chief, Reactor Projects Branch 3
C. Phillips	Senior Resident Inspector
N. Shah	Resident Inspector
R. Jickling	Emergency Preparedness Analyst
J. Belanger	Senior Physical Security Inspector

Illinois Department of Nuclear Safety

J. Roman	Resident Engineer
----------	-------------------

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

456/457/01-05-01	NCV	Inadequate post maintenance testing associated with preventive maintenance on the OA hydrogen recombiner
------------------	-----	--

Closed

456/457/01-05-01	NCV	Inadequate post maintenance testing associated with preventive maintenance on the OA hydrogen recombiner
------------------	-----	--

LIST OF BASELINE INSPECTIONS PERFORMED

The following inspectable-area procedures were used to perform inspections during the report period. Documented findings are contained in the body of the report.

Inspection Procedure		Report
<u>Number</u>	<u>Title</u>	<u>Section</u>
71111-06	Flood Protection Measures	1R06
71111-07	Heat Sink Performance	1R07
71111-12	Maintenance Rule Implementation	1R12
71111-13	Maintenance Risk Assessments And Emergency Work Control	1R13
71111-14	Personnel Performance During Nonroutine Plant Evolutions And Events	1R14
71111-15	Operability Evaluations	1R15
71111-16	Operator Workarounds	1R16
71111-17	Permanent Plant Modifications	1R17
71111-19	Post Maintenance Testing	1R19
71111-22	Surveillance Testing	1R22
71111-23	Temporary Plant Modifications	1R23
71114.02	Alert and Notification System (ANS) Testing	IEP2
71114.03	Emergency Response Organization (ERO) Augmentation Testing	IEP3
71114.05	Correction of Emergency Preparedness Weakness and Deficiencies	IEP5
71151	Performance Indicator Verification	40A1
92709	Licensee Strike Contingency Plans	40A5

LIST OF ACRONYMS AND INITIALISMS USED

ADAMS	NRC's Document System
ANS	Alert and Notification System
AR	Action Request
BwAP	Braidwood Administrative Procedure
BwAR	Braidwood Annunciator Response Procedure
BwEP	Braidwood Emergency Procedure
BwFR	Braidwood Flood Response Procedure
BwGP	Braidwood General Procedure
BwHS	Braidwood Hydrogen Surveillance Procedure
BwMP	Braidwood Maintenance Procedure
BwOA	Braidwood Abnormal Operating Procedure
BwOP	Braidwood Operating Procedure
BwOS	Braidwood Operating Surveillance Procedure
BwVP	Braidwood Engineering Procedure
BwVS	Braidwood Engineering Surveillance
CAN	Community Alert Network
CFR	Code of Federal Regulations
CR	Condition Report
DEP	Drill and Exercise Performance
DEQUIP	Degraded Equipment
DRS	Division of Reactor Safety
EF	Engineered Safety Feature Actuation
EP	Emergency Preparedness
EPZ	Emergency Planning Zone
ERO	Emergency Response Organization
FASA	Focus Area Self-Assessment
FC	Fuel Pool Cooling
GSEP	Generating Stations Emergency Plan
LCO	Limiting Condition for Operation
NRC	Nuclear Regulatory Commission
NRR	Nuclear Reactor Regulations
OOT	Out-of-Tolerance
PARS	Public Availability Records
PBI	Plant Barrier Impairment
PI	Performance Indicator
PIF	Problem Identification Form
RCFC	Reactor Containment Fan Coolers
RROP	Revised Reactor Oversight Process
SI	Safety Injection
SSCR	Scaling Setpoint Change Request
UFSAR	Updated Final Safety Analysis Report
VIO	Violation

LIST OF DOCUMENTS REVIEWED

Items Reviewed for Sections: IEP2, IEP3, IEP5, and 4OA1

Assessments and Audits

"January 18, 1999, Unusual Event, Loss of Annunciators or Indication For \geq 15 Minutes, Summary," January 22, 1999
"January 20, 1999, Unusual Event, Loss Of Annunciators For \geq 15 Minutes, Summary," January 22, 1999
"1999 Braidwood Health Physics Drill," April 19, 1999
"Braidwood Station Assessment Report Nuclear Oversight Assessment NOA-20-99-020 Plant Support-Emergency Preparedness," April 29, 1999
"Braidwood Station 1999 Annual Medical Drill Evaluation Report and Critique," May 6, 1999
"October 13, 1999, Braidwood Station Annual Environmental Drill," October 19, 1999
"Braidwood Station Assessment Plan Nuclear Oversight Assessment NOA 20-99-ES45 NEI/NRC Performance Indicators, November 8-12, 1999," November 2, 1999
"1999 GSEP Integrated Drill Findings and Observation Report," January 31, 2000
"February 2, 2000, GSEP Pre-Exercise Findings and Observation Report," February 17, 2000
"Nuclear Oversight Field Observations," February 21, 2000
"2000 GSEP Exercise Findings and Observations Report," April 14, 2000
"Braidwood Plant Support Functional Area Assessment Agenda Plan Nuclear Oversight Assessment NOA-BW-004Q, October 1 - December 31, 2000," September 29, 2000
"Braidwood Station Emergency Preparedness Self-Assessment Report - First Quarter 2000"
"Braidwood Station Emergency Preparedness Self-Assessment Report - Second Quarter 2000"
"Braidwood Station Emergency Preparedness Self-Assessment Report - Fourth Quarter 2000"
"Focus Area Self-Assessment Report Emergency Preparedness-Braidwood Station February 6-8, 2001"

Miscellaneous

Scenario #0012; "Loss of Offsite Power/Ruptured and Faulted S/G," January 5, 2000
Scenario #0045, "Loss of Heat Sink," June 12, 2000
Scenario #0064, "All Steam Generators Faulted," November 6, 2000
"February 1, 2001, Performance Indicator - Emergency Response Organization Drill/Exercise Performance Data," October 5, 1999
December 1999 - February 2001, Performance Indicator Emergency Response Organization Drill Participation Data
December 1999 - February 2001, Performance Indicator Alert and Notification System Reliability Data
"March 9, 1999, Off-Hours Augmentation Drill," March 10, 1999
"December 7, 1999, Off-Hours Augmentation Drill," December 7, 1999
"January 10, 2000, Off-Hours Augmentation Drill," January 11, 2000
"January 27, 2000, Table Top Drill," January 27, 2000
"July 17, 2000, Table Top Drill," July 31, 2000
"November 27, 2000, Table Top Drill," November 29, 2000

"December 9, 2000, Off-Hours Augmentation Drill," December 11, 2000
 2000 Braidwood Monthly Siren Availability Report
 2000 Braidwood Siren Daily Operability Data Sheets
 "January 11, 2001, Off-Hours Augmentation Drill," January 12, 2001
 "Exelon Semi-Annual Siren Report July 01 -December 31, 2000," January 31, 2001
 "Staff Augmentation, Call Tree Supervisor Functions," March 15, 2000
 "GSEP Call Out List," March 15, 2000
 "Staff Augmentation Call List," March 15, 2001
 "Quarterly Call List Information," March 15, 2001
 "Braidwood Station GSEP Training System," March 18, 2001
 "Braidwood Station GSEP Training System Position Report," March 18, 2001
 "Braidwood Station GSEP Training System Bi-Annual Participation Report," March 18, 2001
 Training Module S-14 G3-EP-XL-S14, "OSC Director Re-Qualification," March 27, 1996
 Training Module S-9, N-RAUG, "Augmentation Caller," February 7, 2000

Condition Reports (CR), Problem Identification Forms (PIF) and Action Requests (AR)

AR#990067853, 990077043, 00018120, 00018251, 00019211, 00019403, 00019513,
 00021580-01, 00022551, 00023663-01, 00023663-02, 00023663-05, 00023663-06,
 00023663-07, 00023663-08, 00023663-09, 00023663-10, 00023663-11, 00023663-12,
 00023664, 00023670, 00023683, 00023685, 00024598, 00025360-06, 00025781-01,
 00025781-02, 00026361, 00028184, 00029164, 00029668, 00032160, 00037510, 00040003,
 00040006, 00040148, 00040371, 00044297, 00044317, 00046409
 CR#A2000-03823, 2000-04488, 2000-04560, 2001-00445
 PIF#A1999-00292, 1999-00973, 1999-01118, 1999-03074, 1999-03190, 1999-03095, 1999-
 03474, 1999-03477, 1999-03601, 1999-03621, 2000-00335, 2000-00954, 2000-01673,
 2000-02088, 2000-02310, 2000-02924, 2000-04150, 2000-04488, 2000-04497, 2000-04528,
 2000-04560, 2001-00094, 2001-00261, 2001-00445, 2001-02159

Procedures

GSEP, Section 4.2	"Station Emergency Response Organization"
S.18	"Emergency Preparedness Department Training and Reference Material Drill, Exercise, and Event Performance, NRC Performance Indicator 08 (S.18) Guidance," Revision 7
S.19	"Emergency Preparedness Department - Training and Reference Material - Emergency Response Organization Drill Participation NRC Performance Indicator 09 (S.19) Guidance," Revision 6
S.20	"Emergency Preparedness Department Training and Reference Material Alert and Notification System Reliability NRC Performance Indicator 10 (S.20) Guidance," Revision 2
LS-AA-126	"Self-Assessment," Revision 0
RS-AA-122-108	"Performance Indicator - Emergency Response Organization Drill/Exercise Performance," Revision 1
BWZS 400-2A1	"GSEP Assignment Form," Revision 2
BWZS 1000-5	"Off-Hours Augmentation," Revision 6
AD-AA-106	"Corrective Action Program (CAP) Process Procedure," Revision 3
EP-AA-112	"Emergency Response Organization/Emergency Response Facility Activation and Operation," Revision 0

EP-AA-112, Attachment 1A "Acting Station Director," Revision 0
EP-AA-112, Attachment 4 "Station Off-Hours Augmentation Using CAN or
Augmentation Callers," Revision 0
EP-AA-112, Attachment 6 "Station TSC/OSC Augmentation During Normal Working Hours"