

November 8, 2006

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

SUBJECT: BRAIDWOOD STATION, UNITS 1 AND 2 NRC INTEGRATED INSPECTION  
REPORT 05000456/2006004; 05000457/2006004

Dear Mr. Crane:

On September 30, 2006 the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Braidwood Station, Units 1 and 2. The enclosed report documents the inspection results, which were discussed on October 10, 2006, with Mr. T. Coutu and other members of your staff.

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

This report documents one NRC-identified finding of very low safety significance (Green). The issue was determined to involve a violation of NRC requirements. In addition, a licensee-identified violation which was determined to be of very low safety significance is listed in this report. However, because of the very low safety significance of the violations and because they were entered into your corrective action program, the NRC is treating these violations as non-cited violations (NCVs) consistent with Section VI.A.1 of the NRC Enforcement Policy.

If you contest any NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-001, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission - Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the Resident Inspector Office at the Braidwood facility.

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

Sincerely,

***/RA D.Smith acting for/***

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

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

Enclosure: Inspection Report 05000456/2006004; 05000457/2006004  
w/Attachments 1: Supplemental Information  
2: Confirmatory Measurements Comparison Chart  
3: Tritium Sample Results

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

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

Sincerely,

***/RA D.Smith acting for/***

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

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

Enclosure: Inspection Report 05000456/2006004; 05000457/2006004  
w/Attachments 1: Supplemental Information  
2: Confirmatory Measurements Comparison Chart  
3: Tritium Sample Results

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

DOCUMENT NAME:G:\BRAI\BRAI 2006004 final.wpd

Publicly Available       Non-Publicly Available       Sensitive       Non-Sensitive

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

OFFICE	RIII	RIII	RIII	RIII
NAME	/RS DSmith for/ RSkokowski	DSmith		
DATE	11/08/06	11/08/06		

**OFFICIAL RECORD COPY**

DISTRIBUTION:

DXC1

TEB

RFK

RidsNrrDirslrib

GEG

KGO

GLS

SPR

CAA1

LSL (electronic IR's only)

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

DRPIII

DRSIII

PLB1

TXN

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

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 50-456; 50-457

License Nos: NPF-72; NPF-77

Report No: 05000456/2006004; 05000457/2006004

Licensee: Exelon Generation Company, LLC

Facility: Braidwood Station, Units 1 and 2

Location: Braceville, IL

Dates: July 1 through September 30, 2006

Inspectors: Steven Ray, Senior Resident Inspector  
G. Roach, Resident Inspector  
J. Cassidy, Radiation Specialist  
M. Holmberg, Reactor Inspector  
M. Jordan, Reactor Inspector  
A. Klett, Reactor Inspector  
R. Ng, Resident Inspector Byron  
S. Orth, Health Physics Program Manager  
M. Perry, Illinois Emergency Management Agency

Observers: J. Dalzell, Summer Hire

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

Enclosure

## SUMMARY OF FINDINGS

IR 05000456/2006004, 05000457/2006004; 04/01/2006 - 06/30/2006; Braidwood Station, Units 1 & 2; Fire Protection.

This report covers a 3-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors in Temporary Instruction (TI) 2515/169, "Mitigating Systems Performance Index Verification." One Green finding, which was a non-cited violation was identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

### A. Inspector-Identified and Self-Revealed Findings

#### **Cornerstone: Mitigating Systems**

Green. The inspectors identified a non-cited violation of Braidwood Facility Operating License Nos. NPF-72 and NPF-77, Condition 2.E, for failing to maintain electrical supervision for fire doors between the diesel generator rooms and their associated ventilation shaft rooms as required by the approved Fire Protection Report. The diesel generator rooms were protected by automatic total flooding gas suppression systems for which NRC fire protection regulations require electrical supervision or that a justification for an exception be given in the Fire Protection Report. The licensee had taken no exception for those doors. The licensee entered the issue into its corrective action program for resolution, and evaluated the condition as being acceptable in the interim due to frequent surveillance of the doors and the infrequency of their use.

This finding was more than minor because it affected the Mitigating Systems Cornerstone objective to ensure that external factors (i.e., fire, flood, etc) do not impact the availability, reliability, and capability of systems that respond to initiating events. The finding was of very low safety significance because the issue only affected suppression, not detection or ignition, and a review of the history of the doors indicated that finding them open during the daily surveillances was extremely rare. In addition, failure of the gaseous suppression system to extinguish a diesel room fire due to one of the doors being open, would not lead to the fire spreading to other areas except for the ventilation shaft, which was in the same fire zone. (Section 1R05)

### B. Licensee-Identified Violations

A violation of very low safety significance, which was identified by the licensee has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and corrective actions are listed in Section 4OA7 of this report.

## REPORT DETAILS

### Summary of Plant Status

Both units operated at or near full power for the entire inspection period.

#### 1. REACTOR SAFETY

##### **Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity**

#### 1R01 Adverse Weather Protection (71111.01)

##### Readiness for Impending Adverse Weather Conditions

##### a. Inspection Scope

The inspectors reviewed the licensee's response to severe thunderstorm warnings in the area including compensatory measures taken before and during the event. The inspectors verified that minor issues identified during this inspection were entered into the licensee's corrective action program. Documents reviewed in this inspection are listed in Attachment 1.

This review constituted one sample of the inspection requirement.

##### b. Findings

No findings of significance were identified.

#### 1R04 Equipment Alignment (71111.04)

##### Partial Walkdowns

##### a. Inspection Scope

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

corrective action program. Documents reviewed during this inspection are listed in Attachment 1.

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

- 2A residual heat removal (RH) while the 2B RH train was out of service;
- 1A and 2B diesel generators (DG) while the 2A DG was out of service; and
- 2A and 2B auxiliary feedwater while valve 2SI8804B was out of service.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

Quarterly Inspection

a. Inspection Scope

The inspectors conducted fire protection walkdowns which were focused on availability, accessibility, and the condition of fire fighting equipment, the control of transient combustibles and ignition sources, and on the condition and operating status of installed fire barriers. The inspectors selected fire areas for inspection based on their overall contribution to internal fire risk, as documented in the Individual Plant Examination of External Events with later additional insights on their potential to impact equipment which could initiate a plant transient or be required for safe shutdown. The inspectors used the Fire Protection Report, Revision 21, to determine that: fire hoses and extinguishers were in their designated locations and available for immediate use; fire detectors and sprinklers were unobstructed; transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition.

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

- 'A' essential service water (SX) room;
- 'B' SX room;
- DG rooms;
- auxiliary building 401 foot elevation common area;
- auxiliary building 426 foot elevation common area;
- plant outbuildings;
- Unit 2 hydrogen system;
- lake screenhouse; and
- Units 1 and 2 transformer yards.

The inspectors verified that minor issues identified during the inspection were entered into the licensee's corrective action program. Documents reviewed during this inspection are listed in Attachment 1.

b. Findings

Failure to Electrically Supervise Doors in Accordance With Fire Protection Program

Introduction: The inspectors identified a Green finding and associated non-cited violation (NCV) of Braidwood Facility Operating License Nos. NPF-72 and NPF-77, Condition 2.E, for failing to have electrically supervised doors in areas protected by total flooding gas suppression systems in the DG rooms, in accordance with the approved fire protection program.

Description: Upon reviewing the requirements for fire doors in the DG rooms, the inspectors identified that NRC fire protection requirements were that doors to total gas suppression system areas be electrically supervised with monitoring at a continuously manned area. The licensee had not taken exception to that requirement in its Fire Protection Report (FPR). The doors in all four of the DG rooms between the main part of the rooms and the ventilation shafts were not electrically supervised in any way, nor were they locked. As a result of this issue, the licensee was performing an extent of condition review and had determined that some doors in the cable spreading rooms were also not electrically supervised. All of the above mentioned areas were protected by total flooding gas suppression systems.

The inspectors reviewed the FPR and did not identify any existing justifications allowing for the existence of this condition. The licensee entered the issue into their corrective action program for resolution. The licensee determined that interim compensatory actions were not needed because the doors were in area infrequently accessed and they were checked daily to ensure they were properly closed. Long term corrective actions were still being reviewed at the conclusion of this inspection.

Analysis: The inspectors determined that the licensee's failure to electrically supervise the doors or justify an exception in the FPR was a performance deficiency warranting a significance determination. Furthermore, the issue was considered more than minor because the finding affected the attribute of protection against external factors (i.e. fire) of the Mitigating Systems Cornerstone. The inspectors assessed the finding using Inspection Manual Chapter 0609, Appendix F, Fire Protection Significance Determination Process, and determined the finding to be of very low safety significance (Green). The finding was of very low safety significance because the issue only affected suppression, not detection or ignition, and a review of the history of the doors indicated that finding them open during the daily surveillances was extremely rare. In addition, failure of the gaseous suppression system to extinguish a diesel room fire due to one of the doors being open, would not lead to the fire spreading to other areas except for the ventilation shaft, which was in the same fire zone. This issue has existed since initial licensing and, as such, was not considered to have cross-cutting aspects for current plant performance.

Enforcement: Braidwood Station's Operating License Condition 2.E stated, in part, that "The licensee shall implement and maintain in effect all provisions of the approved fire protection program as described in the UFSAR." Section 9.5.1 of the UFSAR stated that "The design bases, system descriptions, safety evaluation, inspection and testing requirements, personnel qualification, and training are described in Reference 1 [the

FPR].” Chapter 3 of the FPR stated that areas protected by automatic total flooding gas suppression systems should have electrically supervised self-closing fire doors or should be kept closed and electrically supervised at a continuously manned location. The only exception the licensee took to this requirement in the FPR was for the DG day tank rooms and the diesel-driven auxiliary feedwater pump day tank rooms. Contrary to this, the doors between the DG rooms and their associated ventilation shaft rooms did not have electrically supervised fire doors. The DG rooms were protected by automatic total flooding carbon dioxide gas suppression systems. Because this issue was entered into the corrective action program as IR 512899, and the finding was of very low safety significance, this violation was being treated as an NCV consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000456/2006004-01; 05000457/2006004-01, Failure to Maintain Electrically Supervised Fire Doors in Accordance With the Fire Protection Program. The finding was assigned to the Mitigating Systems Cornerstone for both units.

1R06 Flood Protection Measures (71111.06)

Internal Flooding Review

a. Inspection Scope

The inspectors reviewed Braidwood’s flood analysis and design basis documents to identify design features important to internal flood protection, and reviewed the flood protection measures in place to prevent or mitigate effects of internal flooding. For these inspection samples, the inspectors focused on risk significant areas where the licensee had recently experienced internal flooding problems. The inspectors reviewed the licensee evaluations of the effects of leakage into these rooms and their actions and plans to resolve the conditions. This review represented two annual inspection samples. Documents reviewed during this inspection are listed in Attachment 1. The specific areas reviewed were the following:

- lower cable spreading rooms after chiller condensate water was diverted into the rooms; and
- ground water intrusion into main steam isolation valve rooms.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Regualification Program (71111.11)

Quarterly Review of Testing/Training Activity

a. Inspection Scope

The inspectors observed operating crew performance during an evaluated simulator examination scenario involving a faulted, ruptured steam generator and RH system leak.

The inspectors evaluated crew performance in the following areas:

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

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

The inspectors verified that the crew completed the critical tasks listed in the simulator guide. The inspectors also compared simulator configurations with actual control board configurations. For any weaknesses identified, the inspectors observed the licensee evaluators to determine whether they also noted the issues and discussed them in the critique at the end of the session. Documents reviewed are listed in Attachment 1. This review constituted one sample of this inspection requirement.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

Routine Inspection

a. Inspection Scope

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

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

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

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

- the goals and corrective actions for the system were appropriate.

The above aspects were evaluated using the maintenance rule program and other documents listed in Attachment 1. The inspectors also verified that the licensee was appropriately tracking reliability and/or unavailability for the systems. The inspectors verified that minor issues identified during this inspection were entered into the licensee's corrective action program.

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

- instrument and service air system subsequent to numerous air compressor equipment issues; and
- diesel fuel oil system subsequent to a failure of the fuel oil pump suction hose on the 2A DG.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed the licensee's management of plant risk during emergent maintenance activities or during activities where more than one significant system or train was unavailable. The activities were chosen based on their potential impact on increasing the probability of an initiating event or impacting the operation of safety-significant equipment. The inspections were conducted to determine whether evaluation, planning, control, and performance of the work were done in a manner to reduce the risk and minimize the duration where practical, and that contingency plans were in place where appropriate.

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

In addition, the inspectors reviewed selected issues, listed in Attachment 1, that the licensee encountered during the activities, to determine whether problems were being entered into the corrective action program with the appropriate characterization and significance.

The inspectors completed seven samples by reviewing the following activities:

- 2B chemical and volume control (CV) pump scheduled work window;
- emergent Unit 2 fuel pool cooling valve work;

- 2B SX pump scheduled work window;
- 2A DG scheduled work window;
- Unit 2 component cooling (CC) heat exchanger scheduled outage;
- 2B safety injection (SI) pump scheduled work window; and
- emergent 0B control room chiller failure.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors evaluated plant conditions and selected IRs for risk-significant components and systems in which operability issues were questioned. These conditions were evaluated to determine whether the operability of components was justified. The inspectors compared the operability and design criteria in the appropriate section of the UFSAR to the licensee's evaluations presented in the IRs and documents listed in Attachment 1 to verify that the components or systems were operable. The inspectors also conducted interviews with the appropriate licensee system engineers and conducted plant walkdowns, as necessary, to obtain further information regarding operability questions. The inspectors verified that minor issues identified during this inspection were entered into the licensee's corrective action program. Documents reviewed as part of this inspection are listed in Attachment 1.

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

- pressurizer heater sleeves after discovery and repair of leaking sleeve during the Unit 1 refueling outage;
- RH system operability with back leakage from reactor coolant system;
- containment operability with increased transient material storage;
- Unit 1 reactor coolant system unidentified leakage increase;
- Unit 1 containment floor drain sump indication below zero;
- Unit 2 group step counter shutdown bank counter battery low;
- Unit 1 containment emergency core cooling system (ECCS) sump strainer margin decreased due to additional unqualified coatings; and
- potential air entrainment in ECCS suction piping from the refueling water storage tank.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17)

Annual Review

a. Inspection Scope

The inspectors reviewed licensee procedures and vendor design documents, and observed part of the licensee's activities to implement a design change that affected Unit 2 while online. Specifically, the licensee replaced both the safety related Instrument Bus 212 7.5 KVA [kilovolt-amperes] Inverter (2IP06E) with an AMETEK 10 KVA Inverter and the corresponding constant voltage transformer with a design compatible with the new inverter. The inspectors reviewed the associated 10 CFR 50.59 screening against the system design bases documentation to verify that the modifications had not affected system operability/availability. The inspectors reviewed selected ongoing and completed work activities to verify that installation was consistent with the design control documents. Final completion of this modification, including replacement of the main direct current power breaker to the inverter and wiring of an automatic swap feature to the constant voltage transformer upon loss of the inverter will occur during the upcoming Unit 2 outage in October 2006. Documents reviewed as part of this inspection are listed in Attachment 1.

This review constituted one sample of the inspection requirement.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed post-maintenance testing activities associated with important mitigating systems, barrier integrity, and support systems to ensure that the testing adequately demonstrated system operability and functional capability. The inspectors used the appropriate sections of the TS and UFSAR, as well as the Work Orders (WO) for the work performed, to evaluate the scope of the maintenance and to determine whether the post-maintenance testing was performed adequately, demonstrated that the maintenance was successful, and that operability was restored. The inspectors determined whether the tests were conducted in accordance with the procedures, including establishing the proper plant conditions and prerequisites; that the test acceptance criteria were met; and that the results of the tests were properly reviewed and recorded. The activities were selected based on their importance in demonstrating mitigating systems capability and barrier integrity. Documents reviewed as part of this inspection are listed in Attachment 1.

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

- 2B CV pump following a maintenance window;
- 2B SX pump following a maintenance window;
- 2A DG following a maintenance window;
- 2B containment spray (CS) pump following a maintenance window;
- 1B CS pump following a maintenance window; and

- 2B SI pump following a maintenance window.

b. Findings

No findings of significance were identified.

1R20 Refueling and Other Outage Activities (71111.20)

a. Inspection Scope

In preparation for an upcoming Unit 2 refueling outage, the inspectors monitored the licensee's new fuel receipt activities, including its identification of and response to a mis-packed fuel shipment container and a stuck fuel assembly in the spent fuel pool. The inspectors also met with the licensee's outage work control manager to review the outage schedule and outage risk management plans. Documents reviewed are listed in Attachment 1. This inspection did not constitute an inspection sample. The refueling outage sample will be completed in the next quarterly inspection period.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed surveillance testing activities associated with important mitigating systems, barrier integrity, and support systems to ensure that the testing adequately demonstrated system operability and functional capability. The inspectors used the appropriate sections of the TS and UFSAR to determine whether the surveillance testing was performed adequately and that operability was restored. The inspectors determined whether the testing met the frequency requirements; that the tests were conducted in accordance with the procedures, including establishing the proper plant conditions and prerequisites; that the test acceptance criteria were met; and that the results of the tests were properly reviewed and recorded. The activities were selected based on their importance in demonstrating mitigating systems capability, barrier integrity and the initiating events cornerstone. The inspectors verified that minor issues identified during the inspection were entered into the licensee's corrective action program. Documents reviewed as part of this inspection are listed in Attachment 1.

Five samples were completed by observing and evaluating the following surveillance tests, four of which are Routine samples and one is an In-Service Testing sample:

- 2A DG slave start and monthly operability run;
- 1A DG monthly operability run and fast restart test;
- 1A CC pump American Society of Mechanical Engineers test (IST);
- Unit 1 reheat and intercept valve test in conjunction with a reheater drain tank level adjustment; and

- liquid radioactive waste line process radiation monitor (OPR01J) digital calibration prior to the resumption of normal radioactive liquid effluent release.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed the installation of temporary modifications that could affect the operability of risk significant equipment, the probability of an initiating event, or an unauthorized radioactive material discharge. For each temporary modification, the inspectors reviewed the associated design change paperwork, performed a walkdown installation, and reviewed the affected TS and UFSAR. The inspectors also reviewed the licensee's plans schedules for removing the temporary modification or making it permanent. Those documents reviewed during this inspection are listed in Attachment 1. This review constituted two samples of this inspection requirement. The following temporary modifications were reviewed:

- Engineering Change 362048; Temporarily Defeat the Trip and Alarms for the Unit 2 GIX Relay; and
- WO 00949935-01; Disposal of Low Level Tritiated Water Via the Station Blowdown Line.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

**Cornerstone: Emergency Preparedness**

a. Inspection Scope

The inspectors observed licensee performance during one crew license examination scenario on the simulator. The inspectors observed event classification and notification activities performed by the crew. The inspectors also observed the critique of the scenario to determine whether their observations were also identified by the licensee evaluators and reviewed documents listed in Attachment 1 to determine whether deficiencies were entered into the licensee's corrective action system. This activity constituted one inspection sample.

b. Findings

No findings of significance were identified.

**2. RADIATION SAFETY**

## **Cornerstone: Occupational Radiation Safety**

### 2OS3 Radiation Monitoring Instrumentation and Protective Equipment (71121.03)

#### .1 Inspection Planning

##### a. Inspection Scope

The inspectors reviewed the Braidwood Station UFSAR to identify applicable radiation monitors associated with measuring transient high and very high radiation areas including those used in remote emergency assessment. The inspectors identified the types of portable radiation detection instrumentation used for job coverage of high radiation area work including instruments used for underwater surveys, fixed area radiation monitors used to provide radiological information in various plant areas, and continuous air monitors used to assess airborne radiological conditions and work areas with the potential for workers to receive a 50 millirem or greater committed effective dose equivalent. Contamination monitors, whole body counters, and those radiation detection instruments utilized for the release of personnel and equipment from the radiologically controlled area were also identified. Documents reviewed during this inspection are listed in Attachment 1.

These reviews represented two inspection samples.

##### b. Findings

No findings of significance were identified.

#### .2 Walkdowns of Radiation Monitoring Instrumentation

##### a. Inspection Scope

The inspectors conducted walkdowns of selected area radiation monitors in the Unit 1 and 2 auxiliary buildings to verify that they were located as described in the UFSAR and were adequately positioned relative to the potential source(s) of radiation they were intended to monitor. Walkdowns were also conducted of those areas where portable survey instruments were calibrated/repared and maintained for radiation protection staff use to determine if those instruments designated "ready for use" were sufficient in number to support the radiation protection program, had current calibration stickers, were operable, and were in adequate physical condition. Additionally, the inspectors observed the licensee's instrument calibration units and the radiation sources used for instrument checks to assess their material condition and discussed their use with the radiation protection (RP) staff to determine if they were used appropriately. Licensee personnel demonstrated the methods for performing source checks of portable survey instruments and for source checking personnel contamination and portal monitors used at the egress to the radiologically controlled area. Documents reviewed are listed in Attachment 1.

These reviews represented one inspection sample.

b. Findings

No findings of significance were identified.

.3 Calibration and Testing of Radiation Monitoring Instrumentation

a. Inspection Scope

Portable survey instrument calibrations were performed at an offsite Exelon facility. Licensee personnel were observed performing source checks of selected instruments. This included observing detector evaluation with check sources to determine if station requirements were met. The inspectors reviewed records of calibration, operability, and alarm setpoints of selected instruments and personnel monitoring devices. This review included, but was not limited to the following:

- Certificate of Calibration for Eberline Radiation Detection Device Model ASP-1, Serial No. 1268;
- Certificate of Calibration for Eberline Radiation Detection Device Model PRM-6, Serial No. 1440;
- Certificate of Calibration for Eberline Radiation Detection Device Model PRM-6, Serial No. 1368;
- Certificate of Calibration for Bicron Radiation Detection Device Model RSO-50E, Serial No. B920Y;
- Certificate of Calibration for MGP Radiation Detection Device Model Telepole WR, Serial No. 6603-137; and
- RP-BR-712 Ion Chamber Calibration Form, Serial Number C928H.

The inspectors evaluated those actions that would be taken when, during calibration or source checks, an instrument was found to be out of calibration by more than 50 percent. Those actions included an investigation of the instruments' previous usages and the possible consequences of that since the last calibration or source check. The inspectors also reviewed the licensee's 10 CFR Part 61 source term analyses to determine if the calibration sources used were representative of the plant source term. Documents reviewed are listed in Attachment 1. This review represented one sample.

b. Findings

No findings of significance were identified.

.4 Problem Identification and Resolution

a. Inspection Scope

The inspectors reviewed the licensee's self-assessments, audits, and condition reports that involved personnel contamination monitor alarms due to personnel internal exposures to determine if identified problems were entered into the corrective action program for resolution. There were no internal exposure occurrences greater than 50 millirem committed effective dose equivalent that were evaluated during the inspection. However, the licensee's process for investigating this type of occurrence

was reviewed to determine if the affected personnel would be properly monitored utilizing the appropriate equipment and if the data would be analyzed and internal exposures properly assessed in accordance with licensee procedures. Documents reviewed are listed in Attachment 1. This review represented one sample.

The inspectors reviewed corrective action program reports related to exposure of significant radiological incidents that involved radiation monitoring instrument deficiencies since the last inspection in this area. Staff members were interviewed and corrective action documents were reviewed to determine if follow-up activities were being conducted in an effective and timely manner commensurate with its importance to safety and risk based on the following:

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

Documents reviewed are listed in Attachment 1. This review represented one sample.

The inspectors evaluated the licensee's self-assessment activities to determine if they would identify and address repetitive deficiencies or significant individual deficiencies observed in problem identification and resolution. Documents reviewed during this inspection are listed in Attachment 1. This review represented one sample.

b. Findings

No findings of significance were identified.

.5 Radiation Protection Technician Instrument Use

a. Inspection Scope

The inspectors determined if the calibration expiration and source response check data records on radiation detection instruments staged for use were current and observed radiation protection technicians for appropriate instrument selection and self-verification of instrument operability prior to use. Documents reviewed are listed in Attachment 1. This review represented one sample.

b. Findings

No findings of significance were identified.

.6 Self-Contained Breathing Apparatus Maintenance/Inspection and User Training

a. Inspection Scope

The inspectors reviewed the status, maintenance and surveillance records of selected self-contained breathing apparatuses staged and ready for use in the plant and assessed the licensee's capability for refilling and transporting self-contained breathing apparatus air bottles to and from the control room during emergency conditions. The inspectors determined whether control room operators and other emergency response and radiation protection personnel were trained and qualified in the use of self-contained breathing apparatuses including personal bottle change-out. The inspectors also reviewed the training and qualification records for selected individuals on each control room shift crew and selected individuals from each designated department that were currently assigned emergency duties, including onsite search and rescue. Documents reviewed are listed in Attachment 1. This review represented one sample.

The inspectors reviewed the self-contained breathing apparatus manufacturer's maintenance training certifications for licensee personnel qualified to perform self-contained breathing apparatus maintenance on vital components (regulator and low pressure alarm). The inspectors reviewed maintenance records for several self-contained breathing apparatuses designated as "ready for service." The inspectors verified that maintenance was performed by qualified personnel over the past five years. The inspectors also determined if the required, periodic air cylinder hydrostatic testing was current and documented. The inspectors also evaluated if this licensee's maintenance procedures were consistent with the self-contained breathing apparatus manufacturer's maintenance manuals. Documents reviewed are listed in Attachment 1. This review represented one sample.

b. Findings

No findings of significance were identified.

**Cornerstone: Public Radiation Safety**

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

a. Inspection Scope

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

- emptying the temporary outside storage tanks and sending the water to be reprocessed in the plant;
- moving some of the temporary tanks offsite and setting up a contingency area for the remainder;
- operation of the pond remediation pumping system;
- response to increased tritium levels in the Unit 1 secondary plant;
- response to increased tritium discharges to the Braidwood cooling lake;
- response to tritium detection in the oil separator and plant ditches;
- several walkdowns of the blowdown line vacuum breakers;
- pumping of the temporary bladder storage units to the blowdown line;
- preparations for remediation of the area around vacuum breaker #1; and

- preparations for resumption of normal radioactive liquid releases to the Kankakee River.

In addition, the inspectors attended and presented information at meetings, hosted by the licensee, for interested community members and participated in tours of the affected areas by public officials and NRC senior managers, including the Chairman of the NRC. This inspection did not constitute a completed sample. Documents reviewed as part of this inspection are listed in Attachment 1.

b. Findings

No findings of significance were identified.

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

Reviews of Radiological Environmental Monitoring Reports, Data and Quality Control

a. Inspection Scope

The NRC performed a number of confirmatory measurements of water samples to evaluate the licensee's proficiency in collecting and in analyzing water samples for tritium and other radioactive isotopes. The samples were collected independently by the inspectors and/or by licensee personnel and sent to the NRC's contract laboratory for the analysis of tritium. The NRC and licensee obtained these samples from surface water and groundwater sampling points identified in the licensee's Radiological Environmental Monitoring Program and from onsite and offsite groundwater monitoring wells. In particular, samples were obtained as part of the licensee's environmental study of tritium and potential groundwater contamination (ADAMS ML062760004) and as part of the licensee's evaluation of contamination from historical circulating water blowdown line leakage that was described in NRC Inspection Report 05000456/2006008; 50000457/2006008 (ML061450522). While tritium was the primary radionuclide of concern, selected samples were also analyzed for gamma emitting radionuclides and for strontium. The inspectors performed these reviews to assess the licensee's analytical detection capabilities for radio-analysis of environmental samples and its ability to accurately quantify radionuclides to an acceptable level of sensitivity. The criteria used to compare the sample results is provided in Attachment 2, and the results of the comparisons between the NRC and licensee results is provided in Attachment 3.

The inspectors considered the following activities in evaluating the cause of any comparisons that did not result in an agreement:

- re-analysis by licensee or NRC's contract laboratory;
- review of licensee's interlaboratory cross check program results; and
- review of data for any apparent statistical biases.

b. Findings

No findings of significance were identified.

#### 4. OTHER ACTIVITIES

##### 4OA1 Performance Indicator Verification (71151)

##### **Cornerstones: Occupational and Public Radiation Safety**

##### Radiation Safety Strategic Area

##### a. Inspection Scope

The inspectors sampled the licensee's Performance Indicator (PI) submittals for the periods listed below. The inspectors used PI definitions and guidance contained in Revision 3 of Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," to verify the accuracy of the PI data. The following PIs were reviewed:

- Occupational Exposure Control Effectiveness: Units 1 and 2

The inspectors reviewed the licensee's assessment of the PI for occupational radiation safety, to determine if indicator related data was adequately assessed and reported during the previous four quarters. The inspectors compared the licensee's PI data with the condition report database, reviewed radiological restricted area exit electronic dosimetry transaction records, and conducted walkdowns of accessible locked high radiation area entrances to verify the adequacy of controls in place for these areas. Data collection and analysis methods for PIs were discussed with licensee representatives to determine if there were any unaccounted for occurrences in the Occupational Radiation Safety PI as defined in Revision 3 of Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline." This review represented one sample.

- Radiological Environmental Technical Specification/Offsite Dose Calculation Manual Radiological Effluent Occurrences: Units 1 and 2

The inspectors reviewed data associated with the Radiological Environmental Technical Specification/offsite dose Calculation Manual PI to determine if the indicator was accurately assessed and reported. This review included the licensee's condition report database for the previous four quarters to identify any potential occurrences such as unmonitored, uncontrolled or improperly calculated effluent releases that may have impacted offsite dose. The inspectors also selectively reviewed gaseous and liquid effluent release data and the results of associated offsite dose calculations and quarterly PI verification records generated over the previous four quarters. Data collection and analyses methods for PIs were discussed with licensee representatives to determine if the process was implemented consistent with industry guidance in Revision 3 of Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline." This review represented one sample.

##### b. Findings

No findings of significance were identified. However, the inspectors reviewed the adequacy of the licensee's evaluation of abnormal radiological restricted area exit electronic dosimetry transaction records. Specifically, the records for a condition identified as "Digi Reset" were reviewed. Based on the licensee's understanding, this "Digi Reset" condition represented an event that indicates the dosimeter was not functioning for some period of time while the dosimeter was in use. While the dosimeter was not functioning, dose that was received by the worker would not be recorded by the dosimeter. Therefore, this condition could represent an occurrence in the Occupational Radiation Safety PI as defined in Revision 3 of Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline." At the time of this inspection, the licensee had not determined the extent of the issue nor the impact of the conditions on the workers' dose records. The licensee planned to perform additional evaluations to quantify the duration the dosimeter was not functioning, the amount of dose that was missed during this time, and an evaluation of compliance with the requirements specified in TS 5.7 "Administrative Controls for High Radiation Areas." Therefore, this issue remains unresolved pending NRC review of the licensee's evaluations, and therefore the issue is categorized as an Unresolved Item 05000456/2006004-02; 05000457/2006004-02.

#### 40A2 Identification and Resolution of Problems (71152)

##### .1 Review of Items Entered into the Corrective Action Program

###### a. Inspection Scope

As required by Inspection Procedure 71152, Identification and Resolution of Problems, and in order to help identify repetitive equipment failures or specific human performance issued for follow-up, the inspectors performed screening of all items entered into the licensee's corrective action program. This was accomplished by reviewing the description of each new IR and attending selective daily management review committee meetings. Minor issues entered into the licensee's corrective action program as a result of the inspectors' observations are generally denoted in Attachment 1. These activities were part of normal inspection activities and were not considered separate samples.

###### b. Findings

No findings of significance were identified.

##### .2 Annual Sample - Operator Workarounds

###### a. Inspection Scope

The inspectors reviewed the licensee's ability to identify operator workarounds as well as the timeliness by which they are addressed. The inspectors conducted walkdowns of the plant both independently and with operators in order to assess for any deficiencies in the plant that may prevent an operator from performing their job in a timely and safe manner. In addition, a thorough records review was conducted which included the adverse condition monitoring program, the list of equipment positioned by an equipment status tag, the temporary configuration change log, the degraded equipment list, the

approved operator aid list, and a historical review of issue reports for potential operator workarounds. Documents reviewed as part of this inspection are listed in Attachment 1. This review represented one sample.

b. Assessment and Observations

The licensee's corporate procedure for classifying operator workarounds created the category of operator challenges which was differentiated from an operator workaround based on the challenge being an obstacle to normal plant operation while the workaround was described as an obstacle to emergency or safe plant operation (TS/safety-related equipment). There were six items classified as operator challenges and no identified operator workarounds. The inspectors observed a monthly meeting of the plant's Workaround Board, where three new challenges were added. The board performed an effective review of various plant programs to assess for potential operator workarounds and challenges, reviewed four issues raised by plant employees and the NRC, and evaluated for any aggregate effects of the six open operator challenges. The inspectors noted that the use of a separate category for operator challenges was an acceptable management tool. However, it created a vulnerability allowing the licensee to rationalize not always addressing operational issues in a timely manner. An example of this can be seen in an operator challenge affecting the Unit 2 heater drain pumps, which was first classified in 1995 and will not be completely addressed until the spring of 2007, although no violations of NRC requirements are related to this, the failure to address the concern placed an added burden on the operators.

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

Loss of Volume Control Tank Level due to Mispositioned Valve

a. Inspection Scope

On August 31, 2006 the inspectors responded to the Unit 1 control room when they were informed that an unexplained lowering of level in the volume control tank (VCT) was occurring. The licensee appropriately entered Abnormal Procedure 1BwOA PRI-1 for excessive reactor coolant system leakage. This procedure directed the operators to isolate letdown and charging which isolated the source of the leak from the reactor coolant system. In parallel to the control room response the licensee dispatched operators into the plant to determine the leak location. A non-licensed operator discovered 1CV243, the VCT high point vent valve, a 'T' handled globe valve, open and noted flow noise through its pipe. The operator shut 1CV243, returning it to its normal position, isolating flow from the VCT. The licensee determined the valve mis-positioning resulted in approximately 175 gallons of water leaving the VCT at a maximum flow rate of 7.5 gallons per minute.

No Emergency Action Levels were exceeded during this event. Subsequent licensee investigation determined that a reactor protection technician had just completed loading a 55 gallon drum being used to store spent resin fines into the VCT room. When the drum was moved into the room it came into physical contact with the 'T' handle of 1CV243 causing it to partially open. 1CV243 was especially susceptible to bumping because of its location and because it only requires 1 rotation of its handle to fully

position open. The VCT room had been selected for storage of the radioactive 55 gallon drum due to its proximity to the work site and since the VCT room was posted as a Locked High Radiation Area and as a result would not normally be accessible. The operations, radiation protection, and maintenance individuals involved with selecting the temporary storage location for the drum did not take into account Braidwood procedures for seismic spacing of objects in safety related spaces. This review represents one inspection sample.

b. Findings

This issue was dispositioned in Section 4OA7.

4OA5 Other Activities

(Closed) NRC Temporary Instruction (TI) 2515/169: Mitigating Systems Performance Index Verification

a. Inspection Scope

Between August 16 and September 28, 2006 the inspectors performed a detailed records review of licensee reported unavailability and unreliability of mitigating systems associated with TI 2515/169. The objective of this TI was to verify that the licensee correctly implemented the Mitigating Systems Performance Index (MSPI) guidance for reporting unavailability and unreliability of monitored safety systems, and to verify the accuracy of the licensee generated, plant specific MSPI basis document.

b. Evaluation of Inspection Requirements

In accordance with the requirements of TI 2515/169, the inspectors evaluated and answered the following questions:

1. For the sample selected, did the licensee accurately document the baseline planned unavailability hours for the MSPI systems?

No. The inspectors identified instances where cascaded unavailability time (inoperability time associated with a support systems or related systems) were not uniformly reported for the affected mitigating systems or in some instances not reported at all. In addition, the inspectors noted a period of train unavailability that was not reported in its entirety for the essential service water system, and the failure to report unavailability time of the essential service water system during pump oil sampling even though the procedure used was not listed in the MSPI basis document as one where unavailability time was not recorded due to the short duration (<15 minutes)/simple recovery nature of the procedure. These observations were captured in the licensees corrective action program under IR 527253 (NRC noted November 2004 Diesel Generator data incomplete), IR 531288 (Deficiencies found in MSPI baseline planned unavailability), and IR 537269 (Correction for MSPI basis document identified by NRC audit). The errors caused no change in PI color for any monitored mitigating system.

2. For the sample selected, did the licensee accurately document the actual unavailability hours for the MSPI systems?

No. Concurrent with the inspectors review the licensee noted that unavailability was not correctly reported for the residual heat removal system and the essential service water system. This has been captured in the licensee's corrective action system as IR 537472 (Self identified issues with in MSPI data for second quarter 2006). The licensee planned to submit changes to the NRC on October 21, 2006 in accordance with NEI 99-02, Revision 4. The errors caused no change in PI color for any monitored mitigating system.

3. For the sample selected, did the licensee accurately document the actual unreliability information for each MSPI monitored component?

Yes. The inspectors reviewed maintenance records, operator logs, and the corrective action program database and found the unreliability information reported by the licensee to be accurate.

4. Did the inspector identify significant errors in the reported data, which resulted in a change to the indicated index color? Describe the actual condition and corrective actions taken by the licensee, including the date when the revised PI information was sent to the NRC.

No. Errors identified by the inspectors and the licensee were entered into the calculation for unavailability index. The results showed no change in PI color for any monitored mitigating system. The licensee planned to submit changes in the MSPI basis document and the reported 2<sup>nd</sup> quarter 2006 unavailability index to the NRC on October 21, 2006.

5. Did the inspectors identify significant discrepancies in the basis document which resulted in (1) a change to a system boundary; (2) an addition of a monitored component; or (3) a change in reported index color? Describe the actual condition and corrective actions taken by the licensee, including the date the bases document was revised.

No errors identified by the inspectors in the basis document resulted in changes in system boundaries, monitored components, or performance index color. The licensee planned to submit a revised basis document to the NRC on October 21, 2006, which was to include revisions of minor errors noted by the inspectors and the licensee during the course of their review.

c. Findings

No findings of significance were identified.

4OA6 Meetings

.1 Exit Meeting

On October 10, 2006, the resident inspectors presented the inspection results to Mr. T. Coutu and his staff, who acknowledged the findings. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

## .2 Interim Exit Meetings

Interim exit meetings were conducted for:

- Occupational radiation safety program for radiation monitoring instrumentation and protective equipment program with Mr. K. Polson and Mr. D. Ambler on August 4, 2006.
- Performance indicator verification with Mr. D. Ambler and Mr. J. Moser on September 7, 2006.
- Public radiation safety with Mr. T. Tierney on October 13, 2006 .

## 4OA7 Licensee-Identified Violations

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which meets the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as a NCV.

Technical Specification 5.4 required implementation of the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A. Regulatory Guide 1.33, Appendix A, Part 6, Subsection w, recommended procedures for combating emergencies and other significant events such as earthquakes. Contrary to this requirement, the licensee failed to implement appropriate procedures for the temporary storage of materials in a safety-related space. Specifically, BwAP 1100-23, Step 2.c.2, required that all portable or mobile stored objects be placed a distance of one foot plus the height of the stored object from any structures, systems, or components within the auxiliary building in order to prevent physical contact during a postulated seismic event. The failure to analyze the VCT room for seismic spacing resulted in a space without adequate clearance being selected as a storage location for temporary solid radioactive waste. This in turn led to the bumping event of August 31, 2006, which resulted in approximately 175 gallons being drained from the Unit 1 reactor coolant system. This issue was considered to be of very low safety significance because assuming worst case degradation, the finding would not have exceeded the TS limit of 10 gpm for identified leakage and could not have affected the ability of a mitigating system from performing its safety function. This issue has been entered into the licensee's corrective action program as IR 526093.

ATTACHMENTS:           1. SUPPLEMENTAL INFORMATION  
                                  2. CONFIRMATORY MEASUREMENTS COMPARISON CRITERIA  
                                  3. TRITIUM SAMPLE RESULTS

## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee

T. Coutu, Site Vice President  
G. Boerschig Plant Manager  
D. Ambler, Regulatory Assurance Manager  
M. Cichon, Licensing Engineer  
L. Coyle, Maintenance Director  
G. Dudek, Operations Director  
J. Moser, Radiation Protection Manager  
A. Ronstadt, Maintenance Rule Coordinator  
M. Smith, Engineering Director  
P. Summers, Nuclear Oversight Manager  
T. Tierney, Chemistry, Environmental, and Radioactive Waste Manager

#### Nuclear Regulatory Commission

R. Skokowski, Chief, Reactor Projects Branch 3

### LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

#### Opened

05000456/2006004-01; 05000457/2006004-01	NCV	Failure to Maintain Electrically Supervised Fire Doors in Accordance With the Fire Protection Program (Section 1R05)
05000456/2006004-02; 05000457/2006004-02	URI	Impact of Nonfunctional Dosimeters on Dose Tracking and Technical Specification Compliance (Section 4OA1.1)

#### Closed

05000456/2006004-01; 05000457/2006004-01	NCV	Failure to Maintain Electrically Supervised Fire Doors in Accordance With the Fire Protection Program (Section 1R05)
---	-----	--

## LIST OF DOCUMENTS REVIEWED

The following is a list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspectors reviewed the documents in their entirety but rather that selected sections of portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

### 1R01 Adverse Weather Protection

0BwOA ENV-1; Adverse Weather Conditions Unit 0; Revision 104  
IR 519265; Rain Blowing Into The Unit 2 Octopus; August 10, 2006 [NRC-Identified]

### 1R04 Equipment Alignment

IR 451462; Boric Acid Deposits Found on 2RH01PA Stud; February 8, 2006  
IR 523818; Minor Oil Leak - Puddle on Floor (Source Unknown) - 2DG01KB;  
August 25, 2006 [NRC-Identified]  
IR 524993; Minor Oil Leak From Turbocharger Lube Oil Drains; August 29, 2006 [NRC-Identified]  
BwOP RH-E2; Electrical Lineup - Unit 2; Revision 4  
BwOP RH-M3; Operating Mechanical Lineup Unit 2, 2A RH Train; Revision 8  
WO 00931571; Unit Two ECCS Venting and Valve Alignment Surveillance Data Sheet;  
July 16, 2006  
DWG M - 137; Diagram of Residual Heat Removal (RH) Unit 2; May 5, 1976  
BwOP DG-E1; Electrical Lineup - Unit 1, 1A Diesel Generator (DG); Revision 6  
BwOP DG-E4; Electrical Lineup - Unit 2, 2B DG; Revision 4  
BwOP DG-M1; Operating Mechanical Lineup - Unit 1, 1A DG; Revision 14  
BwOP DG-M4; Operating Mechanical Lineup - Unit 2, 2B DG; Revision 10  
BwOP AF-E2; Electrical Lineup - Unit 2 Operating; Revision 8  
BwOP AF-M2; Operating Mechanical Lineup, Auxiliary Feedwater Unit 2; Revision 9

### 1R05 Fire Protection

IR 382828; B3 Trend code; 0TI-FP8023 As Found Values Out of Tolerance  
Low/Defective; October 6, 2005  
IR 486020; Unit Auxiliary Transformer 141-1 Deluge Valve Leaks By; May 3, 2006  
IR 508168; NRC Identified Location Discrepancies on 2D-11 Preplan and Fire Protection  
Report Drawing; July 11, 2006 [NRC-Identified]  
IR 508296; NRC Identified Overhead Page Speaker Fouled; July 11, 2006 [NRC-Identified]  
IR 512899; Fire Door Design Deviation Not Documented in FPR; July 25, 2006 [IEMA-Identified]  
IR 516465; BwOP FP-100, Box Fan Improperly Stored Inside TB-451 Fire Protection  
Cage; August 3, 2006 [NRC-Identified]  
IR 527413; Create Sign for Operations B.5.b Building; September 5, 2006  
ECR [Engineering Change Request] 376981; Fire Prevention Safeguards for Temporary  
Occupancy of Warehouse #5 and Vahle Dome; Revision 0  
IR 525203; High Hydrogen Usage on Unit 2, Leak Suspected; August 30, 2006  
IR 525521; Wasp's Nest Identified By NRC on Unit 2 Hydrogen Vent Line;  
August 30, 2006 [NRC-Identified]

1R06 Flood Protection Measures

Calculation 3C8-0685-002; Auxiliary Building Flood Level Calculations - Flood Zone S8-4B/S8-4A, Elevation 439; Revision 3

IR 445675; Unacceptable Material Condition; January 24, 2006

IR 462469; Lack of Urgency to Address Material Condition (1B and 1C MSIV [Main Steam Isolation Valve] Rooms); March 6, 2006

IR 466518; Extent of Condition (Poor Material Condition Unit 2 MSIV Rooms); March 14, 2006

IR 470309; Compensatory Measure for Material Condition 1B/1C MSIV Rooms; March 24, 2006

IR 470387; Develop/Implement plan, Address Water Intrusion MSIV Rooms; March 24, 2006

IR 519023; Lower Cable Spreading Room Floor Drain Plugged; August 11, 2006

IR 525799; MSIV Room Material Condition; August 31, 2006

IR 526605; Ground Water Leak at Unit 1 Main Steam Tunnel; August 31, 2006

IR 529249; 439' U-2 Lower Cable Spreading Room Floor Drain Overflowing; August 27, 2006

1R11 Licensed Operator Regualification Program

Scenario Number BR-16; Respond to a Steam Generator Tube Rupture with a Faulted Steam Generator and Miscellaneous Malfunctions; Revision 2006

IR 527932; Training Simulator Guide Enhancements Required; September 6, 2006

1R12 Maintenance Effectiveness

Maintenance Rule Performance Criteria for Station Air to the Instrument Air System  
Maintenance Rule Performance Criteria for Dry Filtered Instrument Air for Equipment and Instruments

IR 358248; Unit 0 Service Air Compressor Shutdown Due to High Vibrations; July 29, 2005

IR 502397; Potential Repetitive MPFF on U-2 Service Air Compressor Trip; June 22, 2006

IR 509645; 2A DG Fuel Oil Leak. 1 Drop/2 sec at Strainer Hose Fitting; July 15, 2006

IR 512840; Missed Opportunity During 2SA01C Work Window; July 21, 2006

IR 523717; NRC Inspectors Concern with Classification of Equipment Failures; August 25, 2006 [NRC-Identified]

Apparent Cause Report 352740; 1WS336 Failed to Open on Unit 1 Station Air Compressor Start resulting in a Compressor Trip on High Oil Temperature; July 13, 2005

Apparent Cause Report 501537; Unit 2 Station Air Compressor Tripped on High Inlet Oil Temperature; June 19, 2006

Apparent Cause Report 502360; Unit 2 Station Air Compressor Tripped Due to Elevated Vibrations; August 24, 2006

Apparent Cause Report 358367; Issues Identified Pertaining to the Unit Common Station Compressor Following Recent Maintenance Window; Revision 1

Maintenance Rule Evaluation History; July 6, 2006

WO 970011807; 2A Emergency DG - Install Fuel Oil Filter/Strainer Mod per E20-96-61; Revision 1

EC E20-2-96-261; Replace DG Fuel Oil Filter/Strainer with New Design; May 8, 2000

WO 938594; 2A DG Fuel Oil Leak. 1 Drop/2 sec at Strainer Hose Fitting; July 15, 2006

1R13 Maintenance Risk Assessments and Emergent Work Control

IR 537089; 0B Control Room Chiller Found Inoperable During Walkdown; September 27, 2006  
2B CV Pump Work Window Protected Equipment; July 24, 2006  
Paragon plant risk model with 2B CV pump out of service while performing 2B Solid State Protection System surveillance; July 28, 2006  
BwOP FC-11; Spent Fuel Pool Level Adjustment; Revision 28  
Protected equipment with Unit 1 and Unit 2 fuel pool cooling pumps out of service; August 15, 2006  
Protected equipment for 2B essential service water (SX) pump out of service; August 21, 2006  
Protected equipment for 2A DG out of service; August 27, 2006  
IR 514716; Unit 2 Risk Assessment Incorrect for 2A SX Pump Work; July 30, 2006  
Protected Equipment Signs for the Unit 2 CC Heat Exchanger, September 11, 2006  
Unit 0,1 Risk Assessment; Work Week 9/11/2006  
Unit 2 Risk Assessment, Work Week 9/11/2006  
On-Line Work Control Look ahead Schedule; September 12, 2006  
2B SI Pump Work Window Protected Equipment; September 21, 2006  
BwOP VC-1; Startup of Control Room HVAC [Heating Ventilation and Air Conditioning] System; Revision 9  
BwOP VC-2; Shutdown of Control Room HVAC System; Revision 7

1R15 Operability Evaluations

DWG M - 137; Diagram of RH Unit 2; May 5, 1976  
DWG M - 136; Diagram of Safety Injection Unit 2; May 5, 1976  
NRC Contact Report in Reference to IR 518634; August 22, 2006  
BwVSR 3.4.14.1; Reactor Coolant System Pressure Isolation Valve Leakage Surveillance; Revision 12  
IR 343906; Disassemble and inspect 2SI8818C and D under WO 681808 AND 99176374 in A2R12; June 14, 2005  
BwAR 2-6-B1; RH Pump 2A Discharge Pressure High; Revision 5E1  
IR 518634; 2A RH Pump [American Society of Mechanical Engineers] ASME Pressure Anomaly Noted; August 10, 2006  
IR 522566; NRC Questions IR 518634, 2A RH Pump Operability; August 22, 2006 [NRC-Identified]  
IR 518845; Lead Blankets Stored In Containment Exceed Evaluated Values; August 10, 2006  
EC 332151; Lead Shielding In Containment - Long Term Storage; July 22, 2002  
BRW-S-2001-535; Storage of Lead Blankets Inside Containment Building; Revision 0  
IR 447295; Unit 2 Group Step Counter Shutdown Bank C Flashing at 227; January 29, 2006,  
IR 477192; Unit 1 Reactor Coolant System Leakrate Slightly Elevated; April 10, 2006  
IR 447364; Shutdown Bank C Group Step Counter Declared Inoperable; January 30, 2006,  
IR 447884; Need WO Replace Unit 2 Digital Step Counter Batteries in A2R12; January 30, 2006,

IR 450704; ECCS Sump Strainer Margin Unqualified Coatings; February 6, 2006,  
 IR 484627; Potentially Unqualified Coating on Duct Work in Containment; April 28, 2006,  
 IR 486260; Need To Document Operability Bases for RF Sump Indication; May 2, 2006,  
 IR 486260; Assignment 2, Re-visit to Determine if Operable, If We Have Level  
 Indication; July 6, 2006,  
 IR 493933; Metallurgical Results Pressurizer Heater Sleeve; May 24, 2006  
 IR 501764; Possible Repetitive Functional Failure of Rod Drive Step Counter;  
 June 16, 2006  
 IR 506271; Increased Input to Unit 1 Reactor Coolant Drain Tank; July 4, 2006  
 IR 506580; NRC Concern With Lack of Communication With Recent Issues; July 5, 2006  
 [NRC-Identified]  
 IR 510913; Unit 1 Reactor Coolant System Leak Rate Trend; July 19, 2006  
 IR 518634; 2A RH Pump ASME Pressure Anomaly Noted; August 8, 2006  
 IR 533902; Gas Void Found in Byron ECCS Suction Piping; September 19, 2006  
 IR 531066; Enhancement Opportunity - Need Formal Document to Track Margins;  
 September 14, 2006 [NRC-Identified]  
 IR 525912; Review of Trend in Unit 1 Reactor Coolant System Leak Rate - Possible  
 Cause; August 31, 2006  
 Apparent Cause Report Rod Drive System Shutdown Bank C Step Counter Batteries  
 Failed Earlier than Expected; January 30, 2006  
 Functional Failure Cause Determination Evaluation, for Rod Control Shutdown Bank C  
 Step Counter Declared Inoperable; March 3, 2006  
 (a)(1) Determination Template; 501764-03 and previous IR's 500698 and 447295;  
 June 21, 2006  
 Expert Panel Meeting notes from July 25, 2006  
 Analysis BRW-98-0100-M/BYR98-030; Containment Sump Zone of Influence for Failed  
 Coatings; Revision 03A  
 Analysis CS-5; NPSHA for RHR and CS Pumps; Revision 03D  
 Westinghouse LTR\_RCPL-06-75; Operability Assessment for Braidwood Units 1 and 2  
 and Byron Units 1 and 2 Pressurizer Heater Sleeves With Potential Circumferential  
 Cracking; May 26, 2006  
 Operability Evaluation 06-002; Unit 1 and Unit 2 Pressurizer heater Sleeves;  
 June 1, 2006  
 NRC Inspection Manual Part 9900 Technical Guidance; Operability Determinations and  
 Functionality Assessments of Degraded or Non-Conforming Conditions Adverse to  
 Quality or Safety; Appendix C  
 IR 517500; NRC Questions Surrounding Unit 1 Reactor Coolant System Leakage  
 Increase;  
 August  
 3,  
 2006  
 [NRC-  
 Identifi  
 ed]  
 IR 522566; NRC Questions on IR 518634 Response; August 22, 2006 [NRC-Identified]

1R17 Permanent Plant Modifications

EC 352346; Design Consideration Summary; Revision 1  
BwOP IP-1; Instrument Bus Inverter Startup; Revision 17  
EC 352346; Work Planning Instructions for Replacement of Instrument Power Inverter 212 (2IP06E); Revision 1  
BRW-S-2006-132; 50.59 Screening for Instrument Power Inverter Replacements; Revision 0  
IR 537137; 212 Inverter Placard Needs Removed; September 28, 2006

1R19 Post-Maintenance Testing

1BwVSR 5.5.8.CS.2; ASME Surveillance Requirements for 1B Containment Spray Pump and Check Valves 1CS003B, 1CS011B; Revision 5  
2BwVSR 5.5.8.CS.2; ASME Surveillance Requirements for 2B Containment Spray Pump and Check Valves 2CS003B, 2CS011B; Revision 6  
2BwVSR 5.5.8.SX.2; ASME Surveillance Requirements For 2B SX Pump; Revision 5  
2BwVSR 5.5.8.SI.2; ASME Surveillance Requirements For The 2B Safety Injection Pump; Revision 4  
BwOP SI-1; Safety Injection System Startup; Revision 17  
BwOP SI-2; Safety Injection System Shutdown; Revision 10  
2BwOSR 3.8.1.2-1; 2A DG Operability Surveillance; Revision 20  
IR 512946; No Procedure Exists for Gearbox Maintenance on the CV Pump; July 25, 2006  
IR 513689; Foreign Material Found in 2CV01PB Gear Case; July 27, 2006  
IR 513620; Limiting Condition for Operations Action Requirement Exit Delays for 2B CV Pump; July 26, 2006  
2BwVSR 5.5.8.CV.2; ASME Surveillance Requirements for 2B Centrifugal Charging Pump and Check Valve 2CV8480B Stroke Test; Revision 4  
IR 514820; 2CV01PB Charging Pump Gear High Temperature; July 31, 2006

1R20 Refueling and Other Outage Activities

IR 513032; Fuel Assembly Will Not Move Up or Downward in Spent Fuel Pool Cell; July 25, 2006  
IR 513158; Foreign Material Exclusion Event - Portion of Burnable Poison Rodlet Assembly found in Spent Fuel Pool Location; July 25, 2006  
IR 519870; New Fuel Improperly Packaged by Westinghouse; August 14, 2006  
WO 777264-01; Troubleshooting Log for Fuel Assembly S60S; July 25, 2006

1R22 Surveillance Testing

2BwOSR 3.3.2.8-611A; Unit 2 ESFAS [Engineered Safety Feature Actuation System] Instrumentation Slave Relay Surveillance; Revision 4  
2BwOSR 3.8.1.2-1; 2A DG Operability Surveillance; Revision 20  
1BwOSR 3.3.2.8-611A; Unit 1 ESFAS Instrumentation Slave Relay Surveillance; Revision 4  
1BwOSR 3.8.1.15-1; Unit 1 1A DG Hot Restart Test; Revision 0  
1BwVSR 5.5.8.CC.1; ASME Surveillance Requirements for Component Cooling Pump 1CC01PA and Discharge Check Valves; Revision 2  
IR 521181; Unable to Fully Adjust Level in 1D 1<sup>ST</sup> Stage Reheater DrainTank; August 17, 2006  
IR 521525; EC361993 Doesn't Prevent HI-2 Level Alarm; August 18, 2006

1BwOS TRM 3.3.g3; Unit One Turbine Overspeed Protection Systems Valve Stem Freedom Checks; Revision 9a  
0BwIS RETS 2.1-1; Digital Channel Operational Test of OPR01J; Revision 9  
IR 537503; RM-11 Problem During Functional Surveillance for OPR01J;  
September 28, 2006

1R23 Temporary Plant Modifications

EC 362048; Temporarily Defeat the Trip and Alarms for the Unit 2 GIX Relay; Revision 0  
IR 514483; GIX-104 Has an Internal Interrupt Alarm In; July 28, 2006  
IR 517637; Work Request to Have the Temporary Bladder Tanks Emptied;  
August 7, 2006  
50.59 Screening No. BRW-S-2006-181; Work Orders 949935, 949887, 950606 Disposal of Low level Tritiated Water Via the Station blowdown Line; Revision 0  
Tritium Sample Data Sheet; Bladders at Vacuum Breaker #1 (North) and #3;  
August 23, 2006  
Tritium Sample Data Sheet; Bladder at Vacuum Breaker #1 (South); August 31, 2006

1EP6 Drill Evaluation

Scenario Number BR-16; Respond to a Steam Generator Tube Rupture with a Faulted Steam Generator and Miscellaneous Malfunctions; Revision 2006  
IR 505980; Blank Severe Accident Management Guideline Procedure; July 3, 2006  
[IEMA-Identified]  
IR 527932; Training Simulator Guide Enhancements Required; September 6, 2006

2OS3 Radiation Monitoring Instrumentation and Protective Equipment

RP-BR-730; Operation and Verification of Counting Efficiencies for GM-Type Contamination Survey Instruments; Revision 3  
RP-BR-760; Operation and Calibration of the Radeco Portable Air Samplers; Revision 0  
RP-BR-712; Operation and Calibration of Ionization Chamber Survey Instruments  
RP-AA-700; Controls for Radiation Protection Instrumentation; Revision 1  
IR 387631; Check-In Self-Assessment Report; RP Instrumentation Program Check-In: Follow-up to NOS 2005 RP Fleet Assessment; July 26, 2006  
NOSA-BRW-05-06 (IR 287716); Health Physics Functional Area NOS Audit; June 22, 2005 Device Model ASP-1/AC3-7; Serial No. 652/724197; tested July 7, 2006  
IR 344675; NOS ID: Calibration Dates Omitted from Calibration Forms; June 16, 2005  
IR 344137; NOS ID (RP) 2004 WBC Calibration Beyond Required Frequency  
June 14, 2005  
IR 344702; NOS ID: RP Ann Cal Review and AF Data Reviews Not Performed;  
June 16, 2005  
IR 342624; NOS ID: (RP) Instrument Out of Tolerance Report(s) Deficiencies;  
June 9, 2005  
IR 344771; NOS ID: Out of Calibration Instruments on Inventory List; June 16, 2005  
IR 344716; NOS ID: RP Instrument Control Deficiency; June 16, 2005  
IR 344848; NOS ID: Shepherd Source Certification/Characterization Issues;  
June 16, 2005  
RP-AP-605; Scaling Factor Determination, February 27, 2006  
RP-BR-730; As Found Pre-Calibration Source Check Sheet; Instrument ASP-1 No. 1067; February 17, 2006

RP-BR-730; Efficiency Verification Log Sheet; Instrument ASP-1 No. 1067; March 13, 2006  
RP-BR-730; As Found Pre-Calibration Source Check Sheet; Instrument RM-14 No. 7491; February 8, 2006  
RP-BR-730; Efficiency Verification Log Sheet; Instrument RM-14 No. 7491; February 8, 2006  
Exelon Power Labs; Certificate of Calibration for Eberline Radiation Detection Device Model ASP-1; Serial No. 1268; tested February 21, 2006  
Exelon Power Labs; Certificate of Calibration for Eberline Radiation Detection Device Model PRM-6; Serial No. 1440; tested February 27, 2006  
Exelon Power Labs; Certificate of Calibration for Bicorn Radiation Detection Device Model RSO-50E; Serial No. B920Y; tested March 15, 2006  
Exelon Power Labs; Certificate of Calibration for MGP Radiation Detection Device Model Telepole WR; Serial No. 6603-137; tested May 18, 2006  
RP-BR-712; Ion Chamber Calibration Form; Serial Number C928H, February 8, 2006  
GM Source Check and SOP Checklist; dated July 31, 2006  
RP-AA-440; Respiratory Protection Program; Revision 7  
RP-AA-825; Maintenance, Care, and Inspection of Respiratory Protective Equipment; Revision 2  
RP-BR-827; Operation, Use, and Inspection of Self Contained Breathing Apparatus (SCBA), Revision 1  
RP-BR-827; Attachment 3; ISI Viking Self Contained Breathing Apparatus Checklist; August 2, 2006  
IR 515952; Enhancement Identified in Storage of SCBA Corrective Lenses, August 2, 2006  
IR 516034; Shepherd calibrator Scale Deficiency, August 2, 2006  
IR 516465; BWOP FP-100, Box Fan Improperly Stored Inside TB-451 FP Cage; August 2, 2006

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems

IR 527593; Exelon Pond Tritium is Higher Than 2862 pci/l; September 5, 2006  
IR 531153; Tritium Concentration Exceeds 600 pci/l in the North Oil Separator; September 14, 2006  
IR 531688; Cooling Lake Tritium Concentration at 134 pci/l; September 15, 2006  
IR 535874; Exelon Pond Flow Totalizer Reading Mismatch; September 25, 2006  
Exelon Nuclear Braidwood Station Letter to NRC BW060085; Resumption of Liquid Discharges Through Blowdown Line; September 1, 2006  
EC 361965; Remediation of Tritium Contaminated Groundwater in the Vicinity of Vacuum Breaker #1; Revision 0  
Plant Operating Committee Meeting 06-027 Agenda Item; Resumption of Limited Radwaste Liquid Release Via the Circulating Water blowdown Line; September 28, 2006  
Plant Operating Committee Meeting 06-027 Agenda Item; Administrative Controls for Vacuum Breaker 1 Remediation System; September 28, 2006

4OA1 Performance Indicator Verification

LS-AA-2140; Monthly Data Elements for NRC Occupational Exposure Control Effectiveness; July 2005 through June 2006

LS-AA-2150; Monthly Data Elements for RETS/ODCM Radiological Effluent Occurrences; July 2005 through June 2006

4OA2 Identification and Resolution of Problems

OP-AA-102-103; Operator Work-Around Program; Revision 1  
Braidwood Station Work Around Board Meeting Handout; September 28, 2006  
Temporary Configuration Change Monthly Review Sheet; September 14, 2006  
Adverse Condition Monitoring Program Status Report; September 28, 2006  
Approved Operator Aids; September 28, 2006  
Operator Work-Around Status Update; August 3, 2006  
IR 496552; 1B 1<sup>ST</sup> Stage RHDT HI-2 Alarm Failed to Reset During Reheat Valve/  
Intercept Valve Surveillance; June 5, 2006  
IR 526169; 1CV131 Pressure Swings in Auto or Manual Following Transient;  
August 31, 2006  
Braidwood Closed Operator Work-Around Log  
Braidwood Closed Operator Challenge Log

4OA3 Followup of Events and Notices of Enforcement Discretion

Quick Human Performance Investigation Report; Unidentified Unit 1 Reactor Coolant System Leakage Due to Bumping of 1CV243; September 6, 2006  
BwAP 100-23; Seismic Housekeeping Requirements for the Temporary Storage of Materials in Category 1 Areas; Revision 1  
DWG M - 64; Diagram of the Chemical & Volume Control & Boron Thermal Regeneration Systems; Sheet 4A  
DWG M - 64; Diagram of the Chemical & Volume Control & Boron Thermal Regeneration Systems; Sheet 4B  
IR 526093; Unplanned LCOAR & BwOA Entry Due to 1CV243 Bumped; August 31, 2006  
1BwOA PRI-1; Excessive Primary Plant Leakage, Unit 1; Revision 101

4OA5 Other Activities

IR 225998; Unplanned LCO Entry for 2A Auxiliary Feedwater (AF) Pump Failure to Start; June 4, 2004  
IR 227302; 2A AF Pump Failed to Start From Main Control Room - Unplanned TRM Entry; June 9, 2004  
IR 527253; NRC Noted November 2004 DG Data Incomplete; September 5, 2006 [NRC-Identified]  
IR 531288; Discrepancies Found in MSPI Baseline Planned Unavailability; September 15, 2006 [NRC-Identified]  
IR 537269; Corrections MSPI Basis Document Identified By NRC Audit; September 28, 2006 [NRC-Identified]  
IR 537472; Self Identified Issues in MSPI Data for Q2 2006; September 28, 2006  
Maintenance Rule - Evaluation History; Chemical and Volume Control System; 2002 - 2006  
Maintenance Rule - Evaluation History; Safety Injection System; 2002 - 2006  
Maintenance Rule - Evaluation History; Residual Heat Removal System; 2002 - 2006  
Maintenance Rule - Evaluation History; Auxiliary Feedwater System; 2002 - 2006  
Maintenance Rule - Evaluation History; Diesel Generator System; 2002 - 2006

Maintenance Rule - Evaluation History; Component Cooling Water System; 2002 - 2006  
Maintenance Rule - Evaluation History; Essential Service Water System; 2002 - 2006  
Focused Operator Log Review covering from January 2002 - June 2006  
1BwOSR 3.3.2.3; Unit One Undervoltage Simulated Start of 1A Auxiliary Feedwater  
Pump Surveillance; Revision 2  
BB PRA-017.27A; Braidwood MSPI Basis Document; Revision 2  
NEI 99-02 Appendix F; Methodologies for Computing the Unavailability Index,  
Unreliability Index and Component Performance Limits; Revision 4

## LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
ASME	American Society of Mechanical Engineers
BwAP	Braidwood Administrative Procedure
BwAR	Braidwood Annunciator Response Procedure
BwOA	Braidwood Abnormal Operating Procedure
BwOP	Braidwood Operating Procedure
BwOSR	Braidwood Operating Surveillance Requirement Procedure
BwVSR	Braidwood Engineering Surveillance Requirement Procedure
CC	Component Cooling
CFR	Code of Federal Regulations
CS	Containment Spray
CV	Chemical and Volume Control
DG	Diesel Generator
EC	Engineering Change
ECCS	Emergency Core Cooling System
ECR	Engineering Change Request
ESFAS	Engineered Safety Feature Actuation System
FPR	Fire Protection Report
HVAC	Heating Ventilation and Air Conditioning
IEMA	Illinois Emergency Management Agency
IMC	Inspection Manual Chapter
IR	Issue Reports
KVA	Kilovolt-Amps
LER	Licensee Event Report
MSIV	Main Steam Isolation Valve
MSPI	Mitigating System Performance Index
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
PARS	Publicly Available Records
PI	Performance Indicator
REMP	Radiological Environmental Monitoring Program
RH	Residual Heat Removal
RP	Radiation Protection
SCBA	Self Contained Breathing Apparatus
SDP	Significance Determination Process
SI	Safety Injection
SX	Essential Service Water
TI	Temporary Instruction
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
VCT	Volume Control Tank
WO	Work Order

### Confirmatory Measurements Comparison Criteria

The NRC applied the comparison criteria contained in NRC Inspection Procedure 84750, "Radioactive Waste Treatment, and Effluent and Environmental Monitoring," dated March 15, 1994, to determine if the licensee's measurement results were in statistical agreement with the NRC measurement results. For the purposes of this comparison, the NRC result is divided by its associated uncertainty to obtain the resolution. (Note: For purposes of this process, the uncertainty is defined as the relative standard deviation, one sigma, of the NRC's contract laboratory's analysis.) The licensee's result is then divided by the corresponding NRC result to obtain the ratio (licensee result/NRC). The licensee's measurement is in agreement if the value of the ratio fall within the limits shown in the following table for the corresponding resolution.

<b>Resolution</b>	<b>Acceptance Range (Licensee Result/NRC Result)</b>
<4	Technical Judgement <sup>1</sup>
4-7	0.5-2.0
8-15	0.6-1.66
16-50	0.75-1.33
51-200	0.80-1.25
>200	0.85-1.18

For analyses that are below the minimum detectable concentration (either for the licensee or NRC's contract laboratory), the measurements are determined to be in agreement if both are below the minimum detectable concentration or if one has an uncertainty that is within the minimum detectable concentration.

---

<sup>1</sup>The inspectors used technical judgement in reviewing results having a relative 1 sigma uncertainty greater than 25 percent (i.e., resolution less than 4). In these cases, the values were typically very close to the laboratory's detection capabilities, and greater variability was expected. Consequently, these sample comparisons were made based on the inspectors qualitative review of the analytical results.

## Attachment 3

**Tritium Sample Results  
Braidwood Generating Station**

#	Collection Date	NRC			Licensee			Ratio: Licensee to NRC	Result	
		Sample ID	Tritium pCi/L ± uncertainty		MDC	Sample ID	Tritium pCi/L ± uncertainty			
1	02/09/2006	BD-06-1-01	< MDC		200	GW-020906-JK-PWN-201	< 200		n/a	Agreement
2	02/10/2006	BD-06-1-02	< MDC		200	GW-021006-MB-PWN-202	< 200		n/a	Agreement
3	01/18/2006	BD-06-1-03	2650	180	200	GW-011806-MB-SW-2	2504	154	0.94	Agreement
4	01/30/2006	BD-06-1-04	< MDC		200	GW-013006-MB-SW-05	< 200		n/a	Agreement
5	02/24/2006	BD-06-1-05	< MDC		200	GW-022406-MB-TB1-8D	< 200		n/a	Agreement
6	02/24/2006	BD-06-1-06	< MDC		200	GW-022406-MB-TB1-9D	< 200		n/a	Agreement
7	02/24/2006	BD-06-1-07	< MDC		200	GW-022406-MB-TB1-10D	< 200		n/a	Agreement
8	02/02/2006	BD-06-1-08	< MDC		200	GW-020206-MB-PW-3	< 200		n/a	Agreement
9	01/30/2006	BD-06-1-09	< MDC		200	GW-013006-MB-PW-5	< 200		n/a	Agreement
10	01/19/2006	BD-06-1-10	< MDC		200	PW-5	< 200		n/a	Agreement
11	02/02/2006	BD-06-1-11	< MDC		200	GW-020206-MB-PW-6	< 200		n/a	Agreement
12	02/07/2006	BD-06-1-12	< MDC		200	GW-020706-MB-PW-6P	< 200		n/a	Agreement
13	02/02/2006	BD-06-1-13	< MDC		200	GW-020206-MB-PW-11	< 200		n/a	Agreement
14	01/30/2006	BD-06-1-14	< MDC		200	GW-013006-MB-PW-13	< 200		n/a	Agreement
15	01/30/2006	BD-06-1-15	< MDC		200	GW-013006-MB-PW-14	< 200		n/a	Agreement
16	02/20/2006	BD-06-1-16	570	270	420	GW-022006-SC-VB4-1	1401	132	2.46	Agreement
17	02/20/2006	BD-06-1-17	< MDC		420	GW-022006-SC-VB4-1D	< 420		n/a	Agreement
18	02/21/2006	BD-06-1-18	< MDC		420	GW-022106-SC-VB4-2	< 420		n/a	Agreement
19	02/21/2006	BD-06-1-19	< MDC		420	GW-022106-SC-VB4-2D	< 420		n/a	Agreement
20	02/21/2006	BD-06-1-20	33900	1100	420	GW-022106-SC-VB4-3	31459	490	0.93	Agreement
21	02/21/2006	BD-06-1-21	< MDC		420	GW-022106-SC-VB4-3D	< 420		n/a	Agreement
22	02/21/2006	BD-06-1-22	< MDC		420	GW-022106-SC-VB4-4	< 420		n/a	Agreement

## Attachment 3

**Tritium Sample Results**  
**Braidwood Generating Station**

#	Collection Date	NRC			Licensee			Ratio: Licensee to NRC	Result
		Sample ID	Tritium pCi/L ± uncertainty	MDC	Sample ID	Tritium pCi/L ± uncertainty			
23	02/21/2006	BD-06-1-23	< MDC	420	GW-022106-SC-VB4-4D	< 420		n/a	Agreement
24	02/21/2006	BD-06-1-24	< MDC	420	GW-022106-SC-VB4-5	< 420		n/a	Agreement
25	02/21/2006	BD-06-1-25	< MDC	420	GW-022106-SC-VB4-5D	< 420		n/a	Agreement
26	02/21/2006	BD-06-1-26	< MDC	420	GW-022106-SC-VB4-6	< 420		n/a	Agreement
27	02/21/2006	BD-06-1-27	< MDC	420	GW-022106-SC-VB4-6D	< 420		n/a	Agreement
28	02/21/2006	BD-06-1-28	< MDC	420	GW-022106-SC-VB4-7	< 420		n/a	Agreement
29	02/21/2006	BD-06-1-29	< MDC	420	GW-022106-SC-VB4-7D	< 420		n/a	Agreement
30	02/21/2006	BD-06-1-30	< MDC	420	GW-022106-JK-VB4-8	< 420		n/a	Agreement
31	02/21/2006	BD-06-1-31	< MDC	420	GW-022106-JK-VB4-8D	< 420		n/a	Agreement
32	02/21/2006	BD-06-1-32	< MDC	420	GW-022106-SC-VB4-9	< 420		n/a	Agreement
33	02/21/2006	BD-06-1-33	< MDC	420	GW-022106-SC-VB4-9D	< 420		n/a	Agreement
34	02/21/2006	BD-06-1-34	< MDC	420	GW-022106-JK-VB4-10	< 420		n/a	Agreement
35	02/21/2006	BD-06-1-35	< MDC	420	GW-022106-JK-VB4-10D	< 420		n/a	Agreement
36	02/20/2006	BD-06-1-36	< MDC	410	GW-022006-SC-VB4-11	< 410		n/a	Agreement
37	02/09/2006	BD-06-1-37	< MDC	410	GW-020906-MB-VB4-11	< 410		n/a	Agreement
38	02/20/2006	BD-06-1-38	< MDC	410	GW-022006-SC-VB4-11D	< 410		n/a	Agreement
39	02/09/2006	BD-06-1-39	< MDC	410	GW-020906-MB-VB4-11D	< 410		n/a	Agreement
40	02/20/2006	BD-06-1-40	< MDC	410	GW-022006-SC-VB4-12	< 410		n/a	Agreement
41	02/09/2006	BD-06-1-41	< MDC	410	GW-020906-MB-VB4-12	< 410		n/a	Agreement
42	02/20/2006	BD-06-1-42	< MDC	410	GW-022006-SC-VB4-12D	< 410		n/a	Agreement
43	02/09/2006	BD-06-1-43	< MDC	410	GW-020906-MB-VB4-12D	< 410		n/a	Agreement
44	02/21/2006	BD-06-1-44	< MDC	410	GW-022106-SC-VB4-13	< 410		n/a	Agreement

## Attachment 3

**Tritium Sample Results**  
**Braidwood Generating Station**

#	Collection Date	NRC			Licensee			Ratio: Licensee to NRC	Result	
		Sample ID	Tritium pCi/L ± uncertainty		MDC	Sample ID	Tritium pCi/L ± uncertainty			
45	02/09/2006	BD-06-1-45	< MDC		410	GW-020906-MB-VB4-13	< 410		n/a	Agreement
46	02/21/2006	BD-06-1-46	< MDC		410	GW-022106-SC-VB4-13D	< 410		n/a	Agreement
47	02/09/2006	BD-06-1-47	< MDC		410	GW-020906-MB-VB4-13D	< 410		n/a	Agreement
48	02/20/2006	BD-06-1-48	< MDC		410	GW-022006-SC-VB4-14	< 410		n/a	Agreement
49	02/09/2006	BD-06-1-49	< MDC		410	GW-020906-MB-VB4-14	< 410		n/a	Agreement
50	02/20/2006	BD-06-1-50	< MDC		410	GW-022006-SC-VB4-14D	< 410		n/a	Agreement
51	02/09/2006	BD-06-1-51	< MDC		410	GW-020906-MB-VB4-14D	< 410		n/a	Agreement
52	02/22/2006	BD-06-1-52	< MDC		410	GW-022206-MB-VB5-2D	< 410		n/a	Agreement
53	02/20/2006	BD-06-1-53	< MDC		410	GW-022006-MB-VB5-3	< 410		n/a	Agreement
54	02/22/2006	BD-06-1-54	< MDC		410	GW-022206-MB-VB5-3D	< 410		n/a	Agreement
55	02/20/2006	BD-06-1-55	< MDC		420	GW-022006-MB-VB5-4	< 420		n/a	Agreement
56	02/22/2006	BD-06-1-56	< MDC		420	GW-022206-MB-VB5-4D	< 420		n/a	Agreement
57	02/20/2006	BD-06-1-57	< MDC		420	GW-022006-MB-VB5-2	< 420		n/a	Agreement
58	02/20/2006	BD-06-1-58	2010	330	420	GW-022006-MB-VB6-2	2222	159	1.11	Agreement
59	02/21/2006	BD-06-1-59	< MDC		420	GW-022106-MB-VB6-2D	< 420		n/a	Agreement
60	02/21/2006	BD-06-1-60	< MDC		420	GW-022106-MB-VB6-3	< 420		n/a	Agreement
61	02/21/2006	BD-06-1-61	< MDC		420	GW-022106-MB-VB6-3D	< 420		n/a	Agreement
62	02/20/2006	BD-06-1-62	< MDC		420	GW-022006-MB-VB6-4	< 420		n/a	Agreement
63	02/20/2006	BD-06-1-63	< MDC		420	GW-022006-MB-VB6-4D	< 420		n/a	Agreement
64	02/20/2006	BD-06-1-64	< MDC		420	GW-022006-JK-VB7-1	< 420		n/a	Agreement
65	02/20/2006	BD-06-1-65	< MDC		420	GW-022006-JK-VB7-1D	< 420		n/a	Agreement
66	02/20/2006	BD-06-1-66	< MDC		420	GW-022006-JK-VB7-2	< 420		n/a	Agreement

## Attachment 3

**Tritium Sample Results  
Braidwood Generating Station**

#	Collection Date	NRC			Licensee			Ratio: Licensee to NRC	Result	
		Sample ID	Tritium pCi/L ± uncertainty		MDC	Sample ID	Tritium pCi/L ± uncertainty			
67	02/21/2006	BD-06-1-67	< MDC		420	GW-022106-JK-VB7-3	< 420		n/a	Agreement
68	02/20/2006	BD-06-1-68	< MDC		420	GW-022006-JK-VB7-4	< 420		n/a	Agreement
69	02/20/2006	BD-06-1-69	< MDC		420	GW-022006-JK-VB7-5	< 420		n/a	Agreement
70	02/20/2006	BD-06-1-70	< MDC		420	GW-022006-JK-VB7-6	< 420		n/a	Agreement
71	02/20/2006	BD-06-1-71	< MDC		420	GW-022006-JK-VB7-7	< 420		n/a	Agreement
72	02/20/2006	BD-06-1-72	< MDC		420	GW-022006-JK-VB7-7D	< 420		n/a	Agreement
73	02/20/2006	BD-06-1-73	< MDC		420	GW-022006-JK-VB7-8	< 420		n/a	Agreement
74	02/20/2006	BD-06-1-74	< MDC		420	GW-022006-JK-VB7-8D	< 420		n/a	Agreement
75	02/21/2006	BD-06-1-75	< MDC		410	GW-022106-MB-VB8-2	< 410		n/a	Agreement
76	02/21/2006	BD-06-1-76	< MDC		410	GW-022106-MB-VB8-2D	< 410		n/a	Agreement
77	02/21/2006	BD-06-1-77	< MDC		410	GW-022106-MB-VB8-3	< 410		n/a	Agreement
78	02/21/2006	BD-06-1-78	< MDC		410	GW-022106-MB-VB8-3D	< 410		n/a	Agreement
79	02/21/2006	BD-06-1-79	< MDC		410	GW-022106-MB-VB8-4	< 410		n/a	Agreement
80	02/21/2006	BD-06-1-80	< MDC		410	GW-022106-MB-VB8-4D	< 410		n/a	Agreement
81	03/20/2006	BD-06-2-01	950	140	200	BDWW-1526	776	111	0.82	Agreement
82	03/20/2006	BD-06-2-02	840	140	200	BDWW-1527	888	115	1.06	Agreement
83	03/20/2006	BD-06-2-03	370	120	200	BDWW-1528	462	101	1.25	Agreement
84	03/20/2006	BD-06-2-04	790	140	200	BDWW-1529	823	113	1.04	Agreement
85	03/20/2006	BD-06-2-05	< MDC		200	BDWW-1530	262	93	n/a	Agreement
86	03/20/2006	BD-06-2-06	< MDC		380	BDWW-1531	< 380		n/a	Agreement
87	03/20/2006	BD-06-2-07	< MDC		380	BDWW-1532	< 380		n/a	Agreement
88	03/29/2006	BD-06-3-01	< MDC		200	GW-032906-JE-PWW-103	< 200		n/a	Agreement

## Attachment 3

**Tritium Sample Results**  
**Braidwood Generating Station**

#	Collection Date	NRC			Licensee			Ratio: Licensee to NRC	Result
		Sample ID	Tritium pCi/L ± uncertainty	MDC	Sample ID	Tritium pCi/L ± uncertainty			
89	04/03/2006	BD-06-3-02	< MDC	200	GW-40306-JL-PW-533	< 200		n/a	Agreement
90	03/28/2006	BD-06-3-03	< MDC	200	GW-032806-JE-PWG-185	< 200		n/a	Agreement
91	04/03/2006	BD-06-3-04	< MDC	200	GW-040306-JL-PWG-095	< 200		n/a	Agreement
92	04/03/2006	BD-06-3-05	< MDC	200	GW-040306-JL-PWG-173	< 200		n/a	Agreement
93	04/04/2006	BD-06-3-06	< MDC	200	GW-040406-JL-PWG-135	< 200		n/a	Agreement
94	04/04/2006	BD-06-3-07	< MDC	200	GW-040406-MB-PWG-059	< 200		n/a	Agreement
95	03/08/2006	BD-06-3-08	< MDC	200	GW-030806-JL-PW-5	< 200		n/a	Agreement
96	03/28/2006	BD-06-3-09	< MDC	200	GW-032806-JL-PW-13	< 200		n/a	Agreement
97	03/28/2006	BD-06-3-10	< MDC	200	GW-032806-JE-PWS-201	< 200		n/a	Agreement
98	04/04/2006	BD-06-3-11	< MDC	200	GW-040406-JL-PW-415	< 200		n/a	Agreement
99	04/03/2006	BD-06-3-12	< MDC	200	GW-040306-JL-PW-418	< 200		n/a	Agreement
100	03/30/2006	BD-06-3-13	< MDC	200	GW-033006-JE-PW-450	< 200		n/a	Agreement
101	03/28/2006	BD-06-3-14	< MDC	200	GW-032806-JE-PW-453	< 200		n/a	Agreement
102	03/30/2006	BD-06-3-15	< MDC	200	GW-033006-MB-PW-433	< 200		n/a	Agreement
103	03/30/2006	BD-06-3-16	< MDC	200	GW-033006-MB-PW-437	< 200		n/a	Agreement
104	03/30/2006	BD-06-3-17	< MDC	200	GW-033006-MB-PW-447	< 200		n/a	Agreement
105	03/30/2006	BD-06-3-18	< MDC	200	GW-033006-JE-PW-523	< 200		n/a	Agreement
106	04/03/2006	BD-06-3-19	< MDC	200	GW-040306-MB-PW-476	< 200		n/a	Agreement
107	04/03/2006	BD-06-3-20	< MDC	200	GW-040306-MB-PW-493	< 200		n/a	Agreement
108	04/03/2006	BD-06-3-21	< MDC	200	GW-040306-MB-PW-512	< 200		n/a	Agreement
109	04/03/2006	BD-06-3-22	< MDC	200	GW-040306-MB-PW-534	< 200		n/a	Agreement
110	04/13/2006	BD-06-4-01	< MDC	200	BDSP-1	< MDC		n/a	Agreement

## Attachment 3

**Tritium Sample Results  
Braidwood Generating Station**

#	Collection Date	NRC			Licensee			Ratio: Licensee to NRC	Result	
		Sample ID	Tritium pCi/L ± uncertainty	MDC	Sample ID	Tritium pCi/L ± uncertainty				
111	04/13/2006	BD-06-4-02	< MDC		200	BDSP-2	< MDC		n/a	Agreement
112	04/13/2006	BD-06-4-03	< MDC		200	BDSP-3	< MDC		n/a	Agreement
113	04/13/2006	BD-06-4-04	< MDC		200	BDSP-4	< MDC		n/a	Agreement
114	04/13/2006	BD-06-4-05	< MDC		200	BDSP-5	< MDC		n/a	Agreement
115	04/13/2006	BD-06-4-06	< MDC		200	*BD-10	< MDC		n/a	Agreement
116	04/13/2006	BD-06-4-07	< MDC		200	*BD-22	< MDC		n/a	Agreement
117	04/13/2006	BD-06-4-08	< MDC		200	*BD-25	< MDC		n/a	Agreement
118	04/13/2006	BD-06-4-09	< MDC		200	*BD-34	< MDC		n/a	Agreement
119	04/13/2006	BD-06-4-10	< MDC		200	*BD-35	< MDC		n/a	Agreement
120	04/13/2006	BD-06-4-11	220	120	200	*BD-36	393		1.79	Agreement
						BDSP-36	361	100	1.64	Agreement
121	04/13/2006	BD-06-4-12	< MDC		200	*BD-37	< MDC		n/a	Agreement
122	04/13/2006	BD-06-4-13	< MDC		200	*BD-38	< MDC		n/a	Agreement
						BDSP-38	208	78	n/a	Agreement
123	04/20/2006	BD-06-4-14	< MDC		200	*BD-13	< MDC		n/a	Agreement
124	04/13/2006	BD-06-5-01	< MDC		190	GW-041306-MB-PWG-190	< 190		n/a	Agreement
125	04/18/2006	BD-06-5-02	< MDC		190	GW-041806-MB-PW-604	< 190		n/a	Agreement
126	04/20/2006	BD-06-5-03	< MDC		190	GW-042006-MB-PWS-202	< 190		n/a	Agreement
127	03/29/2006	BD-06-5-04	< MDC		190	GW-032906-JE-PWG-055	279	94	n/a	Agreement
128	05/10/2006	BD-06-6-01	< MDC		190	JL-011	< 190		n/a	Agreement
129	05/10/2006	BD-06-6-02	< MDC		190	MS-020	< 190		n/a	Agreement
130	05/11/2006	BD-06-6-03	430	120	190	JL-031	441		1.03	Agreement

## Attachment 3

**Tritium Sample Results  
Braidwood Generating Station**

#	Collection Date	NRC			Licensee			Ratio: Licensee to NRC	Result	
		Sample ID	Tritium pCi/L ± uncertainty		MDC	Sample ID	Tritium pCi/L ± uncertainty			
131	05/11/2006	BD-06-6-04	< MDC		190	MS-042	< 190		n/a	Agreement
132	05/15/2006	BD-06-6-05	< MDC		190	MB-050	204		n/a	Agreement
133	04/05/2006	BD-06-6-06	< MDC		190	PW-441	< 190		n/a	Agreement
134	04/13/2006	BD-06-6-07	< MDC		190	PW-465	< 190		n/a	Agreement
135	04/18/2006	BD-06-6-08	< MDC		190	PW-448	< 190		n/a	Agreement
136	05/05/2006	BD-06-6-09	< MDC		190	PWG-048	< 190		n/a	Agreement
137	05/16/2006	BD-06-6-10	< MDC		190	PWG-074	< 190		n/a	Agreement
138	05/16/2006	BD-06-6-11	< MDC		190	PWN-110	< 190		n/a	Agreement
139	05/19/2006	BD-06-6-12	< MDC		190	PWS-203	< 190		n/a	Agreement
140	05/19/2006	BD-06-6-13	< MDC		190	SW-8	< 190		n/a	Agreement
141	06/14/2006	BD-06-7-01	2560	180	180	GW-061406-JL	2368	145	0.93	Agreement
142	06/11/2006	BD-06-7-02	< MDC		180	VB10-061106	< 180		n/a	Agreement
143	04/11/2006	BD-06-7-03	330	120	180	PW-481	337	110	1.02	Agreement
144	04/27/2006	BD-06-7-04	< MDC		180	PWN-104	< 180		n/a	Agreement
145	05/01/2006	BD-06-7-05	< MDC		190	PWN-105	190	104	n/a	Agreement
146	06/15/2006	BD-06-7-06	2560	180	180	GW-061506-JL	2111	138	0.82	Agreement
147	06/15/2006	BD-06-7-07	2680	180	180	NRC Independent sample of GW-061506-JL	2111	138	0.79	Agreement
148	04/25/2006	BD-06-7-08	< MDC		180	PWG-062	< 180		n/a	Agreement
149	04/07/2006	BD-06-7-09	< MDC		180	PWG-067	< 180		n/a	Agreement
150	04/27/2006	BD-06-7-10	< MDC		190	PWG-089	< 190		n/a	Agreement
151	04/11/2006	BD-06-7-11	< MDC		180	PWG-093	< 180		n/a	Agreement

## Attachment 3

**Tritium Sample Results  
Braidwood Generating Station**

#	Collection Date	NRC			Licensee			Ratio: Licensee to NRC	Result
		Sample ID	Tritium pCi/L $\pm$ uncertainty	MDC	Sample ID	Tritium pCi/L $\pm$ uncertainty			
152	06/08/2006	BD-06-7-12	< MDC	180	PWG-100	< 180		n/a	Agreement
153	06/08/2006	BD-06-7-13	< MDC	180	PWG-111	< 180		n/a	Agreement
154	05/01/2006	BD-06-7-14	< MDC	180	PWG-143	< 180		n/a	Agreement
155	04/11/2006	BD-06-7-15	< MDC	190	PWG-176	< 190		n/a	Agreement
156	06/08/2006	BD-06-7-16	< MDC	180	PWG-178	< 180		n/a	Agreement
157	04/27/2006	BD-06-7-17	< MDC	190	PWG-202	< 190		n/a	Agreement
158	04/12/2006	BD-06-7-18	< MDC	190	PWG-600	< 190		n/a	Agreement
159	05/01/2006	BD-06-7-19	< MDC	190	PW-461	< 190		n/a	Agreement
160	05/01/2006	BD-06-7-20	< MDC	190	PW-472	< 190		n/a	Agreement
161	06/08/2006	BD-06-7-21	< MDC	190	PW-528	< 190		n/a	Agreement
162	06/08/2006	BD-06-7-22	< MDC	190	PW-613	< 190		n/a	Agreement

MDC - Minimum Detectable Concentration

\* REMP Sample Locations

NRC sample uncertainties are based on two sigma counting statistics.