



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION III  
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January 17, 2012

Mr. Michael J. Pacilio  
Senior Vice President, Exelon Generation Company, LLC  
President and Chief Nuclear Officer (CNO), Exelon Nuclear  
4300 Winfield Road  
Warrenville, IL 60555

**SUBJECT: BRAIDWOOD STATION – NRC FOLLOW UP INSPECTION  
REPORT 05000456/2011013 AND 05000457/2011013**

Dear Mr. Pacilio:

On December 15, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed a follow up inspection for four Severity Level (SL) IV violations identified between October 1, 2010, and September 30, 2011, at your Braidwood Station. The enclosed report documents the results of this inspection, which were discussed on December 15, 2011, with Mr. D. Enright, and other members of your staff.

The objectives of this follow up inspection were to provide assurance that: (1) the cause(s) of multiple SL IV traditional enforcement violations were understood by the licensee; (2) the extent of condition and extent of cause of multiple SL IV traditional enforcement violations were identified; and (3) licensee corrective actions to traditional enforcement violations were sufficient to address the cause(s).

The inspection consisted of an examination of activities conducted under your license as they relate to safety, compliance with the Commission's rules and regulations, the conditions of your operating license, and the objectives stated above.

Based on the results of this inspection, the inspector determined that, in general, the causes of the violations were adequately understood, the extent of condition and extent of cause of the violations were identified to the extent required by station procedures, and corrective actions planned and/or taken were sufficient to address the causes.

Based on the results of this inspection, no findings were identified.

M. Pacilio

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Sincerely,

*/RA/*

Eric R. Duncan, Chief  
Branch 3  
Division of Reactor Projects

Docket No. 50-456; 50-457  
License No. NPF-72; NPF-77

Enclosure: Inspection Report 05000456/2011013; 05000457/2011013;  
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServ

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-456; 50-457  
License No: NPF-72; NPF-77

Report No: 05000456/2011013; 05000457/2011013

Licensee: Exelon Generation Company, LLC

Facility: Braidwood Station

Location: Braceville, IL

Dates: December 12 through December 15, 2011

Inspector: John Robbins, Byron Resident Inspector

Approved by: E. Duncan, Chief  
Branch 3  
Division of Reactor Projects

Enclosure

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## SUMMARY OF FINDINGS

Inspection Report 05000456/2011013, 05000457/2011013; 12/12/2011 – 12/15/2011;  
Braidwood Station, Units 1 & 2; Follow Up Inspection for Three or More Severity Level IV  
Traditional Enforcement Violations in the Same Area in a 12-Month Period.

This report covers a 4-day period of inspection by the Byron Resident Inspector. No findings were identified. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

The inspectors concluded that, in general, for these violations, the causes were understood by the licensee, the extent of condition and extent of cause were identified to the extent required by Braidwood Station procedures, and the licensee's corrective actions were sufficient to address the identified causes.

**A. NRC-Identified and Self-Revealed Findings**

No findings were identified.

**B. Licensee-Identified Violations**

None.

## REPORT DETAILS

### 4. OTHER ACTIVITIES

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

#### 4OA5 Other Activities

##### .1 Follow Up Inspection for Three or More Severity Level IV Traditional Enforcement Violations in the Same Area in a 12-Month Period (Inspection Procedure 92723)

##### a. Inspection Scope

This inspection was conducted in accordance with Inspection Procedure (IP) 92723, "Follow Up Inspection for Three or More Severity Level (SL) IV Traditional Enforcement Violations in the Same Area in a 12-Month Period," to assess the licensee's evaluation of four SL IV violations that occurred within the area of impeding the regulatory process from October 1, 2010, to September 30, 2011. These violations were documented in NRC Inspection Reports as: (1) Non-Cited Violation (NCV) 05000456/2010005-02, 05000457/2010005-02; (2) NCV 05000457/2011002-01; (3) Notice of Violation (NOV) 05000456/2010503-01; 05000457/2010503-01; and (4) NCV 05000456/2011004-06; 05000457/2011004-06. The inspection objectives were to:

- Provide assurance that the causes of multiple SL IV traditional enforcement violations were understood by the licensee;
- Provide assurance that the extent of condition and extent of cause of multiple SL IV traditional enforcement violations were identified; and
- Provide assurance that licensee corrective actions (CAs) to traditional enforcement violations were sufficient to address the causes.

The inspector reviewed the cause evaluation associated with each of the issues. Additionally, the inspector reviewed Licensee Check-In Self-Assessment Report 1267093, "Pre-NRC Follow Up Inspection for Three or More SL IV Traditional Enforcement Violations in the Same Area in a 12-Month Period." The inspector reviewed CAs to address the identified causes. The inspector also held discussions with licensee personnel to ensure that the causes were understood and CAs were appropriate to address the causes.

##### .2 Evaluation of the Inspection Requirements

##### 2.01 Review of Problem Identification

##### a. Determine that the licensee's evaluation identifies how each of the issues were identified, how long each issue existed, and prior opportunities for identification

The inspector determined that the licensee's evaluation addressed how each of the issues were identified, how long they existed, and prior opportunities for identification.

Each issue was individually evaluated through the licensee's Corrective Action Program (CAP). Additionally, the licensee performed a collective evaluation for the four SL IV violations through a pre-NRC inspection self-assessment. This self-assessment identified one deficiency concerning the Event Reporting process not being initiated in a timely manner as a result of untimely past operability reviews. This issue was entered into the licensee's CAP as Issue Report (IR) 1292145, "LER [Licensee Event Report] Reporting Delayed Due to Numerous ATI [Action Tracking Item] Extensions."

b. Findings

No findings were identified.

2.02 Evaluate Cause, Extent of Condition, and Extent of Cause Evaluations

a. Determine that the group of Severity Level IV violations received an evaluation at an appropriate level of detail using a systematic method(s) to identify cause(s)

The inspectors determined that the SL IV violations were reviewed collectively using a systematic process to identify any common cause(s). The inspectors determined this review contained an appropriate level of detail. The inspector verified that each SL IV violation was adequately evaluated in accordance with Braidwood Station's CAP requirements. The licensee did not identify a common cause for the violations. Therefore, the licensee evaluated each issue individually.

The inspector identified an issue with the licensee's self-assessment efforts to investigate the failure to submit a timely report to notify the NRC of Residual Heat Removal (RHR) system performance problems (NCV 05000456/2010005-02; 05000457/2010005-02, "Failure to Submit an LER Per 10 CFR 73(a)(2)(v)"). In this case, the self-assessment effort focused on the technical aspects of the issue, rather than the underlying causes of the failure to submit a timely report for the loss of safety function of the RHR system. The inspector discussed this issue with the licensee and, as a result, the licensee subsequently entered this issue into their CAP as IR 1302866, "NRC Identified No Formal Evaluation for Untimely LER Submittal for RHR."

However, when the failure to submit the LER that resulted in the SL IV violation was first identified by the inspectors in September 2010, the licensee entered the issue into their CAP as IR 1292145. During this inspection, the inspector confirmed that the issue was appropriately reviewed and addressed. In particular, IR 1155372, "RHR System Issue Resulting in LER," identified that the due date for a task in IR 1073616, "Perform Past Operability Review for RHR in Mode 4," had been extended 11 times such that the deadline for submitting the LER was exceeded and that appropriate supervision was unaware of the deadline. The licensee also identified that the action item associated with the LER submittal was coded as an ATI and therefore did not receive as high a level of review as was warranted.

As a result, a revision to the Station Operating Committee (SOC) process was implemented. Specifically, for issues associated with operability or reportability, the process was revised to assign CAs (vice ATIs) to individual owners to elevate the level of management review.

In addition, Braidwood Station Policy Memorandum BR-40, "Expectations for Extending Issue Report Cause Investigations and Corrective Action Due Dates," required that the first CA extension be reviewed by the department head and that subsequent changes be approved by the Management Review Committee (MRC) or the Plant Manager. At the end of this inspection, the licensee planned to revise Policy Memorandum BR-40 to enhance these requirements to preclude missing an LER submittal deadline.

- b. Determine that the evaluation included a consideration of how prior occurrences in the same traditional enforcement area (willfulness, regulatory process, or consequences) were addressed by the licensee

The inspector determined that the licensee's evaluation included a consideration of how prior occurrences in the area of impeding the regulatory process were addressed. The four SL IV violations were reviewed to determine if they were due to a more fundamental concern involving weaknesses in the station's CAP. The inspector did not identify any commonality among the four SL IV violations that suggested a fundamental weakness with the station's CAP.

- c. Determine that the evaluation addresses the extent of the condition and the extent of cause of the problem

A review of the station's CAP procedures identified that LS-AA-125, "Corrective Action Program (CAP) Procedure," did not require an extent of condition review for a Class D (Work Group) evaluation unless it was specifically requested by the Ownership Committee or MRC. Procedure LS-AA-125, "Corrective Action Program Procedure," only required an extent of condition evaluation for Class A (Root Cause) and Class B (Apparent Cause) evaluations.

The inspectors reviewed the individual CAP items for each of the four SL IV violations as well as the self-assessment. A number of the SL IV violations reviewed were categorized at the Class D level and the inspector determined that the licensee addressed the extent of condition and the extent of cause in accordance with the procedural requirements.

- d. Findings

No findings were identified.

## 2.03 Evaluate Corrective Actions

- a. Determine that appropriate corrective action(s) are specified for each cause identified for the group of violations or that there is an evaluation indicating that no actions are necessary

The inspector determined that appropriate CAs were specified for the causes identified for each of the SL IV violations.



Because no common cause was identified for the group of violations, no CA was taken to address the group of violations collectively.

- b. Determine that the corrective actions have been prioritized with consideration of the regulatory compliance

The inspector determined that CAs were adequately prioritized with the consideration of regulatory compliance.

Procedure LS-AA-125 provided guidance for prioritizing CAs. A sample review conducted by the inspector indicated that CAs were appropriately prioritized.

- c. Determine that a schedule has been established for implementing and completing the corrective actions

The inspector determined that a schedule was established for implementing and completing the CAs.

Procedure LS-AA-125 provided guidance for establishing due dates for CAs. The inspector conducted a sample review of completed and planned CAs and did not identify any discrepancies.

- d. Determine that measures of success have been developed for determining the effectiveness of the corrective actions to prevent recurrence

The inspector determined that there were no measures of success developed for determining the effectiveness of the CAs to prevent recurrence.

Procedures LS-AA-125 and LS-AA-125-1004, "Effectiveness Review Manual," provided guidance for assigning and conducting effectiveness reviews. Effectiveness reviews were only required to be performed for CAs to prevent recurrence (CAPR) or for an individual CA that the Corrective Action Program Coordinators (CAPCOs) or MRC deemed necessary. None of the CAs were required to have an effectiveness review completed and no additional actions were deemed necessary; therefore, none of the SL IV violations reviewed had associated CAPRs.

The licensee's self-assessment identified that there were no effectiveness reviews established for the CAs associated with the four SL IV violations. Although there were no procedural requirements to perform effectiveness reviews, the licensee's self-assessment concluded that the likelihood of recurrence was reduced due to the CAs planned and/or taken.

- e. Findings and observations

No findings were identified.

#### 4OA6 Management Meetings

- .1 Exit Meeting Summary

On December 15, 2011, the inspector presented the inspection results to Mr. D. Enright, and other members of the licensee staff. The licensee acknowledged the issues

presented. The inspectors confirmed that none of the potential report input discussed was considered proprietary.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee

D. Enright, Site Vice President  
M. Kanavas, Plant Manager  
T. Tierney, Operations Support Manager  
L. Dworakowski, Regulatory Assurance Licensing Engineer  
J. Gerrity, Emergency Preparedness Manager  
R. Radulovich, Nuclear Oversight Manager  
T. Kirman, Maintenance Support Manager  
F. Gogliotti, Sr. Engineering Manager  
M. Abbas, Regulatory Assurance NRC Coordinator

#### Nuclear Regulatory Commission

E. Duncan, Chief, Reactor Projects Branch 3  
J. Robbins, Resident Inspector, Byron  
J. Benjamin, Senior Resident Inspector, Braidwood

## LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

### Opened

None.

### Closed

None.

### Discussed

05000456/2010005-02; 05000457/2010005-02 05000457/2011002-01	NCV	Failure to Submit an LER Per 10 CFR 73(a)(2)(v)
05000456/2010503-01; 05000457/2010503-01	NOV	Changes to EAL [Emergency Action Level] Basis Decreases the Effectiveness of the Plan Without Prior NRC Approval
05000456/2011004-06; 05000457/2011004-06	NCV	Modification of the AF [Auxiliary Feedwater] System Without Prior NRC Approval

## LIST OF DOCUMENTS REVIEWED

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

- IR 0906754; Improvements Needed to EP 50.54(Q) Evaluations and Process, April 13, 2009
- IR 1073616; RHR System Issue Associated with Westinghouse NSAL 09-08, May 26, 2010
- IR 1105448; Addendum to Root Cause Report, Rev. 7
- IR 1105448; Unplanned LCO Entry Due to Operator Error, August 24, 2011
- IR 1155372; RHR System Issue Resulting in LER - Tracking, December 22, 2010
- IR 1166336; Inaccurate Information Contained in LER 2010-004, January 21, 2011
- IR 1173606; Braidwood URI on EAL HU6 Classified as Violation, February 10, 2011
- IR 1183518; Receipt of NRC Green Finding - Improper Change to EAL, March 1, 2011
- IR 1184456; Braidwood HU6 EAL Violation Requires Written Response, March 7, 2011
- IR 1195224; Two NRC Enforcements Within a 12 Month Period, March 30, 2011
- IR 1199710; Three NRC Severity Level IV Violations Within a 12 Month Period, April 6, 2011
- IR 1244984; Apparent Cause Report for 50.54(q) NCV, September 16, 2011
- IR 1258017; 1A/2A AF Pump Discharge Crosstie Regulatory Concern, August 22, 2011
- IR 1263931; Three Traditional Enforcement Violations Need Detailed Answer, September 16, 2011
- IR 1267093; Self-Assessment Report, November 17, 2011
- IR 1273856; Potential NRC Severity Level IV Violation, October 5, 2011
- IR 1292145; LER Reporting Delayed Due to Numerous ATI Extensions, November 19, 2010
- IR 1299906; NRC Identified Missed 10CFR50.73 Notification for HELB Design, March 8, 2011
- LER 2010-004-00; Unit 2 Unplanned Limiting Condition for Operation Entry Due to Low Header Pressure on the 2B Essential Service Water Pump, October 25, 2011
- BR-40; Braidwood Station Policy Memorandum - Expectations for Extending Issue Report Cause Investigations and Corrective Action Due Dates, Rev. 4
- EP-AA-120; Emergency Plan Administration, Rev. 14
- EP-AA-120-1001; 50.54(q) Program Evaluation and Effectiveness Review, Rev. 6
- HU-AA-101; Human Performance Tools and Verification Practices, Rev. 5
- HU-AA-102; Technical Human Performance Practices, Rev. 6
- LS-AA-120; Issue Identification and Screening Process, Rev. 14
- LS-AA-125; Corrective Action Program Procedure, Rev. 16
- LS-AA-125-1001; Root Cause Analysis Manual, Rev. 8
- LS-AA-125-1002; Common Cause Analysis Manual, Rev. 7
- LS-AA-125-1003; Apparent Cause Evaluation Manual, Rev. 10
- LS-AA-126; Self-Assessment Program, Rev. 6
- LS-AA-1400; Event Reporting Guidelines 10 CFR 50.72 and 50.73, Rev. 4
- OP-AA-103-102; Watch Standing Practices, Rev. 8

## LIST OF ACRONYMS USED

ACE	Apparent Cause Evaluation
AF	Auxiliary Feedwater
ATI	Action Tracking Item
ADAMS	Agencywide Document Access Management System
CA	Corrective Action
CAP	Corrective Action Program
CAPCO	Corrective Action Program Coordinator
CAPR	Corrective Action to Prevent Recurrence
CCA	Common Cause Analysis
CFR	Code of Federal Regulations
DRP	Division of Reactor Projects
EAL	Emergency Action Level
IP	Inspection Procedure
IR	Issue Report
LER	Licensee Event Report
MRC	Management Review Committee
NCV	Non-Cited Violation
NOV	Notice of Violation
NPF	Nuclear Power Facility
NRC	U.S. Nuclear Regulatory Commission
PARS	Publicly Available Records System
RCE	Root Cause Evaluation
RHR	Residual Heat Removal
SL	Severity Level
SOC	Station Ownership Committee

M. Pacilio

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Sincerely,

**/RA/**

Eric R. Duncan, Chief  
Branch 3  
Division of Reactor Projects

Docket No. 50-456; 50-457  
License No. NPF-72; NPF-77

Enclosure: Inspection Report 05000456/2011013; 05000457/2011013  
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REPORT 05000456/2011013; 05000457/2011013

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