



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

February 28, 2011

EA-10-220

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, UNITS 1 AND 2 FOLLOW-UP INSPECTION OF
EMERGENCY ACTION LEVEL AND EMERGENCY PLAN CHANGE
INSPECTION REPORT 05000456/2010503(DRS); 05000457/2010503(DRS)
AND NOTICE OF VIOLATION**

Dear Mr. Pacilio:

On February 10, 2011, the U. S. Nuclear Regulatory Commission (NRC) completed an in-office inspection of your Braidwood Station, Units 1 and 2. The purpose of the inspection was to review the facts and circumstances concerning Unresolved Item 05000456/2009005-07; 05000457/2009005-07, "Changes to Emergency Action Level HU6 Potentially Decrease the Effectiveness of the Plans without Prior NRC Approval." The enclosed report documents the inspection results, which were discussed by telephone on February 10, 2011, with Mr. D. Enright 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.

The report documents one NRC-identified finding of very low safety significance (Green). The finding was determined to involve a violation of NRC requirements. Based on the results of the inspection and following consultation with the NRC Office of Enforcement staff, we categorized the violation at Severity Level IV. The violation was evaluated in accordance with the NRC Enforcement Policy. The current Enforcement Policy is included on the NRC's Web site at (<http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html>).

The violation is cited in the enclosed Notice of Violation (NOV) and the circumstances surrounding it are described in detail in the subject inspection report. The violation is being cited in the Notice and a response is required because no corrective action had been taken to restore compliance since the issue was entered in your corrective action program in December 2009.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. The NRC will use your response, in part, to determine whether further enforcement action is necessary to ensure compliance with regulatory requirements. In particular, the NRC is interested in any human performance issues associated with performance of 10 CFR 50.54(q) reviews of Emergency Plan and Emergency Action Level changes for all Exelon facilities.

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

Sincerely,

/RA/

Hironori Peterson, Chief
Operations Branch
Division of Reactor Safety

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

Enclosures:

1. Notice of Violation
2. Inspection Report 05000456/2010503(DRS);
05000457/2010503(DRS)
w/Attachment: Supplemental Information

cc w/encls: Distribution via ListServ

NOTICE OF VIOLATION

Exelon Generation Company, LLC
Braidwood Station, Units 1 and 2

Docket Nos. 50-456; 50-457
License Nos. NPF-72; NPF-77
EA-10-220

During a U. S. Nuclear Regulatory Commission (NRC or Commission) inspection completed on February 10, 2011, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

Title 10 CFR 50.54(q) requires, in part, "A licensee authorized to possess and operate a nuclear power reactor shall follow and maintain in effect emergency plans which meet the standards in §50.47(b) and the requirements in Appendix E of this part. The licensee may make changes to these plans without Commission approval only if the changes do not decrease the effectiveness of the plans and the plans, as changed, continue to meet the standards of §50.47(b) and the requirements of Appendix E." Title 10 CFR 50.47(b)(4) requires, in part, "A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures."

Contrary to the above, as of March 28, 2008, the licensee made a change to its emergency plan which decreased the effectiveness of the plan and caused the emergency plan to no longer meet the standards of 50.47(b) and Appendix E to this part without Commission approval. Specifically, the licensee modified the Emergency Action Level (EAL) Basis in EAL HU6, Revision 21, to delay the 15-minute classification time by the dispatching of personnel, reporting the notification of a fire from the field, and extinguishing the fire. As a result, this change indefinitely extends the start of the 15-minute emergency classification clock beyond a credible notification that a fire is occurring or indication of a valid fire detection system alarm. This change decreased the effectiveness of the emergency plan by reducing the capability to perform a risk significant planning function in a timely manner.

This is a Severity Level IV Violation (Section 6.6).

This violation is associated with a Green SDP finding.

Pursuant to the provisions of 10 CFR 2.201, Exelon Generation Company, LLC is hereby required to submit a written statement or explanation to the U. S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001 with a copy to the Regional Administrator, Region III, and a copy to the NRC Resident Inspector at the Braidwood facility, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation; EA-10-220" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level; (2) the corrective steps that have been taken and the results achieved; (3) the corrective steps that will be taken; and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not

received within the time specified in this Notice, an Order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>, to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days.

Dated this 28th day of February 2011.

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 50-456; 50-457

License Nos: NPF-72; NPF-77

Report No: 05000456/2010503(DRS); 05000457/2010503(DRS)

Licensee: Exelon Generation Company, LLC

Facility: Braidwood Station, Units 1 and 2

Location: Braceville, Illinois

Dates: June 16, 2010 through February 10, 2011

Inspectors: Robert Jickling, Senior Emergency Preparedness Inspector

Approved by: Hironori Peterson, Chief
Operations Branch
Division of Reactor Safety

SUMMARY OF FINDINGS

Inspection Report (IR) 05000456/2010503(DRS), 05000457/2010503(DRS); 06/16/2010 - 02/10/2011; Braidwood Station, Units 1 and 2; results of U. S. Nuclear Regulatory Commission (NRC) Emergency Action Level and Emergency Plan Changes Inspection and Follow-up of Unresolved Item (URI) 05000456/2009005-07; 05000457/2009005-07.

This report covers an approximate 6-month period of follow-up inspection and review of the licensee's emergency action level and plan changes. One Green finding was identified by the inspector. The finding involved a Severity Level IV Cited Violation (NOV) of NRC regulations. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process." Findings for which the Significance Determination Process 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 4, dated December 2006.

A. NRC-Identified and Self-Revealed Findings

Cornerstone: Emergency Preparedness

- Severity Level IV/Green. A Green finding involving a Severity Level IV, Cited Violation of 10 CFR 50.54(q) was identified by the inspector for the licensee's change to the emergency plan which decreased the effectiveness of the plan without NRC approval. Specifically, the licensee modified the Emergency Action Level (EAL) Basis in EAL HU6, Revision 21, to delay the 15-minute classification time by the dispatching of personnel, reporting the notification of a fire from the field, and extinguishing the fire. As a result, this change indefinitely extends the start of the 15-minute emergency classification clock beyond a credible notification that a fire is occurring or indication of a valid fire detection system alarm. This change decreased the effectiveness of the emergency plan by reducing the capability to perform a risk significant planning function in a timely manner.

The violation affected the NRC's ability to perform its regulatory function because it involved implementing a change that decreased the effectiveness of the emergency plan without NRC Commission approval. Therefore, this issue was evaluated using Traditional Enforcement. The NRC determined that a Severity Level IV violation was appropriate due to the reduction of the capability to perform a risk significant planning standard function in a timely manner. The violation is cited because no corrective action had been taken to restore compliance since the issue was entered in the licensee's corrective action program in December 2009.

The performance deficiency was more than minor and of very low safety-significance using Manual Chapter (MC) 0612 and MC 0609, Appendix B, because it is associated with the emergency preparedness cornerstone attribute of procedure quality for EAL and emergency plan changes, and it adversely affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Therefore, the performance deficiency was a finding. Using MC 0609, Appendix B, the inspector determined that the finding had a very low safety significance. The inspectors also determined that the finding had a cross-cutting aspect in the area of Human Performance, decision-making because the licensee did not recognize that the change

made to the EAL basis document decreased the effectiveness of the emergency plan.
(H.1.(b)) (Section 1EP4)

B. Licensee-Identified Violations

No violations of significance were identified.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Emergency Preparedness

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

.1 Emergency Action Level and Emergency Plan Changes

a. Inspection Scope

This inspection was a follow-up review of Unresolved Item (URI) 05000456/2009005-07; URI 05000457/2009005-07. The issue was identified in December 2009 during a routine review of changes implemented to the Braidwood Station Emergency Plan Annex Emergency Action Level (EAL) and EAL Basis. The inspector reviewed applicable licensee documents and had discussions with licensee personnel.

b. Findings

Introduction:

A Green finding involving a Severity Level IV, Cited Violation of 10 CFR 50.54(q) was identified by the inspector for the licensee's change to the emergency plan which decreased the effectiveness of the plan without U. S. Nuclear Regulatory Commission (NRC) approval.

Description:

The Radiological Emergency Plan Annex for Braidwood Station, Revision 20, EAL HU6 provided the basis for declaring an Unusual Event due to a fire in the protected area not extinguished within 15 minutes of detection. The EAL HU6 Basis, Revision 20, stated in part: "The 15-minute period begins with a credible notification that a fire is occurring or indication of a valid fire detection system alarm. A verified alarm is assumed to be an indication of a fire unless personnel dispatched to the scene disprove the alarm within the 15-minute period. The report, however, shall not be required to verify the alarm."

On March 28, 2008, Braidwood Station staff implemented Revision 21 of the EAL HU6 Basis which added the following text: "The 15-minute period to extinguish the fire begins with a credible notification that a fire is occurring or indication of a valid fire detection system alarm. If the alarm cannot be verified by redundant Control Room or nearby fire panel indications, notification from the field that a fire exists starts the 15-minute classification and fire extinguishment clocks. The 15-minute period to extinguish the fire does not start until either the fire alarm is verified to be valid by utilization of additional Control Room or nearby fire panel instrumentation, or upon notification of a fire from the field."

Revision 21 of the EAL HU6 Basis allowed delay of the 15-minute classification time by the dispatching of personnel, reporting the notification of a fire from the field, and extinguishing the fire. As a result, this change indefinitely extended the start of the 15-minute emergency classification clock beyond a credible notification that a fire is

occurring or indication of a valid fire detection system alarm. This was determined to be a decrease in effectiveness of the licensee's emergency plan because the change reduced the capability to perform a risk significant planning standard function in a timely manner. This change was not submitted to the NRC for prior approval.

Analysis:

The inspector determined that the change made by the licensee to the EAL HU6 Basis decreased the effectiveness of the Emergency Plan and the change was implemented without prior NRC approval. The issue was determined to be a licensee performance deficiency that impacted the regulatory process and, in accordance with Manual Chapter (MC) 0612 "Power Reactor Inspection Reports," was evaluated using the NRC's traditional enforcement policy as well as the Reactor Oversight Process (ROP).

Using the NRC's Enforcement Policy, this violation met Example c.2 in Section 6.6: "A licensee's ability to meet or implement any regulatory requirement related to assessment or notification is degraded such that the effectiveness of the emergency plan decreases. Although the regulatory requirement could be implemented during the response to an actual emergency, the implementation would be degraded (e.g., not fully effective, inappropriately delayed)." Specifically, the change made to the EAL Basis directly affected the Risk Significant Planning Standard "Classification," which affected assessment of event conditions. Therefore, this violation met the example for Severity Level III. However, the NRC has classified this violation as a Severity Level IV, after determining that its actual and potential safety significance was very low based on the following considerations: (1) the issue involved only one Unusual Event EAL, and not any of the other higher event classifications; and (2) the issue could delay classification but would not prevent classification.

Using MC 0612 "Power Reactor Inspection Reports," Appendix B, "Issue Screening," the performance deficiency was determined to be more than minor and, therefore, a finding, because it is associated with the emergency preparedness cornerstone attribute of procedure quality for EAL and emergency plan changes, and it adversely affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Specifically, the licensee made a change to its EAL Basis, which was a decrease in effectiveness, because the change indefinitely extended the start of the 15-minute emergency classification clock beyond a credible notification that a fire is occurring or indication of a valid fire detection system alarm. Also, this change was made without prior NRC approval.

The inspector determined the finding could be evaluated using the Significance Determination Process (SDP) in accordance with Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," Appendix B, "Emergency Preparedness Significance Determination Process." The finding is a failure to comply with 10 CFR 50.54(q) involving the risk significant planning standard 50.47(b)(4), which, in this case, is not considered degraded. This EAL Classification finding is Green because it involved one Unusual Event classifications (EAL HU6).

This finding has a cross-cutting aspect in the area of human performance, decision-making, because the licensee failed to use conservative assumptions when making decisions and did not demonstrate that nuclear safety was an overriding priority.

Specifically, the licensee changed its EAL Basis to indefinitely extend the start of the 15-minute emergency classification clock beyond a credible notification that a fire is occurring or indication of a valid fire detection system alarm for one EAL HU6. This change was screened through the licensee's 50.54(q) process and was not identified as a decrease in effectiveness. However, after evaluation by the inspector, this change was determined to be a decrease in effectiveness of the emergency plan which was not approved by the NRC before the change was implemented.

Enforcement:

Title 10 of the CFR 50.54(q) states, in part, "A licensee authorized to possess and operate a nuclear power reactor shall follow and maintain in effect emergency plans which meet the standards in §50.47(b) and the requirements in Appendix E of this part. The nuclear power reactor licensee may make changes to these plans without Commission approval only if the changes do not decrease the effectiveness of the plans and the plans, as changed, continue to meet the standards of §50.47(b) and the requirements of Appendix E to this part."

Title 10 CFR 50.47(b)(4) states, in part, "A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures."

Contrary to the above, as of March 28, 2008, the licensee made a change to the emergency classification process which decreased the effectiveness of their emergency plan and caused the emergency plan to no longer meet the standards of 50.47(b) and Appendix E to this part without Commission approval. Specifically, the licensee modified the EAL Basis in EAL HU6, Revision 21, to delay the 15-minute classification time by the dispatching of personnel, reporting the notification of a fire from the field, and extinguishing the fire. As a result, this change indefinitely extended the start of the 15-minute emergency classification clock beyond a credible notification that a fire is occurring or indication of a valid fire detection system alarm. This change decreased the effectiveness of the emergency plan by reducing the capability to perform a risk significant planning function in a timely manner.

This violation impacted the regulatory process, was of very low safety significance and was also entered into the licensee's corrective action program as IR 01008718 dated December 22, 2009. The violation is being cited in the Notice and a response is required because no corrective action had been taken to restore compliance since the issue was entered in your corrective action program in December 2009. This violation is determined to be a Severity Level IV Cited Violation, consistent with Section 2.3.3 of the NRC Enforcement Policy (NOV 05000456/2010503-01; NOV 05000457/2010503-01). This issue has also been dispositioned as a Finding of very low safety significance (Green) (FIN 05000456/2010503-01, FIN 05000457/2010503-01).

The URI 05000456/2009005-07; URI 05000457/2009503-07, "Changes to EAL HU6 Potentially Decreased the Effectiveness of the Plans without Prior NRC Approval" is closed.

4OA6 Management Meetings

.1 Exit Meetings

On February 10, 2011, the inspectors discussed the inspection results by telephone with Mr. D. Enright, and other members of the licensee staff. The licensee acknowledged the issue 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
K. Aleshire, Corporate Emergency Preparedness Manager
S. Butler, Emergency Preparedness Manager
V. Cwietniewicz, Corporate Emergency Preparedness Manager
A. Daniels, Corporate Emergency Preparedness Manager
D. Drawbaugh, Byron Emergency Preparedness Manager
R. Gaston, Regulatory Assurance Manager
J. Gerrity, Regulatory Assurance
K. Kemper, Corporate Emergency Preparedness Director

U. S. Nuclear Regulatory Commission

H. Peterson, Chief, Operations Branch, Division Reactor Safety
E. Duncan, Chief, Branch 3, Division of Reactor Projects
J. Beavers, Emergency Preparedness Inspector

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

| | | |
|--------------------------------------------|-----|----------------------------------------------------------------------------------------------------------------------------------|
| 05000456/2010503-01 05000457/2010503-01 | VIO | (Traditional Enforcement) Changes to EAL Basis Decreases the Effectiveness of the Plan without Prior NRC Approval (1EP4.1) |
| 05000456/2010503-01 05000457/2010503-01 | FIN | Changes Made to EAL Basis that Decreased the Effectiveness (1EP4.1) |

Closed

| | | |
|--------------------------------------------|-----|-------------------------------------------------------------------------------------------------------------------|
| 05000456/2009005-07 05000457/2009005-07 | URI | Changes to EAL HU6 Potentially Decreased the Effectiveness of the Plans without Prior NRC Approval (1EP4.1) |
|--------------------------------------------|-----|-------------------------------------------------------------------------------------------------------------------|

Discussed

None

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.

1EP4 Emergency Action Level and Emergency Plan Changes

EP-AA-1001; Radiological Emergency Plan Annex for Braidwood Station; Revisions 19, 20, and 21

IR 01173606; Braidwood URI on EAL HU6 Classified as Violation; February 10, 2011

IR 01012197; NRC URI for Changes Made to EAL HU6 for a Fire; January 4, 2010

IR 01008718; EP Notified of URI Issued at MidWest Sites for EAL Bases Change; December 22, 2009

LIST OF ACRONYMS USED

| | |
|-------|----------------------------------------------|
| ADAMS | Agencywide Document Access Management System |
| CAP | Corrective Action Program |
| CFR | Code of Federal Regulations |
| DRP | Division of Reactor Projects |
| DRS | Division of Reactor Safety |
| EAL | Emergency Action Level |
| FIN | Finding |
| IMC | Inspection Manual Chapter |
| IP | Inspection Procedure |
| IR | Issue Report |
| MC | Manual Chapter |
| NEI | Nuclear Energy Institute |
| NOV | Notice of Violation |
| NRC | U. S. Nuclear Regulatory Commission |
| PARS | Publicly Available Records System |
| ROP | Reactor Oversight Process |
| SDP | Significance Determination Process |
| URI | Unresolved Item |

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Sincerely,

Hironori Peterson, Chief
Operations Branch
Division of Reactor Safety

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

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OFFICIAL RECORD COPY

Letter to Michael J. Pacilio from Hironori Peterson dated February 28, 2011.

SUBJECT: BRAIDWOOD STATION, UNITS 1 AND 2 FOLLOW-UP INSPECTION OF
EMERGENCY ACTION LEVEL AND EMERGENCY PLAN CHANGE
INSPECTION REPORT 05000456/2010503(DRS); 05000457/2010503(DRS)
AND NOTICE OF VIOLATION

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