



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

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

April 8, 2010

Mr. Charles G. Pardee
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
BASELINE EMERGENCY PREPAREDNESS BIENNIAL EXERCISE
INSPECTION REPORT 05000456/2010502(DRS); 05000457/2010502(DRS)

Dear Mr. Pardee:

On March 26, 2010, the U. S. Nuclear Regulatory Commission (NRC) completed a Baseline Emergency Preparedness Biennial Exercise inspection at your Braidwood Station, Units 1 and 2. The enclosed report documents the inspection results, which were discussed on March 26, 2010, with Mr. A. Shahkarami 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.

Based on the results of this inspection, no NRC-identified and no self-revealed findings of very low safety significance were identified.

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Sincerely,

/RA/

Hironori Peterson, Chief
Operations Branch
Division of Reactor Safety

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

Enclosure: Inspection Report 05000456/2010502; 05000457/2010502
w/Attachment: Supplemental Information

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 50-456; 50-457

License Nos: NPF-72; NPF-77

Report No: 05000456/2010502(DRS) and 05000457/2010502(DRS)

Licensee: Exelon Generation Company, LLC

Facility: Braidwood Station, Units 1 and 2

Location: Braceville, Illinois

Dates: March 22 through 26, 2010

Inspectors: Robert Jickling, Senior Emergency Preparedness Inspector
Regina Russell, Emergency Preparedness Inspector
Raymond Walton, Senior Operations Engineer

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

Enclosure

SUMMARY OF FINDINGS

IR 05000456/2010502, 05000457/2010502; 03/22/2010 - 03/26/2010; Braidwood Station, Units 1 and 2; Baseline Emergency Preparedness Biennial Exercise Inspection.

This report covers a one week period of announced baseline inspection by two regional inspectors and one operations engineer. 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 4, dated December 2006.

A. NRC-Identified and Self-Revealed Findings

Cornerstone: Emergency Preparedness

No findings of significance were identified.

B. Licensee-Identified Violations

No violations of significance were identified.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstone: Emergency Preparedness

1EP1 Exercise Evaluation (71114.01)

.1 Exercise Evaluation

a. Inspection Scope

The inspectors reviewed the March 24, 2010, biennial emergency preparedness exercise's objectives and scenario to ensure that the exercise would acceptably test major elements of the licensee's emergency plan and to verify that the exercise's simulated problems provided an acceptable framework to support demonstration of the licensee's capability to implement its plan. The inspectors also reviewed records of other drills and exercises conducted in 2008, 2009, and 2010, to verify that those drills' scenarios were sufficiently different from the scenario used in the March 24, 2010, exercise.

The inspectors evaluated the licensee's exercise performance, focusing on the risk significant activities of emergency classification, notification, and protective action decision making, implementation of accident mitigation strategies, and correction of past exercise weaknesses in the following emergency response facilities:

- Control Room Simulator (CRS);
- Technical Support Center (TSC); and
- Emergency Operations Facility (EOF).

The inspectors also assessed the licensee's recognition of abnormal plant conditions, transfer of responsibilities between facilities, internal communications, interfaces with offsite officials, readiness of emergency facilities and related equipment, and overall implementation of the licensee's emergency plan.

The inspectors attended post-exercise critiques in the CRS, TSC, and EOF to evaluate the licensee's initial self-assessment of its exercise performance. The inspectors later met with the licensee's lead exercise evaluators and managers to obtain the licensee's findings and assessments of its exercise participants' performances. These self-assessments were then compared with the inspectors' independent observations and assessments to assess the licensee's ability to adequately critique its exercise performance. Documents reviewed are listed in the Attachment to this report.

This exercise evaluation inspection constituted one sample as defined in Inspection Procedure (IP) 71114.01-05.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification (71151)

.1 Drill/Exercise Performance

a. Inspection Scope

The inspectors sampled licensee submittals for the Drill/Exercise Performance PI for the period from the third quarter 2009 through fourth quarter 2009. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, were used. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the NEI guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the PI; assessments of PI opportunities during pre-designated control room simulator training sessions, and performance during other drills. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one drill/exercise performance sample as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.2 Emergency Response Organization Drill Participation

a. Inspection Scope

The inspectors sampled licensee submittals for the Emergency Response Organization (ERO) Drill Participation PI for the period from the third quarter 2009 through fourth quarter 2009. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, were used. The inspectors reviewed the licensee's records associated with the PI to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the NEI guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the PI; performance during the 2009 exercises and drills; and revisions of the roster of personnel assigned to key emergency response organization positions. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one ERO drill participation sample as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.3 Alert and Notification System

a. Inspection Scope

The inspectors sampled licensee submittals for the Alert and Notification System (ANS) PI for the period from the third quarter 2009 through fourth quarter 2009. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, were used. The inspectors reviewed the licensee's records associated with the PI to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the NEI guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the PI and results of periodic scheduled ANS operability tests. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one alert and notification system sample as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

On March 26, 2010, the inspectors presented the inspection results to Mr. A. Shahkiram, 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

A. Shahkarami, Site Vice President
K. Appel, Corporate Emergency Preparedness Manager
S. Butler, Emergency Preparedness Manager
P. Daly, Radiation Protection Manager
R. Gaston, Regulatory Assurance Manager
J. Lizalek, Nuclear Oversight
M. Marchionda, Operations Director
T. Mattson, NRC Coordinator
T. McCool, Operations Manager
S. McKinney, Emergency Preparedness Coordinator
M. Smith, Engineering Manager
W. Waznis, Nuclear Oversight

Nuclear Regulatory Commission

N. Shah, Acting Senior Resident Inspector
A. Garmoe, Resident Inspector

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened, Closed, and Discussed

None

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.

1EP1 Exercise Evaluation

EP-AA-1001; Radiological Emergency Plan Annex for Braidwood; Revision 22

EP-AA-112-100; Control Room Operations; Revision 9

EP-AA-112-200; TSC Activation and Operation; Revision 7

AR 01047918; Exercise: OSC Operator Dispatched without Briefing or Tracking; March 25, 2010

AR 01047913; Exercise: TSC Dose Ass't Used Incorrect Conditions; March 25, 2010

AR 01047898; Exercise: Initial Dose Ass't Air Sample Analysis Incorrect; March 25, 2010

AR 01047890; Exercise: TSC Core Damage Ass't Objective Failure; March 25, 2010

AR 01047653; Exercise: NOS Identified OSC Team Briefing Problems; March 25, 2010

AR 01047638; Exercise: NOS Identified TSC Habitability Problems; March 25, 2010

4OA1 Performance Indicator Verification

LS-AA-2110; Monthly Data Elements for NRC ERO Drill Participation; September - December 2009

LS-AA-2120; Monthly Data Elements for NRC ERO Drill/Exercise Performance; July - December 2009

LS-AA-2130; Monthly Data Elements for NRC Alert and Notification System Reliability; July - December 2009

Braidwood Monthly Siren Availability Report Records; July - December 2009

LIST OF ACRONYMS USED

| | |
|-------|--|
| ADAMS | Agency-wide Documents Access and Management System |
| ANS | Alert and Notification System |
| CFR | Code of Federal Regulations |
| CR | Condition Report |
| CRS | Control Room Simulator |
| EOF | Emergency Operations Facility |
| EP | Emergency Preparedness |
| ERO | Emergency Response Organization |
| IMC | Inspection Manual Chapter |
| IP | Inspection Procedure |
| KI | Potassium Iodide |
| NEI | Nuclear Energy Institute |
| NRC | U. S. Nuclear Regulatory Commission |
| OSC | Operations Support Center |
| PAR | Protective Action Recommendation |
| PARS | Publicly Available Records |
| PI | Performance Indicator |
| SDP | Significance Determination Process |
| TI | Temporary Instruction |
| TSC | Technical Support Center |

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