



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

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

August 16, 2011

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: BYRON STATION, UNITS 1 AND 2
BASELINE EMERGENCY PREPAREDNESS BIENNIAL EXERCISE
INSPECTION REPORT 05000454/2011502(DRS); 05000455/2011502(DRS)

Dear Mr. Pacilio:

On July 29, 2011, the U. S. Nuclear Regulatory Commission (NRC) completed a Baseline Emergency Preparedness Biennial Exercise inspection at your Byron Station, Units 1 and 2. The enclosed inspection report documents the inspection findings which were discussed on July 29, 2011, with Mr. T. Tulon 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, there were no findings of significance identified during this inspection.

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

M. Pacilio

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Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

/RA/

Hironori Peterson, Chief
Operations Branch
Division of Reactor Safety

Docket Nos. 50-454; 50-455
License Nos. NPF-37; NPF-66

Enclosure: Inspection Report No. 05000454/2011502(DRS);
05000455/2011502(DRS)
w/Attachment: Supplemental Information

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 50-454; 50-455

License Nos: NPF-37; NPF-66

Report Nos: 05000454/2011502(DRS); 05000455/2011502(DRS)

Licensee: Exelon Generation Company, LLC

Facility: Byron Station, Units 1 and 2

Location: Byron, Illinois

Dates: July 25 through 29, 2011

Inspectors: Robert Jickling, Sr. Emergency Preparedness Inspector
James Beavers, Emergency Preparedness Inspector
Jeff Laughlin, Sr. Emergency Preparedness Specialist
Nicholas Valos, Sr. Risk Analyst
Alex Garmoe, Resident Inspector

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

Enclosure

SUMMARY OF FINDINGS

IR 05000454/2011502(DRS), 05000455/2011502(DRS); 07/25/2011 - 07/29/2011;
Byron Station, Units 1 and 2; Baseline Emergency Preparedness Biennial Exercise Inspection.

This report covers a one week period of announced baseline inspection by three regional inspectors, one emergency preparedness specialist and one resident inspector. 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 were identified.

B. Licensee-Identified Violations

No violations 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 July 27, 2011, 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 2009, 2010, and 2011, to verify that those drills' scenarios were sufficiently different from the scenario used in the July 27, 2011, 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);
- Operations Support Center (OSC);
- Emergency Operations Facility (EOF); and
- Joint Information Center (JIC).

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, OSC, 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 were identified.

4. OTHER ACTIVITIES

Cornerstone: Emergency Preparedness

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 second quarter 2010 through second quarter 2011. 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 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 second quarter 2010 through second quarter 2011. 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 2010 and 2011 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 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 second quarter 2010 through second quarter 2011. 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 were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

On July 29, 2011, the inspectors presented the biennial exercise inspection results to Mr. T. Tulon 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.

.2 Public and Media Briefing

On July 29, 2011, the inspector summarized the NRC's preliminary exercise inspection conclusions at a public and media briefings hosted by Department of Homeland Security/Federal Emergency Management Agency Region V Field Office staff at the Ogle County Building in Oregon, Illinois.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

T. Tulon, Site Vice President
B. Adams, Plant Manager
J. Bottomley, Outage Manager
A. Daniels, Corporate Emergency Preparedness Manager
P. Dempsey, Site Communications
D. Drawbaugh, Emergency Preparedness Manager
T. Hulbert, NRC Coordinator
B. Kartheiser, Emergency Preparedness Coordinator
S. Merrell, Corporate Emergency Preparedness
B. Spahr, Maintenance Director
D. Spitzer, Regulatory Assurance Manager (Acting)
S. Swanson, Nuclear Oversight Manager
M. Wolfe, Reactor Services Manager
B. Youman, Operations Director

Nuclear Regulatory Commission

B. Bartlett, Senior Resident Inspector
J. Robbins, 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

Byron Station 2011 NRC Graded Exercise Manual July 27, 2011, July 21, 2011
Exelon Nuclear Radiological Emergency Plan Annex for Byron Station; Revision 28
List of Two Years of Corrective Action Program Items; July 2009 – July 2011
List of Two Years of Scenario Timelines; July 2009 – July 2011
EP-AA-112; Emergency Response Organization/Emergency Response Facility Activation and Operation; Revision 15
EP-AA-112-200; TSC Activation and Operation; Revision 7
EP-AA-112-300; OSC Activation and Operation; Revision 7
EP-AA-112-400; EOF Activation and Operation; Revision 10
EP-AA-113; Personnel Protective Actions; Revision 10
EP-AA-114; Notifications; Revision 9
EP-AA-110-302; Core Damage Assessment; Revision 4
EP-AA-111; Emergency Classification and Protective Action Recommendations; Revision 16
EP-AA-122; Drills & Exercises; Revision 11
EP-MA/MW-114-100; Notifications; Revision 9
EP-MA/MW-110-200; Dose Assessment; Revision 8
AR 01247327; Exercise-Evaluate OSC Debrief Adequacy and Team Dose Tracking; August 3, 2011
AR 01247325; Exercise-Evaluate TSC Release Mitigation Priorities; August 3, 2011
AR 01247318; Exercise-Evaluate CRS Clear Communications to the Shift Manager; August 3, 2011
AR 01245187; Exercise-EOF Failed Demonstration Criteria Prioritizing Release Mitigation; July 28, 2011
AR 01217080; Off Year Exercise-Evaluate Guidance For Classification Change Notification on NRC Open Bridge Line; May 17, 2011

4OA1 Performance Indicator Verification

EP-AA-1000; Standardized Radiological Emergency Plan; Revision 20

EP-AA-1002; Radiological Emergency Plan Annex for Byron Station; Revision 28

Off-Site Emergency Plan Alert and Notification System Addendum for the
Byron Nuclear Power Station; November 2009

EP-AA-125-1001; EP Performance Indicator Guidance; Revision 6

EP-AA-125-1002; ERO Performance – Performance Indicators Guidance; Revision 6

EP-AA-125-1003; ERO Readiness – Performance Indicators Guidance; Revision 7

EP-AA-125-1004; Emergency Response Facilities & Equipment Performance
Indicators Guidance; Revision 5

Quarterly Drill and Exercise Performance Summaries; April 2010 – June 2011

Emergency Response Organization Drill Participation Quarterly Reports;
April 2010 - June 2011

Quarterly Key ERO Personnel and Drill Participation Dates; April 2010 – June 2011

AR 01244176; ERO Drill Participation Performance Indicator Opportunity Issue;
July 26, 2011

AR 01243746; ERO Participation Performance Indicator Data Question;
July 25, 2011

LIST OF ACRONYMS USED

ADAMS	Agency-wide Documents Access and Management System
ANS	Alert and Notification System
AR	Action Request
CFR	Code of Federal Regulations
CRS	Control Room Simulator
DRS	Division of Reactor Safety
EOF	Emergency Operations Facility
EP	Emergency Preparedness
ERO	Emergency Response Organization
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
JIC	Joint Information Center
NEI	Nuclear Energy Institute
NRC	U. S. Nuclear Regulatory Commission
OSC	Operations Support Center
PARS	Publicly Available Records
PI	Performance Indicator
SDP	Significance Determination Process
TSC	Technical Support Center

M. Pacilio

-2-

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Hironori Peterson, Chief
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