



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

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

December 19, 2013

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

SUBJECT: BYRON STATION, UNITS 1 AND 2, NRC BASELINE EMERGENCY
PREPAREDNESS BIENNIAL EXERCISE INSPECTION REPORT
05000454/2013503; 05000455/2013503

Dear Mr. Pacilio:

On November 22, 2013, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Byron Station, Units 1 and 2. The enclosed report documents the results of this inspection, which were discussed on November 22, 2013, with Mr. B. Youman 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. No findings were 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, and your response (if any) 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/

Richard A. Skokowski, Chief
Plant Support Branch
Division of Reactor Safety

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

Enclosure: Inspection Report 05000454/2013503; 05000455/2013503
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 No: 05000454/2013503; 05000455/2013503

Licensee: Exelon Generation Company, LLC

Facility: Byron Station, Units 1 and 2

Location: Byron, IL

Dates: November 18 – 22, 2013

Inspectors: R. Jickling, Senior Emergency Preparedness Inspector
J. Beavers, Emergency Preparedness Inspector
J. McGhee, Senior Resident Inspector
N. Valos, Senior Reactor Analyst

Approved by: R. Skokowski, Chief
Plant Support Branch
Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

IR 05000454/2013503; 05000455/2013503; 11/18/2013 – 11/22/2013; 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 and one resident inspector. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 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

None

REPORT DETAILS

1. REACTOR SAFETY

Cornerstone: Emergency Preparedness

1EP1 Exercise Evaluation (71114.01)

.1 Exercise Evaluation

a. Inspection Scope

The inspectors reviewed the November 20, 2013, biennial emergency preparedness exercise objectives and scenario to ensure 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 2011, 2012, and 2013, to verify that those drills' scenarios were sufficiently different from the scenario used in the November 20, 2013, 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, 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) 71114.01-06.

b. Findings

No findings were identified.

1EP8 Exercise Evaluation – Scenario Review (71114.08)

a. Inspection Scope

Prior to the inspection activity, the inspectors conducted an in-office review of the exercise objectives and scenarios submitted to the NRC using IP 71114.08, “Exercise Evaluation - Scenario Review,” to determine if the exercise would test major elements of the Emergency Plan, as required by 10 CFR 50.47(b)(14). This inspection activity represents one sample on a biennial cycle.

The inspectors reviewed various documents, which are listed in the Attachment to this report. This inspection activity satisfied one inspection sample for the exercise evaluation on a biennial basis.

This review of the exercise objectives and scenario constituted one sample as defined in IP 71114.08-06.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

Cornerstone: Emergency Preparedness

4OA1 Performance Indicator Verification (71151)

.1 Drill/Exercise Performance

a. Inspection Scope

The inspectors sampled licensee submittals for the Drill/Exercise Performance Indicator (PI) for the period from the second quarter 2012 through the third quarter 2013. 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, was 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, 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 2012 through the third quarter 2013. 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, was 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 2012 and 2013 drills, and revisions of the roster of personnel assigned to key ERO 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 2012 through the third quarter 2013. 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, was 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 ANS sample as defined in IP 71151-05.

b. Findings

No findings were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

On November 22, 2013, the inspectors presented the biennial exercise inspection results to Mr. B. Youman 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

B. Youman, Plant Manager
G. Armstrong, Security Manager
B. Barton, Radiation Protection Manager
T. Chalmers, Operations Director
A. Daniels, Corporate Emergency Preparedness Manager
S. Gackstetter, Regulatory Assurance Manager
B. Jacobs, Project Management Manager
R. Kartheiser, Emergency Preparedness Coordinator
R. Lloyd, Emergency Preparedness Manager
L. Wehner, Nuclear Oversight Manager
L. Zurawski, Compliance Engineer

Nuclear Regulatory Commission

J. McGhee, 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 partial 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 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.

1EP1 Exercise Evaluation

- EP-AA-1000; Exelon Standardized Radiological Emergency Plan; Revision 24
- EP-AA-1002; Radiological Emergency Plan Annex for Byron Station; Revision 32
- EP-AA-110; Assessment of Emergencies; Revision 9
- EP-AA-110-200; Dose Assessment; Revision 6
- EP-AA-111; Emergency Classification and Protective Action Recommendations; Revision 18
- EP-AA-112; Emergency Response Organization (ERO)/Emergency Response Facility Activation and Operation; Revision 16
- EP-AA-113; Personnel Protective Actions; Revision 11
- EP-AA-114; Notifications; Revision 11
- Two Years of Drill and Exercise ARs; July 2011 – November 2013
- Two Years of Drill and Exercise Scenario Timelines; July 2011 – November 2013
- AR 01588554; Exercise-EOF Communicator Delayed Notification of Change in Classification to NRC; November 21, 2013
- AR 01588547; Exercise-OSC Team Priorities and Delayed Dispatch; November 21, 2013
- AR 01588546; Exercise-TSC Emergency HVAC Mode Initiation Delayed; November 21, 2013
- AR 01588541; Exercise-TSC Briefings/Updates Inconsistent and Omitted Some Detail; November 21, 2013
- AR 01588535; Exercise-Simulator Site Accountability/Assembly Was Delayed; November 21, 2013
- AR 01582733; Pre-Exercise-TSC Delayed Accountability/Assembly, Dose Projection Problems, and Ventilation Emergency Mode Delayed; November 8, 2013

1EP8 Exercise Evaluation – Scenario Review

- Byron Station 2013 NRC Graded Exercise Manual; September 20, 2013

4OA1 Performance Indicator Verification

- LS-AA-2110; Monthly Data Elements for NRC Emergency Response Organization (ERO) Drill Participation; Revision 6
- LS-AA-2120; Monthly Data Elements for NRC Drill/Exercise Performance; Revision 4
- LS-AA-2130; Monthly Data Elements for NRC Alert and Notification System (ANS) Reliability; Revision 5
- ERO Drill Participation; June 2012 - September 2013
- DEP Opportunities; April 2012 - September 2013
- ANS Reliability; April 2012 - September 2013

LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
ANS	Alert and Notification System
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
IP	Inspection Procedure
IR	Inspection Report
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
PARS	Publicly Available Records System
PI	Performance Indicator
SDP	Significance Determination Process
TSC	Technical Support Center

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DATE	12/18/2013		12/18/2013		12/19/2013			

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Letter to Michael Pacilio from Richard A. Skokowski dated December 19, 2013

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PREPAREDNESS BIENNIAL EXERCISE INSPECTION REPORT
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