



UNITED STATES
NUCLEAR REGULATORY COMMISSION
LISLE, ILLINOIS 60532

September 11, 2009

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: BYRON STATION, UNITS 1 AND 2 BASELINE EMERGENCY
PREPAREDNESS BIENNIAL EXERCISE INSPECTION REPORT
05000454/2009502(DRS); 05000455/2009502(DRS)

Dear Mr. Pardee:

On July 31, 2009, 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 31, 2009, 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.

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

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).

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. 05000454/2009502(DRS);
05000455/2009502(DRS)
w/Attachment: Supplemental Information

Letter to Charles G. Pardee from Hironori Peterson dated September 11, 2009

SUBJECT: BYRON STATION, UNITS 1 AND 2 BASELINE EMERGENCY
PREPAREDNESS BIENNIAL EXERCISE INSPECTION REPORT
05000454/2009502(DRS); 05000455/2009502(DRS)

cc w/encl: Site Vice President - Byron Station
Plant Manager - Byron Station
Manager Regulatory Assurance - Byron Station
Senior Vice President - Midwest Operations
Senior Vice President - Operations Support
Vice President - Licensing and Regulatory Affairs
Director - Licensing and Regulatory Affairs
Manager Licensing - Braidwood, Byron, and LaSalle
Associate General Counsel
Document Control Desk - Licensing
Assistant Attorney General
Illinois Emergency Management Agency
J. Klinger, State Liaison Officer,
Illinois Emergency Management Agency
P. Schmidt, State Liaison Officer, State of Wisconsin
Chairman, Illinois Commerce Commission
B. Quigley, Byron Station

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: BYRON STATION, UNITS 1 AND 2 BASELINE EMERGENCY PREPAREDNESS
 BIENNIAL EXERCISE INSPECTION REPORT 05000454/2009502(DRS);
 05000455/2009502(DRS)

Dear Mr. Pardee:

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PREPAREDNESS BIENNIAL EXERCISE INSPECTION REPORT
05000454/2009502(DRS); 05000455/2009502(DRS)

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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: 05000454/2009502(DRS); 05000455/2009502(DRS)

Licensee: Exelon Generation Company, LLC

Facility: Byron Station, Units 1 and 2

Location: Byron, Illinois

Dates: July 27 through 31, 2009

Inspectors: Robert Jickling, Sr. Emergency Preparedness Inspector
Regina Russell, Emergency Preparedness Inspector
Bruce Bartlett, Sr. Resident Inspector
Randy Sullivan, Sr. Emergency Preparedness Specialist

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

Enclosure

SUMMARY OF FINDINGS

IR 05000454/2009502, 05000454/2009502; 07/27/2009 - 07/31/2009; Byron 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, one resident inspector, and one specialist. 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 July 29, 2009, 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 2007, 2008, and 2009, to verify that those drills' scenarios were sufficiently different from the scenario used in the July 29, 2009, 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); 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, OSC, 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 first quarter 2008 through second 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 5, 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 first quarter 2008 through second 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 5, 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 2008 and 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 first quarter 2008 through second 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 5, 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.

4OA5 Other Activities

.1 (Closed) NRC Temporary Instruction 2515/175 "Emergency Response Organization, Drill/Exercise Performance Indicator, Program Review"

The inspector performed Temporary Instruction (TI) 2515/175, ensured the completeness of the TI's Attachment 1, and then forwarded the data to NRC, Headquarters.

4OA6 Management Meetings

.1 Exit Meeting Summary

On July 31, 2009, the inspectors 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.

.2 Public and Media Briefing

On July 31, 2009, the inspector summarized the NRC's preliminary exercise inspection conclusions at a public and media briefing hosted by Department of Homeland Security/Federal Emergency Management Agency Region V Field Office staff in Oregon, Illinois.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

D. Enright, Site Vice President
B. Adams, Plant Manager
K. Appel, Corporate Emergency Preparedness Manager
B. Askren, Security Director
L. Bogue, Training Director
C. Gayheart, Operations Director
S. Greenlee, Engineering Director
D. Gudger, Regulatory Assurance Manager
T. Johnson, Nuclear Oversight Representative
E. Lamken, Emergency Preparedness Coordinator
J. Langan, Regulatory Assurance
D. Thompson, Radiation Protection Manager
W. Walter, Emergency Preparedness Manager
B. Youman, Work Management Director

Nuclear Regulatory Commission

B. Bartlett, Senior 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 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-1002; Radiologic Emergency Plan Annex for Byron Station; Revision 24

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

Byron Station 2009 NRC Graded Exercise Manual; July 29, 2009

Drill and Exercise Scenario Timelines; December 2007 - July 2009

Drill and Exercise Corrective Action Request Records; June 2007 - June 2009

Byron 2009 Pre-Exercise Evaluation Report; June 17, 2009

Byron 2007 NRC Graded Exercise Evaluation Report; June 20, 2007

AR 00957448; Exercise-EOF Failed 2 Demonstration Criteria; August 25, 2009

AR 00947868; Exercise-Impact of Increasing Number of SRVs Open on DAPAR Results; July 30, 2009

AR 00947865; Exercise-Evaluation of OSC Team 8 Preparation and Dispatch; July 30, 2009

AR 00947864; Exercise-TSC Failed EP Exercise Objective; July 30, 2009

AR 00947264; Exercise-ERDS Failure Due to Telephone Line; July 29, 2009

40A1 Performance Indicator Verification

EP-A-125-1003; ERO Readiness – Performance Indicators Guidance; Revision 6

EP-AA-125-1001; EP Performance Indicator Guidance; Revision 5

LS-AA-2110; Monthly Data Elements for NRC Emergency Response Organization (ERO) Drill Participation; 1st Quarter 2008 - 2nd Quarter 2009

LS-AA-2120; Monthly Data Elements for NRC Emergency Response Organization (ERO) Drill Participation; 1st Quarter 2008 - 2nd Quarter 2009

LS-AA-2130; Monthly Data Elements for NRC Alert and Notification System (ANS) Reliability; 1st Quarter 2008 - 2nd Quarter 2009

AR 00946990; ERO Participation Question from NRC; July 28, 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