

July 12, 2007

Mr. Christopher M. Crane  
President and Chief Nuclear Officer  
Exelon Nuclear  
Exelon Generation Company, LLC  
4300 Winfield Road  
Warrenville, IL 60555

SUBJECT: BYRON STATION, UNITS 1 AND 2  
BIENNIAL EMERGENCY PREPAREDNESS EXERCISE BASELINE  
INSPECTION REPORT 05000454/2007502(DRS); 05000455/2007502(DRS)

Dear Mr. Crane:

On June 22, 2007, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Byron Station, Units 1 and 2. The enclosed report documents the inspection findings, which were discussed on June 22, 2007, with Mr. Dave Hoots 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. Specifically, this inspection focused on emergency preparedness, including your staff's determinations of performance indicators for the Emergency Preparedness Cornerstone.

On the basis of the results of this inspection, no findings of 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 System (PARS) component of NRC's Agencywide

C. Crane

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Sincerely,

**/RA/**

Eric Duncan, Chief  
Plant Support Branch  
Division of Reactor Safety

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

Enclosure: Biennial Emergency Preparedness Exercise Baseline Inspection Report  
05000454/2007502(DRS); 05000455/2007502(DRS);  
w/Attachment: Supplemental Information

cc w/encl: Site Vice President - Byron Station  
Plant Manager - Byron Station  
Regulatory Assurance Manager - Byron Station  
Chief Operating Officer  
Senior Vice President - Nuclear Services  
Vice President - Operations Support  
Vice President - Licensing and Regulatory Affairs  
Director Licensing  
Manager Licensing - Braidwood and Byron  
Senior Counsel, Nuclear  
Document Control Desk - Licensing  
Assistant Attorney General  
Illinois Emergency Management Agency  
State Liaison Officer, State of Illinois  
State Liaison Officer, State of Wisconsin  
Chairman, Illinois Commerce Commission  
B. Quigley, Byron Station  
W. King, FEMA, Region V

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Vice President - Operations Support  
Vice President - Licensing and Regulatory Affairs  
Director Licensing  
Manager Licensing - Braidwood and Byron  
Senior Counsel, Nuclear  
Document Control Desk - Licensing  
Assistant Attorney General  
Illinois Emergency Management Agency  
State Liaison Officer, State of Illinois  
State Liaison Officer, State of Wisconsin  
Chairman, Illinois Commerce Commission  
B. Quigley, Byron Station  
W. King, FEMA, Region V

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Letter to Christopher M. Crane from Eric Duncan dated July 12, 2007.

SUBJECT: BYRON STATION, UNITS 1 AND 2  
NRC EMERGENCY PREPAREDNESS INSPECTION  
REPORT 05000454/2007502; 05000455/2007502

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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: 05000454/2007502(DRS); 05000455/2007502(DRS)

Licensee: Exelon Generation Company, LLC

Facility: Byron Station, Units 1 and 2

Location: Byron, IL 61010

Dates: June 18 through June 22, 2007

Inspectors: R. Jickling, Senior Emergency Preparedness Analyst  
C. Moore, Reactor Engineer  
S. Ray, Resident Inspector - Braidwood Station

Observers: J. Bozga, Inspector-in-Training

Approved by: E. Duncan, Chief  
Plant Support Branch  
Division of Reactor Safety

Enclosure

## **SUMMARY OF FINDINGS**

IR 05000454/2007502; 05000455/2007502; on 06/18/2007-06/22/2007; Byron Station, Biennial Emergency Preparedness Exercise Baseline Inspection.

The report covers a 1 week baseline inspection by one regional emergency preparedness inspector, a resident inspector, and a reactor engineer. The inspection focused on the Emergency Preparedness Cornerstone in the Reactor Safety strategic performance area during the biennial emergency preparedness exercise. This inspection also included a review of records related to the three emergency preparedness performance indicators for the period January 1, 2006, through March 31, 2007.

The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

### **A. Inspector-Identified and Self-Revealed Findings**

None.

### **B. Licensee-Identified Violations**

None.

## REPORT DETAILS

### 1. REACTOR SAFETY

#### Cornerstone: Emergency Preparedness

##### 1EP1 Exercise Evaluation (71114.01)

###### a. Inspection Scope

The inspectors reviewed the June 20, 2007, 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 quarterly drills and exercises conducted in 2005, 2006, and 2007, to verify that those drills' scenarios were sufficiently different from the scenario used in the June 20, 2007 exercise.

The inspectors evaluated the licensee's exercise performance, focusing on the risk-significant activities of emergency classification, notification, and protective action decision making, as well as implementation of accident mitigation strategies 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.

These activities completed one of one inspection sample.

###### b. Findings

No findings of significance were identified.

#### 4. OTHER ACTIVITIES

##### 4OA1 Performance Indicator (PI) Verification (71151)

###### **Cornerstone: Emergency Preparedness**

##### .1 Reactor Safety Strategic Area

###### a. Inspection Scope

The inspectors reviewed the licensee's records associated with each of the three emergency preparedness PIs to verify that the licensee's program was implemented consistent with the industry guidelines in the applicable revision of Nuclear Energy Institute Publication No. 99-02, "Regulatory Assessment Performance Indicator Guideline," and related licensee procedures. Specifically, licensee records related to the performance of the Alert and Notification System (ANS), key Emergency Response Organization (ERO) members' drill participation, and Drill and Exercise Performance (DEP) were reviewed to verify the accuracy and completeness of the PI data submitted to NRC for the period from January 1, 2006, through March 31, 2007. The following three PIs were reviewed:

Common

- ANS;
- ERO Drill Participation; and
- DEP.

These activities completed three of three PI samples.

###### b. Findings

No findings of significance were identified.

##### 4OA6 Meetings

##### .1 Exit Meeting

On June 22, 2007, at the conclusion of the on-site inspection activities, the inspectors presented preliminary inspection results to Mr. D. Hoots and other members of licensee management. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.



.2 Public and Media Briefing

On June 22, 2007, an inspector summarized NRC's preliminary exercise inspection conclusions at a public and media briefing hosted by Department of Homeland Security Region V Field Office staff in Oregon, Illinois.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee

D. Hoots, Site Vice President  
M. Snow, Plant Manager  
J. Anderson, Byron Projects Manager  
K. Appel, Corporate Emergency Preparedness Manager  
D. Drawbaugh, Emergency Preparedness Manager  
B. Grundmann, Regulatory Assurance Manager  
T. Hulbert, NRC Coordinator  
R. Kartheiser, Communications  
W. Kouba, Nuclear Oversight Manager  
S. Merrell, Emergency Preparedness Coordinator  
M. Prospero, Operations Manager  
W. Reeher, Chemistry  
W. Stoermer, Regional PA Manager

#### Nuclear Regulatory Commission

B. Bartlett, Senior Resident Inspector  
S. Sheldon, Acting 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 EP Exercise Inspection Readiness Self-Assessment Inspection Report; dated June 6, 2007

Byron 2007 Pre-Exercise Evaluation Report; dated May 31, 2007

Byron Station June 20, 2007, Graded Exercise Scenario Manual; dated May 18, 2007

Byron 2006 Off-Year Exercise Findings and Observations Report

Byron 2005 NRC Graded Exercise Findings and Observation Report; dated August 18, 2005

Byron 2005 Pre-Exercise Findings and Observations Report; dated July 15, 2005

EP-MW-114-100-F-01; Nuclear Accident Reporting System (NARS) Forms; dated June 20, 2007

EP-AA-111; Emergency Classification and Protective Action Recommendations; Revision 11

EP-AA-112-200; TSC Activation and Operation; Revision 6

1BEP-0; Reactor Trip or Safety Injection, Unit 1; Revision 108

### 4OA1 Performance Indicator Verification

LS-AA-2110; Monthly Data Elements for NRC Emergency Response Organization (ERO) Drill Participation; dated January 2006 through March 2007

LS-AA-2120; Monthly Data Elements for NRC Drill/Exercise Performance; dated January 2006 through March 2007

LS-AA-2130; Monthly Data Elements for NRC Alert and Notification System (ANS) Reliability; dated January 2006 through March 2007

EP-AA-125-1003; Key ERO Participation and Stability Monthly Data Reporting Elements; dated March 2006 through March 2007

Byron Monthly Siren Availability Report; dated January 2006 through March 2007

## **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
DEP	Drill and Exercise Performance
DRS	Division of Reactor Safety
EOF	Emergency Operations Facility
EP	Emergency Preparedness
ERO	Emergency Response Organization
NARS	Nuclear Accident Reporting System
NRC	U. S. Nuclear Regulatory Commission
PARS	Publicly Available Records
PI	Performance Indicator
TSC	Technical Support Center