



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

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

April 21, 2021

Mr. David Rhoades  
Senior VP, Exelon Generation Company, LLC  
President and CNO, Exelon Nuclear  
4300 Winfield Road  
Warrenville, IL 60555

SUBJECT: BYRON STATION – EMERGENCY PREPAREDNESS BIENNIAL EXERCISE  
INSPECTION REPORT 05000454/2021501 AND 05000455/2021501

Dear Mr. Rhoades:

On March 26, 2021, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Byron Station and discussed the results of this inspection with Mr. H. Welt and other members of your staff. The results of this inspection are documented in the enclosed report.

No findings or violations of more than minor significance were identified during this inspection.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

Patricia J. Pelke  
Digitally signed by  
Patricia J. Pelke  
Date: 2021.04.21  
10:12:44 -05'00'

Patricia J. Pelke, Chief  
Operations Branch  
Division of Reactor Safety

Docket Nos. 05000454 and 05000455  
License Nos. NPF-37 and NPF-66

Enclosure:  
As stated

cc w/ encl: Distribution via LISTSERV®

Letter to David Rhoades from Patricia J. Pelke dated April 21, 2021.

SUBJECT: BYRON STATION – EMERGENCY PREPAREDNESS BIENNIAL EXERCISE  
INSPECTION REPORT 05000454/2021501 AND 05000455/2021501

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**U.S. NUCLEAR REGULATORY COMMISSION  
Inspection Report**

Docket Numbers: 05000454 and 05000455

License Numbers: NPF-37 and NPF-66

Report Numbers: 05000454/2021501 and 05000455/2021501

Enterprise Identifier: I-2021-501-0010

Licensee: Exelon Generation Company, LLC

Facility: Byron Station

Location: Byron, IL

Inspection Dates: March 22, 2021 to March 26, 2021

Inspectors: J. Dalzell, Reactor Inspector  
M. Garza, Emergency Preparedness Inspector  
G. Hansen, Senior Emergency Preparedness Inspector  
P. Smagacz, Resident Inspector

Approved By: Patricia J. Pelke, Chief  
Operations Branch  
Division of Reactor Safety

Enclosure

## **SUMMARY**

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting an emergency preparedness biennial exercise inspection at Byron Station, in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information.

### **List of Findings and Violations**

No findings or violations of more than minor significance were identified.

### **Additional Tracking Items**

None.

## **INSPECTION SCOPES**

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

## **REACTOR SAFETY**

### 71114.01 - Exercise Evaluation

#### Inspection Review (IP Section 02.01-02.11) (1 Sample)

- (1) The inspectors evaluated the biennial emergency plan exercise on March 23, 2021. The exercise scenario simulated an event at Byron Station that initiated with the declaration and notification of an Alert in response to the failure of an automatic trip to shut down the reactor, and subsequent manual actions taken at the reactor control consoles were not successful in shutting down the reactor. The scenario conditions simulated the escalation of the significance of the event, requiring the declaration of a Site Area Emergency, and then a General Emergency, as well as the development of Protective Action Recommendations that were communicated to the required state and local government agencies.

### 71114.08 - Exercise Evaluation Scenario Review

#### Inspection Review (IP Section 02.01 - 02.04) (1 Sample)

- (1) The inspectors reviewed and evaluated the proposed scenario for the biennial emergency plan exercise on February 18, 2021.

## **OTHER ACTIVITIES – BASELINE**

### 71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

#### EP01: Drill/Exercise Performance (IP Section 03.12) (1 Sample)

- (1) July 01, 2020 through December 31, 2020

#### EP02: ERO Drill Participation (IP Section 03.13) (1 Sample)

- (1) July 01, 2020 through December 31, 2020

EP03: Alert & Notification System Reliability (IP Section 03.14) (1 Sample)

(1) July 01, 2020 through December 31, 2020

**INSPECTION RESULTS**

No findings were identified.

**EXIT MEETINGS AND DEBRIEFS**

The inspectors verified no proprietary information was retained or documented in this report.

- On March 26, 2021, the inspectors presented the emergency preparedness biennial exercise inspection results to Mr. H. Welt and other members of the licensee staff.

**DOCUMENTS REVIEWED**

Inspection Procedure	Type	Designation	Description or Title	Revision or Date	
71114.01	Corrective Action Documents	AR 04293136	Byron 2019 EP NRC Graded Exercise - Facilities/Equip Issues	10/29/2019	
		AR 04307364	Byron ERO Duty Team Member Qualification Lapse	01/01/2020	
		AR 04309602	MET Tower 250 Ft Wind Speed Instrument Failure	01/10/2020	
		AR 04333172	EP-Ogle County Sheriff / EOC did not Respond on NARS Rollcall	04/06/2020	
		AR 04347950	RSH seismic monitor has improper indication	06/04/2020	
		AR 04353687	Byron 2020 HP Drill - Lessons Learned	06/12/2020	
		AR 04359810	NRC (ENS) Red Phone Not Working in MCR	07/30/2020	
		AR 04360703	Ogle County failed to respond to NARS roll call test	08/03/2020	
		AR 04363392	250FT wind direction Y4005 computer point failed	08/15/2020	
		AR 04368127	Byron EP 2020 Off-Year Exercise - SCR Performance	08/25/2020	
		AR 04368136	Byron EP 2020 Off-Year Exercise - TSC Performance	08/25/2020	
		AR 04368140	Byron EP 2020 Off-Year Exercise - OSC Performance	08/25/2020	
		AR 04371960	EP Communicator Qualification	09/25/2020	
		AR 04375471	NRC RED phone in the MCR	10/09/2020	
		AR 04388094	ERO Members Miss Annual EP Training Sessions	12/03/2020	
	AR 04390048	ERO Vacancies Identified - New Members Needed	12/14/2020		
	Miscellaneous			Two Years of Drill and Exercise Evaluation Results	03/01/2019 - 03/26/2021
				PowerPoint Presentation; Byron Biennial Exercise – Exercise Evaluation Results	03/26/2021
				Byron 2019 NRC Graded Exercise Evaluation Report	11/19/2019
		RS-21-010		Byron 2021 Emergency Preparedness Biennial Exercise Scenario	01/21/2020
	Procedures	EP-AA-1000		Exelon Nuclear Standardized Radiological Emergency Plan	33
		EP-AA-1002		Exelon Nuclear Radiological Emergency Plan Annex for Byron Station	36
		EP-AA-1002, Addendum 3		Exelon Nuclear Emergency Action Levels for Byron Station	5
		EP-AA-110-200		Dose Assessment	13

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		EP-AA-110-302	Core Damage Assessment	10
		EP-AA-111	Emergency Classification and Protective Action Recommendations	23
		EP-AA-112	Emergency Response Organization (ERO) / Emergency Response Facility (ERF) Activation and Operation	22
		EP-AA-112-100	Control Room Operations	19
		EP-AA-112-200	TSC Activation and Operation	14
		EP-AA-112-300	OSC Activation and Operation	14
		EP-AA-112-400	EOF Activation and Operation	15
		EP-AA-113	Personnel Protective Actions	15
		EP-AA-114	Notifications	17
71114.08	Miscellaneous	RS-21-010	Byron Station 2021 Emergency Preparedness Biennial Exercise Scenario	01/21/2020
71151	Miscellaneous		NRC PI Data Sheets; NRC Indicator Alert Notification System (ANS) Reliability	07/01/2020 - 12/31/2020
			NRC PI Data Sheets; NRC Indicator Drill and Exercise Performance (DEP)	07/01/2020 - 12/31/2020
			NRC PI Data Sheets; Emergency Response Organization (ERO) Readiness	07/01/2020 - 12/31/2020
		NEI 99-02	Regulatory Assessment Performance Indicator Guideline	7