



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION I
2100 RENAISSANCE BLVD., Suite 100
KING OF PRUSSIA, PA 19406-2713

December 11, 2017

Mr. Bryan C. Hanson
Senior Vice President, Exelon Generation Company, LLC
President and Chief Nuclear Officer, Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

**SUBJECT: LIMERICK GENERATING STATION – UNITS 1 AND 2
EVALUATED EMERGENCY PREPAREDNESS EXERCISE
INSPECTION REPORT 05000352/2017502 AND 05000353/2017502**

Dear Mr. Hanson:

On November 16, 2017, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection of the November 14, 2017, evaluated emergency preparedness exercise at the Limerick Generating Station. On November 16, 2017, the NRC inspectors discussed the results of this inspection with Mr. Frank Sturniolo, Plant Manager, and other members of your staff. The results of this inspection are documented in the enclosed report.

The NRC inspectors did not identify any finding or violation of more than minor significance.

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 the NRC's Public Document Room, in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

Raymond R. McKinley, Chief
Plant Support Branch 1
Division of Reactor Safety

Docket Nos. 50-352 and 50-353
License Nos. NPF-39 and NPF-85

B. Hanson

2

Enclosure:

NRC Inspection Report No. 05000352/2017502
and 05000353/2017502

cc w/encl:

RFlinn, Jr., Director, PA Emergency Management Agency (PEMA)
TScardino, RAC Chair, FEMA Region III

SUBJECT: LIMERICK GENERATING STATION – UNITS 1 AND 2
 EVALUATED EMERGENCY PREPAREDNESS EXERCISE
 INSPECTION REPORT 05000352/2017502 AND 05000353/2017502 DATED
 DECEMBER 11, 2017

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**U.S. NUCLEAR REGULATORY COMMISSION
REGION I**

Docket Nos. 50-352 and 50-353

License Nos. NPF-39 and NPF-85

Report Nos. 05000352/2017502 and 05000353/2017502

Licensee: Exelon Generation Company, LLC

Facility: Limerick Generating Station, Units 1 & 2

Location: Sanatoga, PA

Dates: November 13 – 16, 2017

Inspectors: J. Ambrosini, Sr. Emergency Preparedness Inspector
Division of Reactor Safety (DRS)
J. DeBoer, Emergency Preparedness Inspector, DRS
M. Fannon, Resident Inspector
D. Silk, Senior Operations Engineer, DRS

Approved By: Raymond McKinley, Chief
Plant Support Branch
Division of Reactor Safety

Enclosure

SUMMARY

Inspection Report 05000352/2017502 and 05000353/2017502; 11/13-16, 2017;
Limerick Generating Station; Exercise Evaluation, Exercise Evaluation – Scenario Review,
Performance Indicator Verification.

This was an announced inspection conducted by three Region I-based inspectors and one resident inspector. No findings were identified during the inspection. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 6.

Cornerstone: Emergency Preparedness

No findings were identified.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstone: Emergency Preparedness

1EP1 Exercise Evaluation (71114.01 – 1 sample)

a. Inspection Scope

On November 14, 2017, Exelon conducted a biennial emergency preparedness exercise at the Limerick Generating Station. The NRC inspectors evaluated the adequacy of Exelon's conduct of the exercise and its capability to assess staff performance via a formal critique process, as required by Title 10 of the Code of Federal Regulations (10 CFR) 50.47(b)(14). This overall exercise inspection activity represented the completion of one sample on a biennial cycle.

To evaluate the exercise, the inspectors reviewed:

- The adequacy of Exelon's performance in the biennial full-participation exercise regarding the implementation of the planning standards described in 10 CFR 50.47(b)(4), (5), (9), and (10), which are: emergency classification, offsite notification, radiological assessment, and onsite and public protective action recommendations, respectively.
- The overall adequacy of Exelon's emergency response facilities with regard to Limerick emergency plan commitments. The inspectors assessed the following facilities: the simulator control room, the technical support center, the operations support center, and the emergency operations facility.
- Exelon's performance in other areas, such as: the emergency response organization's (ERO) recognition of abnormal plant conditions, command and control, communications both within and between facilities, prioritization of mitigation activities, utilization of repair and field monitoring teams, interface with offsite agencies, staffing and procedure adequacy, and the overall implementation of the Limerick emergency plan and its implementing procedures.
- A review of past performance issues from the last biennial exercise inspection report and Exelon's emergency preparedness drill reports, to determine the effectiveness of corrective actions as demonstrated during the November 14, 2017, exercise and to ensure compliance with 10 CFR 50.47(b)(14), which requires licensees to conduct periodic drills and exercises and to correct any deficiencies identified.
- The post-exercise critiques, to evaluate Exelon's self-assessment of its ERO performance during the November 14, 2017, exercise and to ensure compliance with 10 CFR Part 50, Appendix E, Section IV.F.2.g.

Documents reviewed for each section of this inspection report are listed in the Attachment.

b. Findings

No findings were identified.

1EP8 Exercise Evaluation – Scenario Review (71114.08 – 1 sample)

a. Inspection Scope

Prior to the November 14, 2017, emergency preparedness exercise, the NRC inspectors conducted an in-office review of the exercise objectives and scenario, which Exelon had submitted to the NRC, to determine if the exercise would test major elements of the Limerick emergency plan as required by 10 CFR 50.47(b)(14). This overall exercise inspection activity represented the completion of one sample on a biennial cycle.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES (OA)

4OA1 Performance Indicator Verification (71151 – 3 Samples)

a. Inspection Scope

The inspectors reviewed data for the Limerick emergency preparedness performance indicators: (1) Drill and Exercise Performance (DEP) (EP01); (2) ERO Drill Participation (EP02); and (3) Alert and Notification System (ANS) Reliability (EP03). The inspectors conducted the last NRC emergency preparedness inspection at Limerick in the fourth calendar quarter of 2016, so the inspectors reviewed supporting documentation from emergency preparedness drills and tests from the fourth calendar quarter of 2016 through the third calendar quarter of 2017, to verify the accuracy of the reported PI data. The inspectors conducted this review in accordance with NRC Inspection Procedure 71151, using the acceptance criteria documented in NEI 99-02, "Regulatory Assessment Performance Indicator Guidelines," Revision 7.

This inspection activity represented the completion of three samples.

b. Findings

No findings were identified.

4OA6 Meetings, including Exit

On November 16, 2017, the inspectors presented the results of this inspection to Frank Sturniolo, Plant Manager, and other members of Exelon's staff. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

**ATTACHMENT
SUPPLEMENTAL INFORMATION
KEY POINTS OF CONTACT**

Licensee Personnel

F. Sturniolo, Limerick Plant Manager
V. Cwietniewicz, Exelon Mid-Atlantic Emergency Planning Manager
A. Hightower, Limerick Emergency Planning Manager

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

None

LIST OF DOCUMENTS REVIEWED

Section 1EP1: Exercise Evaluation:

EP-AA-1000, Exelon Nuclear Standardized Emergency Plan, Revision 028
EP-AA-1008, Radiological Emergency Plan Annex for Limerick Generating Station, Revision 29
Limerick Emergency Plan implementing procedures
Limerick November 14, 2017, Emergency Exercise Scenario Package

Condition Reports

2730920	3954739	4066829
2731035	3954742	4066838
2697459	3951911	4066842
2699307	3954739	4066855
2708412	4066798	4066859
4013634	4066887	4066881
4013614	4066844	4066885
4019370	4066867	4066912
4013624	4066717	4066913
3950707	4066786	4066919
3950702	4066788	4066930
3950703	4066789	4066946
3950864	4066803	4066955
3951911	4066818	

Section 1EP8: Exercise Evaluation – Scenario Review

EP-AA-1000, Exelon Nuclear Standardized Emergency Plan, Revision 028
EP-AA-1008, Radiological Emergency Plan Annex for Limerick Generating Station, Revision 29
Limerick Emergency Plan implementing procedures
Limerick November 14, 2017, Emergency Exercise Scenario Package

Section 4OA1: Performance Indicator (PI) Verification

EP-AA-125-1001, EP Performance Indicator Guidance
ANS PI data, October 2016 – September 2017
DEP PI data, October 2016 – September 2017
ERO Drill Participation PI data, October 2016 – September 2017

LIST OF ACRONYMS

ADAMS	Agencywide Documents Access and Management System
ANS	Alert Notification System
CFR	Code of Federal Regulations
DEP	Drill and Exercise Performance
ERO	Emergency Response Organization
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission