



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

June 30, 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: JAMES A. FITZPATRICK NUCLEAR POWER PLANT – ISSUANCE OF
AMENDMENT RE: EMERGENCY PLAN EMERGENCY ACTION LEVEL HU1.5
(CAC NO. MF9722)

Dear Mr. Hanson:

The U.S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 315 to Renewed Facility Operating License No. DPR-59 for the James A. FitzPatrick Nuclear Power Plant (FitzPatrick). The amendment consists of changes to the Emergency Plan Emergency Action Level HU1.5 in response to your application dated May 19, 2017 (Agencywide Documents Access and Management System Accession No. ML17139C739).

The amendment revises the Emergency Action Level HU1.5 for FitzPatrick by replacing the phrase "Lake water level > 249.2 ft" with the phrase "A hazardous event that results in on-site conditions sufficient to prohibit the plant staff from accessing the site via personal vehicles."

A copy of the related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

A handwritten signature in black ink that reads "V. Booma".

Booma Venkataraman, Project Manager
Plant Licensing Branch I
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-333

Enclosures:

1. Amendment No. 315 to DPR-59
2. Safety Evaluation

cc: Listserv



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-333

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 315
Renewed License No. DPR-59

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Exelon Generation Company, LLC (Exelon, the licensee) dated May 19, 2017, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter 1;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, by Amendment No. 315, the license is amended by changes to the Emergency Plan as set forth in the licensee's application dated May 19, 2017, and evaluated in the NRC staff's safety evaluation for this amendment.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink that reads "Michelle Evans for". The signature is written in a cursive style.

Brian E. Holian, Acting Director
Office of Nuclear Reactor Regulation

Date of Issuance: June 30, 2017



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 315 TO

RENEWED FACILITY OPERATING LICENSE NO. DPR-59

EXELON GENERATION COMPANY, LLC

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

DOCKET NO. 50-333

1.0 INTRODUCTION

By letter dated May 19, 2017 (Reference 1), Exelon Generation Company, LLC (Exelon or the licensee) submitted a request for a change to the James A. FitzPatrick Nuclear Power Plant (FitzPatrick or JAF) Emergency Action Level (EAL) HU1.5. The proposed change would revise EAL HU1.5 to eliminate the high lake water level threshold and incorporate a threshold based upon onsite conditions compromised by a hazardous event such that plant staff cannot access the site via personal vehicles, which may compromise the effective implementation of the site's emergency plan. Specifically, the proposed change would modify the EAL HU1.5 for FitzPatrick by replacing the phrase "Lake water level > 249.2 ft" with the phrase "A hazardous event that results in on-site conditions sufficient to prohibit the plant staff from accessing the site via personal vehicles."

The proposed change to EAL HU1.5 is in alignment with EAL HU3.4 from Nuclear Energy Institute (NEI) document NEI 99-01, Revision 6, "Development of Emergency Action Levels for Non-Passive Reactors," dated November 21, 2012 (Reference 2). NEI 99-01, Revision 6, was endorsed by the U.S. Nuclear Regulatory Commission (NRC or the Commission) by letter dated March 28, 2013 (Reference 3).

2.0 REGULATORY EVALUATION

The applicable regulations and guidance for the emergency plans are as follows.

2.1 Regulations

The regulations in Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.47(a)(1)(i) state, in part, that:

. . . no initial operating license for a nuclear power reactor will be issued unless a finding is made by the NRC that there is reasonable assurance that adequate

protective measures can and will be taken in the event of a radiological emergency.

The planning standards that the onsite and offsite emergency response plans must meet for the NRC staff to make a finding that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency are established in 10 CFR 50.47(b). Specifically, Planning Standard (4) of this section requires that onsite and offsite emergency response plans meet the following standard:

A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures.

Planning Standard (4) emphasizes the use of a standard emergency classification and action level scheme, assuring that implementation methods are relatively consistent throughout the industry for a given reactor and containment design, while simultaneously providing an opportunity for a licensee to modify its EAL scheme as necessary to address plant-specific design considerations or preferences.

In addition, Section IV.B.1 of Appendix E to 10 CFR Part 50, states, in part:

The means to be used for determining the magnitude of, and for continually assessing the impact of, the release of radioactive materials shall be described, including emergency action levels that are to be used as criteria for determining the need for notification and participation of local and State agencies, the Commission, and other Federal agencies, and the emergency action levels that are to be used for determining when and what type of protective measures should be considered within and outside the site boundary to protect health and safety. The emergency action levels shall be based on in-plant conditions and instrumentation in addition to onsite and offsite monitoring. By June 20, 2012, for nuclear power reactor licensees, these action levels must include hostile action that may adversely affect the nuclear power plant.

2.2 Guidance

The EAL development guidance was initially established in Generic Letter (GL) 79-50, "Emergency Plans Submittal Dates," dated October 10, 1979 (Reference 4), and was subsequently revised in NUREG-0654/FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980 (Reference 5), which was endorsed as an approach acceptable to the NRC for the development of an EAL scheme by NRC Regulatory Guide (RG) 1.101, Revision 2, "Emergency Planning and Preparedness for Nuclear Power Reactors," October 1981 (Reference 6).

As industry and regulatory experience was gained with the implementation and use of EAL schemes, the industry issued revised EAL scheme development guidance to reflect lessons learned, numerous of which have been provided to the NRC for review and endorsement as generic (i.e., non-plant-specific) EAL development guidance. By letter dated March 28, 2013

(Reference 3), the NRC endorsed the most recent guidance in NEI 99-01, Revision 6, as acceptable generic (i.e., non-plant-specific) EAL scheme development guidance.

In summary, the NRC staff considers NEI 99-01, Revision 6, an acceptable method to develop plant-specific EALs that meet the requirements of Section IV.B.1 of Appendix E to 10 CFR Part 50 and planning standard 10 CFR 50.47(b).

2.3 NRC Staff Review

The NRC staff verified that the proposed change to EAL HU1.5 is consistent with the guidance provided in NEI 99-01, Revision 6, to assure that the proposed EAL meets the requirements of Section IV.B.1 of Appendix E to 10 CFR Part 50 and planning standard 10 CFR 50.47(b)(4).

A summary of the NRC staff's review of EAL HU1.5 is provided below.

To aid in understanding the nomenclature used in this safety evaluation, the following conventions are used:

- The scheme's generic information is organized by Recognition Category in the following order.
 - R - Abnormal Radiation Levels/Radiological Effluent,
 - C - Cold Shutdown/Refueling System Malfunction,
 - F - Fission Product Barrier,
 - H - Hazards and Other Conditions Affecting Plant Safety, and
 - S - System Malfunction.
- The Recognition Category letter is the first letter for EALs.
- The second letter signifies the emergency classification level:
 - U - Notification of Unusual Event,
 - A - Alert,
 - S - Site Area Emergency, and
 - G - General Emergency.
- The number denotes the sequential subcategory designation from the plant-specific EAL scheme.

This safety evaluation uses the numbering system from the proposed plant-specific EAL scheme. While NEI 99-01, Revision 6, was used, the proposed plant-specific EAL scheme is specific to FitzPatrick.

3.0 TECHNICAL EVALUATION

The proposed change would modify the EAL HU1.5 for FitzPatrick by replacing the phrase "Lake water level > 249.2 ft" with the phrase "A hazardous event that results in onsite conditions sufficient to prohibit the plant staff from accessing the site via personal vehicles." The proposed change to EAL HU1.5 is in alignment with EAL HU3.4 from NEI 99-01, Revision 6.

The guidance in NEI 99-01, Revision 6, provides that the intent of EAL HU3.4 is to ensure an Unusual Event classification is declared based upon the effects that natural hazard events may have on the facility and are considered to be precursors to a more significant event or condition or have potential impacts that warrant emergency notification to local, State, and Federal

authorities. The specific hazard for this EAL is an external event that prohibits the plant staff from accessing the site. Examples of such an event include site flooding caused by a hurricane, heavy rains, up-river water releases, dam failure, etc., or an onsite train derailment blocking the access road. As such, NEI 99-01, Revision 6, EAL HU3.4 is primarily intended to ensure that key emergency response organization (ERO) members and offsite response organizations are aware of the hazardous event that may impact the effective implementation of the respective site's emergency plan.

For FitzPatrick, HU1.5 is currently a site-specific hazard identified by the licensee to declare an Unusual Event when lake level exceeds a predetermined value. While it is acceptable for licensees to develop site-specific EALs for local hazards of concern, it is not required. The value of having this particular EAL is negated by the difficulties a licensee may have when the lake level setpoint is adjusted based upon criteria beyond the licensee's control. Since the overall intent of this EAL is to define EAL thresholds based upon hazards that may be a potential impediment to the ability to effectively implement the site-specific emergency plan, revising this EAL to specifically address the concern of this EAL (i.e., a hazardous event preventing normal site access) is acceptable, rather than using a specific high lake water level setpoint, as this level setpoint changes occasionally. Whatever lake level setpoint the licensee decides to implement, if the lake causes flooding to the extent where site access is compromised, then this Unusual Event will be declared. If the lake level continues to rise to the setpoint as stated in the EAL HA1.6, then the Alert emergency classification will be declared (i.e., this is the escalation path for EAL HU1.5).

While the licensee may need to implement other procedures based upon high lake level, implementation of the site-specific emergency plan is limited to events where a radiological risk to the public, or precursors to this risk, are occurring, as well as any event that compromises the effective implementation of the site-specific emergency plan. The operational constraints, and/or actions that may need to be taken in accordance with site-specific technical specifications for high lake level do not necessitate a corresponding EAL declaration unless normal access to the site is compromised.

The NRC staff has reviewed the technical bases for the proposed EAL change and the licensee's evaluation of the proposed change. The NRC staff has concluded that the proposed change meets the requirements in Section IV.B.1 of Appendix E to 10 CFR Part 50 and planning standard 10 CFR 50.47(b)(4). Therefore, the NRC staff concludes that the licensee's proposed EAL change, as set forth in the licensee's application dated May 19, 2017 (Reference 1) is acceptable and provides reasonable assurance that the licensee can and will take adequate protective measures in the event of a radiological emergency in accordance with 10 CFR 50.47(a)(1)(i). Specifically, the staff concludes that the licensee's updated site-specific EAL and technical basis provided by Attachment 6, "Clean Emergency Action Level Pages for JAF," of the letter dated May 19, 2017 (Reference 1), is acceptable for implementation.

4.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION

The NRC's regulations in 10 CFR 50.92 state that the NRC may make a final determination that a license amendment involves no significant hazards consideration if operation of the facility in accordance with the amendment, would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

As required by 10 CFR 50.91(a), the licensee, in its submittal, provided its analysis of the issue of no significant hazards consideration, which is presented below:

1. Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The proposed changes to EAL HU1.5 do not reduce the capability to meet the emergency planning requirements established in 10 CFR 50.47 and 10 CFR 50, Appendix E. The proposed changes do not reduce the functionality, performance, or capability of Exelon's ERO to respond in mitigating the consequences of any design basis accident.

The probability of a reactor accident requiring implementation of Emergency Plan EALs has no relevance in determining whether the proposed changes to the EAL HU1.5 reduce the effectiveness of the Emergency Plans. As discussed in Section D, "Planning Basis," of NUREG-0654, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants;"

... The overall objective of emergency response plans is to provide dose savings (and in some cases immediate life saving) for a spectrum of accidents that could produce offsite doses in excess of Protective Action Guides (PAGs). No single specific accident sequence should be isolated as the one for which to plan because each accident could have different consequences, both in nature and degree. Further, the range of possible selection for a planning basis is very large, starting with a zero point of requiring no planning at all because significant offsite radiological accident consequences are unlikely to occur, to planning for the worst possible accident, regardless of its extremely low likelihood....

Therefore, Exelon did not consider the risk insights regarding any specific accident initiation or progression in evaluating the proposed changes.

The proposed changes do not involve any physical changes to plant equipment or systems, nor do they alter the assumptions of any accident analyses. The proposed changes do not adversely affect accident initiators or precursors nor do they alter the design assumptions, conditions, and configuration or the manner in which the plants are operated and maintained. The proposed changes do not adversely affect the ability of Structures, Systems, or Components (SSCs) to perform their intended safety functions in mitigating the consequences of an initiating event within the assumed acceptance limits.

Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The proposed changes to EAL HU1.5 do not involve any physical changes to plant systems or equipment. The proposed changes do not involve the addition of any new plant equipment. The proposed changes will not alter the design configuration, or method of operation of plant equipment beyond its normal functional capabilities. All Exelon ERO functions will continue to be performed as required. The proposed changes do not create any new credible failure mechanisms, malfunctions, or accident initiators.

Therefore, the proposed changes do not create the possibility of a new or different kind of accident from those that have been previously evaluated.

3. Does the proposed amendment involve a significant reduction in a margin of safety?

Response: No.

The proposed changes to EAL HU1.5 do not alter or exceed a design basis or safety limit. There is no change being made to safety analysis assumptions, safety limits, or limiting safety system settings that would adversely affect plant safety as a result of the proposed changes. There are no changes to setpoints or environmental conditions of any SSC or the manner in which any SSC is operated. Margins of safety are unaffected by the proposed changes. The applicable requirements of 10 CFR 50.47 and 10 CFR 50, Appendix E will continue to be met.

Therefore, the proposed changes do not involve any reduction in a margin of safety.

The NRC staff has reviewed the licensee's analysis and, based on this review, concludes that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff has made a final determination that no significant hazards consideration is involved for the proposed amendment and that the amendment should be issued as allowed by the criteria contained in 10 CFR 50.91.

5.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New York State official was notified of the proposed issuance of the amendment on May 30, 2017. The State official had no comments.

6.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The

Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (May 30, 2017; 82 FR 24742). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

7.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

8.0 REFERENCES

1. Letter from Exelon Generation Company, LLC, to U.S. Nuclear Regulatory Commission, "Exigent License Amendment Request – Revise Emergency Action Level HU1.5," dated May 19, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17139C739).
2. NEI 99-01, Revision 6, "Development of Emergency Action Levels for Non-Passive Reactors," November 2012 (ADAMS Accession No. ML12326A805).
3. Thaggard, M., U.S. Nuclear Regulatory Commission, Letter to Ms. S. Perkins-Grew, Nuclear Energy Institute, "U.S. Nuclear Regulatory Commission Review and Endorsement of NEI-99-01, Revision 6, Dated November, 2012 (TAC No. D92368)," dated March 28, 2013 (ADAMS Accession No. ML12346A463).
4. U.S. Nuclear Regulatory Commission, Generic Letter (GL) 79-50, "Emergency Plans Submittal Dates," dated October 10, 1979.
5. U.S. Nuclear Regulatory Commission and Federal Emergency Management Agency, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," NUREG-0654/FEMA-REP-1, Revision 1, November 1980 (ADAMS Accession No. ML040420012).
6. U.S. Nuclear Regulatory Commission, "Emergency Planning and Preparedness for Nuclear Power Reactors," Regulatory Guide 1.101, Revision 2, October 1981 (ADAMS Accession No. ML090440294); Revision 3, August 1992 (ADAMS Accession No. ML003740302); and Revision 4, July 2003 (ADAMS Accession No. ML032020276).

Principal Contributor: D. Johnson, NSIR

Date: June 30, 2017

SUBJECT: JAMES A. FITZPATRICK NUCLEAR POWER PLANT – ISSUANCE OF AMENDMENT RE: EMERGENCY PLAN EMERGENCY ACTION LEVEL HU1.5 (CAC NO. MF9722) DATED JUNE 30, 2017

DISTRIBUTION:

Public	LPL1 R/F
RidsACRS_MailCTR	RidsNrrPMFitzPatrick
RidsNrrLALRonewicz	RidsNrrOd
RidsNsirDpr	DJohnson, NSIR
RidsNrrDorlLpl1	RidsNrrDorl
RidsRgn1MailCenter	

ADAMS Accession Number: ML17153A018

***by e-mail**

OFFICE	DORL/LPL1/PM	DORL/LPL1/LA	NSIR/DPR/RLB/BC*	OGC – NLO*	DORL/LPL1/BC
NAME	BVenkataraman	LRonewicz	JAnderson (MNorris for)	AGhosh	JDanna
DATE	06/12/2017	06/12/2017	06/12/2017	06/09/2017	06/15/2017
OFFICE	DORL/D(A)	NRR/D(A)	DORL/LPL1/PM		
NAME	MJRoss-Lee	BHolian (MEvans for)	BVenkataraman		
DATE	06/16/2017	06/30/2017	06/30/2017		

OFFICIAL RECORD COPY