



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

June 25, 2018

Mr. Bryan C. Hanson
President and Chief Nuclear Officer
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: R. E. GINNA NUCLEAR POWER PLANT – ISSUANCE OF AMENDMENT
RELATED TO REQUEST TO DELETE A MODIFICATION ASSOCIATED WITH
THE RISK-INFORMED, PERFORMANCE-BASED FIRE PROTECTION
PROGRAM IN ACCORDANCE WITH 10 CFR 50.48(c) (CAC NO. MF9948;
EPID L-2017-LLA-0253)

Dear Mr. Hanson:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 127 to Renewed Facility Operating License No. DPR-18 for the R. E. Ginna Nuclear Power Plant (Ginna) in response to your application dated June 30, 2017, as supplemented by letter dated October 25, 2017, and June 5, 2018.

The amendment revises the license to delete the modification to install overcurrent protection on its emergency diesel generators which was required as part of Ginna's implementation of its risk-informed, performance-based fire protection program in accordance with paragraph 50.48(c) of Title 10 of the *Code of Federal Regulations*.

A copy of our safety evaluation is also enclosed. A notice of issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

A handwritten signature in black ink, appearing to read "V. Sreenivas", with a long horizontal stroke extending to the right.

V. Sreenivas, Project Manager
Plant Licensing Branch I
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-244

Enclosures:

1. Amendment No. 127 to Renewed DPR-18
2. Safety Evaluation

cc: Listserv



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

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-244

R.E. GINNA NUCLEAR POWER PLANT

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 127
Renewed License No. DPR-18

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Exelon Generation Company, LLC (the licensee), dated June 30, 2017, as supplemented by letter dated October 25, 2017, and June 5, 2018, 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 I;
 - 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, the license is amended by changes as indicated in the attachment to this license amendment, and paragraph 2.C.(3) of Renewed Facility Operating License No. DPR-18 is hereby amended to read as follows:

- (3) Fire Protection

Exelon Generation shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the licensee's amendment request dated March 28, 2013, supplemented by letters dated December 17, 2013; January 29, 2014; February 28, 2014; September 5, 2014; September 24, 2014; December 4, 2014; March 18, 2015; June 11, 2015; August 7, 2015; June 30, 2017; October 25, 2017; and June 5, 2018, and as approved in the safety evaluation reports dated November 23, 2015, and June 25, 2018. Except where NRC approval for changes or deviations is required by 10 CFR 50.48(c), and provided no other regulation, technical specification, license condition or requirement would require prior NRC approval, the licensee may make changes to the fire protection program without prior approval of the Commission if those changes satisfy the provisions set forth in 10 CFR 50.48(a) and 10 CFR 50.48(c), the change does not require a change to a technical specification or a license condition, and the criteria listed below are satisfied.

In addition, the license is amended by changes as indicated in the attachment to this license amendment, and paragraph 2.C.(3)(c) of Renewed Facility Operating License No. DPR-18 is hereby amended, in part, to read as follows:

2. The licensee shall implement the modifications to its facility, as described in LAR Attachment S, Table S-2, "Plant Modifications Committed," of Exelon Generation letter dated June 11, 2015, as modified by the Exelon Generation letter dated June 30, 2017, to complete the transition to full compliance with 10 CFR 50.48(c) no later than prior to startup from the second refueling outage greater than 12 months after receipt of the safety evaluation dated November 23, 2015. The licensee shall maintain appropriate compensatory measures in place until completion of these modifications.
 3. The licensee shall complete the implementation items listed in LAR Attachment S, Table S-3, "Implementation Items," of Exelon Generation letter dated June 11, 2015, as modified by Exelon Generation letter dated June 30, 2017, except Implementation Items 9, 10, 11, 12, 13, 14, 15, 19, 21, 23, and 24, by 180 days after NRC approval unless that date falls within a scheduled refueling outage, then implementation will occur 60 days after startup from that scheduled refueling outage. Implementation Items 9, 10, 11, 12, 13, 14, 15, 19, 21, 23, and 24 are associated

with modifications described in Table S-2 and will be completed once the related modifications are installed and validated in the PRA model.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read "James Danna", with a horizontal line extending from the end of the signature.

James Danna, Chief
Plant Licensing Branch I
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Renewed Facility
Operating License

Date of Issuance: June 25, 2018

ATTACHMENT TO LICENSE AMENDMENT NO. 127

R. E. GINNA NUCLEAR POWER PLANT

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE NO. DPR-18

DOCKET NO. 50-244

Replace the following pages of the Renewed Facility Operating License No. DPR-18 with the revised pages. The revised page is identified by amendment number and contains a marginal line indicating the area of change.

Remove

-3-

-4-

-5-

-6-

Insert

-3-

-4-

-5-

-6-

- (b) Exelon Generation pursuant to the Act and 10 CFR Part 70, to possess and use four (4) mixed oxide fuel assemblies in accordance with the RG&E's application dated December 14, 1979 (transmitted by letter dated December 20, 1979), as supplemented February 20, 1980, and March 5, 1980;
 - (3) Exelon Generation pursuant to the Act and 10 CFR Parts 30, 40, and 70 to receive, possess, and use at any time any byproduct, source, and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
 - (4) Exelon Generation pursuant to the Act and 10 CFR Parts 30, 40, and 70 to receive, possess, and use in amounts as required any byproduct, source, or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
 - (5) Exelon Generation pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- C. This renewed license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; and is subject to all applicable provisions of the Act and rules, regulations and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified below:
- (1) Maximum Power Level
Exelon Generation is authorized to operate the facility at steady-state power levels up to a maximum of 1775 megawatts (thermal).
 - (2) Technical Specifications
The Technical Specifications contained in Appendix A, as revised through Amendment No. 126 are hereby incorporated in the renewed license. Exelon Generation shall operate the facility in accordance with the Technical Specifications.
 - (3) Fire Protection
Exelon Generation shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the licensee's amendment request dated March 28, 2013, supplemented by letters dated December 17, 2013; January 29, 2014; February 28, 2014; September 5, 2014; September 24, 2014; December 4, 2014; March 18, 2015; June 11, 2015; August 7, 2015; June 30, 2017; October 25, 2017; and June 5, 2018, and as approved in the safety evaluation reports dated November 23, 2015, and June 25, 2018. Except where NRC approval for changes or deviations is required

by 10 CFR 50.48(c), and provided no other regulation, technical specification, license condition or requirement would require prior NRC approval, the licensee may make changes to the fire protection program without prior approval of the Commission if those changes satisfy the provisions set forth in 10 CFR 50.48(a) and 10 CFR 50.48(c), the change does not require a change to a technical specification or a license condition, and the criteria listed below are satisfied.

(a) Risk-Informed Changes that May Be Made Without Prior NRC Approval

A risk assessment of the change must demonstrate that the acceptance criteria below are met. The risk assessment approach, methods, and data shall be acceptable to the NRC and shall be appropriate for the nature and scope of the change being evaluated; be based on the as-built, as-operated, and maintained plant; and reflect the operating experience at the plant. Acceptable methods to assess the risk of the change may include methods that have been used in the peer-reviewed fire PRA model, methods that have been approved by NRC through a plant-specific license amendment or NRC approval of generic methods specifically for use in NFPA 805 risk assessments, or methods that have been demonstrated to bound the risk impact.

1. Prior NRC review and approval is not required for changes that clearly result in a decrease in risk. The proposed change must also be consistent with the defense in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.
2. Prior NRC review and approval is not required for individual changes that result in a risk increase less than 1×10^{-7} /year (yr) for CDF and less than 1×10^{-8} /yr for LERF. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.

(b) Other Changes that May Be Made Without Prior NRC Approval

1. Changes to NFPA 805, Chapter 3, Fundamental Fire Protection Program

Prior NRC review and approval are not required for changes to the NFPA 805, Chapter 3, fundamental fire protection program elements and design requirements for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is functionally equivalent or adequate for the hazard. The licensee may use an engineering evaluation to demonstrate that a change to NFPA 805, Chapter 3, element is functionally equivalent to the corresponding technical requirement. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure, or physical arrangement, using a relevant technical requirement or standard.

The licensee may use an engineering evaluation to demonstrate that changes to certain NFPA 805, Chapter 3, elements are acceptable because the alternative is "adequate for the hazard." Prior NRC review and approval would not be required for alternatives to four specific sections of NFPA 805, Chapter 3, for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is adequate for the hazard. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure, or physical arrangement, using a relevant technical requirement or standard. The four specific sections of NFPA 805, Chapter 3, are as follows:

- Fire Alarm and Detection Systems (Section 3.8);
- Automatic and Manual Water-Based Fire Suppression Systems (Section 3.9);
- Gaseous Fire Suppression Systems (Section 3.10); and
- Passive Fire Protection Features (Section 3.11).

This License Condition does not apply to any demonstration of equivalency under Section 1.7 of NFPA 805.

2. Fire Protection Program Changes that Have No More than Minimal Risk Impact

Prior NRC review and approval are not required for changes to the licensee's fire protection program that have been demonstrated to have no more than a minimal risk impact. The licensee may use its screening process as approved in the NRC safety evaluation dated November 23, 2015, to determine that certain fire protection program changes meet the minimal criterion. The licensee shall ensure that fire protection defense-in-depth and safety margins are maintained when changes are made to the fire protection program.

(c) Transition License Conditions

1. Before achieving full compliance with 10 CFR 50.48(c), as specified by (c)2 and (c)3 below, risk-informed changes to the licensee's fire protection program may not be made without prior NRC review and approval unless the change has been demonstrated to have no more than a minimal risk impact, as described in (b)2 above.
2. The licensee shall implement the modifications to its facility, as described in LAR Attachment S, Table S-2, "Plant Modifications Committed," of Exelon Generation letter dated June 11, 2015, as modified by the Exelon Generation letter dated June 30, 2017, to complete the transition to full compliance with 10 CFR 50.48(c) no later than prior to startup from the second refueling outage greater than 12 months after receipt of the safety evaluation dated November 23, 2015. The licensee shall maintain appropriate compensatory measures in place until completion of these modifications.

3. The licensee shall complete the implementation items listed in LAR Attachment S, Table S-3, "Implementation Items," of Exelon Generation letter dated June 11, 2015, as modified by Exelon Generation letter dated June 30, 2017, except Implementation Items 9, 10, 11, 12, 13, 14, 15, 19, 21, 23, and 24, by 180 days after NRC approval unless that date falls within a scheduled refueling outage, then implementation will occur 60 days after startup from that scheduled refueling outage. Implementation Items 9, 10, 11, 12, 13, 14, 15, 19, 21, 23, and 24 are associated with modifications described in Table S-2 and will be completed once the related modifications are installed and validated in the PRA model.

(4) Deleted

(5) Deleted

(6) Deleted

(7) License Transfer

(a) On the closing date of the transfer of the facility, Ginna LLC shall obtain from RG&E the greater of (1) \$200,791,928 or (2) the amount necessary to meet the minimum formula amount under 10 CFR 50.75 calculated as of the date of closing for decommissioning funding assurance for the facility, and ensure the deposit of such funds into a decommissioning trust for the facility established by Ginna LLC.

(b) The decommissioning trust agreement must be in a form acceptable to the NRC.

(c) Ginna LLC shall take all necessary steps to ensure that the decommissioning trust is maintained in accordance with the application and the requirements of the Order approving license transfer, and shall be consistent with the Safety Evaluation supporting that Order.

(8) Mitigation Strategy

Exelon Generation shall develop and maintain strategies for addressing large fires and explosions and that include the following key areas:

(a) Fire fighting response strategy with the following elements:

1. Pre-defined coordinated fire response strategy and guidance
2. Assessment of mutual aid fire fighting assets
3. Designated staging areas for equipment and materials
4. Command and control
5. Training of response personnel



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 127

TO RENEWED FACILITY OPERATING LICENSE NO. DPR-18

EXELON GENERATION COMPANY, LLC

R. E. GINNA NUCLEAR POWER PLANT

DOCKET NO. 50-244

1.0 INTRODUCTION

By letter dated June 30, 2017 (Reference 1), as supplemented by letters dated October 25, 2017 (Reference 2), and June 5, 2018 (Reference 3), Exelon Generation Company, LLC (Exelon, the licensee), submitted a license amendment request (LAR) regarding the R. E. Ginna Nuclear Power Plant (Ginna). Specifically, the licensee requested to delete the modification to install overcurrent protection on its emergency diesel generators (EDGs) (modification ESR-12-0131) which is required as part of Ginna's implementation of its risk-informed, performance-based fire protection program (RI/PB FPP) in accordance with paragraph 50.48(c) of Title 10 of the *Code of Federal Regulations* (10 CFR) (National Fire Protection Association Standard 805 (NFPA 805)). The licensee included modification ESR-12-0131 in its revised LAR Attachment S, Table S-2, which was submitted to the U.S. Nuclear Regulatory Commission (NRC) in a letter dated June 11, 2015 (Reference 4). Portions of the letter dated June 30, 2017, contain proprietary information and, accordingly, have been withheld from public disclosure pursuant to 10 CFR 2.390.

The supplemental letters dated October 25, 2017, and June 5, 2018, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the NRC staff's original proposed no significant hazards consideration determination as published in the *Federal Register* (FR) on October 3, 2017 (82 FR 46097).

1.1 Background

On March 28, 2013 (Reference 5), Constellation Energy Group (the previous licensee for Ginna) requested to revise the Ginna FPP in accordance with 10 CFR 50.48(c). On November 23, 2015 (Reference 6), the NRC issued Amendment No. 119 to Renewed Facility Operating License (RFOL) No. DPR-18. The amendment consisted of changes to the operating license to transition the Ginna FPP to an RI/PB program based on NFPA 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants" (2001 Edition) (NFPA 805) (Reference 7), in accordance with 10 CFR 50.48(c). The NFPA 805 standard

allows the use of PB methods such as fire modeling and RI methods such as fire probabilistic risk assessment (FPRA) to demonstrate compliance with the nuclear safety performance criteria.

2.0 REGULATORY EVALUATION

The following regulations address fire protection:

- Section 50.48, "Fire protection," of 10 CFR, provides the NRC requirements for nuclear power plant fire protection. Section 50.48(a)(1) of 10 CFR requires that each holder of an operating license have a fire protection plan that satisfies General Design Criterion (GDC) 3, "Fire protection," of Appendix A to 10 CFR Part 50, "General Design Criteria for Nuclear Power Plants."
- Section 50.48(c) of 10 CFR incorporates NFPA 805 (2001 Edition) by reference, with certain exceptions, modifications, and supplementation. This regulation establishes the requirements for using an RI/PB FPP in conformance with NFPA 805 as an alternative to the requirements associated with 10 CFR 50.48(b) and Appendix R, "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979," to 10 CFR Part 50, or the specific plant fire protection license condition. The regulation also includes specific requirements for requesting approval for an RI/PB FPP based on the provisions of NFPA 805.

- Appendix A to 10 CFR Part 50, GDC 3, states that:

Structures, systems, and components important to safety shall be designed and located to minimize, consistent with other safety requirements, the probability and effect of fires and explosions. Noncombustible and heat resistant materials shall be used wherever practical throughout the unit, particularly in locations such as the containment and control room. Fire detection and fighting systems of appropriate capacity and capability shall be provided and designed to minimize the adverse effects of fires on structures, systems, and components important to safety. Firefighting systems are designed to assure that their rupture or inadvertent operation does not significantly impair the safety capability of these structures, systems, and components.

- Section 50.48(a)(1) states that the fire protection plan must describe the overall fire protection program for the facility; identify the licensee positions responsible for the program; state the authority delegated to those positions and to implement those responsibilities; and outline the plans for fire protection, fire detection and suppression capability, and limitation of fire damage.
- Section 50.48(a)(2) states that the fire protection plan must describe the specific features necessary to implement the program described in paragraph (a)(1) including administrative controls and personnel requirements for fire prevention and manual fire suppression activities; automatic and manual fire detection and suppression systems; and the means to limit fire damage to structures, systems, and components to ensure the capability to safely shut down the plant.

- Section 50.48(a)(3) requires that the licensee retain the fire protection plan and each change to the plan as a record until the Commission terminates the license and that the licensee retain each superseded revision of the plan procedures for 3 years from the date it was superseded.

- Section 50.48(c)(3)(i) of 10 CFR states, in part, that:

A licensee may maintain a fire protection program that complies with NFPA 805 as an alternative to complying with [10 CFR 50.48(b)] for plants licensed to operate before January 1, 1979, or the fire protection license conditions for plants licensed to operate after January 1, 1979. The licensee shall submit a request to comply with NFPA 805 in the form of an application for license amendment under § 50.90. The application must identify any orders and license conditions that must be revised or superseded, and contain any necessary revisions to the plant's technical specifications and the bases thereof.

- Pursuant to 10 CFR 50.90, whenever a holder of a license desires to amend the license or permit, an application for an amendment must be filed with the Commission describing the changes desired, and following, as far as applicable, the form prescribed for original applications. Accordingly, a licensee who seeks to amend its NFPA 805 authorizations must file an amendment stating, as applicable, the desired changes to orders, license conditions, and technical specifications.

- Section 50.48(c)(3)(i) of 10 CFR states, in part, that:

The Director of the Office of Nuclear Reactor Regulation, or a designee of the Director, may approve the application if the Director or designee determines that the licensee has identified orders, license conditions, and the technical specifications that must be revised or superseded, and that any necessary revisions are adequate. Any approval by the Director or the designee must be in the form of a license amendment approving the use of NFPA 805 together with any necessary revisions to the technical specifications.

- Section 50.48(c)(3)(ii) of 10 CFR states that:

The licensee shall complete its implementation of the methodology in Chapter 2 of NFPA 805 (including all required evaluations and analyses) and, upon completion, modify the fire protection plan required by paragraph (a) of this section to reflect the licensee's decision to comply with NFPA 805, before changing its fire protection program or nuclear power plant as permitted by NFPA 805.

The purpose of 10 CFR 50.48(c)(3)(ii) is explained in the statement of considerations for the Final Rule, "Voluntary Fire Protection Requirements for Light Water Reactors;

Adoption of NFPA 805 as a Risk-Informed, Performance-Based Alternative” (69 FR 33536; June 16, 2004), which states, in part, that:

This paragraph requires licensees to complete all of the Chapter 2 methodology (including evaluations and analyses) and to modify their fire protection plan before making changes to the fire protection program or to the plant configuration. This process ensures that the transition to an NFPA 805 configuration is conducted in a complete, controlled, integrated, and organized manner. This requirement also precludes licensees from implementing NFPA 805 on a partial or selective basis (e.g., in some fire areas and not others, or truncating the methodology within a given fire area).

- Pursuant to 10 CFR 50.92(a), in determining whether an amendment to a license will be issued to the applicant, the Commission will be guided by the considerations, which govern the issuance of initial licenses to the extent applicable and appropriate. Under 10 CFR 50.40, common standards for issuance of licenses include considerations of safety and satisfaction of the requirements of the National Environmental Policy Act of 1969 as implemented in 10 CFR Part 51, “Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions.” Under 10 CFR 50.57(a), to issue an operating license, the Commission must find, among other things, that (1) there is reasonable assurance that the activities authorized by the operating license can be conducted without endangering the health and safety of the public; (2) there is reasonable assurance that such activities will be conducted in compliance with the regulations in this chapter; and (3) the issuance of the license will not be inimical to the common defense and security or to the health and safety of the public. Additional findings required to issue amendments related to fire protection are provided in 10 CFR 50.48, as discussed below.

The regulations also allow for flexibility that was not included in the NFPA 805 standard. Licensees who choose to adopt 10 CFR 50.48(c) but wish to use the PB methods permitted elsewhere in the standard to meet the fire protection requirements of NFPA 805, Chapter 3, “Fundamental Fire Protection Program and Design Elements,” may do so by submitting an LAR in accordance with 10 CFR 50.48(c)(2)(vii). This regulation further provides that:

The Director of the Office of Nuclear Reactor Regulation, or a designee of the Director, may approve the application if the Director or designee determines that the performance-based approach:

(A) Satisfies the performance goals, performance objectives, and performance criteria specified in NFPA 805 related to nuclear safety and radiological release;

(B) Maintains safety margins; and

(C) Maintains fire protection defense-in-depth (fire prevention, fire detection, fire suppression, mitigation, and post-fire safe shutdown capability).

Alternatively, licensees may choose to use RI or PB alternatives to comply with NFPA 805 by submitting an LAR in accordance with 10 CFR 50.48(c)(4), which states, in part, that:

The Director of the Office of Nuclear Reactor Regulation, or designee of the Director, may approve the application if the Director or designee determines that the proposed alternatives:

- (i) Satisfy the performance goals, performance objectives, and performance criteria specified in NFPA 805 related to nuclear safety and radiological release;
- (ii) Maintain safety margins; and
- (iii) Maintain fire protection defense-in-depth (fire prevention, fire detection, fire suppression, mitigation, and post-fire safe shutdown capability).

In addition to the conditions outlined by the rule that require licensees to submit an LAR for NRC review and approval in order to adopt an RI/PB FPP, a licensee may submit additional elements of its FPP for which it wishes to receive specific NRC review and approval, as set forth in Regulatory Position C.2.2.1 of Regulatory Guide (RG) 1.205, Revision 1, "Risk-Informed, Performance-Based Fire Protection for Existing Light-Water Nuclear Power Plants" (Reference 8). Inclusion of these elements in the NFPA 805 LAR is meant to alleviate uncertainty in portions of the current FPP licensing bases as a result of the lack of specific NRC approval of these elements. Regulatory guides are not substitutes for regulations, and compliance with them is not required. Methods and solutions that differ from those set forth in regulatory guides will be deemed acceptable if they provide a basis for the findings required for the issuance or continuance of a permit or license by the Commission. Accordingly, any submittal addressing these additional FPP elements needs to include sufficient detail to allow the NRC staff to assess whether the licensee's treatment of these elements meets the 10 CFR 50.48(c) requirements.

The purpose of the FPP established by NFPA 805, is to provide assurance through a defense in depth (DID) philosophy, that the NRC's fire protection objectives are satisfied.

Section 1.2, "Defense-in-Depth," of NFPA 805 states that:

Protecting the safety of the public, the environment, and plant personnel from a plant fire and its potential effect on safe reactor operations is paramount to this standard. The fire protection standard shall be based on the concept of defense in-depth. Defense-in-depth shall be achieved when an adequate balance of each of the following elements is provided:

- (1) Preventing fires from starting;
- (2) Rapidly detecting fires and controlling and extinguishing promptly those fires that do occur, thereby limiting fire damage; and
- (3) Providing an adequate level of fire protection for structures, systems and components important to safety, so that a fire that is not promptly extinguished will not prevent essential plant safety functions from being performed.

In accordance with 10 CFR Part 50, Appendix A, GDC 3, fire detection and fighting systems must be designed such that their rupture or inadvertent operation does not significantly impair the ability of the structures, systems, and components important to safety to perform their intended safety functions.

In addition, 10 CFR 50.32, "Elimination of repetition," states, in part, that "the applicant may incorporate by reference information contained in previous applications, statements or reports filed with the Commission: *Provided*, That such references are clear and specific."

The NRC staff review of this LAR also relied on the following additional codes, regulatory guides, and standards:

- Revision 1 of RG 1.205, "Risk-Informed, Performance-Based Fire Protection for Existing Light Water Nuclear Power Plants," December 2009 (Reference 8), provides guidance for use in complying with the requirements that the NRC has promulgated for RI/PB FPPs that comply with 10 CFR 50.48 and the referenced 2001 Edition of the NFPA standard. Revision 1 of RG 1.205 sets forth regulatory positions; clarifies the requirements of 10 CFR 50.48(c) and NFPA 805, clarifies the guidance in Nuclear Energy Institute (NEI) 04-02, Revision 2, "Guidance for Implementing a Risk-Informed, Performance-Based fire Protection Program Under 10 CFR 50.48(c)," April 2008 (Reference 9); and provides exceptions to the NEI 04-02 guidance where required. Should a conflict occur between NEI 04-02 and RG 1.205, the regulatory positions in RG 1.205 govern.
- Revision 2 of RG 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk Informed Decisions on Plant-Specific Changes to the Licensing Basis," May 2011 (Reference 10), provides the NRC staff's recommendations for using risk information in support of licensee-initiated licensing basis changes to a nuclear power plant that require such review and approval.
- NUREG/CR-6850, "EPRI/NRC-RES Fire PRA [Probabilistic Risk Assessment] Methodology for Nuclear Power Facilities," Volumes 1 and 2 and Supplement 1, September 2005 and September 2010 (References 11, 12, and 13), respectively, present a compendium of methods, data, and tools to perform an FPRA and develop associated insights.

3.0 TECHNICAL EVALUATION

3.1 Maintaining Defense-in-Depth and Safety Margins

Section 4.2.4.2 of NFPA 805 requires that the "[u]se of fire risk evaluation for the performance-based approach shall consist of an integrated assessment of the acceptability of risk, defense-in-depth, and safety margins."

3.1.1 Defense-in-Depth

As a supplement to the definition of DID provided in NFPA 805, Section 1.2, the NRC-endorsed guidance in NEI 04-02, Section 5.3.5.2, states, in part, that:

In general, the defense-in-depth requirement is satisfied if the proposed change does not result in a substantial imbalance in:

- Preventing fires from starting
- Detecting fires quickly and extinguishing those that do occur, thereby limiting fire damage
- Providing adequate level of fire protection for structures, systems and components important to safety, so that a fire that is not promptly extinguished will not prevent essential plant safety functions [from] being performed.

3.1.2 Safety Margins

Although not a part of the requirements of NFPA 805, and thus not required under 10 CFR 50.48(c), NFPA 805, Appendix A, Section A.2.4.4.3, provides the following background related to the meaning of the term "safety margins":

An example of maintaining sufficient safety margins occurs when the existing calculated margin between the analysis and the performance criteria compensates for the uncertainties associated with the analysis and data. Another way that safety margins are maintained is through the application of codes and standards. Consensus codes and standards are typically designed to ensure such margins exist.

Section 5.3.5.3, "Safety Margins," of NEI 04-02, Revision 2, lists two specific criteria that should be addressed when considering the impact of plant changes on safety margins:

- Codes and standards or their alternatives accepted for use by the NRC are met, and,
- Safety analysis acceptance criteria in the licensing basis (e.g., FSAR [Final Safety Analysis Report], supporting analyses) are met, or provides sufficient margin to account for analysis and data uncertainty.

3.2 Discussion

Amendment No. 119 to Ginna RFOL No. DPR-18 implemented the licensee's transition to an RI/PB FPP based on NFPA 805, in accordance with 10 CFR 50.48(c). As part of the transition license conditions, the licensee is to complete plant modifications and implementation items as listed in Attachment S, Tables S-2 and S-3, of the licensee's letter, dated June 11, 2015 (Reference 4).

Subsequent to the issuance of the amendment, the licensee indicated that the modification to install overcurrent protection for its EDGs is no longer required as alternative means to provide

the same functions for which the EDGs were originally credited are available. In addition, the license also indicated that it would be making changes to mitigation strategies and nomenclature.

In its request for additional information (RAI) 1, dated October 2, 2017 (Reference 14), the NRC staff identified several unrelated changes in the LAR and requested that the licensee clarify whether NRC approval was being requested, provide additional explanation for each proposed change, and indicate whether each proposed change resulted in changes to the PRA. In its RAI response, dated October 25, 2017 (Reference 2), the licensee addressed the following items (as numbered in RAI 1):

- A. Change from "New Charging System" and "Standby Charging Pump" to "Alternate RCS Injection System"

The licensee stated that this is a name change only and that the function and modeling of the pump is unaltered from that approved in the NRC staff's safety evaluation (SE) issued with Amendment No. 119 (Reference 6) (the NFPA 805 SE).

- B. Change in Several Recovery Actions from "New Charging System" to "New RCS Injection System"

The licensee stated that the alternate reactor coolant system (RCS) injection system is the formal name and that the "new RCS Injection System" and "new charging system" refer to the same equipment approved in the NFPA 805 SE.

- C. a. Change that Moved Modifications 7 and 13 from Table S-2 to Table S-1

The licensee stated that these modifications were already approved in the NFPA 805 SE (Reference 5) and have already been installed.

- C. b. Change from "Pressurizer" to "Reactor Coolant System" in Modification 2 in Table S-2

The licensee stated that this is a name change only and that the functional modeling in the PRA remains the same as that approved in the NFPA 805 SE.

- C. c. Change in ESR Number in Table S-2, Modification 3

The licensee stated that Engineering Service Requests (ESRs) 12-0125, 12-0126, and 12-0128 are all being completed under a combined ESR and that there are no functional or modeling changes. The licensee further stated that site engineering can change an ESR number for tracking purposes, but the functional requirements will not be altered.

- C. d. Change in ESR number and additional new text in Table S-2, Modification 4

The licensee stated that ESRs 12-0125, 12-0126, and 12-0128 are all being completed under a combined ESR and that there are no functional or modeling

changes. The licensee further stated that new text refers to an improvement in the actuation logic of the main steam isolation valves and that the main steam isolation valves will be closed by either low RCS pressure or steam generator water level. The licensee further stated that this improvement is credited in the Attachment W delta-risk results and that there is no impact on safety margin or DID.

C. e. Change text in Table S-2, Modification 8

The licensee stated that this change is a name change only for RCS injection and that the functional modeling in the PRA remains the same. The licensee further stated that it always intended that the diverse and flexible coping strategies (FLEX) equipment could support either battery charger (whichever charger is not damaged by the fire) and that there is no impact on safety margin or DID.

C. f. Change text in Table S-2, Modification 9

The licensee stated that the manually initiated borated water source is now the spent fuel pool and that this change is reflected in the updated attachments provided including the delta-risk calculations (i.e., LAR Attachment W). The licensee further stated that the original modification, as approved in the NFFPA 805 SE would have included a 10,000 gallon tank as the water source. The licensee further stated that the spent fuel pool configuration does require a booster pump and that to ensure the same level of redundancy as that approved in the NFFPA 805 SE, the redundant booster pumps will be located in the SAFW [standby auxiliary feedwater] complex along with the alternate RCS injection pump, and as such, no new fire areas can cause the loss of the spent fuel pool option.

C. g. Change Table S-3 to add Implementation Items 10, 11, 12, 13, 14, 21, 23, and 24 to the list of Implementation items that will be Completed after Modifications are Complete

The licensee stated that Implementation Items 10 through 14 represent the feasibility evaluation of each new action added to the fire mitigation procedures and that these actions have been done for Implementation Items 16, 17, 18, 20, and 22. The licensee stated that Implementation Item 21 requires the modification to be fully installed to close this item. The licensee further stated that in Implementation Item 9, those changes are conditional on the completion of the modifications and cannot be completed until the modifications are fully installed, and therefore, Implementation Items 23 and 24 will be implemented when the modifications are completed. The licensee further stated that this will include the feasibility evaluations (i.e., Implementation Items 10 through 14) for Implementation Items 23 and 24.

The licensee stated that Implementation Item 23 requires the new alternate RCS injection system to be fully installed before it can add a procedure step to disable the charging system.

The licensee stated that Implementation Item 24 is partially implemented and that procedure changes are in place, but, the success of the action will rely on the new RCS pressure indication. The licensee further stated that this new indication will either require new training on the indication or specific indication direction in the procedure and cannot be fully implemented until the indication modification is completed.

C. h. Change text in Implementation Items 5, 20, and 24 in Table S-3

The licensee stated that for Implementation Item 5, the procedure name was changed to the Exelon standard naming structure and that the function of the procedures remains the same. The licensee further stated that although the procedure names may change, the NFPA 805 change control requirements will remain unaltered.

The licensee stated that for Implementation Item 20, Operations, identified a faster way to locally secure the motor generator sets than original credited and that this is functionally equivalent to the original modeling and that there is no impact on safety margin or DID. The licensee further stated that plant procedures will ultimately reflect this change once the modification is installed.

The licensee stated that Implementation Item 24 represents a name change only and that the functional modeling of the approved PRA remains unaltered.

Based on the information provided by the licensee in its response to RAI 1, the NRC staff concludes that the licensee's response is acceptable because the licensee demonstrated that the changes are:

- (1) solely name changes in that the function and modeling of the equipment is unchanged from that discussed in the NFPA 805 SE;
- (2) needed to indicate that certain modifications have been completed;
- (3) minor administrative or editorial type changes that provide additional clarification and that do not impact any functional requirements of equipment;
- (4) the addition of implementation items that cannot be completed until after certain modifications have been completed; or
- (5) functionally equivalent to the original modeling with no impact on safety margin or DID.

3.3 Eliminate Modification to Install Overcurrent Protection for Emergency Diesel Generators

In the LAR to adopt NFPA 805 dated March 28, 2013 (Reference 5), the licensee included Modification 6 to provide overcurrent protection for both EDGs in case of a fire outside of the diesel generator rooms.

In the LAR dated June 30, 2017, the licensee proposed to not complete Modification 6 because alternate means are available to provide the same functions for which the EDGs were originally credited which eliminates the need to provide overcurrent protection for the EDGs.

The licensee stated that the original purpose for Modification 6 was to reduce fire risk by protecting the EDGs from fire-induced overcurrent events allowing local recovery of the EDGs. The licensee further stated that during a fire, the locally recovered EDGs could be used to provide power for decay heat removal, reactivity and inventory control, and vital auxiliaries (vital battery chargers, long-term indication and control power, and breaker control).

3.3.1 Risk Evaluation

As permitted by 10 CFR 50.32, the LAR references methods and approaches used in support of Ginna Amendment No. 119, or other methods and approaches that the NRC staff considers acceptable. Additionally, because the NRC staff has found these methods and approaches acceptable for evaluating changes to the FPP as described in the NFPA 805 SE, or in NRC guidance documents, the NRC staff's review in support of this proposed license amendment need not reevaluate the acceptable methods and approaches.

In addition to the proposed modification to the PRA to remove overcurrent protection, the licensee indicated that it incorporated several changes into its PRA model that are consistent with NRC guidance. These changes included:

- (1) The ignition frequency and non-suppression data have been incorporated consistent with NUREG-2169, "Nuclear Power Plant Fire Ignition Frequency and Non-Suppression Probability Estimation Using the Updated Fire Events Database, United States Fire Event Experiences Through 2009," January 2015 (Reference 15).
- (2) The heat release rates have been incorporated consistent with NUREG-2178, "Refining and Characterizing Heat Release Rates from Electrical Enclosures during Fire (RACHELLE-FIRE) - Volume 1: Peak Heat Release Rates and Effect of Obstructed Plume, Final Report," September 2015 (Reference 16).
- (3) The use of Appendix L to NUREG/CR-6850 (Reference 12), to evaluate the main control board risk increases has been incorporated.

The licensee indicated that a focused-scope peer review was completed in September 2016 on the use of NUREG/CR-6850, Appendix L, and no findings were identified.

In RAI 4, the NRC staff noted that the licensee indicated in its LAR that heat release rates have been incorporated consistent with NUREG-2178, and that the data in NUREG-2178 offset the risk increase associated with electrical cabinets. In RAI 4, the NRC staff requested that the licensee indicate if any electrical cabinets to which the obstructed plume model of NUREG-2178 is applied, have the fire placed at an elevation of less than one-half of the cabinet. According to NUREG-2178, the obstructed plume model is not applicable to cabinets in which the fire is placed at elevations of less than one-half of the cabinet. In its response to RAI 4, the licensee stated that the fire location for an electrical cabinet is no lower than 1 foot below the top of the cabinet, and that in some cases, when the venting is within a foot of the top of a cabinet, the fire location is at the highest vent. The licensee further stated that none of the panels that credit an

obstructed plume is less than 2 feet tall, and therefore, no cabinets where obstructed plume are credited are less than one-half of the cabinet height. The NRC staff concludes that the licensee's response to RAI 4 is acceptable because the licensee demonstrated that the guidance contained in NUREG-2178 was followed.

Because (1) the additional changes to the PRA in this LAR (a) are the same as those described in NRC staff guidance documents (i.e., NUREG/CR-6850, NUREG-2169, and NUREG-2178), and are acceptable; and (b) were subjected to a focused scope peer review and no findings were identified, in the case of the NUREG/CR-6850, Appendix L method which constituted an upgrade; and (2) because the NRC staff found the licensee's response to RAI 4 to be consistent with NRC guidance, the NRC staff finds that the changes to the PRA described by the licensee in the LAR are suitable for the development of risk results.

3.3.2 Defense-in-Depth/Safety Margins

The licensee stated that its proposed changes continue to maintain adequate DID and that the only aspect of the DID approach that is altered is that associated with repowering equipment. The licensee further stated that the functions associated with repowering equipment are now achieved through the following alternatives:

- Power to the vital battery chargers can be provided initially through the technical support center (TSC) batteries, and later as supported by the TSC diesel generator (KED02).
- Power to the vital battery chargers can be provided through the existing plant motor control centers using the 1000 kiloWatt (kW) diesel generators KDG08 or KDG09 installed under ESRs 11-0050 and 12-0143.
- Power to the vital battery chargers can be provided from the 100 kW Flex diesel generator (KBD01A), connecting cables from the 100 kW diesel generator staged outside the TSC through the TSC and Turbine Building, directly to the vital battery chargers in the battery rooms.
- Diesel generators KDG08 or KDG09 can provide long term decay heat removal by powering the SAFW pumps (ESRs 11-0050 and 12-0143). These diesel generators can also provide RCS reactivity and inventory control by powering the alternate RCS injection pump (PCH02) (ESRs 12-0143 and 12-0144).

The licensee indicated that the deterministic analysis methodologies and modeling approaches used in the LAR are unchanged from those discussed in the NFPA 805 SE. The licensee also indicated that the NFPA 805 SE includes consideration of RAI responses associated with the NFPA 805 LAR and that the following summarizes the bases for ensuring the maintenance of safety margins:

- The RI/PB processes utilized are based upon NFPA 805, 2001 Edition, endorsed by the NRC in 10 CFR 50.48(c).
- The fire risk evaluation process is in accordance with NEI 04-02, Revision 2, which is endorsed by the NRC in Regulatory Guide 1.205, Revision 1.
- The FPRA is developed with NUREG/CR-6850, which was developed jointly between the NRC and EPRI.

- The Ginna FPRA is built upon the internal events model, which has undergone several peer reviews and self-assessments.
- Fire protection systems and features determined to be required by NFPA 805 Chapter 4 have been confirmed to meet the requirements of NFPA 805 Chapter 3 and their associated referenced codes and listings, or provided with acceptable alternatives using processes accepted for use by the NRC (e.g., Frequently Asked Questions).

3.3.3 NRC Staff Evaluation

In accordance with 10 CFR 50.48(c)(3)(i), the licensee submitted an LAR to revise its fire protection license condition 2.C(3). The NRC staff reviewed the information provided by the licensee in the LAR, including discussions of the impact of the proposed changes on risk, DID, and safety margins as required by NFPA 805, Section 4.2.4.2.

In LAR Attachment W, the licensee indicated that the change in core damage frequency (CDF) and change in large early release frequency (LERF), including the internal events offset, is $4.25\text{E-}6$ and $8.70\text{E-}8$, respectively. The licensee also indicated that the fire, internal events, and seismic contributions produce a CDF total of $5.92\text{E-}5$ and a LERF total of $3.91\text{E-}6$. Finally, the licensee indicated that the additional risk of recovery actions are a CDF of $9.66\text{E-}6$ and a LERF of $2.99\text{E-}7$. Based on the information provided by the licensee, the NRC staff concludes that the proposed changes produce a change in CDF and a change in LERF within the RG 1.174 acceptance guidelines (which are 10^{-5} for CFD and 10^{-6} for LERF) and an acceptable additional risk of recovery actions in accordance with RG 1.205.

In regard to DID, the NRC staff confirmed the proposed changes have no impact on any of the DID echelons because not completing the modification has no impact on preventing fires from starting, or on detecting or extinguishing fires. Therefore, an adequate level of fire protection will continue to be provided so that a fire will not prevent essential safety functions from being performed. The licensee indicated that alternative means to provide the same key functions for which the EDGs were originally credited are available for DID and the NRC staff concludes that these alternate means compensate for the loss of overcurrent protection as proposed by the licensee. Because the DID echelons are unaffected, the NRC staff concludes that the balance between DID echelons is maintained.

In regard to safety margins, the NRC staff confirmed that the proposed changes continue to maintain adequate safety margins, in part, because the change does not impact any codes and standards, or their alternatives accepted for use by the NRC, and the change does not impact any safety analysis acceptance criteria used in the licensing basis.

In regards to the proposed changes in nomenclature, the NRC staff confirmed that the proposed changes are acceptable because the licensee demonstrated that the changes are: (1) solely name changes in that the function and modeling of the equipment is unchanged from that discussed in the NFPA 805 SE; (2) needed to indicate that certain modifications have been completed; (3) minor administrative or editorial type changes that provide additional clarification and that do not impact any functional requirements of equipment; (4) the addition of implementation items that cannot be completed until after certain modifications have been completed; or (5) functionally equivalent to the original modeling with no impact on safety margin or DID.

3.4 Conclusion

The NRC staff reviewed the licensee's LAR to not complete the modification to install overcurrent protection for its EDGs and rely on alternative means instead related to the RI/PB FPP in accordance with the requirements of 10 CFR 50.48(c) and NFPA 805. The licensee's LAR identified revisions to license conditions in accordance 10 CFR 50.48(c)(3)(i). The changes proposed by the licensee included a review of compliance, risk, DID, and safety margins (as applicable), as required by NFPA 805, Section 4.2.4.2. The NRC staff concludes that the licensee's LAR provides the appropriate license conditions that must be revised as a result of the proposed changes, and that the revisions are adequate, thereby satisfying the requirements of 10 CFR 50.48(c)(3)(i). In addition, the NRC staff concludes that (1) the effect of the proposed changes on the FPP can be assessed using the methods and approaches previously approved by the NRC staff, and (2) the licensee used acceptable PRA changes PRA from NUREG-2169, NUREG-2178, and NUREG/CR-6850, Appendix L to produce its risk estimates. The addition of the method from NUREG/CR-6850, Appendix L required a peer review because it is considered a PRA upgrade for this LAR.

The NRC staff concludes that the results of the licensee's evaluation in regard to risk, DID, and safety margin for the proposed changes are acceptable because: (1) the changes when integrated into the PRA produce an increase in the change in CDF and in the change in LERF, and with the total CDF and LERF, fall within the RG 1.174 risk acceptance guidelines; (2) the licensee's process and results followed guidance approved by the NRC staff in its NFPA 805 SE or guidance documents; and (3) the results of the changes are consistent with guidance in NEI 04-02, Revision 2; RG 1.205, Revision 1; and RG 1.174, Revision 2. In addition, the NRC staff concludes that the proposed changes in nomenclature are acceptable for the reasons discussed in SE Section 3.3.3.

Implementation of the RI/PB FPP under 10 CFR 50.48(c) must be in accordance with the fire protection license condition, which identifies the list of modifications and implementation items that must be completed in order to support the NRC staff's conclusion and establishes a date by which full compliance with 10 CFR 50.48(c) must be achieved. Before the licensee is able to fully implement the transition to an FPP based on NFPA 805 and apply the new fire protection license condition to its full extent, the modifications and implementation items must be completed within the timeframe specified.

4.0 FIRE PROTECTION LICENSE CONDITION

On November 23, 2015 (Reference 6), the NRC issued Amendment No. 119 to Ginna RFOL No. DPR-18. The amendment consisted of changes to the operating license to transition the Ginna FPP to an RI/PB program based on NFPA 805, in accordance with 10 CFR 50.48(c). The new license condition adopted the guidelines of the standard fire protection license condition promulgated in RG 1.205, Revision 1, Regulatory Position C.3.1, as issued on December 18, 2009 (74 FR 67253). Plant-specific changes were made to the sample license condition; however, the plant-specific FPP license conditions are consistent with the standard fire protection license condition and incorporated all of the relevant features of the transition to NFPA 805 at Ginna.

In a letter dated June 30, 2017, as supplemented by letters dated October 25, 2017, and June 5, 2018, the licensee submitted an LAR for a license amendment to modify fire protection license condition 2.C.(3). The changes made to the license condition include adding the licensee's LAR and supplement dates, adding the issuance date of this SE, revising transition

license condition 2 to add the date of the LAR, and revising transition license condition 3 to add the date of the LAR and to add additional implementation items to be excluded from the 180-day completion requirement. In addition, the NRC staff made editorial changes to transition license condition 3. In the first sentence, the staff added a comma after the phrase "except Implementation Items 9, 10, 11, 12, 13, 14, 15, 19, 21, 23, and 24." In the second sentence, the staff replaced "These Implementation Items" with "Implementation Items 9, 10, 11, 12, 13, 14, 15, 19, 21, 23, and 24," to clarify which implementation items are excluded from the 180-day completion requirement. No other changes to the license condition were requested by the licensee or identified by the NRC staff.

The approved amendment would revise Paragraph 2.(C).3 of RFOL No. DPR-18, to read as follows:

3. Exelon Generation shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the licensee's amendment request dated March 28, 2013, supplemented by letters dated December 17, 2013; January 29, 2014; February 28, 2014; September 5, 2014; September 24, 2014; December 4, 2014; March 18, 2015; June 11, 2015; August 7, 2015; June 30, 2017; October 25, 2017; and June 5, 2018, and as approved in the safety evaluation reports dated November 23, 2015, and June 25, 2018. Except where NRC approval for changes or deviations is required by 10 CFR 50.48(c), and provided no other regulation, technical specification, license condition or requirement would require prior NRC approval, the licensee may make changes to the fire protection program without prior approval of the Commission if those changes satisfy the provisions set forth in 10 CFR 50.48(a) and 10 CFR 50.48(c), the change does not require a change to a technical specification or a license condition, and the criteria listed below are satisfied.

In addition, the approved amendment would revise the transition license conditions, in part, under Paragraph 2.C.(3)(c) to read as follows:

2. The licensee shall implement the modifications to its facility, as described in LAR Attachment S, Table S-2, "Plant Modifications Committed," of Exelon Generation letter dated June 11, 2015, as modified by the Exelon Generation letter dated June 30, 2017, to complete the transition to full compliance with 10 CFR 50.48(c) no later than prior to startup from the second refueling outage greater than 12 months after receipt of the safety evaluation dated November 23, 2015. The licensee shall maintain appropriate compensatory measures in place until completion of these modifications.
3. The licensee shall complete the implementation items listed in LAR Attachment S, Table S-3, "Implementation Items," of Exelon Generation letter dated June 11, 2015, as modified by Exelon Generation letter dated June 30, 2017, except Implementation Items 9, 10, 11, 12, 13, 14, 15, 19, 21, 23, and 24, by 180 days after NRC approval unless that date falls within a scheduled refueling outage, then implementation will occur 60 days after startup from that

scheduled refueling outage. Implementation Items 9, 10, 11, 12, 13, 14, 15, 19, 21, 23, and 24 are associated with modifications described in Table S-2 and will be completed once the related modifications are installed and validated in the PRA model.

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 April 23, 2018. The State official had no comments.

6.0 ENVIRONMENTAL CONSIDERATION

The amendment changes requirements with respect to the 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 published in the *Federal Register* on October 3, 2017 (82 FR 46097). 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. Gudger, David T., Exelon Generation Company, LLC, letter to U.S. Nuclear Regulatory Commission, "R.E. Ginna Nuclear Power Plant, Renewed Facility Operating License No. DPR-18, NRC Docket No. 50-244, License Amendment Request - Revised Commitment Associated with Implementation of NFPA 805, 2001 Edition," dated June 30, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17186A233).
2. Barstow, James, Exelon Generation Company, LLC, letter to U.S. Nuclear Regulatory Commission, "R.E. Ginna Nuclear Power Plant, Renewed Facility Operating License No. DPR-18, NRC Docket No. 50-244, License Amendment Request - Revised Commitment Associated with Implementation of NFPA 805, 2001 Edition," dated October 25, 2017 (ADAMS Accession No. ML17298B444).

3. Gudger, David T., Exelon Generation Company, LLC, letter to U.S. Nuclear Regulatory Commission, "R.E. Ginna Nuclear Power Plant, Renewed Facility Operating License No. DPR-18, NRC Docket No. 50-244, License Amendment Request - Revised Commitment Associated with Implementation of NFPA 805, 2001 Edition," dated June 5, 2018 (ADAMS Accession No. ML18158A129).
4. Pacher, Joseph E., Exelon Generation Company, LLC, letter to U.S. Nuclear Regulatory Commission, "R.E. Ginna Nuclear Power Plant, Renewed Facility Operating License No. DPR-18, Docket No. 50-244, Response to Request for Additional Information," dated June 11, 2015 (ADAMS Accession Nos. ML15167A504 and ML15167A504).
5. Pacher, Joseph E., Constellation Energy Nuclear Group, letter to U.S. Nuclear Regulatory Commission, "R.E. Ginna Nuclear Power Plant, Docket No. 50-244, License Amendment Request Pursuant to 10 CFR 50.90: Adoption of NFPA 805, Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants (2001 Edition)," dated March 28, 2013 (ADAMS Accession No. ML13093A064).
6. Render, Diane, U.S. Nuclear Regulatory Commission, letter to Bryan C. Hanson, Exelon Nuclear, "R.E. Ginna Nuclear Power Plant - Issuance of Amendment Regarding Transition to a Risk-Informed, Performance-Based Fire Protection Program in Accordance with Title 10 of the Code of Federal Regulations Section 50.48(c) (CAC No. MF1393)," dated November 23, 2015 (ADAMS Accession No. ML15271A101).
7. National Fire Protection Association, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants," Standard 805 (NFPA 805), 2001 Edition, Quincy, Massachusetts.
8. U.S. Nuclear Regulatory Commission, "Risk-Informed, Performance-Based Fire Protection for Existing Light-Water Nuclear Power Plants," Regulatory Guide 1.205, Revision 1, December 2009 (ADAMS Accession No. ML092730314).
9. Nuclear Energy Institute, "Guidance for Implementing a Risk-Informed, Performance-Based Fire Protection Program Under 10 CFR 50.48(c)," Washington, DC, NEI 04-02, Revision 2, April 2008 (ADAMS Accession No. ML081130188).
10. U.S. Nuclear Regulatory Commission, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," Regulatory Guide 1.174, Revision 2, May 2011 (ADAMS Accession No. ML100910006).
11. U.S. Nuclear Regulatory Commission, "EPRI/NRC-RES Fire PRA Methodology for Nuclear Power Facilities, Volume 1: Summary and Overview," NUREG/CR-6850, September 2005 (ADAMS Accession No. ML052580075).
12. U.S. Nuclear Regulatory Commission, "EPRI/NRC-RES Fire PRA Methodology for Nuclear Power Facilities, Volume 2: Detailed Methodology," NUREG/CR-6850, September 2005 (ADAMS Accession No. ML052580118).

13. U.S. Nuclear Regulatory Commission, "Fire Probabilistic Risk Assessment Methods Enhancements," NUREG/CR-6850, Supplement 1, September 2010 (ADAMS Accession No. ML103090242).
14. Sreenivas, V., U.S. Nuclear Regulatory Commission, e-mail to Thomas Loomis, Exelon Generation Company, LLC, "Ginna: Request for Additional Information (RAI) for NFPA-805 that proposed to not complete modification, remove overcurrent protection for its emergency diesel generators," dated October 2, 2017 (ADAMS Accession No. ML17277A205).
15. U.S. Nuclear Regulatory Commission, "Nuclear Power Plant Fire Ignition Frequency and Non-Suppression Probability Estimation Using the Updated Fire Events Database," NUREG-2169 and EPRI 3002002936, January 2015 (ADAMS Accession No. ML15016A069).
16. U.S. Nuclear Regulatory Commission and Electric Power Research Institute, "Refining and Characterizing Heat Release Rates from Electrical Enclosures During Fire (RACHELLE-FIRE)," NUREG-2178/EPRI 3002005578, December 2015 (ADAMS Accession No. ML15266A516).

Principal Contributors: Jay Robinson
JS Hyslop

Date: June 25, 2018

SUBJECT: R. E. GINNA NUCLEAR POWER PLANT – ISSUANCE OF AMENDMENT RELATED TO REQUEST TO DELETE A MODIFICATION ASSOCIATED WITH THE RISK-INFORMED, PERFORMANCE-BASED FIRE PROTECTION PROGRAM IN ACCORDANCE WITH 10 CFR 50.48(c) (CAC NO. MF9948; EPID L-2017-LLA-0253) DATED JUNE 25, 2018

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*** via SE input memo**

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DATE	6/5/18	6/23/18	6/25/18

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