



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

November 16, 2018

Mr. Joel P. Gebbie
Senior Vice President and
Chief Nuclear Officer
Indiana Michigan Power Company
Nuclear Generation Group
One Cook Place
Bridgman, MI 49106

SUBJECT: DONALD C. COOK NUCLEAR PLANT, UNIT NOS. 1 AND 2 - ISSUANCE OF
AMENDMENTS RE: REQUEST FOR DEVIATION FROM NATIONAL FIRE
PROTECTION ASSOCIATION 805 REQUIREMENTS (EPID L-2018-LLA-0166)

Dear Mr. Gebbie:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 342 to Renewed Facility Operating License No. DPR-58 and Amendment No. 324 to Renewed Facility Operating License No. DPR-74 for the Donald C. Cook Nuclear Plant (CNP), Unit Nos. 1 and 2, respectively. The amendments consist of changes to the license in response to your application dated June 11, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18164A033).

The amendments approve the use of performance-based methods for flexible metallic conduit in configurations other than to connect components, and for flexible metallic conduit in lengths greater than short lengths. These changes are related to the CNP, Unit Nos. 1 and 2, fire protection program, which is based on National Fire Protection Association Standard 805, in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR), Sections 50.48(b) and 50.48(c).

A copy of our related 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 "Allison W. Dietrich".

Allison W. Dietrich, Project Manager
Plant Licensing Branch III
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-315 and 50-316

Enclosures:

1. Amendment No. 342 to DPR-58
2. Amendment No. 324 to DPR-74
3. Safety Evaluation

cc: Listserv



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

INDIANA MICHIGAN POWER COMPANY

DOCKET NO. 50-315

DONALD C. COOK NUCLEAR PLANT, UNIT NO. 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 342
License No. DPR-58

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Indiana Michigan Power Company (the licensee), dated June 11, 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, paragraph 2.C.(4) of Renewed Facility Operating License No. DPR-58 is hereby amended to read as follows:

Fire Protection Program

Indiana Michigan Power Company 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 July 1, 2011, as supplemented by letters dated September 2, 2011, April 27, 2012, June 29, 2012, August 9, 2012, October 15, 2012, November 9, 2012, January 14, 2013, February 1, 2013, May 1, 2013, June 21, 2013, and September 16, 2013; and the license amendment request dated November 7, 2017, as supplemented by letter dated May 4, 2018; and license amendment request dated June 11, 2018, and as approved in the Safety Evaluations dated October 24, 2013, July 6, 2018, and November 16, 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.

3. This license amendment is effective as of its date of issuance and shall be implemented within 90 days.

FOR THE NUCLEAR REGULATORY COMMISSION



David J. Wrona, Chief
Plant Licensing Branch III
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to Renewed
Facility Operating License No. DPR-58

Date of Issuance: November 16, 2018

ATTACHMENT TO LICENSE AMENDMENT NO. 342

DONALD C. COOK NUCLEAR PLANT, UNIT NO. 1

TO RENEWED FACILITY OPERATING LICENSE NO. DPR-58

DOCKET NO. 50-315

Replace the following page of Renewed Facility Operating License DPR-58 with the attached revised page. The revised page is identified by amendment number and contains a marginal line indicating the area of change.

REMOVE

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May 1, 2013, June 21, 2013, and September 16, 2013; and the license amendment request dated November 7, 2017, as supplemented by letter dated May 4, 2018; and license amendment request dated June 11, 2018, and as approved in the Safety Evaluations dated October 24, 2013, July 6, 2018, and November 16, 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 (FPRA) 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^{-9} /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 and Design Elements

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 an 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,



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INDIANA MICHIGAN POWER COMPANY

DOCKET NO. 50-316

DONALD C. COOK NUCLEAR PLANT, UNIT NO. 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 324
License No. DPR-74

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Indiana Michigan Power Company (the licensee), dated June 11, 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, paragraph 2.C.(3)(o) of Renewed Facility Operating License No. DPR-74 is hereby amended to read as follows:

Fire Protection Program

Indiana Michigan Power Company 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 July 1, 2011, as supplemented by letters dated September 2, 2011, April 27, 2012, June 29, 2012, August 9, 2012, October 15, 2012, November 9, 2012, January 14, 2013, February 1, 2013, May 1, 2013, June 21, 2013, and September 16, 2013; and the license amendment request dated November 7, 2017, as supplemented by letter dated May 4, 2018; and license amendment request dated June 11, 2018, and as approved in the Safety Evaluations dated October 24, 2013, July 6, 2018, and November 16, 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.

3. This license amendment is effective as of its date of issuance and shall be implemented within 90 days.

FOR THE NUCLEAR REGULATORY COMMISSION



David J. Wrona, Chief
Plant Licensing Branch III
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to Renewed
Facility Operating License No. DPR-74

Date of Issuance: November 16, 2018

ATTACHMENT TO LICENSE AMENDMENT NO. 324

DONALD C. COOK NUCLEAR PLANT, UNIT NO. 2

TO RENEWED FACILITY OPERATING LICENSE NO. DPR-74

DOCKET NO. 50-316

Replace the following pages of Renewed Facility Operating License DPR-74 with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

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residual heat removal, safety injection and boron injection systems in accordance with the specifications of Section XI of the American Society of Mechanical Engineers Code. In addition, prior to completion of the first inservice testing interval, test connections which allow individual leak testing of the charging pump system discharge check valves shall be installed and the check valves shall be leak tested. The tests shall be repeated at the conclusion of each subsequent inservice inspection interval.

- (d) Deleted by Amendment No. 39
- (e) Deleted by Amendment No. 5
- (f) Deleted by Amendment No. 2
- (g) Deleted by Amendment No. 60
- (h) Deleted by Amendment No. 63
- (i) Deleted by Amendment No. 19
- (j) Power Operation with Fewer than Four Reactor Coolant Pumps in Operation

Indiana Michigan Power Company shall not operate the reactor at power levels above P-7 (as defined in Table 3.3.1-1 of Specification 3.3.1 of Appendix A to this renewed operating license) with fewer than four reactor coolant loops in operation until safety analyses for fewer than four loop operation have been submitted and approval for fewer than four loop operation at power levels above P-7 has been granted by the Commission by Amendment of this license.

- (k) Deleted by Amendment No. 16
- (l) Deleted by Amendment No. 63
- (m) Deleted by Amendment No. 19
- (n) Deleted by Amendment No. 28
- (o) Fire Protection Program

Indiana Michigan Power Company 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 July 1, 2011, as supplemented by letters dated September 2, 2011, April 27, 2012, June 29, 2012, August 9, 2012, October 15, 2012, November 9, 2012, January 14, 2013, February 1, 2013, May 1, 2013, June 21, 2013, and September 16, 2013; and the license amendment request dated November 7, 2017, as supplemented by letter dated May 4, 2018; and license amendment request dated June 11, 2018, and as approved in the Safety Evaluations dated October 24, 2013, July 6, 2018, and November 16, 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 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.

I. 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 (FPRA) 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.

II. Other Changes that May Be Made Without Prior NRC Approval

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

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 an 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.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO

AMENDMENT NO. 342 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-58

AND

AMENDMENT NO. 324 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-74

INDIANA MICHIGAN POWER COMPANY

DONALD C. COOK NUCLEAR PLANT, UNIT NOS. 1 AND 2

DOCKET NOS. 50-315 AND 50-316

1.0 INTRODUCTION

By application dated June 11, 2018 (Reference 1), Indiana Michigan Power Company (I&M, the licensee), requested changes to the licenses for Donald C. Cook Nuclear Plant (CNP), Unit Nos. 1 and 2. The proposed changes would revise the licenses to allow a performance-based (PB) method to justify the use of flexible metallic conduit in configurations other than to connect components, and the use of flexible metallic conduit in lengths greater than short lengths. The licensee submitted the license amendment request (LAR) in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 50.48(c)(2)(vii), requesting to use PB methods in a fire protection program (FPP) element.

On October 24, 2013 (Reference 2), the U.S. Nuclear Regulatory Commission (NRC or the Commission) issued Amendment No. 322 to Renewed Facility Operating License (RFOL) No. DPR-58, and Amendment No. 305 to RFOL No. DPR-74 for CNP, Unit Nos. 1 and 2, respectively. The amendments consisted of changes to transition the CNP FPP to a risk-informed, performance-based (RI/PB) program based on National Fire Protection Association (NFPA) 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants, 2001 Edition" (Reference 3), in accordance with 10 CFR 50.48(c). NFPA 805 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 (NSPC).

On July 6, 2018 (Reference 4), the NRC issued Amendment No. 340 to RFOL DPR-58, and Amendment No. 322 to RFOL DPR-74, approving a change to the licensee's RI/PB FPP regarding the use of non-plenum listed cables above suspended ceilings, and the use of electric metallic tube and embedded/buried polyvinyl chloride conduit.

The NRC staff's original proposed no significant hazards consideration determination for this amendment was published in the *Federal Register* on August 28, 2018 (83 FR 43905).

2.0 REGULATORY EVALUATION

Section 50.48, "Fire protection," of 10 CFR provides the NRC requirements for nuclear power plant fire protection. The NRC regulations include specific requirements for requesting approval for an RI/PB FPP based on the provisions of NFPA 805. Paragraph 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 [10 CFR] 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, 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. Pursuant to 10 CFR 50.32, "Elimination of repetition," the licensee/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.

In addition, 10 CFR 50.48(c)(3)(i) 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.

In addition, 10 CFR 50.48(c)(3)(ii) 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 intent of 10 CFR 50.48(c)(3)(ii) is given 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 through 69 FR 33548; 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. Under 10 CFR 50.57(a), in order 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.

As stated, in part, in 10 CFR 50.48(c)(3)(i):

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.

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 requires licensees to submit an LAR for NRC review and approval in order to adopt a 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 (Reference 5). Allowing licensees to include these elements in NFPA 805 LARs 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. The RGs are not substitutes for regulations and compliance with them is not required. Methods and solutions that differ from those set forth in RGs 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. NFPA 805, Section 1.2, "Defense-in-Depth," 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.

The following GDC regulations address fire protection:

- GDC Criterion 3, "Fire Protection," states, in part, that:

Structures, systems, and components important to safety are designed and located to minimize, consistent with other safety requirements, the probability and effect of fires and explosions. Noncombustible and heat resistant materials are 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 are 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) of 10 CFR requires that each holder of an operating license have a fire protection plan that satisfies GDC 3 of Appendix A to 10 CFR [Part] 50.
- 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 50, or the specific plant fire protection license condition.

The NRC staff review also relied on the following additional codes, RGs, and standards:

- RG 1.205, Revision 1, "Risk-Informed, Performance-Based Fire Protection for Existing Light-Water Nuclear Power Plants," issued December 2009 (Reference 5), 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. RG 1.205 sets forth regulatory positions, emphasizes certain issues, 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)," (Reference 6), and provides exceptions to the NEI-04-02 guidance where required. Should a conflict occur between NEI 04-02 and this RG, the regulatory positions in RG 1.205 govern.
- RG 1.174, Revision 2, "An Approach for Using Probabilistic Risk Assessment [PRA] in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," issued May 2011 (Reference 7), 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 Methodology for Nuclear Power Facilities," Volumes 1 and 2, September 2005, and Supplement 1, September 2010 (Reference 8, Reference 9, and Reference 10, respectively), presents a compendium of methods, data, and tools to perform an FPRA and develop associated insights.

3.0 TECHNICAL EVALUATION

3.1 Background/Discussion

In its LAR, the licensee requested approval of a PB method to demonstrate an equivalent level of fire protection for the NFPA 805, Section 3.3.5.2, requirements that only metal tray and metal conduits shall be used for electrical raceways, that thin wall metallic tubing shall not be used for power, instrumentation, or control cables, and that flexible metallic conduits shall only be used in short lengths to connect components. Specifically, the licensee stated that it has used flexible metallic conduit in other applications than to connect components that are original to plant construction, and that flexible metallic conduit has been used at building transitions, building expansion joints, as raceway expansion joints, and in congested areas in place of complex rigid conduit or electrical metallic tubing (EMT) bends. The licensee also stated that it has used flexible metallic conduits in lengths greater than short lengths throughout the CNP power block and that prior to transition to NFPA 805, its engineering specification for cables allowed the use of flexible metallic conduits up to 5 feet in length, and also allowed for longer lengths when approved in accordance with its configuration change process.

NFPA 805, Section 1.3.1, "Nuclear Safety Goal," states:

The nuclear safety goal is to provide reasonable assurance that a fire during any operational mode and plant configuration will not prevent the plant from achieving and maintaining the fuel in a safe and stable condition.

NFPA 805, Section 1.3.2, "Radioactive Release Goal," states:

The radioactive release goal is to provide reasonable assurance that a fire will not result in a radiological release that adversely affects the public, plant personnel, or the environment.

NFPA 805, Section 1.4.1, "Nuclear Safety Objectives," states:

In the event of a fire during any operational mode and plant configuration, the plant shall be as follows:

- (1) *Reactivity Control.* Capable of rapidly achieving and maintaining subcritical conditions.
- (2) *Fuel Cooling.* Capable of achieving and maintaining decay heat removal and inventory control functions.

- (3) *Fission Product Boundary*. Capable of preventing fuel clad damage so that the primary containment boundary is not challenged.

NFPA 805, Section 1.4.2, "Radioactive Release Objective," states:

Either of the following objectives shall be met during all operational modes and plant configurations.

- (1) Containment integrity is capable of being maintained.
- (2) The source term is capable of being limited.

NFPA 805, Section 1.5.1, "Nuclear Safety Performance Criteria," states:

Fire protection features shall be capable of providing reasonable assurance that, in the event of a fire, the plant is not placed in an unrecoverable condition. To demonstrate this, the following performance criteria shall be met.

- (a) *Reactivity Control*. Reactivity control shall be capable of inserting negative reactivity to achieve and maintain subcritical conditions. Negative reactivity inserting shall occur rapidly enough such that fuel design limits are not exceeded.
- (b) *Inventory and Pressure Control*. With fuel in the reactor vessel, head on and tensioned, inventory and pressure control shall be capable of controlling coolant level such that subcooling is maintained for a PWR [pressurized-water reactor] and shall be capable of maintaining or rapidly restoring reactor water level above top of active fuel for a BWR [boiling-water reactor] such that fuel clad damage as a result of a fire is prevented.
- (c) *Decay Heat Removal*. Decay heat removal shall be capable of removing sufficient heat from the reactor core or spent fuel such that fuel is maintained in a safe and stable condition.
- (d) *Vital Auxiliaries*. Vital auxiliaries shall be capable of providing the necessary auxiliary support equipment and systems to assure that the systems required under (a), (b), (c), and (e) are capable of performing their required nuclear safety function.
- (e) *Process Monitoring*. Process monitoring shall be capable of providing the necessary indication to assure the criteria addressed in (a) through (d) have been achieved and are being maintained.

NFPA 805, Section 1.5.2, "Radioactive Release Performance Criteria," states:

Radiation release to any unrestricted area due to the direct effects of fire suppression activities (but not involving fuel damage) shall be as low as reasonably achievable and shall not exceed applicable 10 CFR, Part 20, Limits.

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.

In NEI 04-02, Section 5.3.5.3, "Safety Margins," 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, etc.) are met, or provides sufficient margin to account for analysis and data uncertainty.

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 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; and
- 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.

3.2 Use of Flexible Metallic Conduit in Configurations Other than to Connect Components

The licensee stated that its compliance statement for NFPA 805, Section 3.3.5.2, complies with clarification. The licensee stated that all exposed electrical raceways are metal tray or metal conduit and that in general, all cable is run through conduits or trays, with the exception of short cable air drops. The licensee further stated that approximately 3 foot air drops align with the guidance of Section K.4 of NEI-04-02 (Reference 9) and are, therefore, acceptable. The licensee further stated that it has used flexible metallic conduit in other applications, most of which are original to plant construction, and that flexible metallic conduit has been used at building transitions, building expansion joints, as raceway expansion joints, and in congested areas in place of complex rigid conduit or EMT bends.

The licensee stated that its engineering specification for cable installation did not originally contain any requirements limiting the use of flexible conduit to connect components. In order to align with NFPA 805, the licensee revised its specification for new installations to only allow for the use of flexible metallic conduit to connect components. The licensee stated that it has historically used flexible metallic conduit, and that although flexible metallic conduit is noncombustible, it is not credited to prevent or delay fire damage or circuit failures. The licensee further stated that it uses tight liquid flexible metallic conduit (LFMC), which is generically called flexible metallic conduit. The LFMC is provided with a combustible jacket, but provides essentially the same protection as standard flexible metallic conduit. The licensee stated that it conducted a review within its corrective action program (CAP) and determined that the presence of LFMC has not adversely affected NSPC, radiological release performance criteria, safety margin, or DID. The licensee stated that the flexible metallic conduit is used in complex installations or to mitigate vibration, expansion, and differential building movement, and that this use is reasonable and meets the intent of providing a robust, totally enclosed, metallic raceway.

The licensee stated that a subsequent revision to NFPA 805 removed the restriction for use of flexible metallic conduit in its entirety in order to be consistent with the National Electric Code (NEC) (NFPA 70) (Reference 10). The licensee stated that although it is excluded from the scope of the NEC, as the NEC is typically more conservative than standards appropriate for industrial applications, its staff does occasionally reference the NEC as a source of conservative design inputs for plant design changes. The NEC serves as a reasonable benchmark for the design consideration of systems using flexible metallic conduit. The licensee further stated that the NEC allows for the use of flexible metallic conduit, provided that it is adequately supported, and that the licensee's plant configuration change process ensures any flexible metallic conduit in excess of 5 feet is structurally reviewed for adequacy.

The licensee stated that the NEC requires that the flexible metallic conduit be protected from physical damage, and that most areas inside the power block are not subject to potential physical damage due to heavy equipment movement. The licensee further stated that safety-significant systems, including flexible metallic conduits, are ruggedly designed to survive seismic events and the associated forces. The licensee further stated that administrative controls, including human performance and equipment protection procedures, further limit the potential for flexible metallic conduit damage during work evolutions. In the unlikely event damage does occur, the condition would be documented in the CAP upon discovery and would be evaluated immediately to determine impact on the plant. The licensee further stated that damage to flexible metallic conduit is not likely to result in an unrecognized or immediate fire hazard, and that because flexible metallic conduits are both adequately supported and protected from physical damage, they perform similarly to rigid metallic conduit. The licensee concluded that protection provided by the use of flexible metallic conduit is similar to that from rigid metallic conduit.

The licensee stated that the use of flexible metallic conduit does not affect NFPA 805 credited success paths, as conduit type is not credited to prevent cable damage during a fire, and therefore, there is no impact on the NSPC.

The licensee stated that the use of flexible metallic conduit does not have any impact on the radiological release performance criteria. The radiological release review was performed based on the manual fire suppression activities in areas containing, or potentially containing, radioactive materials and is not dependent on the type of conduit material. The licensee further stated that the conduit material does not change the radiological release evaluation

which concludes that potentially contaminated water is contained and smoke is monitored, and that the conduits do not add additional radiological materials to the area or challenge systems boundaries.

3.2.1 Safety Margins/DID

The licensee stated that flexible metallic conduit is noncombustible and that LFMC contains a combustible jacket, but that this jacket is outside of a flexible metal core. The licensee further stated that cables routed in flexible metallic conduits and LFMCs are fully enclosed by conduit and, therefore, are not susceptible to in-conduit self-ignition, and that the precautions and limitations on use and installation ensure that these materials do not impact the analysis of the fire event. The licensee stated that because of the above, the inherent safety margin and conservatism in its analysis methods remain unchanged.

The licensee stated that the three elements of DID are: (1) prevent fires from starting, (2) rapidly detect, control and extinguish fires that do occur, thereby limiting damage, and (3) provide adequate level of fire protection for systems and structures so that a fire will not prevent essential safety functions from being performed.

With regard to Element 1, the licensee stated that the use of flexible metallic conduit does not create ignition sources and does not impact fire prevention. The licensee further stated that flexible metallic conduit has been in use since original plant construction, that it is not expected to increase the potential for a fire to start, and that a subsequent revision to NFPA 805 removed the restriction for use of flexible metallic conduit in its entirety to be consistent with the NEC.

With regard to Element 2, the licensee stated that the use of flexible metallic conduit has no impact on the ability of the automatic suppression or detection systems to perform their functions, and that portable fire extinguishers and hose reel stations are available for manual firefighting activities by the site fire brigade and are unaffected by the presence of flexible metallic conduit.

With regard to Element 3, the licensee stated that the use of flexible metallic conduit to connect components does not result in compromising automatic fire suppression functions, manual fire suppression functions, or post-fire safe shutdown capability, and will not prevent essential safety functions from being performed, due to being adequately supported and protected from physical damage.

3.2.2 NRC Staff Evaluation

The NRC staff reviewed the information provided by the licensee in its LAR which included discussions of the impact of the proposed change on the performance goals, performance objectives, and performance criteria specified in NFPA 805 related to nuclear safety and radiological release, DID, and safety margins as required by 10 CFR 50.48(c)(2)(vii).

The NRC staff determined that the proposed change has no impact on the performance goals, performance objectives, and performance criteria specified in NFPA 805 related to nuclear safety and radiological release because flexible metallic conduit: (1) is noncombustible; (2) is not credited by the licensee to prevent or delay fire damage or circuit failures; (3) is only used in limited situations throughout the plant in certain areas due to complexity, or to mitigate

vibration, expansion, or differential building movement; (4) is allowed by subsequent versions of NFPA 805 and the NEC (NFPA 70); (5) is subject to the licensee's program that ensures it is adequately supported and protected from physical damage; and (6) does not add radiological materials to the plant or challenge system boundaries. In addition, the NRC staff determined that although LFMC contains a combustible jacket, the jacket is outside of a flexible metal core, and the cables are fully enclosed by metal conduit and are not susceptible to in-conduit self-ignition. The NRC staff also determined that the licensee's precautions and limitations on use and installation of LFMC ensures that it does not impact the analysis of any fire event.

The NRC staff determined that the proposed change has no impact on any of the DID echelons because flexible metallic conduit is not considered a method for preventing, detecting, controlling, or extinguishing fires, and does not create any new or different ignition sources. In addition, the level of fire protection provided so that a fire will not prevent essential safety functions from being performed is not changed because flexible metallic conduit does not impact the availability and reliability of fire protection systems and features.

The NRC staff also determined that the proposed change continues to maintain adequate safety margins. The NRC staff determined that the change does not impact any codes and standards, or their alternatives accepted for use by the NRC, because the licensee demonstrated that the flexible metallic conduits are noncombustible and are allowed by subsequent versions of NFPA 805 and the NEC (NFPA 70). The NRC staff further determined that the change does not impact any safety analysis acceptance criteria used in the licensing basis because the licensee demonstrated that flexible metallic conduit will not compromise automatic or manual fire suppression functions and post fire safe shutdown capability, is not credited to prevent or delay fire damage, and does not impact the analysis of any fire event.

3.2.3 Conclusion

Based on its review of the information submitted by the licensee, and in accordance with 10 CFR 50.48(c)(2)(vii), the NRC staff concludes that the proposed PB method as described by the licensee in its basis for the request, for the use of flexible metallic conduit in configurations other than to connect components, is an acceptable alternative to the corresponding NFPA 805, Section 3.3.5.1 requirement. The proposed PB method satisfies the performance goals, performance objectives, and performance criteria specified in NFPA 805 related to nuclear safety and radiological release, maintains safety margins, and maintains fire protection DID (fire prevention, fire detection, fire suppression, mitigation, and post-fire safe shutdown capability).

3.3 Use of Flexible Metallic Conduit in Lengths Greater Than Short Lengths

The licensee stated that flexible metallic conduit has been a basic conduit type used historically at CNP, and that flexible metallic conduit is not credited to prevent or delay fire damage or circuit failures and is noncombustible, and therefore, is similar to rigid metallic conduit. The licensee further stated that LFMC is also used at CNP and is generically called flexible metallic conduit, and that it is provided with a combustible jacket, but provides essentially the same protection as standard flexible metallic conduit. The licensee further stated that based on a review within the CNP CAP, the presence of flexible metallic conduit has not adversely affected NSPC, radiological release performance criteria, safety margin, or DID. The licensee further stated that its use in short lengths was not prohibited by original plant design guidelines, which allowed for the use of longer lengths when approved within the plant configuration process.

The licensee stated that a subsequent revision of NFPA 805 removed the restriction for use of flexible metallic conduit in its entirety in order to be consistent with the NEC, and that although CNP is excluded from the scope of the NEC, CNP staff does reference it as a source of design inputs for plant design changes. The licensee further stated that the NEC serves as a reasonable benchmark for the design considerations of systems with flexible metallic conduit, and that the NEC allows for the use of flexible metallic conduit provided that it is adequately supported. The licensee further stated that the plant configuration change process ensures that any flexible metallic conduits in excess of 5 feet are structurally reviewed for adequacy, and, therefore, the requirement for adequate support is met.

The licensee stated that the NEC requires that the flexible metallic conduit be protected from physical damage, and that most areas inside the power block are not subject to potential physical damage due to heavy equipment movement. The licensee further stated that safety-significant systems, including flexible metallic conduits, are ruggedly designed to survive seismic events and the associated forces and that administrative controls, including human performance and equipment protection procedures, further limit the potential for flexible metallic conduit damage during work evolutions. The licensee further stated that in the unlikely event damage does occur, the condition would be documented in CNP's CAP upon discovery, and would be evaluated immediately to determine impact on the plant. The licensee further stated that damage to flexible metallic conduit is not likely to cause an unrecognized or immediate fire hazard, and that since flexible metallic conduits are both adequately supported and protected from physical damage, they perform similarly to rigid metallic conduit. Therefore, the licensee states, the protection provided by the use of flexible metallic conduit is similar to that from rigid metallic conduit.

The licensee stated that use of flexible metallic conduit does not affect NFPA 805 credited success paths as conduit-type is not credited to prevent cable damage during a fire and, therefore, there is no impact on the NSPC.

The licensee stated that the use of flexible metallic conduit does not have any impact on the radiological release performance criteria. The radiological release review was performed based on the manual fire suppression activities in areas containing, or potentially containing, radioactive materials and is not dependent on the type of conduit material. The licensee further stated that the conduit material does not change the radiological release evaluation which concludes that potentially contaminated water is contained and smoke is monitored, and that the conduits do not add additional radiological materials to the area or challenge systems boundaries.

3.3.1 Safety Margins/DID

The licensee stated that flexible metallic conduit is noncombustible and that LFMC contains a combustible jacket, but this jacket is outside of a flexible metal core. The licensee further stated that the conductors routed in flexible metallic conduits and LFMCs are fully enclosed by conduit, and therefore, are not susceptible to in-conduit self-ignition. The licensee further stated that the precautions and limitations on use and installation ensure that these materials do not impact the analysis of the fire event and, therefore, the inherent safety margin and conservatisms in these analysis methods remain unchanged.

The licensee stated that the three elements of DID are: (1) prevent fires from starting, (2) rapidly detect, control and extinguish fires that do occur, thereby, limiting damage, and (3)

provide adequate level of fire protection for systems and structures so that a fire will not prevent essential safety functions from being performed.

With regard to Element 1, the licensee stated that the use of flexible metallic conduit does not create ignition sources and does not impact fire prevention, and that flexible metallic conduit has been in use since original plant construction and is not expected to increase the potential for a fire to start. The licensee further stated that the use of flexible metallic conduit is allowed by the NEC and the CNP Engineering Specification for cables, and that subsequent revision to NFPA 805 removed the requirement for use of flexible metallic conduit in its entirety to be consistent with the NEC.

With regard to Element 2, the licensee stated that the use of flexible metallic conduit has no impact on the ability of the automatic suppression or detection systems to perform their functions and that portable fire extinguishers and hose reel stations are available for manual firefighting activities by the site fire brigade and are unaffected by the presence of flexible metallic conduit.

With regard to Element 3, the licensee stated that the use of flexible metallic conduit in greater than short lengths does not result in compromising automatic fire suppression functions, manual fire suppression functions, or post-fire safe shutdown capability and will not prevent essential safety functions from being performed due to being adequately supported and protected from physical damage.

3.3.2 Staff Evaluation

The NRC staff reviewed the information provided by the licensee in its LAR, which included discussions of the impact of the proposed change on the performance goals, performance objectives, and performance criteria specified in NFPA 805 related to nuclear safety and radiological release, DID, and safety margins as required by 10 CFR 50.48(c)(2)(vii).

The NRC staff determined that the proposed change has no impact on the performance goals, performance objectives, and performance criteria specified in NFPA 805 related to nuclear safety and radiological release because flexible metallic conduit: (1) is noncombustible; (2) is not credited by the licensee to prevent or delay fire damage or circuit failures; (3) is only used in limited situations throughout the plant in certain areas due to complexity, or to mitigate vibration, expansion, or differential building movement; (4) is allowed by subsequent versions of NFPA 805 and the NEC (NFPA 70); (5) is subject to the licensee's program that ensures it is adequately supported and protected from physical damage; and (6) does not add radiological materials to the plant or challenge system boundaries. In addition, the NRC staff determined that although LFMC contains a combustible jacket, the jacket is outside of a flexible metal core and the cables are fully enclosed by metal conduit and are not susceptible to in-conduit self-ignition. The NRC staff also determined that the licensee's precautions and limitations on use and installation of LFMC ensures that it does not impact the analysis of any fire event.

The NRC staff determined that the proposed change has no impact on any of the DID echelons because flexible metallic conduit is not considered a method for preventing, detecting, controlling, or extinguishing fires, and does not create any new or different ignition sources. In addition, the level of fire protection provided so that a fire will not prevent essential safety functions from being performed is not changed because flexible metallic conduit does not impact the availability and reliability of fire protection systems and features.

The NRC staff also determined that the proposed change continues to maintain adequate safety margins. The NRC staff determined that the change does not impact any codes and standards, or their alternatives accepted for use by the NRC because the licensee demonstrated that the flexible metallic conduits are noncombustible and are allowed by subsequent versions of NFPA 805 and the NEC (NFPA 70). The NRC staff further determined that the change does not impact any safety analysis acceptance criteria used in the licensing basis, because the licensee demonstrated that flexible metallic conduit will not compromise automatic or manual fire suppression functions and post fire safe shutdown capability, is not credited to prevent or delay fire damage, and does not impact the analysis of any fire event.

3.3.3 Conclusion

Based on its review of the information submitted by the licensee, and in accordance with 10 CFR 50.48(c)(2)(vii), the NRC staff concludes that the proposed PB method for the use of flexible metallic conduit in lengths greater than short lengths, is an acceptable alternative to the NFPA 805, Section 3.3.5.2, requirement. The proposed PB method satisfies the performance goals, performance objectives, and performance criteria specified in NFPA 805 related to nuclear safety and radiological release, maintains safety margins, and maintains fire protection DID (fire prevention, fire detection, fire suppression, mitigation, and post-fire safe shutdown capability).

4.0 FIRE PROTECTION LICENSE CONDITION

On October 24, 2013 (Reference 2), the NRC issued Amendment Nos. 322 and 305, which revised the existing fire protection license conditions for CNP to address the transition to a RI/PB FPP under NFPA 805 in accordance with 10 CFR 50.48(c)(3)(i). The new license conditions adopted the guidelines of the standard fire protection license condition promulgated in RG 1.205, Revision 1, Regulatory Position C.3.1, issued in December 2009 (Reference 5). 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 CNP.

On July 6, 2018 (Reference 4), the NRC issued Amendment No. 340 to RFOL DPR-58, and Amendment No. 322 to RFOL DPR-74, approving a change to the licensee's RI/PB FPP regarding the use of non-plenum listed cables above suspended ceilings, and the use of electric metallic tube and embedded/buried polyvinyl chloride conduit.

In its letter dated June 11, 2018 (Reference 1), the licensee requested a license amendment regarding its use of flexible metallic conduit in configurations other than to connect components, its use of flexible metallic conduit in lengths greater than short, and proposed to modify Fire Protection License Condition 2.C.(4) for Unit 1, and 2.C.(3)(o) for Unit 2. The licensee proposed that the license condition be revised to add the LAR submittal date, and issuance date of this safety evaluation (SE), to the first paragraph under 2.C.(4) and 2.C.(3)(o), respectively. No other changes to the license condition were requested by the licensee or identified by the NRC staff. As described in Section 3.0 of this SE, the NRC staff reviewed the information provided by the licensee and concludes that the proposed use of the PB alternatives is acceptable. Therefore, the NRC staff concludes that the revision of the license conditions to allow such use, by identifying the additional LAR and SE dates, is appropriate and acceptable.

As revised, the first paragraph of CNP Unit No. 1 and 2, License Condition 2.C.(4) and 2.C.(3)(o), will read as shown below:

Fire Protection Program

Indiana Michigan Power Company 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 July 1, 2011, as supplemented by letters dated September 2, 2011, April 27, 2012, June 29, 2012, August 9, 2012, October 15, 2012, November 9, 2012, January 14, 2013, February 1, 2013, May 1, 2013, June 21, 2013, and September 16, 2013; and the license amendment request dated November 7, 2017, as supplemented by letter dated May 4, 2018; and license amendment request dated June 11, 2018, and as approved in the Safety Evaluations dated October 24, 2013, July 6, 2018, and November 16, 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.

5.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Michigan State official was notified of the proposed issuance of the amendments on October 5, 2018. 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 amendments involve no significant hazards consideration and there has been no public comment on such finding published in the *Federal Register* on August 28, 2018 (83 FR 43905). Accordingly, the amendments meet 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 amendments.

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 amendments will not be inimical to the common defense and security or to the health and safety of the public.

8.0 REFERENCES

1. Lies, Q. Shane, Indiana Michigan Power Company, letter to U.S. Nuclear Regulatory Commission, "Donald C. Cook Nuclear Plant, Units 1 and 2, Request for Deviation from National Fire Protection Association (NFPA) 805 Requirements," June 11, 2018 (ADAMS Accession No. ML18164A033).
2. Wengert, Thomas, J., U.S. Nuclear Regulatory Commission, letter to Weber, Lawrence, J., Indiana Michigan Power Company, "Donald C. Cook Nuclear Plant, Units 1 and 2 - Issuance of Amendments Regarding Transition to a Risk-informed, Performance-Based Fire Protection Program in Accordance with 10 CFR 50.68(c) (TAC Nos. ME6629 and ME6630)," October 24, 2013 (ADAMS Accession No. ML13140A398).
3. 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.
4. Dietrich, Allison, W., U.S. Nuclear Regulatory Commission, letter to Gebbie, Joel, P., Indiana Michigan Power Company, "Donald C. Cook Nuclear Plant, Unit Nos. 1 and 2 - Issuance of Amendments RE: Request for Deviation from National Fire Protection Association 805 Requirements (EPID-L-2017-LLA-0374)," July 6, 2018 (ADAMS Accession No. ML18131A253).
5. 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).
6. 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).
7. 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 3, January 2018 (ADAMS Accession No. ML17317A256).
8. U.S. Nuclear Regulatory Commission, "Fire PRA Methodology for Nuclear Power Facilities," NUREG/CR-6850 and Supplement 1 to NUREG/CR-6850, 2005 and

September 2010 (ADAMS Accession Nos. ML052580075, ML052580118, and ML103090242).

9. Klein, Alex, R., U.S. Nuclear Regulatory Commission, "Closure of National Fire Protection Association 805 Frequently Asked Question Number 06-0021," November 13, 2007 (ADAMS Accession No. ML072420306).
10. National Fire Protection Association, "National Electric Code," Standard 70 (NFPA 70), Quincy, Massachusetts.

Principal Contributor: Jay Robinson

Date of Issuance: November 16, 2018

SUBJECT: DONALD C. COOK NUCLEAR PLANT, UNIT NOS. 1 AND 2 - ISSUANCE OF AMENDMENTS RE: REQUEST FOR DEVIATION FROM NATIONAL FIRE PROTECTION ASSOCIATION 805 REQUIREMENTS (EPID L-2018-LLA-0166) DATED NOVEMBER 16, 2018

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***via memorandum**

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