FAQ Number 13-0068 **FAQ Revision** 2

FAQ Title NFPA 805 License Condition

Plant: NEI NFPA 805 Task Force Date:

Contact: Brian Mann / Ned Tyler Phone: 240-880-0490 / 410-495-6714

Email: brian.mann@excelservices.com
edmund.tyler@cengllc.com

Distribution: *(NEI Internal Use)*

☒ 805 TF ☐ FPWG ☐ RATF ☐ RIRWG ☐ BWROG ☐ PWROG

Purpose of FAQ:

Improve the presentation of the NFPA 805 license condition in RG 1.205 (Rev 1).

Is this Interpretation of guidance? Yes / No

Proposed new guidance not in NEI 04-02? Yes / No

Details:

Title 10 of the Code of Federal Regulations (10 CFR), Paragraph 50.48(c)(2)(vii) allows the application of performance based methods to the Fire Protection Program (FPP) elements and minimum design requirements of Chapter 3 of NFPA 805 without prior NRC approval if requested by license amendment and approved by the NRC. Regulatory Guide 1.205 (Rev. 1), Section C, Regulatory Position 3.1, provides an example license condition to be included in the plant's license amendment request to use 10 CFR 50.48(c) and NFPA 805.

Licensees not involved in the pilot plant process have reviewed the existing RG 1.205 license condition and expressed concerns with ambiguous language and undefined terms that may result in difficulties in industry implementation and NRC inspection. It is not the intent of this FAQ to alter the regulatory requirements on licensees, but to place requirements in the appropriate regulatory document and to clarify the intent of the requirements.

Circumstances requiring guidance interpretation or new guidance:

It is recognized that a license condition is necessary for the implementation of NFPA 805. Licensees not involved with the NFPA 805 pilot process have reviewed the license condition and have several concerns with the current version in RG 1.205, Revision 1:

1. The model License Condition is of an unprecedented length and complexity compared to other license conditions.

2. With the exception of the plant-specific NRC Safety Evaluation date and transition license conditions, the information in the license condition is generic and should be applicable to all NFPA 805 plants. Generic information on an acceptable method to implement a rule is typically included in a Regulatory Guide and not in plant-specific license conditions.

3. Placing repetitive, generic information in the licenses of multiple plants is likely to lead to differences between plants. Lack of standardization will complicate industry compliance and NRC inspection. Duplicating the generic information in multiple licenses will complicate dissemination of clarifying information (e.g., a Regulatory Issue Summary or Generic Letter would be required.) In addition, if the license condition references a specific revision to the Regulatory Guide, licensees could adopt a newer revision with a simple license amendment request under the Consolidated Line Item Improvement Process (CLIIP) instead of a plant-specific license amendment request. This would reduce the burden of adopting future changes on both the industry and the NRC.

4. Of particular concern, there are a number of terms used in the License Condition that are not defined in the license, RG 1.205, NEI 04-02, or NFPA 805. The industry believes this will cause future difficulties in industry compliance and NRC inspection. Examples are:
    - "acceptable to the NRC"
    - "adequate for the hazard"
    - "methods that have been demonstrated to bound the risk impact"
    - "clearly result in a decrease in risk"
    - "qualified fire protection engineer"
    - "relevant technical requirement or standard"

5. Portions of the License Condition appear to be duplicative or conflicting. This is likely to result in future difficulties in industry compliance and NRC inspection.

6. Portions of the License Condition appear to only serve to direct the licensee to follow the regulations. This is unnecessary.

These issues are discussed below.

Detail contentious points if licensee and NRC have not reached consensus on the facts and circumstances:

Note: A clean typed version of the proposed changes is located in the last section of this FAQ, in the section titled, "If appropriate, provide proposed rewording of guidance for inclusion in the next Revision."

Appropriate Location for the Requirements

Regulatory Guide 1.205 (Rev. 1), Section C, Regulatory Position 3.1, provides an example license condition to be included in the plant's license amendment request to use 10 CFR 50.48(c) and NFPA 805.). Included in this example license condition are criteria for the application of performance-based methods to the Fire Protection Program elements and minimum design requirements of NFPA 805 Chapter 3 without prior NRC approval if requested by license amendment and approved by the NRC per 10 CFR 50.48(c)(2)(vii).

The proposed change continues to use an NRC-approved license condition to allow licensees to use performance based methods in accordance with 10 CFR 50.48(c)(2)(vii). The proposed change incorporates by reference the definitions in proposed Regulatory Position 3.1.1and the proposed acceptance criteria in Regulatory Position 3.1.3, which are both incorporated by reference in the proposed license condition in Regulatory Position 3.1.2. As there is no distinction in the license between explicit requirements and requirements incorporated by reference, the proposed change does not affect the validity of the approach.

NRC approval in a new Regulatory Position in RG 1.205 and placement of a requirement to follow that Regulatory Position in the license condition in lieu of the relocated text provides a number of advantages to both licensees and the NRC:

- The generic information on how to implement a rule is moved to an NRC document. The purpose of Regulatory Guides is to describe an acceptable method of meeting a regulation. The proposed change is aligned with that purpose.

- Information that is intended to be generic is not duplicated in individual licenses. This duplication will inevitably result in differences between licensees (as has already been seen in the differences between the approved NFPA 805 license conditions). These differences will result in difficulties in industry implementation and NRC inspection.

- Placing the generic information in the Regulatory Guide instead of individual licenses will facilitate future changes and clarifications. Licensees will be required to follow a particular revision of the Regulatory Guide referenced in their license. Adoption of a new revision will require a license amendment, but such an amendment should be straightforward to prepare and approve. This will reduce the burden of future changes on both the industry and the NRC, while improving consistency across the industry.

There are many examples of requirements in a Regulatory Guide being incorporated by reference into the Technical Specifications (which are a part of the license). See NUREG-1431, "Standard Technical Specifications - Westinghouse Plants," Revision 4, Specification 5.5.7, "Reactor Coolant Pump Flywheel Inspection Program"; Specification 5.5.11, "Ventilation Filter Testing Program (VFTP)"; Specification 5.5.16,

"Containment Leakage Rate Testing Program"; and Specification 5.5.17, "Battery Monitoring and Maintenance Program."

The proposed change moves the description of changes that may be made without prior NRC approval to new Regulatory Position 3.1.3. The first sentence of the current Licensing Condition states:

> "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."

This sentence is followed by two sections, "Risk-Informed Changes that May be Made Without Prior NRC Approval," and "Other Changes that May be Made Without Prior NRC approval." The sentence and the two sections are moved to new Regulatory Guide 1.205, Regulatory Position 3.1.3.

The license condition is revised to reference the relocated discussion by replacing the sentence and two sections discussed above, with:

> "Changes may be made to the fire protection program without prior approval of the Commission as described in Regulatory Positions 3.1.1 and 3.1.3 of Regulatory Guide 1.205, Revision 2, 'Risk-Informed, Performance-Based Fire Protection for Existing Light-Water Nuclear Power Plants'."

<u>Undefined Terms</u>

There are a number of undefined terms in the license condition that can result in inconsistent industry implementation and NRC inspection. A new Regulatory Position 3.1.1, "Definitions," is proposed. The existing Regulatory Position 3.1, "Standard License Condition," is renumbered to 3.1.2 so that the definitions appear before their use.

The following definitions are proposed:

Acceptable to the NRC – Acceptable due to consistency with NRC guidance, by NRC endorsement, or by unit-specific NRC approval. Unit-specific NRC approval is only applicable to the specific unit.

Adequate for the hazard – The effectiveness of the fire protection features to detect, control, suppress, and extinguish a fire and provide passive protection to achieve the performance criteria. The application of this term involves engineering evaluations supporting compliance with the criteria of NFPA 805 Sections 3.8, 3.9, 3.10, and 3.11.

Bound the risk impact - A qualitative or quantitative method that is not specifically applied to NFPA 805 risk assessments, but can be shown to be applicable, and which indicates risk that is greater than or equal to the actual level of risk.

Clearly show decrease in risk – A qualitative or quantitative evaluation demonstrates that the change will reduce risk.

Qualified fire protection engineer – See Regulatory Guide 1.189, Rev. 2, Regulatory Position C.1.6.1.A.

Relevant technical requirement or standard - A technical requirement or standard that can be shown to have a direct relation to or impact on the evaluation of the functionality of a component, system, procedure, or physical arrangement.

Clarify Wording

For readers that have not participated in the development of the license condition, portions appear to be duplicative or conflicting. It also appears that portions of the License Condition only serve to direct the licensee to follow the regulations. In order to clarify and simplify the wording, the following changes are proposed. These proposed changes are not intended to alter the intent of the requirements.

Clarify the Transition License Condition

In the proposed Regulatory Position, the transition license condition is shown in brackets, indicating it is optional. The condition is not needed for licensees that complete all required modifications prior to receipt of NRC approval of the license amendment request. These brackets will not appear in a plant-specific license.

The first paragraph states,

> "Before achieving full compliance with 10 CFR 50.48(c), as specified by (2) 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 (2) above."

This paragraph is moved to new Regulatory Position 3.1.3, under the subtitle, "Risk-Informed Changes that May Be Made Without Prior NRC Approval," Paragraph (b). This paragraph discusses what risk-informed changes may be made after full compliance with 10 CFR 50.48(c) is achieved. Adding this exception in this location is more logical and groups related requirements together.

The second paragraph includes a list of modifications identified by the licensee as necessary to complete the transition to compliance with 10 CFR 50.48(c). We recommend an alternative that references the licensee's letter(s) that describes the modifications. This does not change the licensee requirements, while providing improved detail and a more traceable basis for the requirement.

~~(2)~~ *[* The licensee shall implement the ~~following~~ modifications to its facility *described in [letter or Safety Evaluation reference]* to complete the transition to full compliance with 10 CFR 50.48(c) by {date}. *The licensee shall maintain appropriate compensatory measures in place until completion of* ~~the~~ *these* modifications ~~delineated above~~. *]*

~~{Include a plant-specific list of any modifications identified by the licensee as necessary to complete the transition to its new fire protection license basis.}~~

To eliminate unneeded numbering, the third paragraph, shown below, is incorporated into the second paragraph, as shown above.

~~(3) The licensee shall maintain appropriate compensatory measures in place until completion of the modifications delineated above.~~

Clarify the Relocated License Condition Description of the Change Mechanisms

The last sentence of the first paragraph of the current License Condition is moved to the new Regulatory Position 3.1.3. The sentence states"

> "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."

Most of this sentence restates regulatory requirements. It is not necessary for the license to state that specific regulations must be followed. Eliminating this unnecessary duplication of requirements, the sentence is restated as:

"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) and the criteria listed below are satisfied."

Clarify the Relocated License Condition Description Under the Subtitle, "Risk-Informed Changes that May Be Made Without Prior NRC Approval"

Paragraphs (a) and (b) of the current License Condition both state, "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." It is proposed to remove the statement from Paragraphs (a) and (b) in the new Regulatory Position 3.1.3 and state it following those two items to improve readability.

(a) 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.~~

(b) 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.~~

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.

Clarify the Relocated License Condition Description Under the Subtitle, "Other Changes that May Be Made Without Prior NRC Approval

The first two paragraphs of this portion of the current License Condition are almost identical and it is very difficult to distinguish the different intent because of a number of repeated sentences. In the new Regulatory Position 3.1.3, the two paragraphs are revised to combine the common elements, distinguish the differences, and to clarify the intent. The sentence discussing evaluations by a qualified fire protection engineer is moved after the list of sections for clarity. The sentence regarding use of an engineering evaluation to show functional equivalence is combined with the first sentence to reduce duplication and improve clarity.

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 *to the*

corresponding technical requirement ~~or adequate for the hazard~~. *Prior NRC review and approval are not required for alternatives to the following 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.* ~~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.~~

~~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).

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.

Clarify the Relocated License Condition Description Under the Subtitle, "Fire Protection Program Changes that Have No More than Minimal Risk Impact"

This portion of the current License Condition includes the date of the NRC Safety Evaluation. As this information is being relocated to the Regulatory Guide, this information is not appropriate. The date of the NRC Safety Evaluation is retained in the license condition.

The last sentence states, "The licensee shall ensure that fire protection defense-in-depth and safety margins are maintained when changes are made to the fire protection

program." This sentence is combined with the other criterion of minimal risk impact to improve clarity and reduce duplication. The revised sentence states, "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, and that defense-in-depth and safety margins are maintained.

Potentially relevant existing FAQ numbers:

FAQ 06-008 discusses the license condition.

Response Section:

Proposed resolution of FAQ and the basis for the proposal:

If appropriate, provide proposed rewording of guidance for inclusion in the next Revision:

Revised text:

3.1.1 Definitions

1. Acceptable to the NRC – Acceptable due to consistency with NRC guidance, by NRC endorsement, or by unit-specific NRC approval. Unit-specific NRC approval is only applicable to the specific unit.

2. Adequate for the hazard – The effectiveness of the fire protection features to detect, control, suppress, and extinguish a fire and provide passive protection to achieve the performance criteria. The application of this term involves engineering evaluations supporting compliance with the criteria of NFPA 805 Sections 3.8, 3.9, 3.10, and 3.11.

3. Bound the risk impact - A qualitative or quantitative method that is not specifically applied to NFPA 805 risk assessments, but can be shown to be applicable, and which indicates risk that is greater than or equal to the actual level of risk.

4. Clearly show decrease in risk – A qualitative or quantitative evaluation demonstrates that the change will reduce risk.

5. Qualified fire protection engineer – See Regulatory Guide 1.189, Rev. 2, Regulatory Position C.1.6.1.A.

6. Relevant technical requirement or standard - A technical requirement or standard that can be shown to have a direct relation to or impact on the evaluation of the functionality of a component, system, procedure, or physical arrangement.

3.1.2 Standard License Condition

As specified in 10 CFR 50.48(c)(3)(i), the license amendment request must identify any license conditions to be revised or superseded. NFPA 805 and paragraph (c) in 10 CFR 50.48 identify aspects of a performance-based FPP that the NRC must specifically approve through a license amendment. It is the intent of 10 CFR 50.48(c) to allow certain changes to be made to the FPP without prior NRC review and approval, once the NRC approves the transition to a performance-based FPP. This intent is reflected in the regulatory analysis for 10 CFR 50.48(c), which states, "Licensees choosing to use the flexibilities provided by the rulemaking could use risk-informed and performance-based approaches and methods in NFPA 805, rather than submitting an exemption or deviation request each time they wish to depart from current requirements."

The NRC provides the flexibility to make certain changes without prior NRC review and approval in a license condition for licensees that make the transition to 10 CFR 50.48(c). A sample license condition, which establishes the acceptance criteria for making changes to the licensee's FPP without prior NRC review and approval, is shown below. The application of these risk acceptance criteria, described in RG 1.205, requires that the plant have an acceptable fire PRA that is in accordance with the guidance in Regulatory Position 4.3; refer also to Regulatory Position 3.2.4.

> (Name of Licensee) 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 amendment request dated _____ (and supplements dated _____) and as approved in the safety evaluation report dated (and supplements dated _____). Changes may be made to the fire protection program without prior approval of the Commission as described in Regulatory Positions 3.1.1 and 3.1.3 of Regulatory Guide 1.205, Revision 2, "Risk-Informed, Performance-Based Fire Protection for Existing Light-Water Nuclear Power Plants."
>
> [The licensee shall implement the modifications to its facility described in [letter or Safety Evaluation reference] to complete the transition to full compliance with 10 CFR 50.48(c) by {date}. The licensee shall maintain appropriate compensatory measures in place until completion of these modifications.]

3.1.3 Changes that May be Made Without 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) and the criteria listed below are satisfied.

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.

The proposed change must 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.

(a) Prior NRC review and approval is not required for changes that clearly result in a decrease in risk.

(b) Before achieving full compliance with 10 CFR 50.48(c), 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 (2) below.

(c) After achieving full compliance with 10 CFR 50.48(c), 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.

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 to the corresponding technical requirement. Prior NRC review and approval are not required for alternatives to the following four 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:

- "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).

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.

(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, and that defense-in-depth and safety margins are maintained. The licensee may use its screening process as approved in the NRC safety evaluation report to determine that certain fire protection program changes meet the minimal criterion.