Section 2.2, page 7, 3rd paragraph:

- **Performance-Based Methods, § 50.48(c)(2)(vii) -** The prohibition in Section 3.1 of NFPA 805 that does not permit the use of performance-based methods for the Chapter 3 fundamental fire protection program elements and minimum design criteria is not endorsed. The NRC takes this exception in order to provide licensees greater flexibility in meeting the fire protection program elements and minimum design requirements of Chapter 3 by the use of performance-based methods (including the use of risk-informed methods) described in the NFPA 805 standard. Licensees who wish to deviate from Chapter 3 requirements must submit a license amendment request for NRC approval.

  Refer to Appendix L for a process/method to be submitted in the transition LAR is to allow fire protection engineering analyses to address NFPA 805 Chapter 3 requirements:

  - When the Chapter 3 requirements are conditional based upon NFPA 805 Chapter 4; and
  - For deviations from the NFPA codes and listings for rated components in NFPA 805.

  Approval of a license amendment for the use of this process would constitute a "previously approved alternative" that would allow the use of this process without prior approval for specific applications, as long as the application is within the bounds of NRC approval of the proposed methods/processes.

Section 2.3, page 9, 2nd paragraph:

"Compliance with Chapter 3 of NFPA 805 may be demonstrated by showing that the specific requirements are met either directly or by the use of alternative methods and analytical approaches. Alternative methods and analytical approaches must be accepted by the NRC in a license amendment per 10 CFR 50.48(c)(4). Contrary to Section 3.1 of NFPA 805, performance-based methods may be used. (See 10 CFR 50.48(c)(2)(vii)). Note licensees contemplating applying for permission to use an alternative method or analytical approach could pursue a generic approval process with other utilities and/or NEI. See Section 2.4 of this document.

Refer to Appendix L for a process/method to be submitted in the transition LAR is to allow fire protection engineering analyses to address NFPA 805 Chapter 3 requirements:

- When the Chapter 3 requirements are conditional based upon NFPA 805 Chapter 4; and
- For deviations from the NFPA codes and listings for rated components in NFPA 805.

Approval of a license amendment for the use of this process would constitute a "previously approved alternative" that would allow the use of this process without prior approval for specific applications, as long as the application is within the bounds of NRC approval of the proposed methods/processes."

Section 4.1.1, page 21, 1st paragraph:

"For areas of the fire protection program that are not in compliance with NFPA 805, Chapter 3, the licensee may utilize the alternate performance-based methods as long as the method is

approved by the NRC in a License Amendment. The NRC has taken exception to NFPA 805, Section 3.1 (See 10 CFR 50.48.c (2)(vii)).

Refer to Appendix L for a process/method to be submitted in the transition LAR is to allow fire protection engineering analyses to address NFPA 805 Chapter 3 requirements:

- When the Chapter 3 requirements are conditional based upon NFPA 805 Chapter 4; and
- For deviations from the NFPA codes and listings for rated components in NFPA 805.

Approval of a license amendment for the use of this process would constitute a "previously approved alternative" that would allow the use of this process without prior approval for specific applications, as long as the application is within the bounds of NRC approval of the proposed methods/processes."

Section 4.3.1, page 27, add new paragraph to this section at the end

"Refer to Appendix L for a process/method to be submitted in the transition LAR is to allow fire protection engineering analyses to address NFPA 805 Chapter 3 requirements:

- When the Chapter 3 requirements are conditional based upon NFPA 805 Chapter 4; and
- For deviations from the NFPA codes and listings for rated components in NFPA 805.

Approval of a license amendment for the use of this process would constitute a "previously approved alternative" that would allow the use of this process without prior approval for specific applications, as long as the application is within the bounds of NRC approval of the proposed methods/processes."

Section 4.6.1, page 34 insert new paragraph before last sentence "A sample LAR……"

"Refer to Appendix L for a process/method to be submitted in the transition LAR is to allow fire protection engineering analyses to address NFPA 805 Chapter 3 requirements:

- When the Chapter 3 requirements are conditional based upon NFPA 805 Chapter 4; and
- For deviations from the NFPA codes and listings for rated components in NFPA 805.

Approval of a license amendment for the use of this process would constitute a "previously approved alternative" that would allow the use of this process without prior approval for specific applications, as long as the application is within the bounds of NRC approval of the proposed methods/processes."

Section 5.3.1, page 43

"…….Under the risk-informed, performance-based regulatory framework, Fire Protection Program changes will be made without prior NRC approval, except where required by:

- 10 CFR 50.59,
- Other regulatory processes (i.e., Technical Specifications),
- 10CFR 50.48(c) (certain changes to Chapter 3 requirements or Nuclear Safety Changes that do not meet the acceptance criteria of NFPA Section 2.4.4.)
- Changes that have been evaluated using performance-based methods other than the those acceptable to the AHJ
- Changes that have been evaluated using performance-based methods other than the approaches in NFPA 805 (i.e., fire modeling and risk evaluation)

Except as noted, in general changes that have been previously approved by the NRC or that do not deviate from a specific NFPA 805 requirement related to systems, methods, or devices need not be submitted for AHJ approval……"

Section 5.3.2, page 46, starting with 7th paragraph:

"Additional consideration should be given to changes to Fundamental Program Elements and Minimum Design Requirements. 10 CFR 50.48(c)(2)(vii) allows licensees to use performance-based methods to demonstrate compliance with NFPA 805 Chapter 3 requirements. However, these alternate methods must be approved via the license amendment process (10 CFR 50.48(c)(4)).

Refer to Appendix L for a process/method to be submitted in the transition LAR is to allow fire protection engineering analyses to address NFPA 805 Chapter 3 requirements:

- When the Chapter 3 requirements are conditional based upon NFPA 805 Chapter 4; and
- For deviations from the NFPA codes and listings for rated components in NFPA 805.

Approval of a license amendment for the use of this process would constitute a "previously approved alternative" that would allow the use of this process without prior approval for specific applications, as long as the application is within the bounds of NRC approval of the proposed methods/processes.

Most changes to the Fundamental Program Elements and Minimum Design Requirements should not require a License Amendment request, since they are evaluations that demonstrate compliance with requirements of Chapter 3 of NFPA 805. Licensees can deviate from the NFPA standards referenced in NFPA 805 Chapter 3 within in the bounds discussed in Appendix L.

Examples of changes that would not require a License Amendment are:

- Replacing a fire rated component (e.g., penetration seal, door, wrap, etc.) with a different component/material having the same or greater fire rating. This does not require a license amendment because it meets the appropriate code.
- Evaluating a blocked sprinkler head(s) for adequate coverage in the area. Chapter 3 of NFPA 805 and the referenced code do not dictate where a sprinkler system should be

Deleted: NFPA 805 Section 1.7 Equivalency states that "Nothing in this standard is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability and safety over those prescribed by this standard. Technical documentation shall be submitted to the authority having jurisdiction to demonstrate equivalency." Licensees can deviate from the NFPA standards referenced in NFPA 805 Chapter 3 without NRC approval if allowed by the code of record, so long as the evaluated condition is in accordance with the terms of the code of record or if the code does not dictate the specific issue (e.g., adequacy of coverage of suppression and detection systems). In addition to the performance-based methods outlined in NFPA 805, the NRC will provide guidance on Analytical methods and tools and methods acceptable for use in NFPA 805 applications in the Regulatory Guide for the adoption of 10 CFR 50.48. Therefore approval will be required for:¶

Deleted: out NRC approval if allowed by the code of record, so long as the evaluated condition is in accordance with the terms of the code of record (e.g., "Nothing in this standard is intended to restrict new technologies or alternate arrangements, providing the level of safety prescribed by the standard is not lowered." – Excerpt from 1985 edition of NFPA 13) or if the code does not dictate the specific issue (e.g., adequacy of coverage of suppression and detection systems).

Deleted: <#>Changing the surveillance frequency of a fire protection feature or system based on NFPA standard as long as the underlying basis for the NFPA standard frequency is the same. This does not require a license amendment because the surveillance frequency would satisfy that specified in the current edition of NFPA codes for providing reasonable assurance that the system or component is maintained in an operable condition.¶

installed. Therefore the adequacy of the coverage should be evaluated with respect to the nuclear safety component(s) the sprinkler system is protecting.

- Evaluating a broken/missing hanger on a fire suppression system. The acceptability of this deviation can be evaluated to show that the support of the system is still adequate with the broken/missing hanger and is therefore equivalent to a code compliant system as allowed by the code of record.

Conversely, examples of changes that would require a License Amendment are:

- Reducing the number of fire brigade members required on-site to below five.
- Elimination of the Fire Prevention Program at the plant

Deleted: <#>Revision of concentration of an agent to a value less than that required by the respective code or previously approved value.¶

NFPA 805 Section 4.1, states that, "Deterministic requirements shall be "deemed to satisfy" the performance criteria and require no further engineering analysis." Chapter 4 of NFPA 805 provides the requirements for the baseline evaluation of the fire protection program's ability to achieve the performance criteria outlined in Section 1.5 of NFPA 805. The 'deemed to satisfy' with out additional engineering analysis does not imply that a Plant Change Evaluation would not be performed. For example if a licensee was changing its current licensing basis in a fire area to a 'deterministic method', that change would require a 'Plant Change Evaluation'. Note the Defense in Depth and Safety Margin portion of the "Plant Change Evaluation' would be satisfied by the fact that a 'deterministic' option was chosen for compliance (See Sections 2.4.4.2 and 2.4.4.3 of NFPA 805)."

Appendix I, page I-2 (note: changes are shown to approved FAQ 06-0002, rather than rev. 1 of NEI 04-02).

FIRE PROTECTION PROGRAM FUNDAMENTAL ELEMENT / MINIMUM DESIGN REQUIREMENT CHANGE QUESTIONS

Considering the proposed change, answer the following questions, including a reference to the applicable regulatory, licensing basis, or NFPA document(s), and a brief description of why the proposed change does or does not satisfy the referenced document(s).

3. Does the proposed change involve an **NFPA 805 Chapter 3** requirement as defined in **[Insert appropriate document reference]**? For those fire protection program changes that involve a Nuclear Safety Compliance Strategy requirement or a Radioactive Release requirement, ensure the effect of the change is evaluated in Appendix I, Sections 1.0 and 2.0, respectively.

- ☐ Yes – Proceed to Question 3.a.
- ☐ No – Document basis and proceed to Question 2

a. Is the change editorial or trivial in nature? (See Attachment 1)

o ☐ Yes Document basis and stop.

o ☐ No Proceed to Question 3.b.

b. Does the change meet NFPA 805 Chapter 3 requirements or the previously approved alternative as defined in [Insert appropriate document reference]?

Previously approved alternatives include fire protection engineering analyses that are allowed based upon an approved license amendment described in NEI 04-02, Appendix L. (See Attachment 2)

o ☐ Yes Document conclusions, complete remaining sections.

o ☐ No License Amendment Request must be processed for NRC approval. Complete remaining sections.

Deleted: Changes that deviate from the NFPA standards referenced in NFPA 805 Chapter 3 can be made without NRC approval if allowed by the code of record (so long as the evaluated condition is in accordance with the terms of the code of record) or if the code does not dictate the specific issue (e.g., adequacy of coverage of suppression and detection systems). Ensure documentation for determination of acceptability is included and meets NEI 04-02 requirements for documentation.

Appendix I – Attachment 2, page I-8

"Refer to Appendix L for a process/method to be submitted in the transition LAR is to allow fire protection engineering analyses to address NFPA 805 Chapter 3 requirements:

- When the Chapter 3 requirements are conditional based upon NFPA 805 Chapter 4; and
- For deviations from the NFPA codes and listings for rated components in NFPA 805.

Approval of a license amendment for the use of this process would constitute a "previously approved alternative" that would allow the use of this process without prior approval for specific applications, as long as the application is within the bounds of NRC approval of the proposed methods/processes.

The following are examples of changes that do not require NRC approval:

- Replacing a fire rated component (e.g., fire rated penetration seal, fire door, fire rated wrap, etc.) with a different component having the same or greater fire rating.
- Use of fire hoses manufactured from a different material.
- Use of a valve assembly supplied by a different manufacturer for a suppression system.
- Changes to Fire Brigade Training requirements that do not affect performance.
- Evaluating a blocked sprinkler head(s) for adequate coverage in the area. Chapter 3 of NFPA 805 and the referenced code do not dictate where a sprinkler system should be installed. Therefore the adequacy of the coverage should be evaluated with respect to the nuclear safety component(s) the sprinkler system is protecting."

Deleted: In general, deviations from Chapter 3 must be submitted for NRC approval per the Rule. However, licensees can deviate from the NFPA standards referenced in Chapter 3 without NRC approval if allowed by the code of record and the changed condition is in accordance with the terms of the code of record (e.g., many earlier editions of NFPA Codes included the following statement: "Nothing in this standard is intended to restrict new technologies or alternate arrangements, providing the level of safety prescribed by the standard is not lowered." - From 1985 edition of NFPA 13) or if the code (including NFPA 805, Chapter 3) does not dictate the specific issue (e.g., suppression system or detection system coverage).

Deleted: <#>Changing the surveillance frequency for a fire protection feature, as long as the new frequency is bounded by the NFPA code of record (and does not increase CDF or LERF), providing reasonable assurance that the system or component is maintained in an operable condition.¶

Appendix L – Alternative Method for Engineering Analyses

This Appendix is based upon Frequently Asked Question 06-0008, Revision [TBD], approved by the NRC in Closure memo dated [TBD], as documented in Regulatory Issues Summary (RIS) 2007-[TBD], dated [TBD] ADAMS Accession No. [TBD].

L.1 Background

10 CFR 50.48(c) requires licensees to submit 10 CFR 50.90 license amendment requests for any changes to Chapter 3 features of NFPA 805, unless they have been previously approved by the NRC. Under the standard license condition of GL 86-10, licensees are allowed to make certain types of changes without prior NRC approval as long as the changes do not adversely affect the plant's ability to safely shutdown in the event of a fire.

To apply this process/method, licensees must send the proposed process/methods outlined in this Appendix to the NRC for approval. Then, they may use the approved processes/methods without prior approval for specific applications, as long as the application is within the bounds of NRC approval of the proposed methods/processes. Approval of a license amendment for the use of this process would constitute a "previously approved alternative" as discussed in NFPA 805 Section 3.1.

The licensees' process/methodology must request an amendment under 10 CFR 50.90, using the flexibility available under 10 CFR 50.48(c)(2)(vii), "Performance-Based Methods", to allow 10 CFR 50.48(c) licensees to establish a process that enables them to make changes to Chapter 3 of NFPA 805, as long as those changes only affect the referenced standards and listings, such as Underwriters Laboratory, Inc. or Factory Mutual listings. Under the proposal the licensee will commit to a process to evaluate deviations from secondary codes and listings required by NFPA 805 Chapter 3. The NFPA 805 change evaluation process will be used to ensure that nuclear safety performance goals, objectives and criteria are satisfied along with defense-in-depth and safety margins, as described in 10 CFR 50.48(c)(2)(vii).

Therefore, application of this process/method requires two steps. First, the process/methods and bounds of the process must be submitted to the NRC for approval. Second, following approval by the NRC, all plant specific changes made under this license amendment will undergo the same evaluation process as part of 10 CFR 50.48(c)(2)(vii). This second step, application of the process/method, will not require NRC approval.

This process/method would not apply to NFPA 805 Chapter 3 changes that do not relate to either NFPA codes or listings or changes that are not conditional based on NFPA 805 Chapter 4. These types of changes would continue to require individual 10 CFR 50.90 license amendment requests addressing the specific deviation.

L.2 Process

Proposed addition to the post-NFPA transition fire protection standard license condition (Section C.3.1 of Regulatory Guide 1.205:

"Licensees may perform change evaluations for fundamental fire protection program and design elements of NFPA 805 Chapter 3 that are conditional based on NFPA 805 Chapter 4 requirements.

Licensees may also perform change evaluations for deviations from the NFPA codes and listings for rated components mentioned in NFPA 805, without a 10 CFR 50.90 submittal, as long as the specific requirement for the feature is not included in NFPA 805 Chapter 3 itself, and the NFPA 805 change process is used."

The following table provides the sections of NFPA 805 that will utilize this process/method. Sections that are addressed conditionally by Chapter 4 performance-based process are also identified for completeness.

Column Heading Definition:

Fire Protection Engineering Analysis Process Applicable: Sections of NFPA 805 Chapter 3 containing referenced codes and listings. Note the "Applicability" would only apply to the referenced codes and listings contained within these sections, and the process could not be used to change the NFPA 805 Chapter 3 specific requirements.

Chapter 4 Conditional Section: These NFPA 805 Chapter 3 sections are conditional based upon NFPA 805 Chapter 4 requirements. The requested use of fire protection engineering evaluations for these sections are not limited to referenced codes and listings.

Fire Protection Engineering Analysis and Chapter 4 Not Applicable: These NFPA 805 Chapter 3 sections do not have NFPA 805 Chapter 4 conditions and do not have referenced codes and listings. Therefore, the process/method associated with this Appendix is not applicable and would be outside the scope of the associated LAR.

Section	Title	FP Eng. Analysis Process Applicable	Chapter 4 Conditional Section	FP Eng. Analysis Process and Chapter 4 Not Applicable
3.1	General			X
3.2	Fire Protection Plan			X
3.2.1	Intent			X
3.2.2	Management Policy Direction and Responsibility			X
3.2.3	Procedures			X
3.3	Prevention			X
3.3.1	Fire Prevention for Operational Activities	X		
3.3.2	Structural	X		
3.3.3	Interior Finishes	X		

Appendix L – Alternative Method for Engineering Analyses

Section	Title	FP Eng. Analysis Process Applicable	Chapter 4 Conditional Section	FP Eng. Analysis Process and Chapter 4 Not Applicable
3.3.4	Insulation Materials			X
3.3.5	Electrical			X
3.3.6	Roofs	X		
3.3.7	Bulk Flammable Gas Storage	X		
3.3.8	Bulk Storage of Flammable and Combustible Liquids	X		
3.3.9	Transformers			X
3.3.10	Hot Pipes and Surfaces			X
3.3.11	Electrical Equipment (Note 1)			X
3.3.12	Reactor Coolant Pumps (Note 1)			X
3.4	Industrial Fire Brigade			
3.4.1	On-Site Fire Fighting Capability	X		
3.4.2	Pre-Fire Plans			X
3.4.3	Training and Drills	X		
3.4.4	Fire Fighting Equipment	X		
3.4.5	Off-Site Fire Department Interface			X
3.4.6	Communications			X
3.5	Water Supply	X		
3.6	Standpipe and Hose Stations	X		
3.7	Fire Extinguishers	X		
3.8	Fire Alarm and Detection Systems		X	
3.9	Automatic and Manual Water-Based Fire Suppression Systems		X	
3.10.	Gaseous Fire Suppression Systems		X	
3.11	Passive Fire Protection Features		X	
3.11.1	Building Separation		X	
3.11.2	Fire Barriers		X	
3.11.3	Fire Barrier Penetrations		X	
3.11.4	Through Penetration Fire Stops (Note 2)		X	
3.11.5	Electrical Raceway Fire Barrier Systems (ERFBS)		X	

Note 1 – Separate clarifications [TBD] will be used to clarify the applicability of engineering analyses to the requirements of Section 3.3.11 and 3.3.12 of NFPA 805.

Note 2 – Through penetration fire stops referenced in Section 3.11.4 of NFPA 805 are considered conditional based upon NFPA 805 Chapter 4 requirements, since they are integral to fire barriers (Section 3.11.2)

L.3 Example

Section 3.6.1 of NFPA 805 requires a hose system to be installed per NFPA 14. Using this process/method, a hose system must be available and have access to "all power block buildings," and must also be a Class III standpipe, but may deviate from other specific requirements of NFPA 14. These deviations must not contradict other text in Chapter 3 of NFPA 805. The NFPA 805 change evaluation process will be used to ensure that nuclear safety performance goals, objectives and criteria are satisfied along with defense-in-depth and safety margins, as described in 10 CFR 50.48(c)(2)(vii).

L.4 Justification

Since this process/method will be approved by the NRC as part of the 10 CFR 50.90 submittal, it will meet the legal requirement of 10 CFR 50.48(c)(2)(vii). The basis for the change evaluation to be included in the 10 CFR 50.90 submittal will be that each individual change will be evaluated against the NFPA 805 change process (NFPA 805 performance goals / objectives /criteria, defense-in-depth and safety margins evaluation), and providing this flexibility does not adversely impact the features required by Chapter 3 of NFPA 805 to ensure the NFPA 805 performance goals, performance objectives, and performance criteria are satisfied. By only allowing changes to the secondary codes and listings, the changes are bounded. All features required by Chapter 3 will continue to be required (unless specifically addressed separately from this process in an LAR). Secondary features may be changed based on an evaluation, using the required methods in a similar manner that was previously allowed under the Generic Letter 86-10 license condition, without prior NRC approval.

The method will ensure that the following requirements are met:

10 CFR 50.48(c) Requirement	Method of Accomplishment
(a) The required NFPA 805 performance goals, performance objectives, and performance criteria are satisfied.	The fire protection engineering analysis process includes the assessment of impact on NFPA 805 performance goals, performance objectives, and performance criteria are satisfied. Impact will be assessed per risk-informed, performance-based change process in NEI 04-02 Chapter 5 and Appendices I and J and supplemented by RG 1.205 Section 3.2.
(b) Safety margins are maintained.	Maintaining safety margins will be ensured using the risk-informed, performance-based change process in NEI 04-02 Chapter 5 and Appendices I and J and supplemented by RG 1.205 Section C.3.2.

Appendix L – Alternative Method for Engineering Analyses

10 CFR 50.48(c) Requirement	Method of Accomplishment
(c) Fire protection defense-in-depth is maintained.	Maintaining fire protection defense-in-depth will be ensured using the risk-informed, performance-based change process in NEI 04-02 Chapter 5 and Appendices I and J and supplemented by RG 1.205 Section C.3.2.

The LAR will contain the following information per Regulatory Guide 1.205 Section C.3.2.3:

RG 1.205 Guidance	Method of Accomplishment
(a) detailed description of the alternative risk-informed, performance-based method	The alternative method will be described in the LAR in detail, or a reference to NEI 04-02 will be provided once the process is added to this document.
(b) description of how the method will be applied, the aspects of the FPP to which it will applied, and the circumstances under which it will be applied	Risk-informed, performance based fire protection engineering analyses will be allowed to be applied: ▪ When the Chapter 3 requirements are conditional based upon NFPA 805 Chapter 4; and ▪ For deviations from the NFPA codes and listings for rated components mentioned in NFPA 805.
(c) acceptance criteria, including risk increase acceptance criteria, that the licensee will apply when determining whether the results of an evaluation that uses this methodology meet the required NFPA 805 performance goals, performance objectives, and performance criteria	Acceptance criteria for changes will use the risk-informed, performance-based change process in NEI 04-02 Chapter 5 and Appendices I and J (and supplemented by RG 1.205 Section 3.2).
(d) for PSA-based methodologies, an explanation of how the PSA is of sufficient technical adequacy for evaluation of the changes to which it will be applied	Technical adequacy of the PSA used in the risk-informed, performance-based approach will be in accordance with RG 1.205.
(e) for PSA-based methodologies, a description of the peer review and how the review findings have been addressed	Peer review of the PSA used in the risk-informed, performance-based approach will be in accordance with RG 1.205.

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L.5 Conclusion

This process/method will permit a risk-informed, performance-based approach to evaluate Fire Protection Program changes within the bounds of secondary codes and listings or changes that are conditional based on NFPA 805 Chapter 4. Following NRC approval of a 10 CFR 50.90 license amendment, this process/methodology will permit licensees to evaluate fire protection features without prior NRC approval. Other issues, not involving NFPA codes or listings or changes that are not conditional based on NFPA 805 Chapter 4, would have to be submitted for NRC approval on a case by case basis.