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**[Your Utility Here]**  
**[Your Power Plant Here]**  
**[Your Docket Number(s) Here]**

**Transition to 10 CFR 50.48(c) - NFPA 805  
Performance-Based Standard for Fire Protection for  
Light Water Reactor Electric Generating Plants, 2001  
Edition**

**[YOUR LOGO HERE]**

**Transition Report**

**Revision [#]**

**[Date]**

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High Level: Suggest making a clear distinction between guidance (if necessary) and LAR boilerplate language.

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## Executive Summary

[Enter LICENSEE] will transition the [Enter PLANT] fire protection program and the current licensing basis (CLB) to a new RI-PB alternative per 10 CFR 50.48(c) which includes by reference NFPA 805. The CLB per 10 CFR 50.48(b) and 10 CFR 50, Appendix R, which has been in place since the early 1980s will be superseded.

[Explain commitment to transition to NFPA 805 in this second paragraph]

### Transition Report Structure

The following is a summary of the major elements of this report and where the information is contained:

Section 4 of the Transition Report and associated attachments provide a summary of compliance with NFPA 805 requirements which addresses the following major topics:

- Fundamental Fire Protection Program and Design Elements (Attachment A)
- Nuclear Safety Performance Criteria Transition Review (Attachments B and C)
- Non-Power Operational Modes (Attachment D)
- Radioactive Release Performance Criteria (Attachment E)
- Fire PRA Development and Fire Risk Evaluations (Attachments U, V, W and X)
- Monitoring Program
- Program Documentation, Configuration Control, and Quality Assurance

Section 5 of the Transition Report and associated attachments provide regulatory evaluations for:

- Changes to License Conditions (Attachment M)
- Changes to Technical Specifications, Orders, and Exemptions (Attachments N and O)
- Changes to the UFSAR (for illustrative purposes only) (Attachment R)
- Determination of No Significant Hazards Consideration
- Evaluation of Environmental Considerations

The attachments to the Transition Report include the details to support the transition process and results.

It should be noted that the Transition Report assumes NRC acceptance of certain FAQs pending approval listed in Table H-1 of Attachment H and it is requested that approval be provided as part of the SER for this LAR.

### Commitments (Enclosure I of the LAR)

Enclosure I identifies the regulatory commitments in this document. Any other statements in this submittal represent intended or planned actions. They are provided for information purposes and are not considered to be regulatory commitments.

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## 1.0 INTRODUCTION

The NRC has promulgated an alternative rule for fire protection requirements at nuclear power plants, 10 CFR 50.48(c), NFPA 805. [Enter LICENSEE] is implementing the methodology for transitioning [Enter PLANT] from its current fire protection LB to the new requirements as outlined in NFPA 805. This report describes the transition methodology applied by [Enter LICENSEE] for [Enter PLANT] and documents how [Enter PLANT] will demonstrate compliance with the new requirements.

### 1.1 Background

#### 1.1.1 NFPA 805 – Requirements and Guidance

On July 16, 2004 the NRC amended 10 CFR 50.48, Fire Protection, to add a new subsection, 10 CFR 50.48 (c), which establishes new RI-PB fire protection requirements. 10 CFR 50.48(c) incorporates by reference, with exceptions, the National Fire Protection Association's NFPA 805, Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants – 2001 Edition, as a voluntary alternative for demonstrating compliance with 10 CFR 50.48 Section (b), Appendix R, and Section (f), Decommissioning.

As stated in 10 CFR 50.48 (c)(3)(i), any licensee's adoption of a RI-PB program that complies with the rule is voluntary. This rule may be adopted as an acceptable alternative method for complying with either 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, or 10 CFR 50.48(f), plants shutdown in accordance with 10 CFR 50.82(a)(1).

NEI developed NEI 04-02, Guidance for Implementing a Risk-Informed, Performance-Based Fire Protection Program under 10 CFR 50.48(c), to assist licensees in adopting NFPA 805 and making the transition from their current fire protection LB to one based on NFPA 805. The NRC issued RG 1.205, Risk-Informed, Performance-Based Fire Protection for Existing Light Water Nuclear Power Plants, which endorses NEI 04-02, in May 2006.

A depiction of the primary document relationships is shown in Figure 1-1:

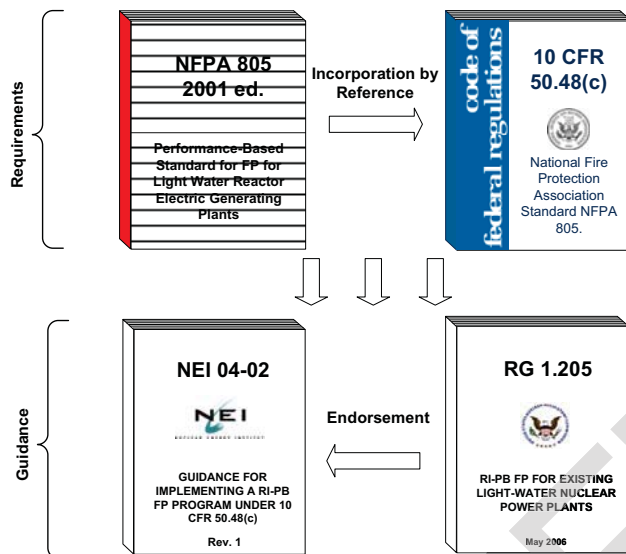


Figure 1-1 NFPA 805 Transition – Implementation Requirements/Guidance

## 1.1.2 Transition to 10 CFR 50.48(c)

### 1.1.2.1 Start of Transition

In [Enter year], [Enter PLANT] decided to transition the fire protection licensing basis to the RI-PB alternative in 10 CFR 50.48(c). [Enter LICENSEE] submitted a letter of intent to the NRC on [Enter date and ML Reference] for [Enter PLANT] to adopt NFPA 805 in accordance with 10 CFR 50.48(c).

By letter dated [Enter date and ML Reference], the NRC granted a two year enforcement discretion period for existing identified items. In a letter dated [Enter date and ML Reference], [Enter LICENSEE] requested an extension of the period of enforcement discretion for unresolved items from 2 years to 3 years for [Enter PLANT]. The NRC granted a third year of enforcement discretion by letter dated [Enter date and ML Reference] extending the [Enter PLANT] LAR submittal date to [Enter Date]. In accordance with NRC Enforcement Policy, the enforcement discretion period will continue until the NRC approval of the license amendment request is completed.

### 1.1.2.2 Transition Process

The [Enter PLANT] NFPA 805 transition is being conducted as part of a fleet initiative. The initiative includes the following high level activities:

- [to the extent this is true] A new fire SSA (continuation of activities started in 2000 for 10 CFR 50, Appendix R)



- A new Fire PRA using NUREG/CR 6850, EPRI/NRC-RES Fire PRA Methodology for Nuclear Power Facilities, as guidance and a revision to the Internal Events PRAs to support the Fire PRAs
- Completion of activities required to transition the CLB to 10 CFR 50.48(c) as specified in NEI 04-02

## 1.2 Purpose

The purpose of the Transition Report is as follows:

- 1) Describe the process implemented by [Enter LICENSEE] to transition the current [Enter PLANT] fire protection program to compliance with the additional requirements of 10 CFR 50.48(c);
- 2) Summarize the results to date of the [Enter PLANT] transition process;
- 3) Explain the bases for [Enter LICENSEE]'s conclusions that the [Enter PLANT] fire protection program complies with 10 CFR 50.48(c) requirements (pending approval of identified NFPA 805 Chapter 3 deviations); and
- 4) Describe the new [Enter PLANT] fire protection LB.

## 2.0 OVERVIEW OF EXISTING FIRE PROTECTION PROGRAM

### 2.1 Current Fire Protection Licensing Basis

[Enter PLANT] was licensed to operate on February 6, 1973 (Unit 1), October 6, 1973 (Unit 2), and July 19, 1974 (Unit 3). As a result, the [Enter PLANT] fire protection program is based on compliance with 10 CFR 50.48(a), 10 CFR 50.48(b), and the following License Condition:

[Enter LICENSEE] [Enter PLANT] Renewed Facility Operating License Condition 3.D for each unit states:

[Insert current license condition]

### 2.2 NRC Acceptance of the Fire Protection Licensing Basis

[Provide an explanation of each SER]

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## 3.0 TRANSITION PROCESS

### 3.1 Background

Section 4.0 of NEI 04-02 describes the process for transitioning from compliance with the current fire protection licensing basis to the new requirements of 10 CFR 50.48(c). NEI 04-02 contains the following steps:

- 1) Licensee determination to transition the licensing basis and devote the necessary resources to it;
- 2) Submit a Letter of Intent to the NRC stating the licensee's intention to transition the licensing basis in accordance with a tentative schedule;
- 3) Conduct the transition process to determine the extent to which the current fire protection licensing basis supports compliance with the new requirements and the extent to which additional analyses, plant and program changes, and alternative methods and analytical approaches are needed;
- 4) Submit a LAR;
- 5) Complete transition activities that can be completed prior to the receipt of the License Amendment;
- 6) Receive SER; and
- 7) Complete implementation of the new licensing basis, including completion of modifications identified in Attachment S

### 3.2 NFPA 805 Process

Section 2.2 of NFPA 805 establishes the general process for demonstrating compliance with NFPA 805. This process is illustrated in Figure 3-1. It shows that except for the fundamental fire protection requirements, compliance can be achieved on a fire area basis either by deterministic or RI-PB methods. (The NRC permits licensees to use RI-PB methods to comply with the fundamental fire protection requirements, but those applications must be approved through the NRC's license amendment process.) Consistent with the guidance in NEI 04-02, [Enter PLANT] is implementing this process by first determining the extent to which its current fire protection program supports findings of deterministic compliance with the requirements in NFPA 805. RI-PB methods are being applied to the requirements for which deterministic compliance could not be shown.

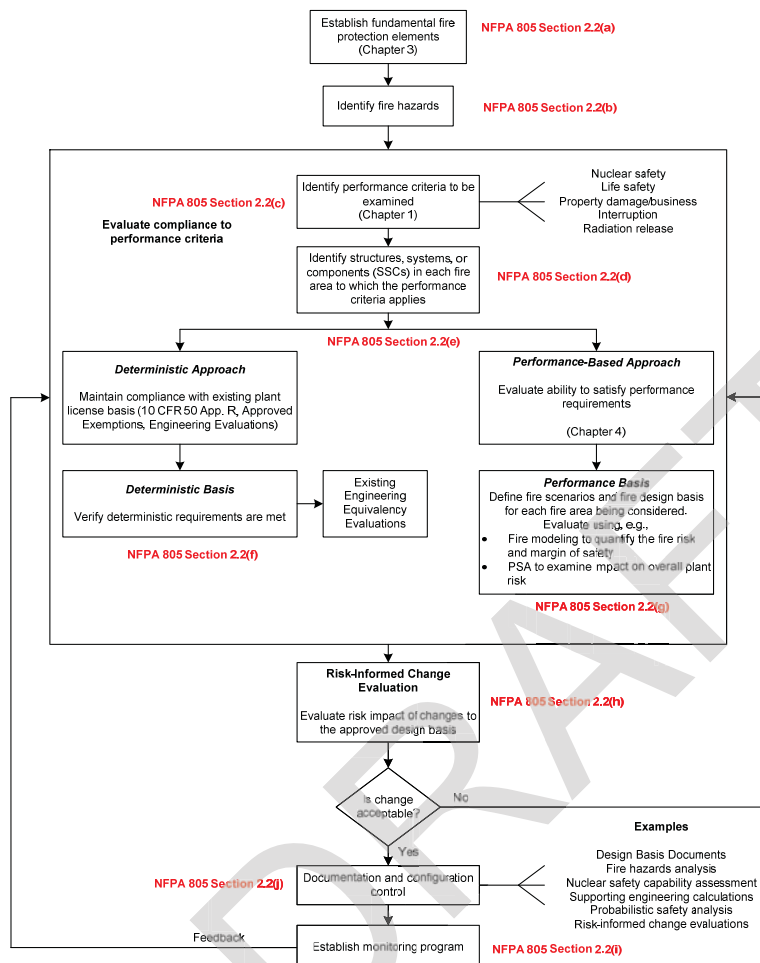
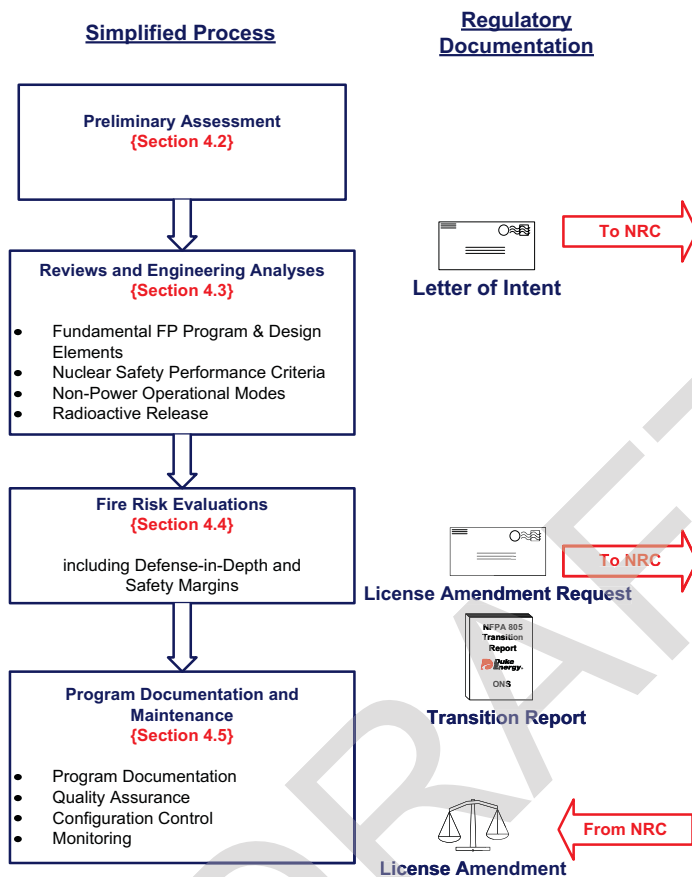


Figure 3-1 NFPA 805 Process [NEI 04-02 Figure 3-1 based on Figure 2-2 of NFPA 805]<sup>1</sup>

### 3.3 NEI 04-02 – NFPA 805 Transition Process

NFPA 805 contains technical processes and requirements for a RI-PB fire protection program. NEI 04-02 was developed to provide guidance on the overall process (programmatic, technical, and licensing) for transitioning from a traditional fire protection licensing basis to a new RI-PB method based upon NFPA 805, as shown in Figure 3-2.

<sup>1</sup> Note: 10 CFR 50.48(c) does not incorporate by reference Life Safety and Plant Damage/Business Interruption goals, objectives and criteria. See 10 CFR 50.48(c) for specific exceptions to the incorporation of NFPA 805.



**Figure 3-2 Implementing the New Licensing Basis [Based on NEI 04-02 Figure 3-3]**

Section 4.0 of NEI 04-02 describes the detailed process for assessing a fire protection program for compliance with NFPA 805, as shown in Figure 3-3. [Enter PLANT] conducted the detailed evaluation processes by establishing teams comprised of knowledgeable personnel. The assessment processes used by these teams and the results of the assessments are discussed later in this report.

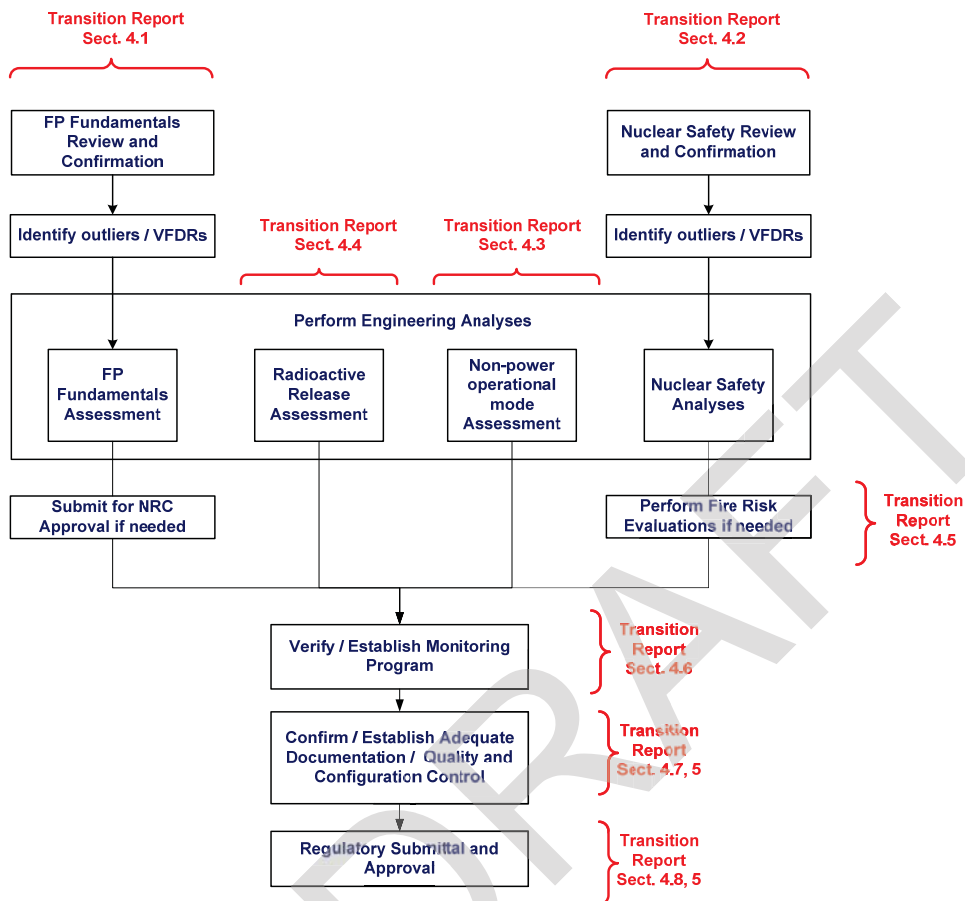


Figure 3-3 Transition Process (Simplified) [based on NEI 04-02 Figure 4-1]

### 3.4 NEI 04-02 Frequently Asked Questions (FAQs)

The NRC has worked with NEI and two Pilot Plants (ONS and Harris Nuclear Plant) to define the licensing process for transitioning to a new licensing basis under 10 CFR 50.48(c) and NFPA 805. Both the NRC and the industry recognized the need for additional clarifications to the guidance provided in RG 1.205, NEI 04-02 Revision 1, and NFPA 805. The NFPA 805 FAQ process was jointly developed by NEI and NRC to facilitate timely clarifications of NRC positions. This process is described in a letter from the NRC dated July 12, 2006, to NEI (ML061660105) and in Regulatory Issues Summary (RIS) 2007-19, Communicating Clarifications of Staff Positions in RG 1.205 Concerning Issues Identified During Pilot Application of NFPA Std 805, dated August 20, 2007 (ML071590227).

Under the FAQ Process, transition issues are submitted to the NEI NFPA 805 Task Force for review, and subsequently presented to the NRC during public FAQ meetings. Once the NEI NFPA 805 Task Force and NRC reach agreement, the NRC issues a memorandum to indicate that the FAQ is acceptable. NEI 04-02 will be revised to incorporate the approved FAQs. This is an on-going revision process that will continue through the transition of NFPA 805 transition plants. Final closure of the FAQs will occur when RG 1.205, which endorses the new revision of NEI 04-02, is approved by the NRC. It is expected that additional FAQs will be written and existing FAQs will be revised as the Pilot Plant process continues. These changes should be documented in the [Enter PLANT] SER so there is clear documentation of the final methodology used in the development of the [Enter PLANT] transition.

Attachment H contains the FAQs issued to date, that have been used to clarify the guidance in RG 1.205, NEI 04-02, NFPA 805 and in the preparation of this LAR.

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## 4.0 COMPLIANCE WITH NFPA 805 REQUIREMENTS

### 4.1 Fundamental Fire Protection Program and Design Elements

The Fundamental Fire Protection Program and Design Elements are established in Chapter 3 of NFPA 805. Section 4.3.1 of NEI 04-02 provides a systematic process for determining the extent to which the CLB and plant configuration meets these criteria and for identifying the fire protection program changes that would be necessary for compliance to NFPA 805. NEI 04-02 Appendix B-1 provides guidance on documenting the comparison of the Fire Protection Program requirements of NFPA 805 Chapter 3 to the current fire protection program.

#### 4.1.1 Overview of Evaluation Process

The comparison of the [Enter PLANT] Fire Protection Program to NFPA 805 Chapter 3 (NEI 04-02 Table B-1) was performed using the methodology contained in [Enter LICENSEE] Calculation [enter number and title] and the guidance contained in Section 4.3.1 of NEI 04-02. The methodology is depicted in Figure 4-1:

Each section and subsection of NFPA 805 Chapter 3 was reviewed against the current fire protection program. Upon completion of the activities associated with the review, the following compliance statement(s) was used:

- Complies - For those sections/subsections determined to meet the specific requirements of NFPA 805
- Complies with Clarification - For those sections/subsections determined to meet the requirements of NFPA 805 with clarification
- Complies by previous NRC approval - For those sections/subsections where the specific NFPA 805 Chapter 3 requirements are not met but previous NRC approval of the configuration exists.
- Complies via Engineering Equivalency Evaluation - For those sections/subsections determined to be equivalent to the regulation and/or requirement and documented by engineering analysis
- License Amendment Approval Requested - For those sections/subsections determined to need a license amendment request: A summary of the bases of acceptability for the license amendment request is provided in the Compliance Basis field (See Attachment L for details)

**Comment [EK1]:** NEI 04-02 reflects methodology and FAQ 07-0036. However minor update to reflect RAIS were made – no new FAQ (flow chart changed and strengthened compliance statements)

**Comment [EK2]:** Note Figure 4-1 also depicts a 'Further Action Required' decision. This indicates an interim position used during the process of completing the B-1 Table. 'Further Action Required' entries should be resolved prior to submitting the LAR. If they are not a confirmatory activity should be added to the LAR submittal.

Should this be Existing Engineering Equivalency Evaluation?

This bullet is unclear. What compliance strategy is at issue? It should be clear that the LAR is requesting explicit approval. Same comment for Figure 4.1 bottom line.



This flowchart does not include an option for bringing a VFDR into compliance through modification

copy/paste error?

[Your Utility Here]

4.0 Compliance with NFPA 805 Requirements

Unclear why guidance of this type is in an LAR Template. Suggest using a table with this content filled into the cells as it would appear in an LAR.

Suggest adding content about continued validity

Suggest "document previous approval, with revision numbers"

"Open" is a loaded term, consider using other language

See 5th bullet on previous page

A LAR would normally need more than summary level information for explicit approval

Suggest adding notes that EEE's are not involved in PB compliance strategies

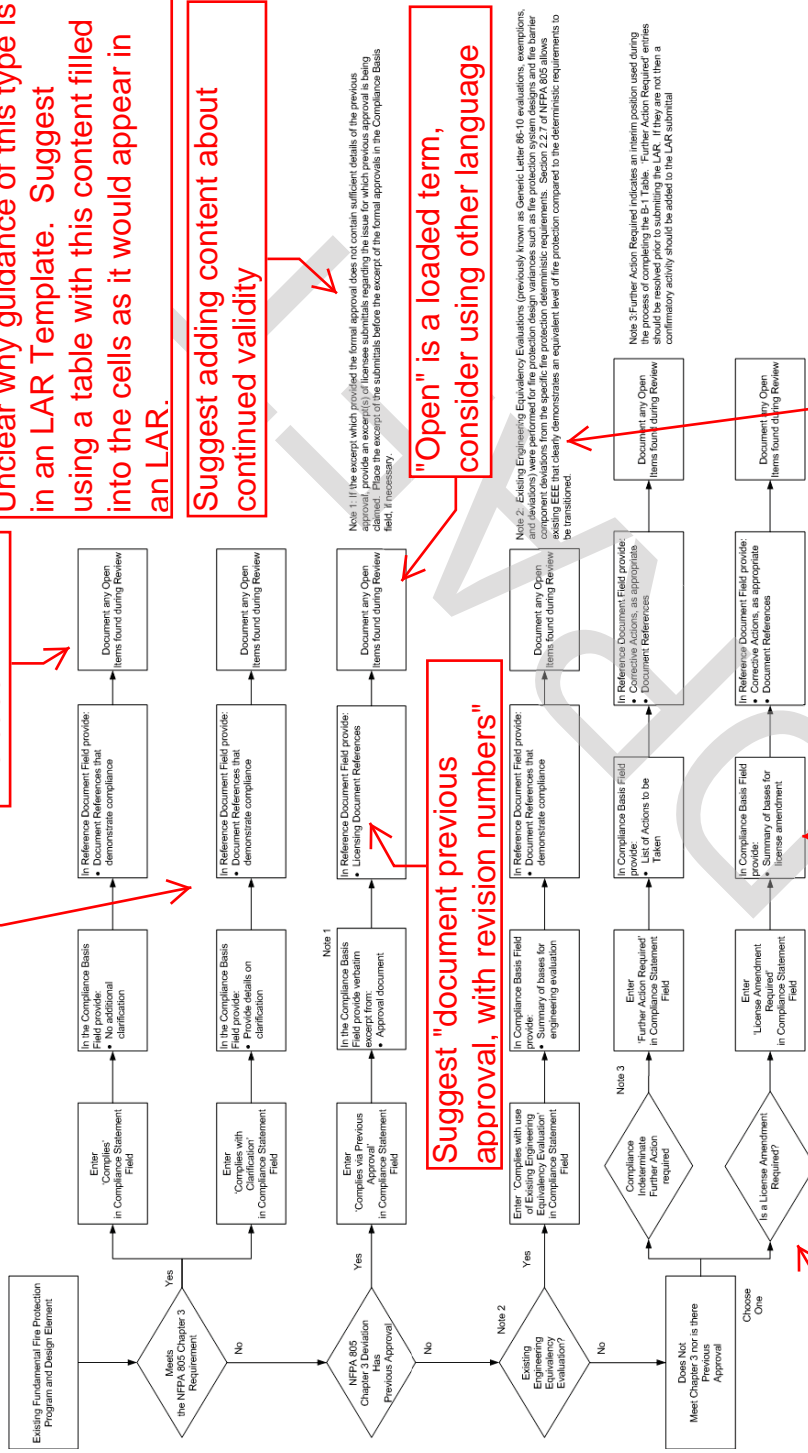


Figure 4-1 - Fundamental Fire Protection Program and Design Elements Transition Process [Based on NEI 04-02 Figure 4-2/FAQ 07-0036]

## 4.1.2 Results of the Evaluation Process

Use positive compliance statements (all of 4.1.2)

### 4.1.2.1 NFPA 805 Chapter 3 Requirements Met or Previously Approved by the NRC

Requirements in NFPA 805 Chapter 3 that have been determined to 'comply' or 'comply by previous NRC approval' are included in Attachment A. References to the document(s) that justify that position are included in Attachment A.

As written, it is unclear what is in Attachment A. Documentation of compliance? Is any further description possible on a summary level? Summary statements of positive compliance would aid reviewers

### 4.1.2.2 NFPA 805 Chapter 3 Requirements Not Previously Approved by NRC

The following sections of NFPA 805 Chapter 3 are not specifically met nor do previous NRC approvals of alternatives exist:

- 3.3.1.2(1) – Approval is requested for the use of non fire retardant wood in special cases.
- 3.3.1.3.4 – Approval is requested for the use of temporary heaters.
- 3.3.7 – Approval is requested for the storage of flammable gas cylinders in special cases.

**Comment [EK3]:** Need engineering evaluations to meet the tests of Section 50.48(c)(2)(vii). Performance-Based Methods or 50.48(c)(4)

**Comment [EK4]:** May need a FAQ to determine which regulatory path is correct for this section.

Suggest clarifying that the bullets are examples.

The specific deviation and a discussion of how the approaches satisfies 10 CFR 50.48(c)(2)(vii) or (c)(4) requirements are provided in Attachment L. Open items have been identified for these items and will remain open pending approval of the LAR.

### 4.1.2.3 NFPA 805 Chapter 3 Requirements Requiring Clarification of Prior NRC Approval

The following sections of NFPA 805 Chapter 3 are those for which specific NRC previous approval is uncertain. For each section a discussion of [Enter PLANT] submittals and NRC's SER is provided

- [Summarize items for which clarification is required]

These items are discussed in Attachment S.

Suggest moving before 4.1.2.2

## 4.1.3 Definition of Power Block and Plant

The definition of "Power Block" and "Plant" as referenced in NFPA 805, Chapter 3 was clarified in FAQ 06-0019. "Power Block" and "Plant" refer to "Structures that have equipment required for nuclear plant operations," such as Containment, Auxiliary Building, Service Building, Control Building, Fuel Building, Radioactive Waste, Water Treatment, Turbine Building, and intake structures. These are the structures that are identified in the facility's CLB.

The "Power Block" structures are listed in Attachment I.

Language is not template style.

## 4.2 Nuclear Safety Performance Criteria Transition Review

The Nuclear Safety Performance Criteria are established in Section 1.5 of NFPA 805. Chapter 4 of NFPA 805 provides the methodology to determine the fire protection

Is a separate attachment necessary? Would Attachment I identify structures that are not in the power block? Suggest a generic statement of the basis for the exclusion of the balance of plant from the power block.

systems and features required to achieve the performance criteria outlined in Section 1.5. Section 4.3.2 of NEI 04-02 provides a systematic process for determining the extent to which the CLB meets these criteria and for identifying any necessary protection program changes. NEI 04-02, Appendix B-2 provides guidance on documenting the transition of Nuclear Safety Capability Assessment Methodology and the Fire Area compliance strategies.

#### 4.2.1 Nuclear Safety Capability Assessment Methodology Review

The Nuclear Safety Capability Assessment Methodology review consists of three processes:

- Establishing compliance with NFPA 805 Section 2.4.2
- Establishing the Safe and Stable Conditions for the Plant
- Transitioning Operator Manual Actions to Recovery Actions
- Evaluating Multiple Spurious Operations

The methodology for demonstrating reasonable assurance that a fire during non-power operational modes is an additional requirement of 10 CFR 50.48(c) and is addressed in Section 4.3.

##### 4.2.1.1 Compliance with NFPA 805 Section 2.4.2

#### Overview of Process

The comparison of the [Enter PLANT] 10 CFR 50, Appendix R 'Deterministic' safe shutdown methodology to NEI 00-01 Chapter 3 (NEI 04-02 Table B-2) was performed and documented in a [Enter LICENSEE] Calculation entitled, "NFPA 805 Transition B-2 Table", and the guidance contained in FAQ 07-0039, Lessons Learned – NEI 04-02 B-2 and B-3 Tables (Note FAQ 07-0039 was revised to address the B-2 Table only. FAQ 08-0055 will be submitted to address the B-3 Table). The safe shutdown methodology review evaluates the existing post-fire SSA against the guidance provided in Section 2.4.2 of NFPA 805 for the Nuclear Safety Capability Assessment. This methodology review consisted of a review of NEI 00-01 Chapter 3, "Deterministic Methodology," as discussed in Appendix B-2 of NEI 04-02.

The methodology steps are depicted in Figure 4-2:

Step 1 – Assemble documentation. Gather industry and plant-specific information.

Step 2 – Determine and document the applicability of each section of Chapter 3 of NEI 00-01. Correlate the specific section of NFPA 805 2.4.2 to the corresponding section of NEI 00-01 Chapter 3. Note: NEI 00-01 Chapter 3 contains methodology and "acceptable methods," but does not contain regulatory requirements. NEI 00-01 Chapter 3 has methods that "can" and "may" be used to perform an analysis in an acceptable and/or efficient manner. Judgment will be necessary to determine the impact of a lack of alignment with NEI 00-01 guidance on the acceptability of the methodology transition. Based upon the content of the NEI 00-01 methodology statements, determine if the section is applicable to the station. Examples where a section may not be applicable include:

- Guidance provided in NEI 00-01 specifically for BWRs.
- Specific reference to equipment/equipment types/cable types that are not used at the plant under review.

Step 3 – Perform comparison of plant-specific safe shutdown methodology to applicable sections of NEI 00-01. Determine if failure to maintain strict alignment with the guidance in NEI 00-01 could have adverse consequences. Since NEI 00-01 is a guidance document, portions of its text could be interpreted as ‘good practice’ or intended as an example of an efficient means of performing the analyses. In some instances the commentary presents analytical preferences which can be performed in a number of different ways without impacting the validity of the results. These sections of NEI 00-01 can be dispositioned without further review. Document whether the plant:

- Aligns with the NEI guidance,
- Aligns with intent,
- Does not align, or
- Does not align but has previous approval.

Provide the basis for the alignment statements.

Step 4 – Document Open Items associated with the review of the NEI 00-01 guidance.

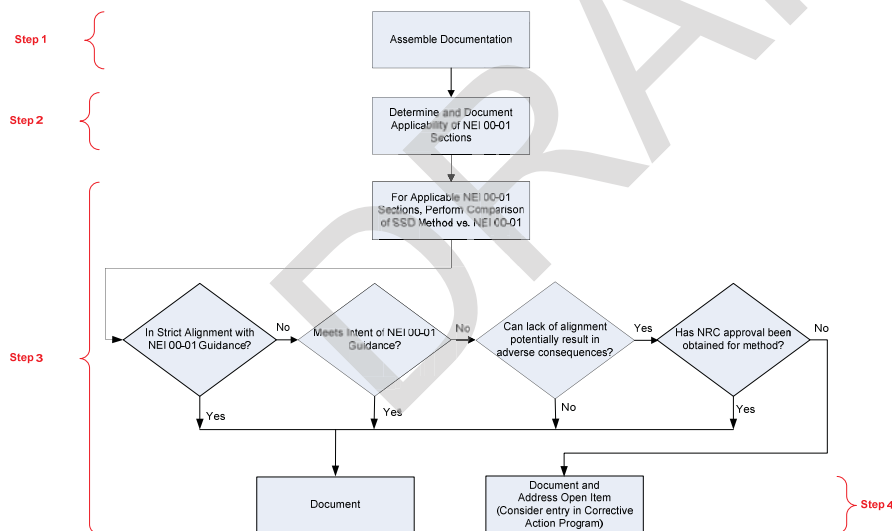


Figure 4-2 – Summary of Nuclear Safety Methodology Review Process (FAQ 07-0039)

## Results from Evaluation Process

The specific results of the [Enter PLANT] Nuclear Safety Capability Assessment Methodology Review are included in Attachment B. The [Enter PLANT] methodology aligns with the guidance in NEI 00-01 with the following exceptions:

- [Enter specific exceptions]

### 4.2.1.2 Safe and Stable

#### Overview of Process

[later]

#### Results

[later]

### 4.2.1.3 Transition of Operator Manual Actions to Recovery Actions

#### Overview of Process

[later]

#### Results

[later]

### 4.2.1.4 Evaluation of Multiple Spurious Operations

#### Overview of Process

[later]

#### Results

[later]

## 4.2.2 Fire Area-by-Fire Area Transition

### 4.2.2.1 Overview of Evaluation Process

The Fire Area-by-Fire Area Transition of the [Enter PLANT] Fire Protection Program (NEI 04-02 Table B-3) was performed using the methodology contained in a [Enter LICENSEE] Calculation entitled, "NFPA-805 Transition B-3 Table/Report," and the guidance contained in FAQ 07-0039, Lessons Learned – NEI 04-02 B-2 and B-3 Tables. (Note FAQ 07-0039 was revised to address the B-2 Table only. FAQ 08-0055 will be submitted to address the B-3 Table.) The methodology for performing the Fire Area-by-Fire Area Transition depicted in Figure 4-3 is outlined as follows:

Step 1 - Assemble documentation. Gather industry and plant-specific fire area analyses and licensing basis documents.

Step 2 – Assess accomplishment of performance goals. Document the method of accomplishment, in summary level form, for the fire area. The description of key assumptions utilized in the SSA and an overview of accomplishment of each of the performance goals are included in Attachment C.

**Comment [EK5]:** This will reflect the revisions to FAQ 07-0030

**Comment [EK6]:** This will reflect FAQ 07-0038

**Comment [EK7]:** This will be revised to reflect the new "fire risk evaluation" process and the "required fire protection systems and features" ONS / HNP RAIs

Step 3 – Perform Licensing Action Reviews. Perform a review of the licensing aspects of the selected fire area and document the results of the review.

Step 4 – Perform Engineering Evaluation Reviews. Perform a review of appropriate engineering evaluations to determine and assess the basis for acceptability. Document the purpose of the evaluation and the review.

Step 5 – Document results and define Open Items/Change Evaluations.

Document the review of SSD documents (Step 1), assessment of performance goal accomplishment for each fire area (Step 2), review of fire area licensing actions (Step 3), and review of engineering evaluations (Step 4). Document and categorize open items that result from this review using the following process:

- Categorize the following types of open items as include in LAR/TR “Yes”:
  - Variances from the current deterministic licensing basis for which change evaluations were performed (Note these will remain open pending the approval of the LAR) (See Section 4.5).
  - Items which require NRC concurrence of prior approval (See Attachment T).
  - Items for which modifications are postulated (See Attachment S).
- Categorize the following types of open items as include in LAR/TR “No” (Note these items may be closed without NRC approval):
  - Minor procedure enhancements.
  - Transition to CSD and CSD actions.
  - Bin A through G OMAs.
  - SSA documentation enhancements.
  - Items in compliance.

In addition to documenting open items, provide the following information:

- Document if suppression and detection is installed in the area and if the suppression and detection is required to be installed in the area for NFPA 805 compliance.
- Document the results of the effect of fire suppression activities on nuclear safety performance criteria.
- Provide any additional summary level information applicable to the fire area that is outside of the content in the performance SSD goals in the Fire Area Comments field.



#### 4.2.2.2.1 Results of the Existing Engineering Equivalency Evaluation Review

**Comment [EK8]:** Revise to reflect new interpretation of FAQ 06-008 and 07-0033

Make it its own subsection

- Determination that the EEEE is not based solely on quantitative risk evaluations,
- Determination that the EEEE is an appropriate use of an engineering equivalency evaluation,
- Determination that the EEEE is of appropriate quality,
- Determination that the standard license condition is met,
- Determination that the EEEE is technically adequate, and

- Determination that the EEEE reflects the plant as-built condition.

In accordance with the guidance provided in RG 1.205, Revision 0, Regulatory Position C.3.2.4 and FAQ 07-0033, Transition of Existing Engineering Equivalency Evaluations, EEEEs identified in Attachment J as 'Include in LAR/TR – Yes' are evaluations of variances from the requirements of NFPA 805 Chapter 3 and as such are included in the LAR.

#### 4.2.2.2.2 Results of the Licensing Action Review

The existing licensing actions (exemption requests) review was performed using the methodology contained in a [Enter LICENSEE] Calculation entitled "NFPA 805 Transition Licensing Action Review". The methodology for the licensing action review included the following:

- Determination of the bases for acceptability of the licensing action.
- Determination that these bases for acceptability are still valid and required for NFPA 805.

Licensing Actions were reviewed at [Enter PLANT]. All licensing actions will be transitioned into the post-transition NFPA 805 fire protection program. Since these licensing actions (exemptions and approval of the SSF) are considered compliant under 10 CFR 50.48(c), they will be superseded as part of the LAR process. Attachment K contains the results of the Licensing Action Review.

In accordance with the requirements of 10 CFR 50.48(c) these licensing actions are being superseded and are also included in Attachment O, Orders and Exemptions.

#### 4.2.2.3 Results of the Fire Area-by-Fire Area Review

Attachment C contains a description of key assumptions utilized in the SSA and an overview of accomplishment of each of the performance goals. Attachment C also contains the results of the Fire Area Transition review (NEI 04-02 Table B-3). These fire areas are addressed below in section 4.2.2.3.1. The NEI 04-02 Table B-3 includes the following summary level information for each fire area:

- Regulatory Basis – Both the 10 CFR 50, Appendix R pre-transition (e.g., III.G.1.b, III.G.2.b, etc.) and NFPA 805 post-transition (e.g., 4.2.3 or 4.2.4) regulatory bases are included.
- Performance Goal Summary – An overview of the method of accomplishment of each of the performance criteria in NFPA 805 Section 1.5 is provided.
- Reference Documents – Specific References to Nuclear Safety Capability Assessment Documents are provided.
- Licensing Actions – Specific References to Exemption Requests that will remain part of the post-transition licensing basis and the Basis for Acceptability of that Licensing Action and summaries of RI-PB change evaluations performed for variances from the current deterministic criteria. Attachment T contains items for which [Enter PLANT] is requesting concurrence of prior approval.

**Comment [EK9]:** Revise to reflect RG 1.205 revision

Make it its own subsection

**Comment [EK10]:** Revise to reflect definitions of safe and stable and primary control station, and fire risk evaluations – FAQ 07-0055



- EEEE – Specific References to EEEE that rely on determinations of “adequate for the hazard” that will remain part of the post-transition licensing basis and the Basis for Acceptability of that EEEE.
- Open Items – Specific References to Open Items such as modifications, Change Evaluations, or procedural changes. Refer to Section 4.5 for a discussion of the change evaluations.

As pointed out in Section 4.2.1.2, given a fire, NFPA 805 does not require a plant to transition to cold shutdown. The fire area-by-fire area assessment documents the method of accomplishment of the NFPA 805 performance goals (including the transition to cold shutdown). During transition, [Enter PLANT] did not attempt to change the SSA to remove equipment/cables (and protection strategies) that were required to achieve and maintain cold shutdown. However, as allowed by the NFPA 805 change process and the revised license condition, [Enter PLANT] may revise these strategies post-transition.

### 4.3 Non-Power Operational Modes

#### 4.3.1 Overview of Evaluation Process

The current industry approach for evaluating risk during shutdown conditions involves the normal fire protection program defense-in-depth actions as well as qualitative and/or quantitative assessments and is based on based on NUMARC 93-01, Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants and NUMARC 91-06, Guidelines for Industry Actions to Assess Shutdown Management, as documented in NEI 04-02 and FAQ 07-0040, Clarification on Non-Power Operations. The strategy for controls/protection of equipment during NPO modes for plants adopting NFPA 805 is a combination of the normal fire protection defense-in-depth actions; and additional risk-informed steps based on the availability of systems and equipment needed to support KSFs and whether or not the plant is in a HRE. The goal (as depicted in Figure 4-5) is to ensure that contingency plans are established when the plant is in an HRE, and there is the possibility of losing a KSF due to fire. Additional controls/measures are evaluated during an NPO mode where the risk is intrinsically high<sup>2</sup>. During low risk periods, normal risk management controls and fire prevention/protection processes and procedures will be utilized.

<sup>2</sup> According to Section 1.3.1, “Nuclear Safety Goal,” of NFPA 805, “[t]he nuclear safety goal shall be 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.” As stated, this does not mandate a fire risk evaluation comparable to what would be expected during full power. Therefore, it is recognized that, for non-power operations, a “risk-informed” approach has been developed which addresses what is believed to be (and evidenced through the referenced studies) the most risk-significant POSs during non-power operations when including considerations of fire effects, namely total loss of a KSF. As such, these are expected to account for most, if not all, POSs that can be considered “intrinsically high” when considering fire effects. This approach, while compliant with 10 CFR 50.48(c), does not constitute a complete surrogate for a non-power risk evaluation since, under plant-specific conditions (believed to be relatively rare), there may be non-power POSs where less than total loss of a KSF (e.g., a reduction in the availability of credited paths [“redundancy decrease”] such that at least one path still remains), including consideration of fire effects, could result in a risk-significant contribution.

Where does Low Power go?

Sections 4.3 & 4.4 contain many flowcharts and language that reads as guidance. Suggest re-working the content into template style language.

Recommend removal of the note.

The process to demonstrate that the nuclear safety performance criteria are met during NPO modes involves the following steps:

- Review the existing Outage Management Processes
- Identify Equipment/Cables:
  - Review plant systems to determine success paths that support each of the defense-in-depth KSFs, and
  - Identify cables required for the selected components and determine their routing.
- Perform Fire Area Assessments (identify pinch points).
- Manage risk associated with fire-induced vulnerabilities during the outage.

The process is depicted in Figures 4-4 and 4-5. The results are presented in Section 4.3.2.

Not in  
template  
style.

DRAFT

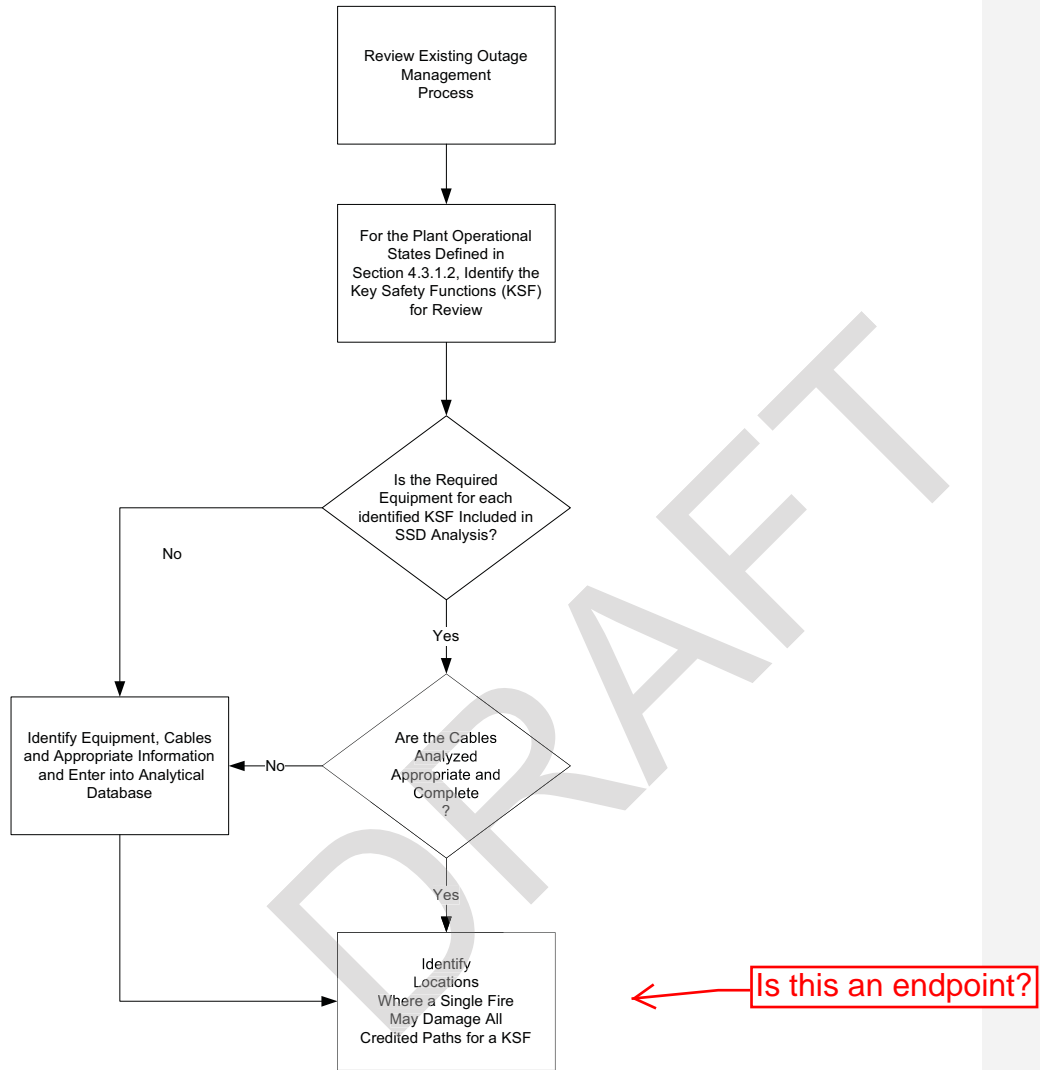


Figure 4-4 Review POSs, KSFs, Equipment, and Cables, and Identify Pinch Points

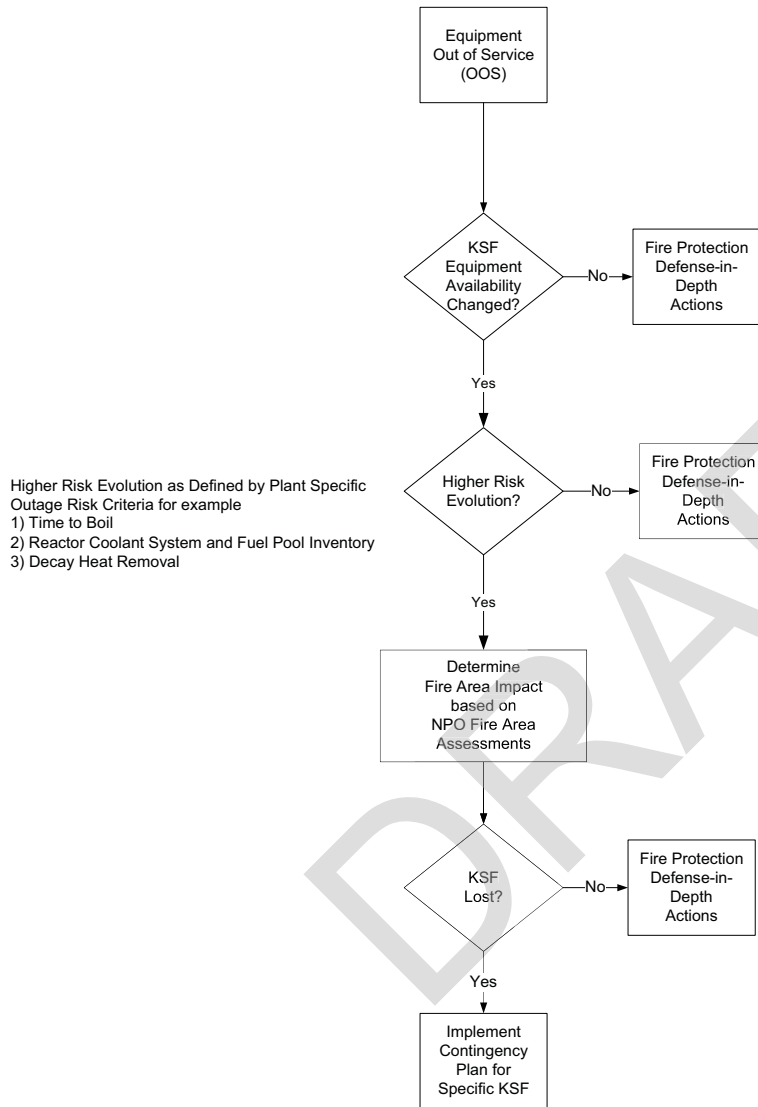


Figure 4-5 Manage Risks

Suggest not using "risk" Perhaps use "pinchpoints" or "events" instead

### 4.3.2 Results of the Evaluation Process

[Insert a discussion of the results of the NPO evaluation. With specific focus on the following items:

- Applicable Plant Operational States
- Component selection (including power supplies, supporting equipment, etc.)
- Circuit Analysis
- Results of pinch point analysis
- Methods to manage risk

## 4.4 Radioactive Release Performance Criteria

Comment [EK11]: Revise to reflect RAIs and FAQ 07-0056 – Table format

### 4.4.1 Overview of Evaluation Process

The review of the Fire Protection Program against NFPA 805 requirements for fire suppression related radioactive release (NEI 04-02 Table G-1) was performed using the methodology contained in a [Enter LICENSEE] Calculation entitled, "NFPA 805 Transition Radiological Release G-1 Table." The methodology steps are outlined as follows:

Step 1 - Perform Fire Pre-Plan review. Review the site fire pre-plans for locations that have the potential for radiological contamination. The review shall ensure specific guidance is included in the fire pre-plan for containment and monitoring of potentially contaminated materials.

Step 2 - Perform Fire Brigade Training Plan review. The site fire brigade training materials shall be reviewed to ensure specific steps are included for dealing specifically with containment and monitoring of potentially contaminated materials and monitoring of potentially contaminated fire suppression products following a fire event.

Step 3 – Establish engineering controls. During the review process, determine if engineering controls or additional fire brigade equipment could be established to minimize the release of radioactive materials (e.g., smoke and/or contaminated water).

Step 4 – Provide documentation.

### 4.4.2 Results of the Evaluation Process

The radioactive release review determined the current FP program is compliant with the requirements of NFPA 805 and the guidance in NEI 04-02 and RG 1.205.

The site specific review of the direct effects of fire suppression activities on radioactive release is summarized in Attachment E, the NEI 04-02 Table G-1.

[insert a discussion of any plant specific compliance strategies]

## 4.5 Fire PRA and Fire Risk Evaluation Methodology

RI-PB evaluations are an integral element of an NFPA 805 fire protection program. Key parts of RI-PB evaluations include:

- A Fire PRA (discussed in Section 4.5.1 and Attachments ???).
- Fire Modeling (discussed in Section 4.5.2).
- NFPA 805 Fire Risk Evaluation Process (discussed in Section 4.5.3).

#### 4.5.1 Fire PRA Development and Assessment

A Fire PRA model was developed for [Enter PLANT] using the guidance provided in NUREG/CR-6850/EPRI TR-1011989. The resulting model was reviewed against the requirements of Part 3 "Internal Fires at Power Probabilistic Risk Assessment Requirements," of the ASME and ANS combined PRA Standard, ASME/ANS RA-S-2009Sa, "Standard for Level 1/Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Application," (hereafter referred to as Fire PRA Standard). [Enter PLANT] conducted a peer review by independent industry analysts as required by RG 1.200 prior to a risk-informed submittal. Attachment H provides a listing of the approved FAQs that affect the overall license transition process. The resulting fire risk assessment model is used as the analytical tool to perform Fire Risk Evaluations during the transition process.

Section 4.5.1.1 describes the Internal Events PRA model. Section 4.5.1.2 describes the Fire PRA model. Section 4.5.1.3 describes the results and resolution of the peer review of the Fire PRA, and Section 4.5.1.4 describes insights gained from the Fire PRA.

##### 4.5.1.1 Internal Events PRA

The [Enter PLANT] base internal events PRA ([Enter PLANT Model Identifier]) was the starting point for the Fire PRA.

[Insert a discussion of the Internal Events PRA quality, using the guidance of Section 4.2 of RG 1.200. Summarize results in Attachment ???]

##### 4.5.1.2 Fire PRA

[Describe development of plant fire PRA.]

[Provide discussion/references to peer review conducted. Summarize results in Attachment ???]

#### 4.5.2 Fire Modeling

NFPA 805 outlines the approaches for performing performance-based analyses. As specified in Section 4.2.4, there are generally two types of analyses performed for the performance-based approach:

- Fire Modeling (NFPA 805 Section 4.2.4.1).
- Fire Risk Evaluation (NFPA 805 Section 4.2.4.2).

Fire modeling was performed as part of the Fire PRA development (NFPA 805 Section 4.2.4.2) maximum expected fire scenario (MEFS)/limiting fire scenario (LFS) were not analyzed separately.

DID, Safety Margins?

Suggestion: move sentence to after the 6850 reference and clarify that only certain FAQ's pertain to PRA development

Are Sections 4.5.1.1/2 still under development? It appears key elements of guidance are missing

Consider emphasizing aspects of RG 1.200 with further description in 4.5.1.1/2. In particular: ongoing PRA technical adequacy and a current model to support self-approval of program changes

Suggest adding text for submitting the disposition of peer review findings per RG 1.200 , Section 4.2

Suggest including a reference to RG 1.200 Section 4.2, similar to internal events section (4.5.1)

Suggest putting the 4.2.4.1 fire modeling content in it its own section.

[Provide a discussion of the fire models used during the development of the fire PRA and compliance with sections 2.4.1.2.1 through 2.4.1.2.3. See section 4.2 of RG 1.205]

#### 4.5.3 Fire Risk Evaluation Process

[to be provided later]

**Comment [EK12]:** Require FAQ

Will reflect the new RG interpretations and flow charts presented at 11/16/09 meeting

#### 4.6 Monitoring Program

The Monitoring Program will be implemented after the LAR approval as part of the FP program transition to NFPA 805. In order to assess the impact of the transition to NFPA 805 on the current monitoring program, the [Enter PLANT] FP program documentation such as the maintenance program processes, FP program implementing procedures, and plant change processes will be reviewed. Sections 4.5.3 and 5.2 of the NEI 04-02 Implementing Guidance will be used during the review process and that process is described in the following sections.

**Comment [EK13]:** Revise RAI response and consider moving to Section 4.7 Configuration Control

**Comment [EK14]:** Look at HNP response and incorporate changes from RAI response 6-1

##### 4.6.1 Overview of NFPA 805 Requirements and NEI 04-02 Guidance on the Existing Monitoring Program

Section 2.6 of NFPA 805 states:

*"A monitoring program shall be established to ensure that the availability and reliability of the fire protection systems and features are maintained and to assess the performance of the fire protection program in meeting the performance criteria. Monitoring shall ensure that the assumptions in the engineering analysis remain valid."*

The intent of the review will be to confirm (or modify as necessary) the adequacy of the existing surveillance, testing, maintenance, compensatory measures, and oversight processes for transition to NFPA 805. This review will consider the following:

- 1) The adequacy of the scope of systems and equipment within existing plant programs, i.e., the necessary FP systems and features and nuclear safety capability equipment (NFPA 805 Section 1.5.1) are included.
- 2) The performance criteria for the availability and reliability of FP systems and features relied on to demonstrate compliance.
- 3) The adequacy of the plant corrective action program in determining causes of equipment and programmatic failures and in minimizing their recurrence.

The process and the proposed plan for monitoring program implementation (See section 4.6.2) were discussed with the NRC at the April 2008 Pilot Observation Meeting.

##### 4.6.2 Overview of Post-Transition NFPA 805 Monitoring Program

A flowchart of the overall process for NFPA 805 monitoring implementation is shown in Figure 4-7. The four main phases of the monitoring process are described as follows:

### Phase 1 - Scoping

Phase 1 of the process will determine the scope of the NFPA 805 monitoring program. In order to meet the NFPA 805 requirements for monitoring, four basic categories are established:

- FP systems and features.
- Nuclear safety capability equipment (NFPA 805 Section 1.5.1).
- FP Programmatic Elements.
- Key Assumptions in Engineering Analyses (e.g., Change Evaluations, Nuclear Safety Capability Assessment, EEEs).

### Phase 2 - Establishing Risk Criteria

Phase 2 of the process will establish risk significant criteria for SSCs and programmatic elements within the NFPA 805 monitoring scope. The Fire PRA is the primary tool used to establish risk significant criteria. Only certain SSCs/FP program elements are amenable to risk measurement in Fire PRA.

Another aspect of risk criteria is establishing performance criteria. These performance criteria will be established for items within the NFPA 805 monitoring scope, regardless of their ability to be measured using risk significant criteria. The performance criteria used should be availability, reliability, or condition, as appropriate.

### Phase 3 - Risk Determination

Phase 3 will consist of utilizing the Fire PRA, or other processes, as appropriate, to determine the risk significant SSCs/FP program elements using the criteria established in Phase 2.

### Phase 4 – Monitoring Implementation

Phase 4 is the implementation of the monitoring program, once the scope, and risk criteria are established in previous phases. The implementation includes the assessment of performance against the established criteria. Maintenance of the monitoring program will include refinement of performance goals and criteria, analysis of situations where goals are not met, and addressing items appropriately via the corrective action program.

The FP program monitoring scope is not included in the scope of 10 CFR 50.65, Maintenance Rule.



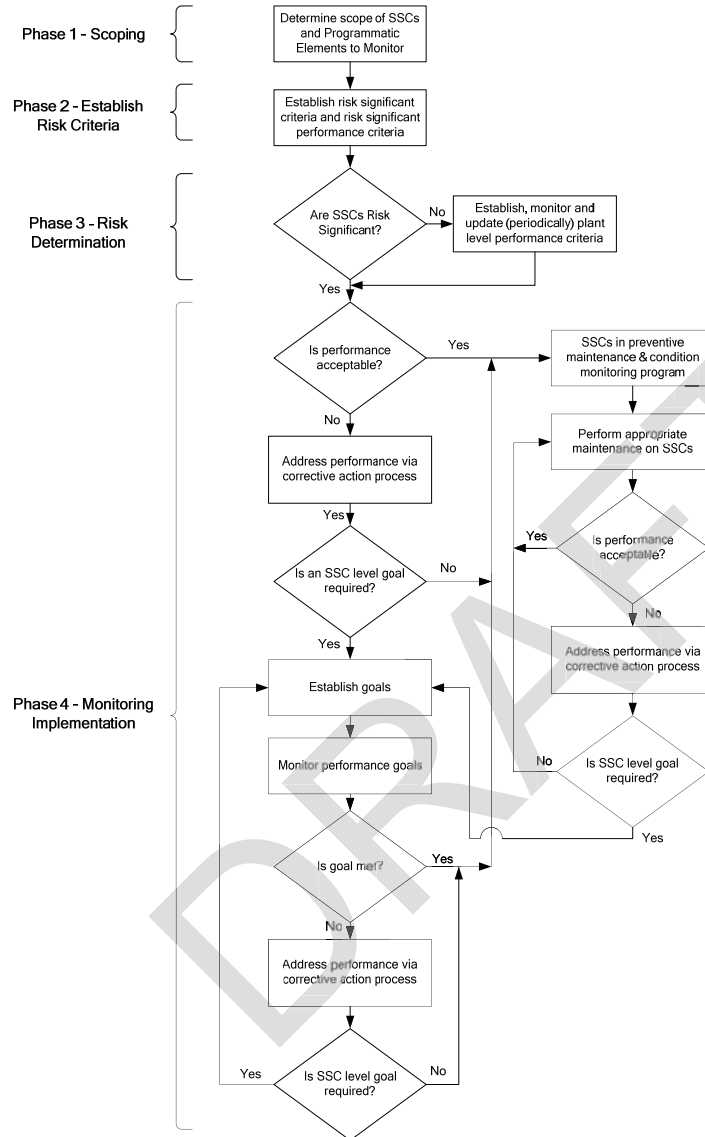


Figure 4-7 – Post-Transition NFPA 805 Monitoring Program

## 4.7 Program Documentation, Configuration Control, and Quality Assurance

**Comment [EK15]:** Revise to reflect responses to RAI 7-2 and fire PRA quality Post Transition

### 4.7.1 Compliance with Documentation Requirements in Section 2.7.1 of NFPA 805

In accordance with the requirements and guidance in NFPA 805 Section 2.7.1 and NEI 04-02, Revision 1, [Enter PLANT] has documented analyses to support compliance with 10 CFR 50.48(c). The analyses and calculations are being performed in accordance with [Enter LICENSEE]'s processes for ensuring assumptions are clearly defined, that results be easily understood, that results be clearly and consistently described, and that sufficient detail be provided to allow future review of the entire analyses.

Analyses, as defined by NFPA 805 2.4, performed to demonstrate compliance with 10 CFR 50.48(c) will be maintained for the life of the plant and organized to facilitate review for accuracy and adequacy. These analyses do not include items such as periodic tests, hot work permits, fire impairments, etc.

The [Enter PLANT] "Fire Protection Program Design Basis Document" concept described in Section 2.7.1.2 of NFPA 805 and necessary supporting documentation described in Section 2.7.1.3 of NFPA 805 will be revised as part of transition to 10 CFR 50.48(c) to ensure program implementation following receipt of the SER. Appropriate cross references will be established to supporting documents as required by [Enter LICENSEE] processes.

### 4.7.2 Compliance with Configuration Control Requirements in Section 2.7.2 of NFPA 805

Program documentation established, revised, or utilized in support of compliance with 10 CFR 50.48(c) is subject to [Enter LICENSEE] configuration control processes that meet the requirements of Section 2.7.2 of NFPA 805. This includes the appropriate procedures and configuration control processes for ensuring that changes impacting the FP program are reviewed for impact.

### 4.7.4 Compliance with Quality Requirements in Section 2.7.3 of NFPA 805

During the transition to 10 CFR 50.48(c), [Enter PLANT] performed work in accordance with the quality requirements of Section 2.7.3 of NFPA 805. Post-transition quality requirements from NFPA 805 that are not currently part of the [Enter LICENSEE] processes will be revised to include any additional requirements.

**NFPA 805 Section 2.7.3.1 - Review** – Analyses, calculations, and evaluations performed in support of compliance with 10 CFR 50.48(c) are performed in accordance with [Enter LICENSEE] procedures that require independent review.

**NFPA 805 Section 2.7.3.2 – Verification and Validation** – Computational models and numerical methods used in support of compliance with 10 CFR 50.48(c) will be verified and validated as required by Section 2.7.3.2 of NFPA 805.

**NFPA 805 Section 2.7.3.3 – Limitations of Use** - Engineering methods and numerical models used in support of compliance with 10 CFR 50.48(c) were used and will be used appropriately as required by Section 2.7.3.3 of NFPA 805.

**NFPA 805 Section 2.7.3.4 – Qualification of Users** – Cognizant personnel who use and apply engineering analysis and numerical methods in support of compliance with 10 CFR 50.48(c) are competent and experienced as required by Section 2.7.3.4 of NFPA 805.

**NFPA 805 Section 2.7.3.5 – Uncertainty Analysis** – Uncertainty analyses are performed as required by 2.7.3.5 of NFPA 805. This is of particular interest in Fire modeling and Fire PRA development.

## 4.8 Summary of Results

### 4.8.1 Results of the Fire Area-by-Fire Area Review

A higher level summary is provided in Table 4-4. The table provides the following information from the NEI 04-02 Table B-3 ([Enter LICENSEE] Calculation entitled “NFPA-805 Transition B-3 Table/Report”):

- Fire Area: Fire Area Identifier.
- Area Description: Fire Area Description.
- NFPA 805 Regulatory Basis (Post-Transition): Post-transition NFPA 805 Chapter 4 reference for the Fire Area.
- Change Evaluations: Indicate (Yes/No) if a Change Evaluation for the fire area has been performed. Change Evaluations will be summarized as new licensing actions.
- Licensing Actions or Engineering Equivalency Evaluations Transitioning? Indicate (Yes/No) if a licensing action or engineering equivalency evaluation is being transitioned.
- Suppression Required? (Yes/No): Confirmation of requirement for fire suppression in the Fire Area based on NFPA 805. This includes:
  - Systems required to meet Chapter 4 deterministic compliance.
  - Systems required to meet Chapter 4 performance-based compliance.
- Detection Required? (Yes/No): Confirmation of requirement for fire detection in the Fire Area on NFPA 805. This includes:
  - Systems required to meet Chapter 4 deterministic compliance.
  - Systems required to meet Chapter 4 performance-based compliance.

**Comment [EK16]:** Revise to reflect fire risk evaluations (including risk of recovery actions) also include new table from RAI response 2-8

**Comment [EK17]:** Update to reflect revised process Required Systems and Risk update

Suggest phrasing  
Section 4.8 in template  
style

Other Chapter 3  
items could also go  
in this list (ERFBS,  
penetration seals,  
fire stops, etc.)

DRAFT

## 4.8.2 Supplemental Information – Generic Issue Resolution

### 4.8.2.1 Fire Induced Multiple Spurious Operations Resolution

NEI 04-02 suggests that a licensee submit a summary of its approach for addressing potential fire-induced MSOs for NRC review and approval. As a minimum, NEI 04-02 suggests that the summary contain sufficient information relevant to methods, tools, and acceptance criteria used to enable the NRC to determine the acceptability of the licensee's methodology. The methodology utilized to address MSOs for [Enter PLANT] is summarized below.

As part of the NFPA 805 transition project, a review and evaluation of [Enter PLANT] susceptibility to fire-induced MSOs was performed. The process was conducted generally in accordance with NEI 04-02 Revision 1 and RG 1.205 Revision 0, as supplemented by FAQ 07-0038 Revision 1 (ML082100034), with consideration given to NRC comments on FAQ 07-0038 (ML082700815). It is noted that since [Enter PLANT] was a pilot plant, certain steps in the process were performed prior to key aspects of the FAQ 07-0038 process, such as development of a Generic MSO list by the PWROG. The [Enter PLANT] process was iterative in an attempt to stay current with industry interpretations and regulatory expectations.

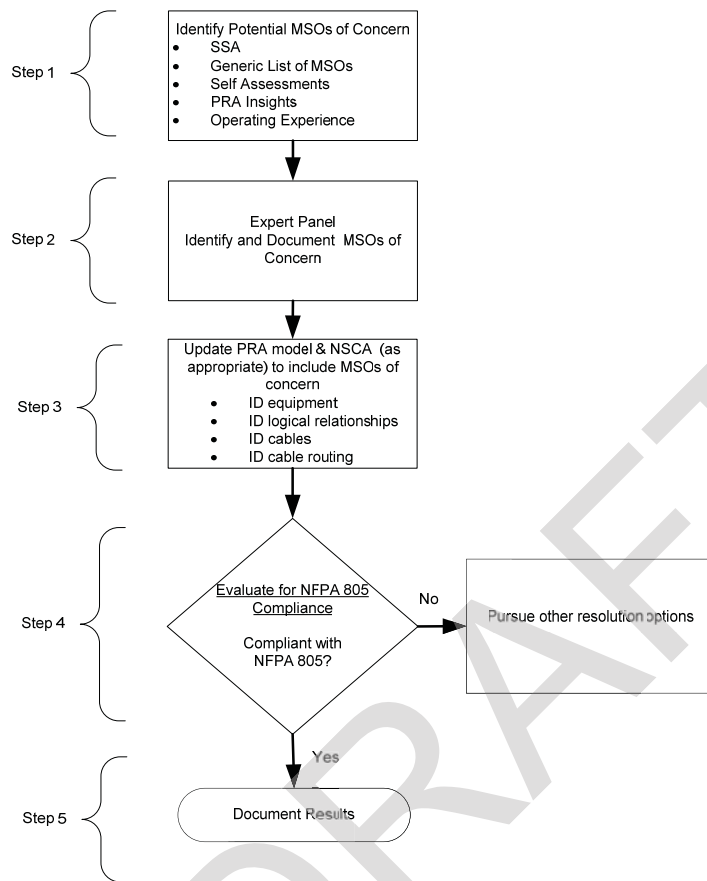
The approach outlined in Figure 4-8 from FAQ 07-0038, Revision 1, is one acceptable method to address fire-induced MSOs. This method used insights from the Fire PRA developed in support of transition to NFPA 805.

This process is intended to support the transition to a new LB. Post-transition changes would use the RI-PB change process. The post-transition change process for the assessment of a specific MSO would be a simplified version of this process, and may not need the level of detail shown in the following section (e.g., An expert panel may not be necessary to identify and assess a new potential MSO. Identification of new potential MSOs may be part of the plant change review process and/or inspection process).

Comment [EK18]: Review RAIs for updates

Move the NSCA Section

A draft FAQ is referenced. A LAR would need to provide a site-specific justification to use a draft FAQ.



**Figure 4-8 – Multiple Spurious Operations – Transition Resolution Process (Based on FAQ 07-0038, Revision 1)**

- Step 1 Identify potential MSOs of concern.
- Step 2 Conduct an expert panel to assess plant specific vulnerabilities (e.g., per NEI 00-01, Rev. 1 Section F.4.2).
- Step 3 Update the Fire PRA model and NSCA to include the MSOs of concern.
- Step 4 Evaluate for NFPA 805 Compliance.
- Step 5 Document Results.

Refer to Attachment F for the complete guidance from FAQ 07-0038 Revision 1, with a discussion on how the **[Enter PLANT]** process was conducted and additional insights on the results from the process.

#### 4.8.2.2 Operator Manual Actions Transition

NEI 04-02 suggests that a licensee submit a summary of its approach for addressing the transition of OMAs to recovery actions in the LAR (Regulatory Position C.1 and NEI-04-02, Rev. 1, Section 4.6). As a minimum, NEI 04-02 suggests that the assumptions, criteria, methodology, and overall results be included for the NRC to determine the acceptability of the licensee's methodology.

This process is addressed in a draft FAQ 07-0030. The process in draft FAQ 07-0030 was discussed at the September 29, 2008 public meeting on the Harris Nuclear Plant LAR (ML082600736) and at the October 3, 2008 public meeting on the Pilot Plant LARs Lessons Learned (ML082520076).

The process outlined in draft FAQ 07-0030, and implemented at [Enter PLANT], consists of the following elements:

- Establishment of OMA Evaluation Groups (addressed by FAQ 06-0012 – Closure Memo ML072340368).
  - If the transitioning OMA is allowed or was previously reviewed and approved by the NRC's Office of Nuclear Reactor Regulation (NRR) it does not require a change evaluation. Document in Table B-3. Include reference to documentation that demonstrates prior review and approval by the NRC.
  - If the transitioning OMA requires a change evaluation, include the reference to the appropriate document in Table B-3.
- Determination of whether a transitioning OMA is a post-transition recovery action, a DID action, or neither.
- Evaluation of the additional risk presented by the use of recovery actions credited in the analysis post-transition as a compliance strategy and the results of that evaluation.
- Evaluation of the feasibility of the recovery and DID actions credited in the analysis post-transition and the results of that evaluation.
- Evaluation of the reliability of recovery actions credited in the analysis post-transition as a compliance strategy and the results of that evaluation.

Refer to Attachment G for the detailed guidance from draft FAQ 07-0030, with a discussion on how the [Enter PLANT] process was conducted and additional insights on the results from the process.

#### 4.8.3 Plant Modifications and Confirmatory Items

Planned modifications, studies, and evaluations to comply with NFPA 805 are described in Attachment S.

**Comment [EK19]:** Needs to be completely revised to reflect new FAQ 07-0030 process

Move to NSCA SECTION

Not consistent with  
RG 1.205 Rev 1

**Comment [EK20]:** Two Tables

## 5.0 REGULATORY EVALUATION

### 5.1 Introduction – 10 CFR 50.48

On July 16, 2004 the NRC amended 10 CFR 50.48, Fire Protection, to add a new subsection, 10 CFR 50.48(c), which establishes alternative FP requirements. 10 CFR 50.48 endorses, with exceptions, the NFPA's NFPA 805, Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants – 2001 Edition (NFPA 805), as a voluntary alternative for demonstrating compliance with 10 CFR 50.48 Section (b), Appendix R, and Section (f), Decommissioning.

The voluntary adoption of 10 CFR 50.48(c) by [Enter PLANT] does not eliminate the need to comply with 10 CFR 50.48(a) and 10 CFR 50, Appendix A, GDC 3, Fire Protection. The NRC addressed the overall adequacy of the regulations during the promulgation of 10 CFR 50.48(c) (~~Reference FR Notice 69 FR 33536 dated June 16, 2004, ML041340086~~).

← delete reference

*"NFPA 805 does not supersede the requirements of GDC 3, 10 CFR 50.48(a), or 10 CFR 50.48(f). Those regulatory requirements continue to apply to licensees that adopt NFPA 805. However, under NFPA 805, the means by which GDC 3 or 10 CFR 50.48(a) requirements may be met is different than under 10 CFR 50.48(b). Specifically, whereas GDC 3 refers to SSCs important to safety, NFPA 805 identifies fire protection systems and features required to meet the Chapter 1 performance criteria through the methodology in Chapter 4 of NFPA 805. Also, under NFPA 805, the 10 CFR 50.48(a)(2)(iii) requirement to limit fire damage to SSCs important to safety so that the capability to safely shut down the plant is ensured is satisfied by meeting the performance criteria in Section 1.5.1 of NFPA 805. The Section 1.5.1 criteria include provisions for ensuring that reactivity control, inventory and pressure control, decay heat removal, vital auxiliaries, and process monitoring are achieved and maintained.*

*This methodology specifies a process to identify the fire protection systems and features required to achieve the nuclear safety performance criteria in Section 1.5 of NFPA 805. Once a determination has been made that a fire protection system or feature is required to achieve the performance criteria of Section 1.5, its design must meet any applicable requirements of NFPA 805, Chapter 3. Having identified the required fire protection systems and features, the licensee selects either a deterministic or performance-based approach to demonstrate that the performance criteria are satisfied. This process satisfies the GDC 3 requirement to design and locate SSCs important to safety to minimize the probability and effects of fires and explosions." (Reference FR Notice 69 FR 33536 dated June 16, 2004, ML041340086)*

The new rule provides actions that may be taken to establish compliance with 10 CFR 50.48(a), which requires each operating nuclear power plant to have a fire protection program plan that satisfies GDC 3, as well as specific requirements in that section. The transition process described in 10 CFR 50.48(c)(3)(ii) provides, in pertinent parts, that a licensee intending to adopt the new rule must, among other things, "modify the fire protection plan required by paragraph (a) of that section to reflect the licensee's



decision to comply with NFPA 805.” Therefore, to the extent that the contents of the existing FP program plan required by 10 CFR 50.48(a) are inconsistent with NFPA 805, the FP program plan must be modified to achieve compliance with the requirements in NFPA 805. All other requirements of 10 CFR 50.48 (a) and GDC 3 have corresponding requirements in NFPA 805.

A comparison of the current requirements in Appendix R with the comparable requirements in Section 3 of NFPA 805 shows that the two sets of requirements are consistent in many respects. This was further clarified in FAQ 07-0032, 10 CFR 50.48(a) and GDC 3 clarification (ML081300697). The following tables provide a cross reference of FP regulations associated with the post-transition [Enter PLANT] FP program and applicable industry and [Enter PLANT] documents that address the topic.

### 10 CFR 50.48(a)

**Table 5-1 10 CFR 50.48(a) – Applicability/Compliance Reference**

10 CFR 50.48(a) Section(s)	Applicability/Compliance Reference
(1) Each holder of an operating license issued under this part or a combined license issued under part 52 of this chapter must have a fire protection plan that satisfies Criterion 3 of appendix A to this part. This fire protection plan must:	See below
(i) Describe the overall fire protection program for the facility;	NFPA 805 Section 3.2 [Enter PLANT] NEI 04-02 Table B-1
(ii) Identify the various positions within the licensee's organization that are responsible for the program;	NFPA 805 Section 3.2.2 [Enter PLANT] NEI 04-02 Table B-1
(iii) State the authorities that are delegated to each of these positions to implement those responsibilities; and	NFPA 805 Section 3.2.2 [Enter PLANT] NEI 04-02 Table B-1
(iv) Outline the plans for fire protection, fire detection and suppression capability, and limitation of fire damage.	NFPA 805 Section 2.7 and Chapters 3 and 4 [Enter PLANT] NEI 04-02 B-1 and B-3 Tables
(2) The plan must also describe specific features necessary to implement the program described in paragraph (a)(1) of this section such as:	See below
(i) Administrative controls and personnel requirements for fire prevention and manual fire suppression activities;	NFPA 805 Sections 3.3.1 and 3.4 [Enter PLANT] NEI 04-02 Table B-1
(ii) Automatic and manually operated fire detection and suppression systems; and	NFPA 805 Sections 3.5 through 3.10 and Chapter 4 [Enter PLANT] NEI 04-02 B-1 and B-3 Tables
(iii) The means to limit fire damage to structures, systems, or components important to safety so that the capability to shut down the plant safely is ensured.	NFPA 805 Chapter 4 [Enter PLANT] NEI 04-02 B-3 Table

full citation

Table 5-1 10 CFR 50.48(a) – Applicability/Compliance Reference

10 CFR 50.48(a) Section(s)	Applicability/Compliance Reference
(3) The licensee shall retain the fire protection plan and each change to the plan as a record until the Commission terminates the reactor license. The licensee shall retain each superseded revision of the procedures for 3 years from the date it was superseded.	NFPA 805 Section 2.7.1.1 requires that documentation (Analyses, as defined by NFPA 805 2.4, performed to demonstrate compliance with this standard) be maintained for the life of the plant. [Enter LICENSEE] Nuclear System Directive entitled "Records Management"]
(4) Each applicant for a design approval, design certification, or manufacturing license under part 52 of this chapter must have a description and analysis of the fire protection design features for the standard plant necessary to demonstrate compliance with Criterion 3 of appendix A to this part.	Not applicable to [Enter PLANT]. [Enter PLANT] is licensed under 10 CFR 50.

### General Design Criterion 3

Table 5-2 GDC 3 – Applicability/Compliance Reference

GDC 3, Fire Protection, Statement	Applicability/Compliance Reference
Structures, systems, and components important to safety shall be designed and located to minimize, consistent with other safety requirements, the probability and effect of fires and explosions.	NFPA 805 Chapters 3 and 4 [Enter PLANT] NEI 04-02 B-1 and B-3 Tables
Noncombustible and heat resistant materials shall be used wherever practical throughout the unit, particularly in locations such as the containment and control room.	NFPA 805 Sections 3.3.2, 3.3.3, 3.3.4, 3.11.4 [Enter PLANT] NEI 04-02 B-1 Table
Fire detection and fighting systems of appropriate capacity and capability shall be provided and designed to minimize the adverse effects of fires on structures, systems, and components important to safety.	NFPA 805 Chapters 3 and 4 [Enter PLANT] NEI 04-02 B-1 and B-3 Tables
Firefighting systems shall be designed to assure that their rupture or inadvertent operation does not significantly impair the safety capability of these structures, systems, and components	NFPA 805 Sections 3.4 through 3.10 and 4.2.1 [Enter PLANT] NEI 04-02 Table B-3

## 10 CFR 50.48(c)

Table 5-3 10 CFR 50.48(c) – Applicability/Compliance Reference

10 CFR 50.48(c) Section(s)	Applicability/Compliance Reference
(1) <i>Approval of incorporation by reference.</i> National Fire Protection Association (NFPA) Standard 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants, 2001 Edition" (NFPA 805), which is referenced in this section, was approved for incorporation by reference by the Director of the Federal Register pursuant to 5 U.S.C. 552(a) and 1 CFR part 51.	General Information. NFPA 805 (2001 edition) is the edition adopted by [Enter LICENSEE] for [Enter PLANT].
(2) Exceptions, modifications, and supplementation of NFPA 805. As used in this section, references to NFPA 805 are to the 2001 Edition, with the following exceptions, modifications, and supplementation:	General Information. NFPA 805 (2001 edition) is the edition adopted by [Enter LICENSEE] for [Enter PLANT].
(i) <i>Life Safety Goal, Objectives, and Criteria.</i> The Life Safety Goal, Objectives, and Criteria of Chapter 1 are not endorsed.	The Life Safety Goal, Objectives, and Criteria of Chapter 1 of NFPA 805 are not part of the [Enter PLANT] LAR.
(ii) <i>Plant Damage/Business Interruption Goal, Objectives, and Criteria.</i> The Plant Damage/Business Interruption Goal, Objectives, and Criteria of Chapter 1 are not endorsed.	The Plant Damage/Business Interruption Goal, Objectives, and Criteria of Chapter 1 of NFPA 805 are not part of the [Enter PLANT] LAR.
(iii) <i>Use of feed-and-bleed.</i> In demonstrating compliance with the performance criteria of Sections 1.5.1(b) and (c), a high-pressure charging/injection pump coupled with the pressurizer power-operated relief valves (PORVs) as the sole fire-protected safe shutdown path for maintaining reactor coolant inventory, pressure control, and decay heat removal capability (i.e., feed-and-bleed) for pressurized-water reactors (PWRs) is not permitted.	Feed and bleed is not utilized as the sole fire-protected safe shutdown methodology at [Enter PLANT].
(iv) Uncertainty analysis. An uncertainty analysis performed in accordance with Section 2.7.3.5 is not required to support deterministic approach calculations.	Uncertainty analysis was not performed for deterministic methodology at [Enter PLANT].
(v) Existing cables. In lieu of installing cables meeting flame propagation tests as required by Section 3.3.5.3, a flame-retardant coating may be applied to the electric cables, or an automatic fixed fire suppression system may be installed to provide an equivalent level of protection. In addition, the italicized exception to Section 3.3.5.3 is not endorsed.	Electrical cable construction at [Enter PLANT] complies with a flame propagation test that was found acceptable to the NRC as documented in NEI 04-02 Table B-1.

Table 5-3 10 CFR 50.48(c) – Applicability/Compliance Reference

10 CFR 50.48(c) Section(s)	Applicability/Compliance Reference
(vi) Water supply and distribution. The italicized exception to Section 3.6.4 is not endorsed. Licensees who wish to use the exception to Section 3.6.4 must submit a request for a license amendment in accordance with paragraph (c)(2)(vii) of this section.	[Enter PLANT] "complies via previous NRC approval" as documented in the NEI 04-02 Table B-1.
(vii) Performance-based methods. Notwithstanding the prohibition in Section 3.1 against the use of performance-based methods, the fire protection program elements and minimum design requirements of Chapter 3 may be subject to the performance-based methods permitted elsewhere in the standard. Licensees who wish to use performance-based methods for these fire protection program elements and minimum design requirements shall submit a request in the form of an application for license amendment under § 50.90. 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).	The [Enter PLANT] LAR requests the use of performance-based methods for NFPA 805 Chapter 3 requirements based upon FAQ 06-0008 (ADAMS reference pending). This request is in accordance with 10 CFR 50.48(c)(2)(vii). See Attachment P.
(3) Compliance with NFPA 805.	See below
(i) A licensee may maintain a fire protection program that complies with NFPA 805 as an alternative to complying with paragraph (b) of this section for plants licensed to operate before January 1, 1979, or the fire protection license conditions for plants licensed to operate after January 1, 1979. The licensee shall submit a request to comply with NFPA 805 in the form of an application for license amendment under § 50.90. The application must identify any orders and license conditions that must be revised or superseded, and contain any necessary revisions to the plant's technical specifications and the bases thereof. 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.	The [Enter PLANT] LAR was submitted in accordance with 10 CFR 50.90. The LAR included applicable license conditions, orders, technical specifications/bases that needed to be revised and/or superseded.
(ii) 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 [Enter PLANT] LAR and transition report summarize the evaluations and analyses performed in accordance with Chapter 2 of NFPA 805.

plain language?

TS bases must also be provided

This topic is currently under internal discussion at the NRC

Table 5-3 10 CFR 50.48(c) – Applicability/Compliance Reference

10 CFR 50.48(c) Section(s)	Applicability/Compliance Reference
(4) Risk-informed or performance-based alternatives to compliance with NFPA 805. A licensee may submit a request to use risk-informed or performance-based alternatives to compliance with NFPA 805. The request must be in the form of an application for license amendment under § 50.90 of this chapter. 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:	No risk-informed or performance-based alternatives to compliance with NFPA 805 (per 10 CFR 50.48(c)(4)) were utilized by [Enter PLANT]. See Attachment Q.
(i) Satisfy the performance goals, performance objectives, and performance criteria specified in NFPA 805 related to nuclear safety and radiological release;	Not applicable to [Enter PLANT].
(ii) Maintain safety margins; and	Not applicable to [Enter PLANT].
(iii) Maintain fire protection defense-in-depth (fire prevention, fire detection, fire suppression, mitigation, and post-fire safe shutdown capability).	Not applicable to [Enter PLANT].

## 5.2 Regulatory Topics

### 5.2.1 License Condition Changes

The current [Enter PLANT] fire protection license condition 3.D is being replaced with the standard license condition in Regulatory Position C.3.1 of RG 1.205, Revision 0, as modified by FAQ 06-0008, as shown in Attachment M.

**Comment [EK21]:** Update to reflect new license condition and revision to Reg Guide

### 5.2.2 Technical Specifications

[Enter PLANT] conducted a review of the Technical Specifications to determine which Technical Specifications are required to be revised, deleted, or superseded. [Enter PLANT] determined that the changes to the Technical Specifications and applicable justification listed in Attachment N are adequate for the [Enter PLANT] adoption of the new FP LB. Enclosures 3 and 4 contain the mark-up and re-typed copies of the Facility Operating License, Technical Specifications, and Technical Specification Bases.

### 5.2.3 Orders and Exemptions

A review was conducted of the [Enter PLANT] docketed correspondence to determine if there were any orders or exemptions that needed to be superseded or revised. A review was also performed to ensure that compliance with the physical protection requirements, security orders, and adherence to those commitments applicable to the plant are maintained. A discussion of affected orders and exemptions is included in Attachment O.

Consider adding a positive compliance statement regarding these items since they are not addressed specifically in Attachment O.

### 5.3 Regulatory Evaluations

#### 5.3.1 No Significant Hazards Consideration

Pursuant to 10 CFR 50.91, [Enter LICENSEE] has made the determination that this amendment request involves a "No Significant Hazards Consideration" by applying the standards established by the NRC regulations in 10 CFR 50.92. This amendment does not involve a significant hazards consideration for the following reasons:

To the extent that these conclusions apply to compliance with the requirements in NFPA 805, these conclusions are based on the following NRC statements in the Statements of Consideration accompanying the adoption of alternative FP requirements based on NFPA 805.

- 1) **Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?**  
Response: No.
- 2) **Does the proposed amendment create the possibility of a new or different kind of accident from any kind of accident previously evaluated?**  
Response: No.
- 3) **Does the proposed amendment involve a significant reduction in the margin of safety?**  
Response: No.

#### 5.3.2 Environmental Consideration

#### 5.4 Revisions to the [Enter PLANT] UFSAR

After the approval of the LAR, in accordance with 10 CFR 50.71(e), the ONS UFSAR will be revised. The changes to the UFSAR necessitated by the license amendment are discussed in Attachment Q.

#### 5.5 Transition Implementation Schedule

The following schedule for transitioning [Enter PLANT] to the new FP licensing basis requires NRC approval of the LAR in accordance with the following schedule:

- Implementation of new NFPA 805 FP program to include procedure changes, process updates, and training to affected plant personnel. This will occur ☐ months after NRC approval.
- [Provide Modifications scope and implementation schedule]. Appropriate compensatory measures will be maintained until modifications are complete.

### 6.0 REFERENCES

The following references were used in the development of the TR. Additional references are in the NEI 04-02 Tables in the various Attachments.

There will be more descriptive answers in plant-specific LARs, correct?

Consider either a brief discussion of the compensatory measures or a reference to where such a discussion can be found.

[insert references]

DRAFT

ATTACHMENTS

DRAFT



**A. NEI 04-02 Table B-1 Transition of Fundamental FP Program & Design Elements**

80 Pages Attached

DRAFT

**B. NEI 04-02 Table B-2 – Nuclear Safety Capability Assessment - Methodology Review**

112 Pages Attached

EXTRA

**C. NEI 04-02 Table B-3 – Fire Area Transition**

367 Pages Attached

DRAFT

Security-Related Information – Withhold Under 10 CFR 2.390

[Your Utility Here]

Attachment C – NEI 04-02 Table B-3 Fire Area Transition

[provide discussion of NSCA strategies]

### Fire Area Transition

NEI 04-02 Table B-3 Fire Area Transition is attached. [362 Pages]

DRAFT

**D. NEI 04-02 Table F-1 Non-Power Operational Modes Transition**

6 Pages Attached

DRAFT

**E. NEI 04-02 Table G-1 Radioactive Release Transition**

3 Pages Attached

DRAFT

## **F. Fire-Induced Multiple Spurious Operations Resolution**

5 Pages Attached

DRAFT

## MSO Process Summary

The following table provides the guidance from FAQ 07-0038, Revision 1, along with the [Enter PLANT] process and results.

Table F-1 – FAQ 07-0038 Rev. 1 Summary Table

Guidance (NEI 04-02 FAQ 07-0038, Revision 1)	[Enter PLANT] Process/Results
<b>Step 1 Identify potential MSOs of concern</b> Information sources that may be used as input include: <ul style="list-style-type: none"> <li>• Post-fire safe shutdown analysis (NEI 00-01, Revision 1, Chapter 3)</li> <li>• Generic lists of MSOs (e.g., from Owners Groups, if available.)</li> <li>• Self assessment results (e.g., NEI 04-06 assessments performed to address RIS 2004-03)</li> <li>• PRA insights (e.g., NEI 00-01 Revision 1, Appendix F)</li> <li>• Operating Experience (e.g., licensee event reports, NRC Inspection Findings, etc.)</li> </ul>	
<b>Step 2 Conduct an expert panel to assess plant specific vulnerabilities (e.g., per NEI 00-01, Rev. 1 Section F.4.2).</b>  The expert panel should focus on system and component interactions that could impact nuclear safety. This information will be used in later tasks to identify cables and potential locations where vulnerabilities could exist.  [Note: The physical location of the cables of concern (e.g., fire zone/area routing of the identified MSO cables), if known, may be used at this step in the process to focus the scope of the detailed review in further steps.]	
<b>Step 3 – Update the fire PRA model and NSCA to include the MSOs of concern.</b> This includes the: <ul style="list-style-type: none"> <li>• Identification of equipment (NUREG/CR-6850 Task 2)</li> <li>• Identification of cables that, if damaged by fire, could result in the spurious operation (NUREG/CR-6850 Task 3, Task 9)</li> <li>• Identify routing of the cables identified above.</li> </ul> Include the equipment/cables of concern in the Nuclear Safety Capability Assessment (NSCA). Including the equipment and cable information in the NSCA does not necessarily imply that the interaction is possible since separation/protection may exist throughout the plant fire areas such that the interaction is not possible).  Note: Instances may exist where update of the MSOs may not warrant update of the Fire PRA and NSCA analysis. For example, Fire PRA analysis in NUREG/CR-6850 Task 2, Component Selection, may determine that the particular interaction may not lead to core damage, or pre-existing equipment and cable routing information may determine that the particular MSO interaction is not physically possible. The rationale for exclusion of identified MSOs from the Fire PRA and NSCA should be documented and the configuration control mechanisms should be reviewed to provide reasonable confidence that the exclusion basis will remain valid.	



Table F-1 – FAQ 07-0038 Rev. 1 Summary Table

Guidance (NEI 04-02 FAQ 07-0038, Revision 1)

[\[Enter PLANT\]](#) Process/Results**Step 4 – Evaluate for NFPA 805 Compliance**

MSOs of concern should be included in the compliance assessment in the NSCA, consistent with the process for all NSCA components. The compliance assessment may use both deterministic and performance-based approaches.

The performance-based approach may include the use of feasible and reliable recovery actions. During transition, if the recovery actions are deemed unallowed per the pre-transition licensing basis (Bin H for FAQ 06-0012), a risk-informed performance-based change evaluation may be used as potential means of demonstrating NFPA 805 compliance.

Note that during the NFPA 805 transition, deterministic separation/protection is per the current licensing basis (10 CFR 50, Appendix R/NUREG-0800) with consideration of approved exemptions, etc. MSOs that meet the separation/protection requirements of the pre-transition licensing basis should be documented and the appropriate transition documentation updated as necessary.

MSOs that are not in compliance with NFPA 805 will be reviewed for other resolution options, such as plant modifications.

**Step 5 - Document Results**

The results of the process should be documented. High level methodology utilized as part of the transition process should be included in the 10 CFR 50.48(c) License Amendment Request/Transition Report.

**Summary of Results**[\[Input summary\]](#)

[Your Utility Here]

Table F-2 – Summary of [Enter PLANT] MSO Open Items

Disposition

MSO Combination

VFDR

## G. Operator Manual Actions Transition

 Pages Attached

DRAFT

## H. NEI 04-02 Frequently Asked Question Summary Table

5 Pages Attached

Note: The NEI 04-02 FAQ process will continue through the transition of non-pilot NFPA 805 transition plants. Final closure of the FAQs will occur when RG 1.205, which endorses the new revision of NEI 04-02, is approved by the NRC. It is expected that additional FAQs will be written and existing FAQs will be revised as the Pilot Plant process continues.

DRAFT

Table H-1 - NEI 04-02 FAQs – Status and Reference Table							
No.	Rev.	Title	FAQ Ref.	FAQ NRC Comment Ref.	Technical Agreement	Closure Memo	FAQ Cross Ref.
06-0001		Alternate method for Engineering Evaluations	ML061440419	ML062060303	WITHDRAWN 12/14/06 ML063480169	WITHDRAWN 12/14/06 ML063480169	N/A
06-0002	2	NEI 04-02 Section 5.3.3 and App. I, Order of Questions for Change Analysis Screening	ML061440420 ML063170357 ML063350515	ML062060303	01/04/07 ML070030276	01/04/07 ML070030276	Note 1 4.5
06-0003	1b	Change Analysis Screening	ML061440422 ML063170355	ML062060303	01/04/07 ML070030242	01/04/07 ML070030242	Note 1 4.5
06-0004	0	Clarify NFPA 805 Chapter 4 and 3 relationship for 'required' FP systems/features	ML061440430	ML062060303 ML063350442	WITHDRAWN	WITHDRAWN 08/21/08 ML082330386	N/A
06-0005	2	Guidance on fire protection program related changes	ML062350095 ML063180544 ML072820015	ML072400021 ML073060462	WITHDRAWN 08/11/08	WITHDRAWN 08/11/08 ML0816390322	N/A
06-0006	2	High-low pressure interface definition and NEI 00-01/NFPA 805 discrepancies	ML062350109 ML063170360 ML063540308	ML062890268 ML070660071	03/12/07 ML070030117	03/12/07 ML070030117	Note 1 4.2
06-0007	3	NFPA 805 Chapter 3 Requirements for Fire Brigades	ML062350121 ML070030325 ML070510442 ML071550408	ML063170365 ML071380338	6/21/07 ML071940375	11/13/07 ML072560733	Note 1 4.1

Table H-1 - NEI 04-02 FAQs – Status and Reference Table							
No.	Rev.	Title	FAQ Ref.	FAQ NRC Comment Ref.	Technical Agreement	Closure Memo	FAQ Cross Ref.
06-0008	8	Alternate method for Engineering Evaluations	ML062860250	ML0633350442	11/24/08 ML080430163		5.1 Att. M Att. P
			ML070510499	ML070640544			
			ML070800007	ML071380177			
			ML071020160	ML071380182			
			ML071020169	ML072050214			
			ML071080099	ML072740231			
			ML071340180	ML073370775			
			ML072820016 ML073370025	ML083010061			
06-0011	2	Clarify III.G.3 Compliance Transition	ML062890271	ML0633350442	10/18/07 ML073200763	3/04/08 ML080300121	Note 1 4.2
			ML070510505 ML072740248	ML072400023			
06-0012	5	Clarify Manual Action Transition in Appendix B	ML062860255	ML0633350442	6/21/07 ML071940375  11/29/07 ML073400502	1/24/08 ML072340368	Note 1 4.2 Att. B Att. C Att. G
			ML063170362	ML071380186			
			ML070850610	ML072820170			
			ML071380229	ML072820168			
			ML071570260				
			ML073320028				
06-0016	1	Ignition Source counting guidance for Electrical Cabinets	ML070030348 ML071020174	ML070640555	5/17/07 ML071510425	10/05/07 ML072700475	Note 1 Note 2 Note 3
06-0017	2	Ignition Source counting guidance for High Energy Arcing Faults (HEAF)	ML070030383	ML071730038	6/21/07 ML071940375	9/26/07 ML072500300	Note 1 Note 2 Note 3
			ML071350432				
			ML071570255				
06-0018	1	Ignition Source counting guidance for Main Control Board (MCB)	ML070030427 ML071020181	ML070640562	5/17/07 ML071510425	9/7/07 ML072500273	Note 1 Note 2 Note 3

Table H-1 - NEI 04-02 FAQs – Status and Reference Table							
No.	Rev.	Title	FAQ Ref.	FAQ NRC Comment Ref.	Technical Agreement	Closure Memo	FAQ Cross Ref.
06-0019	4	Define “power block” and “plant”	ML070030437	ML070510365	11/15/07	3/05/08	Note 1 4.1.3 Att. I
			ML071340184	ML073060471	ML073200936	ML080510224	
			ML072550063				
			ML072740255				
			ML073060545				
06-0020	1	Definition of “applicable”	ML070030443	ML070510369	5/17/07	11/28/07	Note 1 4.1 Att. A
			ML071340188		ML071510425	ML072420286	
06-0021	1a	Clarify that air drops are acceptable.	ML070030457	ML070510417	5/17/07	11/13/07	Note 1 4.1 Att. A
			ML071340192		ML071510425	ML072420306	
06-0022	2	Identify a list of typical flame propagation tests which are considered acceptable.	ML070030459	ML072050222			4.1 Att. A
			ML072340055	ML072740236			
			ML083010053				
06-0023		Grant exception for Diesel Generator Day Tanks located within Diesel Generator Buildings.	ML070030470		WITHDRAWN	WITHDRAWN	N/A
					5/17/07	10/3/07	
06-0024	1	Define what “adequate clearance” is.	ML070030472	ML071380189	8/23/07	10/16/07	Note 1 4.1 Att. A
			ML072340062		ML072550213	ML072740225	
06-0025	5	Define minimum acceptable pre-plan scope.	ML070030476	ML070300588	7/19/07	WITHDRAWN	N/A
			ML071340194	ML073510074	ML072080246	08/21/08	
			ML073400147		WITHDRAWN08	ML082330365	
			ML073510082		/21/08		
			ML073550021				

Table H-1 - NEI 04-02 FAQs – Status and Reference Table							
No.	Rev.	Title	FAQ Ref.	FAQ NRC Comment Ref.	Technical Agreement	Closure Memo	FAQ Cross Ref.
06-0026		Clarify NFPA code requirements for gear maintenance	ML070030480	ML071380194	WITHDRAWN 5/17/07 ML071510425	WITHDRAWN 10/15/07 ML072560564	N/A
06-0027	0	Clarify the “where provided” statement.	ML071380236		10/18/07 ML073200763		4.1 Att. A
06-0028	2	Clarify intent of “familiarization with plant fire prevention procedures, fire reporting, and plant emergency alarms” regarding scope of or depth of the training.	ML070030489 ML071340195 ML071550415	ML070510427 ML071380349	6/21/07 ML071940375	10/17/07 ML072740233	Note 1 4.1 Att. A
07-0031	0	Misc Binning Issues	ML071380238	ML072880327 ML073060480	11/29/07 ML073400502	12/17/07 ML072840658	Note 1 Note 2 Note 3
07-0032	1	10 CFR 50.48(a) and GDC 3 clarification	ML071930378 ML080700411 ML081300697	ML073060492 ML081300689	5/15/08	08/20/08 ML081400292	Note 1 5.1
07-0033	1	Review of Existing Engineering Equivalency Evaluations	ML071930379 ML073550023	ML072700037	2/21/08 ML080730007	08/28/08 ML082380395	Note 1 4.2.2.2 Att. J
07-0035	0	Bus Duct counting guidance for High Energy Arcing Faults	ML071650151 ML081960709	ML073540262			Note 2 Note 3
07-0036	1	Define compliance categories for Table B-1	ML072320155 ML073550025	ML072700038	2/21/08 ML080730007	08/28/08 ML082380547	Note 1 4.1 Att. A



Table H-1 - NEI 04-02 FAQs – Status and Reference Table							
No.	Rev.	Title	FAQ Ref.	FAQ NRC Comment Ref.	Technical Agreement	Closure Memo	FAQ Cross Ref.
07-0038	0	Lessons learned for MSOs	ML072740262 ML082100034	ML073060506			4.8.2.1 Att. F
07-0039	1	Provide update of NEI 04-02 B-2 and B-3 Processes	ML072740268 ML080910136 ML082590466	ML073330556	9/25/08		4.2 Att. B Att. C
07-0040	2	Clarification on Non-Power Operations	ML073060550 ML080720027 ML081430041 ML081960523 ML082070249	ML073170227 ML081150739 ML081790387	8/11/08	08/11/08 ML082200528	Note 1 4.3 Att. D
07-0041	0	Chapter 3 Codes and Standards	ML073310447		CANCELLED	CANCELLED 07/02/08 ML081690332	N/A
07-0042	0	Vented Cabinets	ML080230438				Note 2
08-0043	0	Cabinet Fire Location	ML081500507				Note 2
08-0047	0	Spurious Operation Probability	ML081200126 ML082590466		9/25/08		Note 2
08-0052	0	Transient Fire Size	ML081500500	ML083010061			
08-0053	0	Kerite Cable	ML082660021				

Note 1 – These FAQs are closed by the issuance of an NRC closure memo.

Note 2 – These FAQs are associated with Fire PRA development, which is summarized in Section 4.5.1. The FAQs are not specifically discussed in the TR.

Note 3 – These FAQs are associated with counting ignition sources and are not specifically discussed in the TR.

**I. Definition of Power Block**

1 Page Attached

DRAFT

[Provide the methodology used to develop the list of Power Block. Also ensure this is coordinated with the plant partitioning efforts]

For the purposes of establishing the structures included in the [Enter PLANT] FP program in accordance with 10 CFR 50.48(c) and NFPA 805, plant structures listed in the following table are considered to be part of the power block.

Table I-1 – [Enter PLANT] Power Block Definition	
Power Block Structures	Fire Area(s)

DRAFT

## J. EEEE Transition

7 Pages Attached

DRAFT

## K. Existing Licensing Action Transition

47 Pages Attached

Recommend that the prior approvals are described in sufficient detail to make the licensing basis clear.

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**L. NFPA 805 Chapter 3 Requirements for Approval**  
**(10 CFR 50.48(c)(2)(vii))**

3 Pages Attached

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## Approval Request 1

### NFPA 805 Section 3.3.1.2(1)

[INSERT REQUEST:]

**Basis for Request:**

[INSERT BASIS]

### **Acceptance Criteria Evaluation:**

[Enter PLANT] determined that the [performance based approach/NFPA 805 alternative] satisfies the following criteria”

- Satisfies the performance goals performance objectives, and performance criteria specified in NFPA 805 related to nuclear safety and radiological release
- Defense in Depth
- Safety Margin

## **M. License Condition Changes**

2 Pages Attached

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## **N. Technical Specification Changes**

1 Page Attached

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## O. Orders and Exemptions

1 Page Attached

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## Exemptions

Supersede the following exemptions granted against 10 CFR 50, Appendix R dated February 2, 1982; August 31, 1983; December 27, 1984; and August 21, 1989.

## Orders

No Orders need to be superseded or revised. [Enter PLANT] implemented the following process for making this determination:

- A review was conducted of the [Enter PLANT] docketed correspondence by [Enter PLANT] licensing staff. The review was performed by reviewing the correspondence files and performing electronic searches of internal [Enter PLANT] records and the NRC's ADAMS document system.

A specific review was performed of the license amendment that incorporated the mitigation strategies required by Section B.5.b of Commission Order EA-02-026 (TAC No's MD4712, MD4713, and MD4714) to ensure that any changes being made to ensure compliance with 10 CFR 50.48(c) do not invalidate existing commitments applicable to the plant. The review of this order demonstrated that changes to the FPP will not affect measures required by B.5.b.

Will plant-specific LARs contain a description of the exemptions? Also, consider adding a statement that the licensee considers the exemptions no longer applicable to their plant.

"changing the FPP in order to adopt NFPA 805

**P. RI-PB Alternatives to NFPA 805 10 CFR 50.48(c)(4)**

No risk-informed or performance-based alternatives to compliance with NFPA 805 (per 10 CFR 50.48(c)(4)) were utilized by [Enter PLANT].

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**Q. UFSAR Changes**

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After the approval of the LAR, in accordance with 10 CFR 50.71(e) and the ONS UFSAR update procedures, the ONS UFSAR will be revised. The changes to the UFSAR necessitated by the license amendment are discussed below:

- 

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**R. Plant Modifications and Confirmatory Items**

 Pages Attached

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[\[Your Utility Here\]](#)

Table R-1, Plant Modifications provided below includes a description of the modifications along with the following information:

- A problem statement,
- Risk ranking of the modification,
- An indication if the modification is currently included in the FPRA,
- Compensatory Measure in place, and
- A risk-informed characterization of the modification and compensatory measure.

The following legend should be used when reviewing the table:

- N\* = To be incorporated into the Fire PRA upon completion of the modification.
- High = Modification would have an appreciable impact on reducing overall fire CDF.
- Med = Modification would have a measurable impact on reducing overall fire CDF.
- Low = Modification would have either an insignificant or no impact on reducing overall fire CDF.

Seems like a good place to have confirmatory items; be sure to include time frame.

### Table R-1 Plant Modifications

Item	Rank	Unit	Problem Statement	Proposed Modification	In Comp FPRA Measure	Risk Informed Characterization
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8
9	9	9	9	9	9	9
10	10	10	10	10	10	10
11	11	11	11	11	11	11
12	12	12	12	12	12	12
13	13	13	13	13	13	13
14	14	14	14	14	14	14
15	15	15	15	15	15	15
16	16	16	16	16	16	16
17	17	17	17	17	17	17
18	18	18	18	18	18	18
19	19	19	19	19	19	19
20	20	20	20	20	20	20
21	21	21	21	21	21	21
22	22	22	22	22	22	22
23	23	23	23	23	23	23
24	24	24	24	24	24	24
25	25	25	25	25	25	25
26	26	26	26	26	26	26
27	27	27	27	27	27	27
28	28	28	28	28	28	28
29	29	29	29	29	29	29
30	30	30	30	30	30	30
31	31	31	31	31	31	31
32	32	32	32	32	32	32
33	33	33	33	33	33	33
34	34	34	34	34	34	34
35	35	35	35	35	35	35
36	36	36	36	36	36	36
37	37	37	37	37	37	37
38	38	38	38	38	38	38
39	39	39	39	39	39	39
40	40	40	40	40	40	40
41	41	41	41	41	41	41
42	42	42	42	42	42	42
43	43	43	43	43	43	43
44	44	44	44	44	44	44
45	45	45	45	45	45	45
46	46	46	46	46	46	46
47	47	47	47	47	47	47
48	48	48	48	48	48	48
49	49	49	49	49	49	49
50	50	50	50	50	50	50
51	51	51	51	51	51	51
52	52	52	52	52	52	52
53	53	53	53	53	53	53
54	54	54	54	54	54	54
55	55	55	55	55	55	55
56	56	56	56	56	56	56
57	57	57	57	57	57	57
58	58	58	58	58	58	58
59	59	59	59	59	59	59
60	60	60	60	60	60	60
61	61	61	61	61	61	61
62	62	62	62	62	62	62
63	63	63	63	63	63	63
64	64	64	64	64	64	64
65	65	65	65	65	65	65

### Add Confirmatory Items List

## S. Clarification of Prior NRC Approvals

 Pages Attached

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## Introduction

The elements of the FP CLB for which specific NRC previous approval is uncertain are identified in the following sections. Also provided in the following sections is sufficient detail to demonstrate how those elements of the FP CLB meet the requirements in 10 CFR 50.48(c) (RG 1.205, Revision 0, Regulatory Position C.2.2).

[For each topic that requires clarification of prior approval provide the following information]

## Prior Approval Clarification Request 1

### Current Licensing Basis:

[Enter an explanation of the current licensing basis and what issue requires clarification]

### Background/Basis:

[Provide the background and basis for the claim of previous approval. This should include excerpts from submittals and NRC approvals (SERs)]

### Request

[State the specific request that requires clarification.]

For plants that need this section, recommend that the prior approvals are described in sufficient detail to make the licensing basis clear.

## T. Internal Events PRA Quality

[ - ] Pages Attached

DRAFT

[In accordance with RG 1.205 position 4.3:

*“The licensee should submit the documentation described in Section 4.2 of Regulatory Guide 1.200 to address the baseline PRA and application-specific analyses. For PRA Standard “supporting requirements” important to the NFPA 805 risk assessments, the NRC position is that Capability Category II is generally acceptable. Licensees should justify use of Capability Category I for specific supporting requirements in their NFPA 805 risk assessments, if they contend that it is adequate for the application. Licensees should also evaluate whether portions of the PRA need to meet Capability Category III, as described in the PRA Standard.”]*

[Insert a discussion to address this guidance.]

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## U. Fire PRA Quality

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[In accordance with RG 1.205 position 4.3:

*“The licensee should submit the documentation described in Section 4.2 of Regulatory Guide 1.200 to address the baseline PRA and application-specific analyses. For PRA Standard “supporting requirements” important to the NFPA 805 risk assessments, the NRC position is that Capability Category II is generally acceptable. Licensees should justify use of Capability Category I for specific supporting requirements in their NFPA 805 risk assessments, if they contend that it is adequate for the application. Licensees should also evaluate whether portions of the PRA need to meet Capability Category III, as described in the PRA Standard.”]*

[Insert a discussion to address this guidance.]

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## V. Fire PRA Insights

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## W.1 Fire PRA Overall Risk Insights

Risk insights were documented as part of the development of the FPRA. The total plant fire CDF/LERF was derived using the NUREG/CR-6850 methodology for FPRA development and is useful in identifying the areas of the plant where fire risk is greatest. The risk insights generated were useful in identifying areas where specific contributors might be mitigated via modification. A detailed description of significant risk sequences associated with the fire initiating events that collectively represent 95% (and individually any sequences above 1% contribution) of the calculated fire risk for the plant was prepared for the purposes of gaining these insights and an understanding of the risk significance of MSO combinations. These insights are provided in Table W-1.

## W.2 Risk Change Due to NFPA 805 Transition

In accordance with the guidance in Regulatory Position C.2.4.4.2 of RG 1.205 Revision 1,

*“The total increase or decrease in risk associated with the implementation of NFPA 805 for the overall plant should be calculated by summing the risk increases and decreases for each fire area (including any risk increases resulting from previously approved recovery actions). The total risk increase should be consistent with the acceptance guidelines in Regulatory Guide 1.174. Note that the acceptance guidelines of Regulatory Guide 1.174 may require the total CDF, LERF, or both, to evaluate changes where the risk impact exceeds specific guidelines. If the additional risk associated with previously approved recovery actions is greater than the acceptance guidelines in Regulatory Guide 1.174, then the net change in total plant risk incurred by any proposed alternatives to the deterministic criteria in NFPA 805, Chapter 4 (other than the previously approved recovery actions), should be risk-neutral or represent a risk decrease.”*

[Insert a discussion of the total risk increase/decrease and how RG 1.174 acceptance criteria are met]

[Your Utility Here]

Table V-1 Fire Initiating Events Representing 95% of the Calculated Fire Risk for [Enter PLANT]

Scenario	Description	Contribution	Risk insights	CCDP	IF	CDF