
[ENTER Utility Here]
[ENTER Power Plant Here]

Comment [e1]: NOTE TO LAR DEVELOPER:
Background information and, description of transition process and figures are optional information.

Comment [e2]: NOTE TO LAR DEVELOPER:
Ensure a review is performed for 'will' statements that should be included in the Attachment S, Items for Implementation Table. Ensure enough detail is provided for the reviewers to understand what will be completed as part of the item for implementation.

Comment [A3]: NOTE TO LAR DEVELOPER
The NRC proposed a Draft Criteria for Reviewing NFPA 805 License Amendment Requests and Safety Evaluations for SUNSI requirements on 1/19/12 (ML120190323). Industry presented concerns to the NRC on 2/16/12 (ML120540379). At the 6/27/12 NRC Public Meeting, the NRC presented on the topic (ML12178A407). The industry and NRC agreed at the 6/27 and 6/28/12 public meetings to remove specific expectations on redactions from the LAR template sections (i.e., Attachments C, D, G, S, and W). NRC guidance on redaction for NFPA 805 submittals is contained in ML120190323. Licensees should follow this guidance or their plant-specific processes for redaction.

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

[ENTER YOUR LOGO HERE]

Transition Report

[ENTER Date]

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Executive Summary

[ENTER LICENSEE] will transition the [ENTER PLANT] fire protection program to a new Risk-Informed, Performance-Based (RI-PB) alternative per 10 CFR 50.48(c) which incorporates by reference NFPA 805. The licensing basis per [Enter appropriate fire protection licensing basis] will be superseded.

[EXPLAIN commitment to transition to NFPA 805 here]

The transition process consisted of a review and update of [ENTER PLANT] documentation, including the development of a Fire Probabilistic Risk Assessment (PRA) using NUREG/CR 6850 as guidance. This Transition Report summarizes the transition process and results. This Transition Report contains information:

- Required by 10 CFR 50.48(c).
- Recommended by guidance document Nuclear Energy Institute (NEI) 04-02 Revision 2 and appropriate Frequently Asked Questions (FAQs).
- Recommended by guidance document Regulatory Guide 1.205 Revision 1.

Comment [e4]: NOTE TO LAR DEVELOPER:

Ensure correct revision.

Section 4 of the Transition Report provides a summary of compliance with the following NFPA 805 requirements:

- Fundamental Fire Protection Program Elements and Minimum Design Requirements
- Nuclear Safety Performance Criteria, including:
 - Non-Power Operational Modes
 - Fire Risk Evaluations
 - Radioactive Release Performance Criteria
 - Monitoring Program
- Program Documentation, Configuration Control, and Quality Assurance

Section 5 of the Transition Report provides regulatory evaluations and associated attachments, including:

- Changes to License Condition
- Changes to Technical Specifications, Orders, and Exemptions,
- Determination of No Significant Hazards and evaluation of Environmental Considerations.

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

Attachment H contains the approved FAQs not yet incorporated into the endorsed revision of NEI 04-02. These FAQs have been used to clarify the guidance in RG 1.205, NEI 04-02, and the requirements of NFPA 805 and in the preparation of this License Amendment Request.

Comment [e5]: NOTE TO LAR DEVELOPER:

If you choose to use information from an unapproved FAQ, provide justification in Attachment H for the deviation from the approved guidance

Acronym List

Comment [e6]: NOTE TO LAR DEVELOPER:

An acronym list would greatly assist NRC reviewers. In particular, it would be helpful to include all the acronyms that come from data copied from plant databases since those databases may use different terminology or acronyms than the body of the LAR.

1.0 INTRODUCTION

The Nuclear Regulatory Commission (NRC) has promulgated an alternative rule for fire protection requirements at nuclear power plants, 10 CFR 50.48(c), National Fire Protection Association Standard 805 (NFPA 805). [ENTER LICENSEE] is implementing the Nuclear Energy Institute methodology NEI 04-02, "Guidance for Implementing a Risk-informed, Performance-based Fire Protection Program Under 10 CFR 50.48(c)" (NEI 04-02), to transition [ENTER PLANT] from its current fire protection licensing basis to the new requirements as outlined in NFPA 805. This report describes the transition methodology utilized and documents how [ENTER PLANT] complies 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 Risk-Informed, Performance-Based (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 to 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 to assist licensees in adopting NFPA 805 and making the transition from their current fire protection licensing basis to one based on NFPA 805. The NRC issued Regulatory Guide (RG) 1.205, Risk-Informed, Performance-Based Fire Protection for Existing Light Water Nuclear Power Plants, which endorses NEI 04-02, with exceptions, in December 2009.¹

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

Comment [e7]: NOTE TO LAR DEVELOPER:

If you have deviated from the endorsed process, provide justification in this section or Attachment H.

Update NEI 04-02 and RG 1.205 references as necessary. See footnote also.

¹ Where referred to in this document NEI 04-02 is Revision 2 and RG 1.205 is Revision 1.

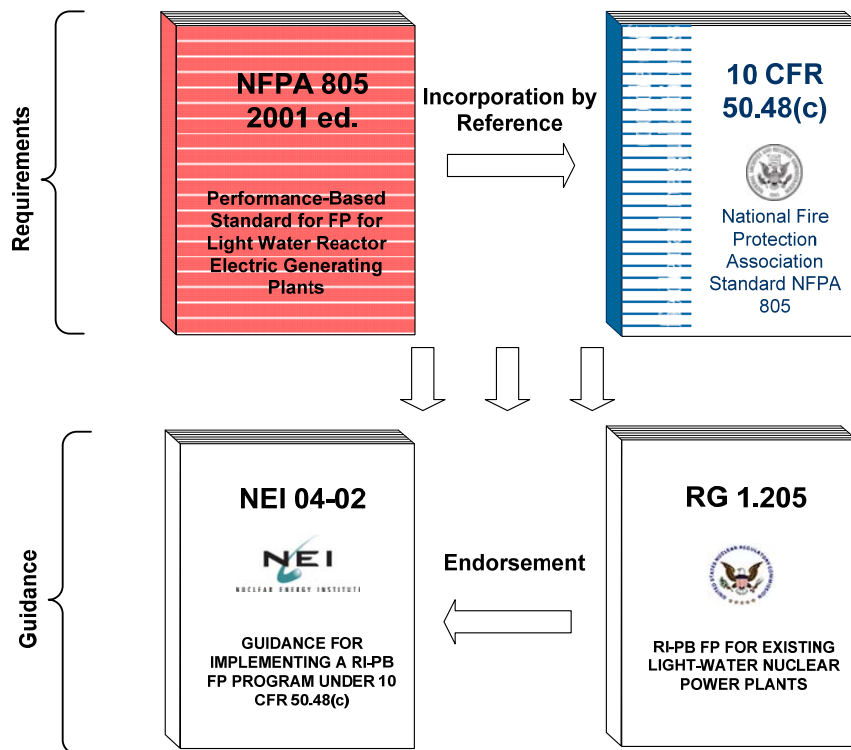


Figure 1-1 NFA 805 Transition – Implementation Requirements/Guidance

1.1.2 Transition to 10 CFR 50.48(c)

1.1.2.1 Start of Transition

[ENTER LICENSEE] submitted a letter of intent to the NRC on [ENTER date and ADAMS Accession No.] for [ENTER PLANT] to adopt NFA 805 in accordance with 10 CFR 50.48(c).

By letter dated [ENTER date and ADAMS Accession No.], the NRC granted a three year enforcement discretion period. In accordance with NRC Enforcement Policy, the enforcement discretion period will continue until the NRC approval of the license amendment request (LAR) is completed.

1.1.2.2 Transition Process

The transition to NFA 805 includes the following high level activities:

- [ENTER major initiative(s) associated with the transition to NFA 805 for example]
- A new fire safe shutdown analysis

- A new Fire Probabilistic Risk Assessment (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 pre-transition Licensing Basis to 10 CFR 50.48(c) as specified in NEI 04-02 and RG 1.205

1.2 Purpose

The purpose of the Transition Report is as follows:

- 1) Describe the process implemented to transition the current fire protection program to comply with the additional requirements of 10 CFR 50.48(c)
- 2) Summarize the results of the transition process
- 3) Explain the bases for conclusions that the fire protection program complies with 10 CFR 50.48(c) requirements
- 4) Describe the new fire protection licensing basis
- 5) Describe the configuration management processes used to manage post-transition changes to the station and the fire protection program, and resulting impact on the licensing basis

2.0 OVERVIEW OF EXISTING FIRE PROTECTION PROGRAM

2.1 Current Fire Protection Licensing Basis

[ENTER PLANT] was licensed to operate on [ENTER DATE]. As a result, the [ENTER PLANT] fire protection program is based on compliance with 10 CFR 50.48(a), [ENTER appropriate Licensing Basis 10 CFR 50.48(b) or (e)], and the following License Condition:

[ENTER LICENSEE] [ENTER PLANT] [ENTER LICENSE CONDITION REFERENCE] states:

[Insert current license condition citation]

Comment [e8]: NOTE TO LAR DEVELOPER:

10 CFR 50.48 (e) no longer exists. For post 1979 plant may want to use "10 CFR 50.48(a) and the following License Condition".

2.2 NRC Acceptance of the Fire Protection Licensing Basis

[ENTER an explanation of each safety evaluation listed in the License Condition. There may be instances where additional fire protection program SERs exist but are not captured in the license condition. Ensure that all SERs applicable to the fire protection program are discussed.]

Example Level of Detail

In response to the NRC's request, Duke Energy performed a fire hazards analysis which analyzed the ONS fire protection program against the guidance of Appendix A to BTP APCSB 9.5-1. The results of the analysis, in addition to proposed modifications and additions to the fire protection system, were communicated to the NRC by letter dated December 31, 1976, and served as the basis for the Appendix A to BTP APCSB 9.5-1 safety evaluation, dated August 11, 1978.

Duke Energy requested the deletion of the requirement for spare dedicated cables for the motors of the Low Pressure Service Water pumps in a letter dated June 19, 1978. The NRC supplemented the August 11, 1978 safety evaluation on October 5, 1978 deleting the requirement for spare cables.

On June 9, 1981, the NRC revised License Condition 3.E, the common Technical Specifications related to facility fire protection modifications, and clarified the Fire Protection Safety Evaluation, which was issued on August 11, 1978.

In a safety evaluation dated April 28, 1983 the NRC concluded that the ONS design will provide one train of systems necessary to achieve and maintain safe shutdown conditions by utilizing either the control room or the Standby Shutdown Facility (SSF) in conjunction with undamaged systems in the fire affected unit, and thus will meet the requirements of 10 CFR 50, Appendix R, Sections III.G.3 and III.L with respect to safe shutdown in the event of a fire, with the exceptions of the availability of a source range flux monitor and steam generator pressure indication at the SSF. An exemption request was requested and granted for this deviation on August 31, 1983.

In addition to the instrumentation exemption, the NRC granted the following:

- An exemption from the 10 CFR 50, Appendix R Section III.G.3 requirement to provide fixed suppression in the Control Rooms in a safety evaluation dated February 2, 1982.

Comment [e9]: NOTE TO LAR DEVELOPER:

Review final HNP and ONS LAR submittals for level of detail.

- An exemption from 10 CFR 50, Appendix R Section III.G.2.a for the lack of 3-hour fire rated barrier separation between safe shutdown circuits (between the West Penetration and Balance of Plant Fire Areas) in a safety evaluation dated August 21, 1989.

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 a Safety Evaluation; 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. Consistent with the guidance in NEI 04-02, [ENTER LICENSEE] has implemented the NFPA 805 Section 2.2 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.

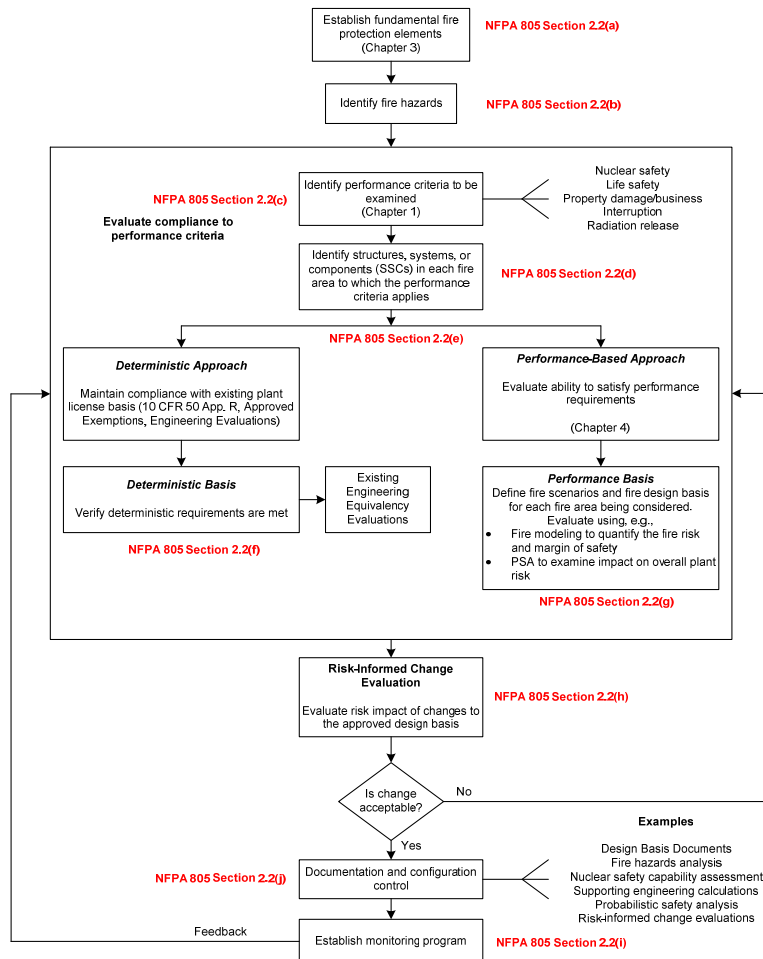


Figure 3-1 NFPA 805 Process [NEI 04-02 Figure 3-1 based on Figure 2-2 of NFPA 805]²

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.

² 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 by reference of NFPA 805.

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 3-2.

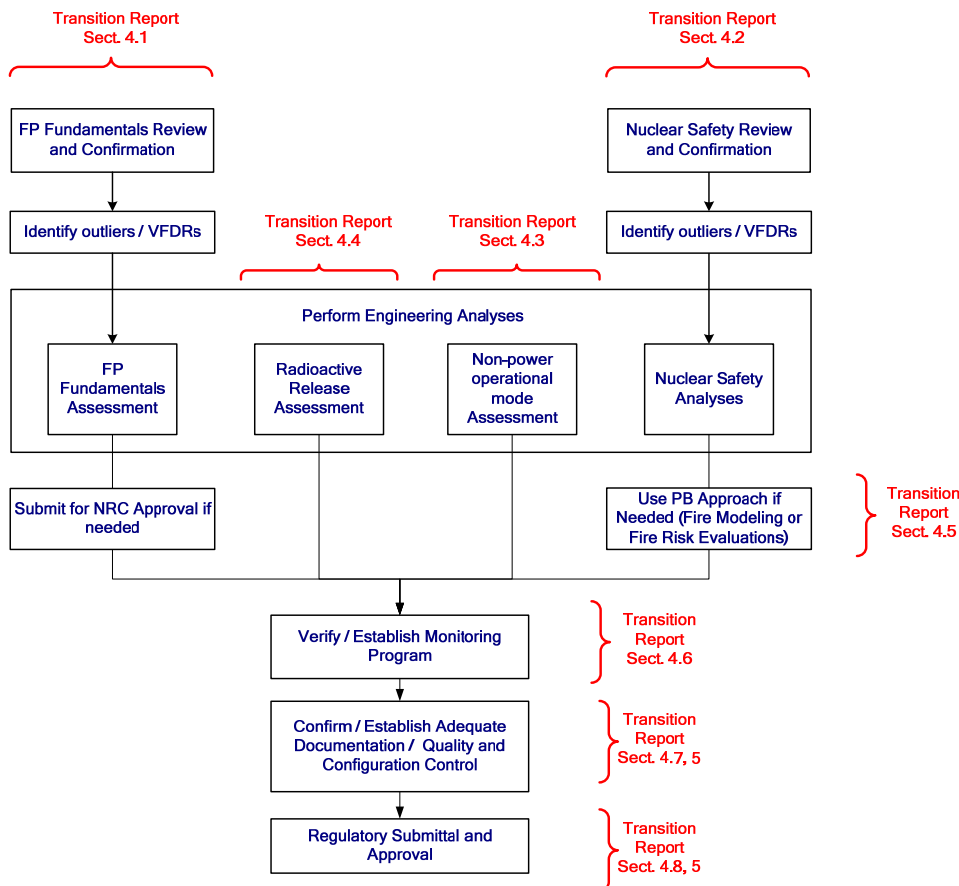


Figure 3-2 Transition Process (Simplified) [based on NEI 04-02 Figure 4-1]

3.4 NFPA 805 Frequently Asked Questions (FAQs)

The NRC has worked with NEI and two Pilot Plants (Oconee Nuclear Station 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, and the requirements of 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, Process for Communicating Clarifications

of Staff Positions Provided in RG 1.205 Concerning Issues Identified during the Pilot Application of NFPA Standard 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 plants. Final closure of the FAQs will occur when future revisions of RG 1.205, endorsing the related revisions of NEI 04-02, are approved by the NRC. It is expected that additional FAQs will be written and existing FAQs will be revised as plants continue NFPA 805 transition after the Pilot Plant Safety Evaluations.

Attachment H contains the list of approved FAQs not yet incorporated into the endorsed revision of NEI 04-02. These FAQs have been used to clarify the guidance in RG 1.205, NEI 04-02, and the requirements of NFPA 805 and in the preparation of this LAR.

Comment [e10]: NOTE TO LAR DEVELOPER:

If you choose to use information from an unapproved FAQ, provide justification in Attachment H for the deviation from the approved guidance

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 pre-transition licensing basis and plant configuration meets these criteria and for identifying the fire protection program changes that would be necessary for compliance with NFPA 805. NEI 04-02 Appendix B-1 provides guidance on documenting compliance with the program requirements of NFPA 805 Chapter 3.

4.1.1 Overview of Evaluation Process

The comparison of the [ENTER PLANT] Fire Protection Program to the requirements of NFPA 805 Chapter 3 was performed and documented in a [ENTER DOCUMENT]. The [ENTER DOCUMENT] used the guidance contained in NEI 04-02, Section 4.3.1 and Appendix B-1 (See 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 with use of Existing Engineering Equivalency Evaluations (EEEEEs) - For those sections/subsections determined to be equivalent to the NFPA 805 Chapter 3 requirements as documented by engineering analysis
- Submit for NRC Approval - For those sections/subsections for which approval is sought in this LAR submittal in accordance with 10 CFR 50.48(c)(2)(vii). A summary of the bases of acceptability is provided (See Attachment L for details).

In some cases multiple compliance statements have been assigned to a specific NFPA 805 Chapter 3 section/subsection. Where this is the case, each compliance/compliance basis statement clearly references the corresponding requirement of NFPA 805 Chapter 3.

Comment [e11]: NOTE TO LAR DEVELOPER:

If you have deviated from the endorsed process, provide justification in this section

Comment [e12]: NOTE TO LAR DEVELOPER:

Some items may require the completion of 'items for implementation' (Attachment S). LAR developer may use an alternate compliance statement such as:

Complies – with item for implementation

Comment [A13]: NOTE TO LAR DEVELOPER:

NRC feedback on this topic was provided at the 11/18/11 Meeting ML113210461 – Slide 22) and at the 6/27/12 Meeting ML12178A409 – Slide 5.

Specifically, some plants were using "Complies with Clarification" in instances where another compliance statement should have been used.

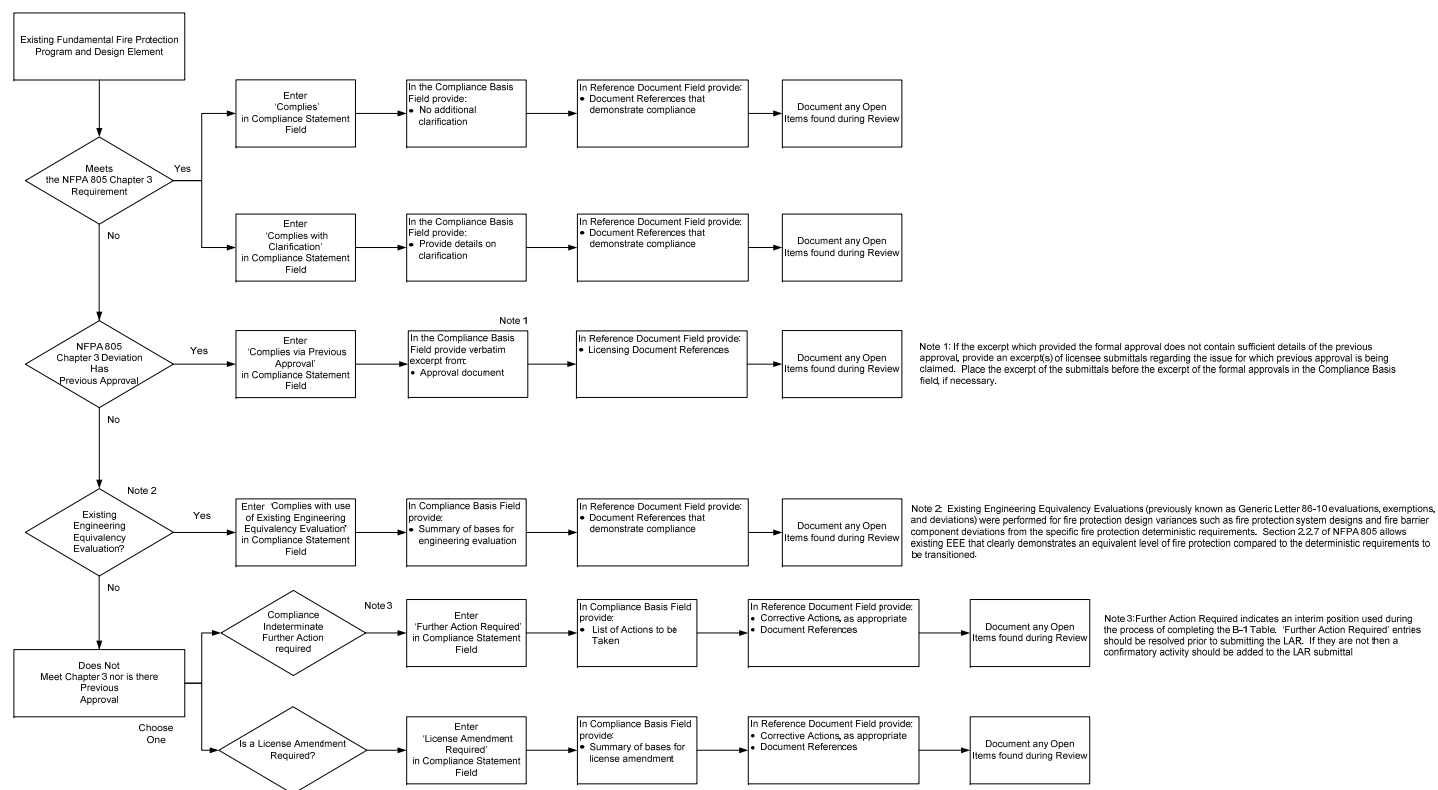


Figure 4-1 - Fundamental Fire Protection Program and Design Elements Transition Process
[Based on NEI 04-02 Figure 4-2]³

³ Figure 4-1 depicts the process used during the transition and therefore contains elements (i.e., open items) that represent interim resolutions. Additional detail on the transition of EEEs is included in Section 4.2.2.

4.1.2 Results of the Evaluation Process

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

Attachment A contains the NEI 04-02 Table B-1, Transition of Fundamental Fire Protection Program and Design Elements. This table provides the compliance basis for the requirements in NFPA 805 Chapter 3. Except as identified in Section 4.1.2.3, Attachment A demonstrates that the fire protection program at [ENTER PLANT] either:

- Complies directly with the requirements of NFPA 805 Chapter 3,
- Complies with clarification with the requirements of NFPA 805 Chapter 3,
- Complies through the use of existing engineering equivalency evaluations which are valid and of appropriate quality, or
- Complies with a previously NRC approved alternative to NFPA 805 Chapter 3 and therefore the specific requirement of NFPA 805 Chapter 3 is supplanted.

4.1.2.2 NFPA 805 Chapter 3 Requirements Requiring Clarification of Prior NRC Approval

NFPA 805 Section 3.1 states in part, "Previously approved alternatives from the fundamental protection program attributes of this chapter by the AHJ take precedence over the requirements contained herein." In some cases prior NRC approval of an NFPA 805 Chapter 3 program attribute may be unclear. [ENTER LICENSEE] requests that the NRC concur with their finding of prior approval for the following sections of NFPA 805 Chapter 3:

- None.

OR

- [ENTER Section(s) of NFPA Chapter 3 for which clarification will be sought. Discuss the specific requirement that requires clarification. For Example:
- 3.3.12(2) – Clarification of the specific approval of the size of the Reactor Coolant Pump oil collection tank volume.]

The discussion of the prior approval, including appropriate reference documents, is provided in Attachment T.

4.1.2.3 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:

- [ENTER Section(s) of NFPA Chapter 3 for which NRC approval will be sought. Discuss the specific requirement not met. For Example:
- 3.5.16– Approval is requested for the use of fire protection water for specific plant evolutions.]

The specific deviation and a discussion of how the alternative satisfies 10 CFR 50.48(c)(2)(vii) requirements are provided in Attachment L. [ENTER LICENSEE] requests NRC approval of these performance-based methods.

4.1.3 Definition of Power Block and Plant

Where used in NFPA 805 Chapter 3 the terms “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 or structures that are identified in the facility’s pre-transition licensing basis.

[ENTER summary of specific process used to determine the structures that are considered in the Power Block.]

These structures are listed in Attachment I and define the “power block” and “plant”.

4.2 Nuclear Safety Performance Criteria

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 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 pre-transition licensing basis meets these criteria and for identifying any necessary fire 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

The Nuclear Safety Capability Assessment (NSCA) Methodology review consists of four processes:

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

The methodology for demonstrating reasonable assurance that a fire during non-power operational (NPO) modes will not prevent the plant from achieving and maintaining the fuel in a safe and stable condition 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

NFPA 805 Section 2.4.2 Nuclear Safety Capability Assessment states:

- “The purpose of this section is to define the methodology for performing a nuclear safety capability assessment. The following steps shall be performed:*
- (1) Selection of systems and equipment and their interrelationships necessary to achieve the nuclear safety performance criteria in Chapter 1*
 - (2) Selection of cables necessary to achieve the nuclear safety performance criteria in Chapter 1*
 - (3) Identification of the location of nuclear safety equipment and cables*

Comment [e14]: NOTE TO LAR DEVELOPER:

If you have deviated from the endorsed process, provide justification in this section

(4) *Assessment of the ability to achieve the nuclear safety performance criteria given a fire in each fire area*

The NSCA methodology review evaluated the [existing post-fire safe shutdown analysis (SSA) / NSCA] methodology against the guidance provided in NEI 00-01, Revision 1 (ML050310295) Chapter 3, "Deterministic Methodology," as discussed in Appendix B-2 of NEI 04-02. The methodology is depicted in Figure 4-2 and consisted of the following activities:

- Each specific section of NFPA 805 2.4.2 was correlated to the corresponding section of Chapter 3 of NEI 00-01 Revision 1. Based upon the content of the NEI 00-01 methodology statements, a determination was made of the applicability of the section to the station.
- The plant-specific methodology was compared to applicable sections of NEI 00-01 and one of the following alignment statements and its associated basis were assigned to the section:
 - Aligns
 - Aligns with intent
 - Not in Alignment
 - Not in Alignment, but Prior NRC Approval
 - Not in Alignment, but no adverse consequences
 - For those sections that do not align, an assessment was made to determine if the 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. If the section has no adverse consequences, these sections of NEI 00-01 can be dispositioned without further review.

The comparison of the [ENTER PLANT] [existing post-fire SSA / NSCA methodology] to NEI 00-01 Chapter 3 (NEI 04-02 Table B-2) was performed and documented in [ENTER DOCUMENT].

In addition, a review of NEI 00-01, Revision 2, (ML091770265) Chapter 3, was conducted to identify the substantive changes from NEI 00-01, Revision 1 that are applicable to an NFPA 805 fire protection program. This review was performed and documented in [ENTER DOCUMENT].

Results from Evaluation Process

The method used to perform the [existing post-fire SSA / NSCA] with respect to selection of systems and equipment, selection of cables, and identification of the location of equipment and cables, either meets the NRC endorsed guidance from NEI 00-01, Revision 1, Chapter 3 (as supplemented by the gap analysis) directly or met the intent of the endorsed guidance with adequate justification as documented in Attachment B.

OR

Comment [e15]: NOTE TO LAR DEVELOPER:

A licensee may choose to compare to Revision 2 of NEI 00-01 instead of performing the gap analysis identified below,

Comment [A16]: NOTE TO LAR DEVELOPER:

NRC feedback provided on this topic at the 11/18/11 Meeting ML113210461 – Slide 19 and at the 6/27/12 Meeting ML12178A409 – Slide 5.

B-2 Table alignment with endorsed guidance should be based on current, living engineering documentation, not previous licensing basis (Appendix R) or calculations being superseded by NFPA 805 processes/calculations.

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Comment [e17]: NOTE TO LAR DEVELOPER:

NEI 00-01 Chapter 3 correlates to NFPA 805, which makes it one acceptable way to comply with the regulation. If a licensee chooses to use another compliance method, that should be made clear to the NRC in the LAR.

If a section is not in alignment and has adverse consequences (and it is not corrected prior to LAR submittal) explain actions taken to address the issue.

Comment [e18]: NOTE TO LAR DEVELOPER:

This additional guidance is based upon the NRC feedback on this topic at the 11/18/11 Meeting ML113210461 – Slide 20 and at the 6/27/12 Meeting ML12178A409 – Slide 5.

Depending on the level of information, additional detail can be provided in Attachment B.

Comment [e19]: NOTE TO LAR DEVELOPER:

Modify for plant specific differences as necessary.

The method used to perform the [existing post-fire SSA / NSCA] with respect to selection of systems and equipment, selection of cables, and identification of the location of equipment and cables, either meets the NRC endorsed guidance from NEI 00-01, Revision 1, Chapter 3 (as supplemented by the gap analysis) directly or met the intent of the endorsed guidance with adequate justification as documented in Attachment B with the following exceptions:

- [ENTER specific exceptions and justification]

Comment [e20]: NOTE TO LAR DEVELOPER:

Modify for plant specific differences as necessary.

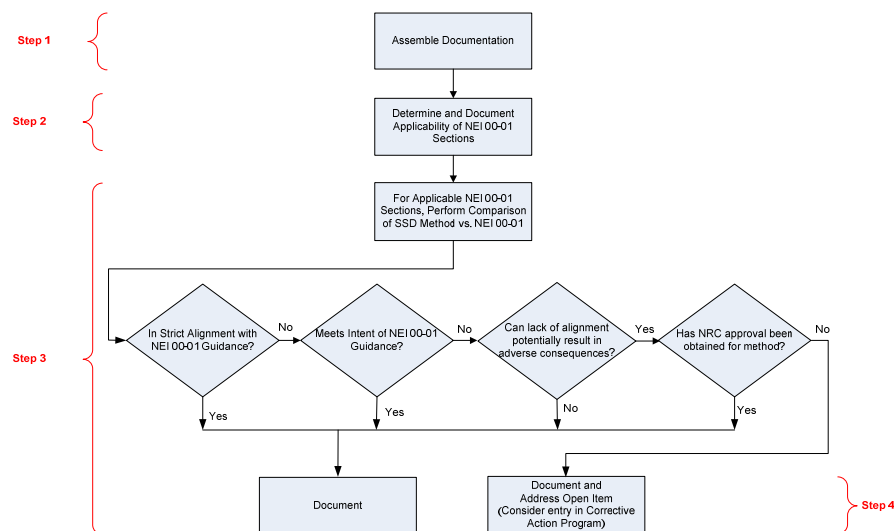


Figure 4-2 – Summary of Nuclear Safety Methodology Review Process (FAQ 07-0039)

Comparison to NEI 00-01 Revision 2

An additional review was performed of NEI 00-01, Revision 2, Chapter 3, for specific substantive changes in the guidance from NEI 00-01, Revision 1 that are applicable to an NFPA 805 transition. The results of this review are summarized below:

- Post fire manual operation of rising stem valves in the fire area of concern (NEI 00-01 Section 3.2.1.2)
[Insert summary of results]
- Analysis of open circuits on a high voltage (e.g., 4.16 kV) ammeter current transformers (NEI 00-01 Section 3.5.2.1)
[Insert summary of results]
- Analysis of control power for switchgear with respect to breaker coordination (NEI 00-01 Section 3.5.2.4)
[Insert summary of results]

Comment [e21]: NOTE TO LAR DEVELOPER:

This additional guidance is based upon the NRC feedback on this topic at the 11/18/11 Meeting ML113210461 – Slide 15).

Enter plant specific results. Depending on the level of information, additional detail can be provided in Attachment B or listed here.

4.2.1.2 Safe and Stable Conditions for the Plant

Overview of Process

The nuclear safety goals, objectives and performance criteria of NFPA 805 allow more flexibility than the previous deterministic programs based on 10 CFR 50 Appendix R and NUREG 0800, Section 9.5-1 (and NEI 00-01, Chapter 3) since NFPA 805 only requires the licensee to maintain the fuel in a safe and stable condition rather than achieve and maintain cold shutdown.

NFPA 805, Section 1.6.56, defines Safe and Stable Conditions as follows

"For fuel in the reactor vessel, head on and tensioned, safe and stable conditions are defined as the ability to maintain $K_{eff} < 0.99$, with a reactor coolant temperature at or below the requirements for hot shutdown for a boiling water reactor and hot standby for a pressurized water reactor. For all other configurations, safe and stable conditions are defined as maintaining $K_{eff} < 0.99$ and fuel coolant temperature below boiling."

The nuclear safety goal of NFPA 805 requires "...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" without a specific reference to a mission time or event coping duration.

For the plant to be in a safe and stable condition, it may not be necessary to perform a transition to cold shutdown as currently required under 10 CFR 50, Appendix R. Therefore, the unit may remain at or below the temperature defined by a hot standby/hot shutdown plant operating state for the event.

Results

Based on [ENTER Document] the NFPA 805 licensing basis for [ENTER PLANT] is to [describe the proposed safe and stable conditions for example]

[Demonstration of the Nuclear Safety Performance Criteria for safe and stable conditions was performed in two analyses.

- At-Power analysis, Modes 1-2. This analysis is discussed in Section 4.2.4.
- Non-Power analysis, which includes Mode 3 and below. This analysis is discussed in Section 4.3.

Discuss mission / coping time as appropriate.

OR

[Demonstration of the Nuclear Safety Performance Criteria for safe and stable conditions was performed in two analyses.

- At-Power analysis, Modes 1 through achieving and maintain cold shutdown. This analysis is discussed in Section 4.2.4.
- Non-Power analysis, which includes Mode 4 and below. This analysis is discussed in Section 4.3.]

Discuss mission / coping time as appropriate.

Comment [e22]: NOTE TO LAR DEVELOPER:

If you have deviated from the endorsed process, provide justification in this section

Comment [e23]: NOTE TO LAR DEVELOPER:

The following information should be provided to the staff in the LAR (this information was originally asked of licensees if a defined time period was included in the LAR. The NRC has subsequently expressed an expectation that the information below be provided regardless of whether a defined time period is defined in the LAR:

- The physical or design constraints that form the basis of the defined time (what is the defined time based on?).
- What plant impact will occur if the time is exceeded (if a 72 hour time is being used, is there some physical limitation in the SSCs relied upon that could result in failure of the functions at 75 hours?). Describe any additional actions that must be taken to maintain safe and stable conditions beyond the time in sufficient detail to determine whether they are recovery actions or maintenance actions (refill water tank(s), refuel diesel storage tank(s), etc.).
- Provide a qualitative assessment of the bases for why any identified physical limitations will not have an adverse impact on the risk (for example, within the defined time period the site emergency organization will be established, more resources will be available, additional material will be available from both within and outside the corporation, damage repairs can be completed before the end of the time resulting in additional success paths being made available, offsite power can be restored, etc.).

OR

Demonstration of the Nuclear Safety Performance Criteria for safe and stable conditions was performed [ENTER plant specific treatment].

4.2.1.3 Establishing Recovery Actions

Overview of Process

NEI 04-02 and RG 1.205 suggest that a licensee submit a summary of its approach for addressing the transition of OMAs as recovery actions in the LAR (Regulatory Position 2.2.1 and NEI-04-02, 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.

The discussion below provides the methodology used to transition pre-transition OMAs and to determine the population of post-transition recovery actions. This process is based on FAQ 07-0030 (ML110070485) and consists of the following steps:

- Step 1: Clearly define the primary control station(s) and determine which pre-transition OMAs are taken at primary control station(s) (Activities that occur in the Main Control Room are not considered pre-transition OMAs). Activities that take place at primary control station(s) or in the Main Control Room are not recovery actions, by definition.
- Step 2: Determine the population of recovery actions that are required to resolve variances from deterministic requirements (VFDRs) (to meet the risk acceptance criteria or maintain a sufficient level of defense-in-depth).
- Step 3: Evaluate the additional risk presented by the use of recovery actions required to demonstrate the availability of a success path
- Step 4: Evaluate the feasibility of the recovery actions
- Step 5: Evaluate the reliability of the recovery actions

Results

The review results are documented in [ENTER DOCUMENT]. Refer to Attachment G for the detailed evaluation process and summary of the results from the process.

4.2.1.4 Evaluation of Multiple Spurious Operations

Overview of Process

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 in accordance with NEI 04-02 and RG 1.205, as supplemented by FAQ 07-0038 Revision

Comment [e24]: NOTE TO LAR DEVELOPER:

If you have deviated from the endorsed process, provide justification in this section

Comment [e25]: NOTE TO LAR DEVELOPER:

If you have deviated from the endorsed process, provide justification in this section

3 (ML110140242). The [PWR/BWR] Generic MSO list dated [ENTER Date] was utilized.

The approach outlined in Figure 4-3 (based on Figure XX from FAQ 07-0038) 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 and consists of the following:

- Identifying potential MSOs of concern.
- Conducting an expert panel to assess plant specific vulnerabilities (e.g., per NEI 00-01, Rev. 1 Section F.4.2).
- Updating the Fire PRA model and [existing post-fire SSA / NSCA] to include the MSOs of concern.
- Evaluating for NFPA 805 Compliance.
- Documenting Results.

This process is intended to support the transition to a new licensing basis. 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).

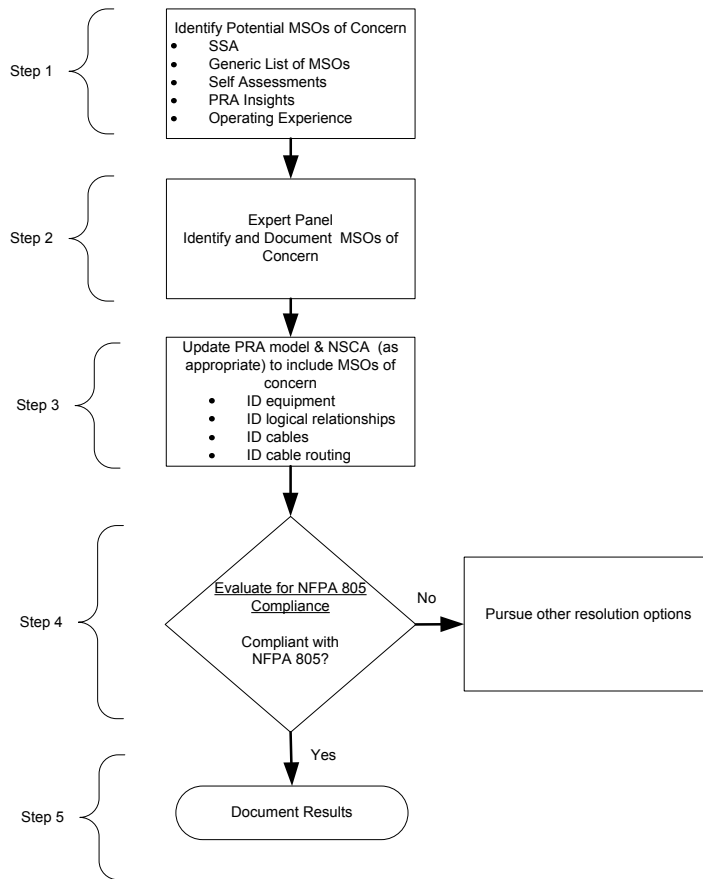


Figure 4-3 – Multiple Spurious Operations – Transition Resolution Process
(Based on FAQ 07-0038)

Results

Refer to Attachment F for the process used and the results.

4.2.2 Existing Engineering Equivalency Evaluation Transition

Overview of Evaluation Process

The EEEEs that support compliance with NFPA 805 Chapter 3 or Chapter 4 (both those that existed prior to the transition and those that were created during the transition) were reviewed using the methodology contained in NEI 04-02. The methodology for performing the EEEE review included the following determinations:

- The EEEE is not based solely on quantitative risk evaluations,
- The EEEE is an appropriate use of an engineering equivalency evaluation,
- The EEEE is of appropriate quality,

Comment [e26]: NOTE TO LAR DEVELOPER:

If you have deviated from the endorsed process, provide justification in this section

- The standard license condition is met,
- The EEEE is technically adequate,
- The EEEE reflects the plant as-built condition, and
- The basis for acceptability of the EEEE remains valid

In accordance with the guidance in RG 1.205, Regulatory Position 2.3.2 and NEI 04-02, as clarified by FAQ 07-0054, Demonstrating Compliance with Chapter 4 of NFPA 805, EEEEs that demonstrate that a fire protection system or feature is “adequate for the hazard” are summarized in the LAR as follows:

- If not requesting specific approval for “adequate for the hazard” EEEEs, then the EEEE was referenced where required and a brief description of the evaluated condition was provided.
- If requesting specific NRC approval for “adequate for the hazard” EEEEs, then EEEE was referenced where required to demonstrate compliance and was included in Attachment L for NRC review and approval.

In all cases, the reliance on EEEEs to demonstrate compliance with NFPA 805 requirements was documented in the LAR.

Results

The review results for EEEEs are documented in [ENTER Document].

In accordance with the guidance provided in RG 1.205, Regulatory Position 2.3.2, NEI 04-02, as clarified by FAQ 07-0054, Demonstrating Compliance with Chapter 4 of NFPA 805, EEEEs used to demonstrate compliance with Chapters 3 and 4 of NFPA 805 are referenced in the Attachments A and C as appropriate.

In addition, the following EEEEs require NRC approval:

- List EEEEs

The specific deviation addressed in the EEEE and a discussion of how the alternative satisfies 10 CFR 50.48(c)(2)(vii) requirements are provided in Attachment L.

OR

None of the transitioning EEEEs require NRC approval.

4.2.3 Licensing Action Transition

Overview of Evaluation Process

The existing licensing actions (exemptions / deviations / safety evaluations) review was performed in accordance with NEI 04-02. 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.
- [In addition, variances from the deterministic requirements were identified in the NEI 04-02 Table B-3 (See Attachment C). Some of these variances were subsequently dispositioned via the use of the performance-based approach. A

Comment [e27]: NOTE TO LAR DEVELOPER:

If you have deviated from the endorsed process, provide justification in this section

Comment [e28]: NOTE TO LAR DEVELOPER:

This licensing action review is of the 'Appendix R' licensing actions. Those associated with the 'fire protection Safety Evaluations' are captured in the B-1 Table.

licensing action summary was completed for each fire area using the performance-based approach.]

Results

Attachment K contains the detailed results of the Licensing Action Review.

The following licensing actions will be transitioned into the NFPA 805 fire protection program as previously approved (NFPA 805 Section 2.2.7). These licensing actions are considered compliant under 10 CFR 50.48(c).

- List Licensing Actions

The following licensing actions are no longer necessary and will not be transitioned into the NFPA 805 fire protection program:

- List Licensing Action

Provide brief synopsis as to why it is no longer necessary For example:

- “Appendix R Exemption, Auxiliary Building Non-rated Expansion Joints (III.G.2.a criteria)”

This exemption is no longer required because the boundary definitions within the fire area have changed and are no longer applicable to the issue.

Since the exemptions are either compliant with 10 CFR 50.48(c) or no longer necessary, in accordance with the requirements of 10 CFR 50.48(c)(3)(i), [ENTER Licensee] requests that the exemptions listed in Attachment K be rescinded as part of the LAR process. It is [ENTER Licensee's] understanding that implicit in the superseding of the current license condition, all prior fire protection program Safety Evaluation Reports and commitments will be superseded in their entirety. See Attachment O, Orders and Exemptions.

or

[ENTER Plant] was licensed to operate after January 1, 1979, and as such 10 CFR 50 Appendix R is not applicable and exemptions from the regulation were not necessary. Since the deviations are either compliant with 10 CFR 50.48(c) or no longer necessary, as discussed in Attachment M, upon issuance of the new 10 CFR 50.48(c) license condition, the current [ENTER Licensee] license condition will be superseded. It is [ENTER Licensee's] understanding that implicit in the superseding of the current license condition, all prior fire protection program Safety Evaluation Reports and commitments will be superseded in their entirety.

4.2.4 Fire Area Transition

Overview of Evaluation Process

The Fire Area Transition (NEI 04-02 Table B-3) was performed using the methodology contained in NEI 04-02 and FAQ 07-0054. The methodology for performing the Fire Area Transition, depicted in Figure 4-4, is outlined as follows:

Step 1 - Assembled documentation. Gathered industry and plant-specific fire area analyses and licensing basis documents.

Comment [e29]: NOTE TO LAR DEVELOPER:

This is optional. One way to summarize the results of the performance-based approach is to summarize the results as licensing actions (since technically they are being approved with the LAR submittal).

Comment [e30]: NOTE TO LAR DEVELOPER:

If you have deviated from the endorsed process, provide justification in this section

Step 2 – Documented fulfillment of nuclear safety performance criteria.

- Assessed accomplishment of nuclear safety performance goals. Documented the method of accomplishment, in summary level form, for the fire area.
[Optional: 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.]
- Documented evaluation of effects of fire suppression activities. Documented the evaluation of the effects of fire suppression activities on the ability to achieve the nuclear safety performance criteria.
- Performed licensing action reviews. Performed a review of the licensing aspects of the selected fire area and document the results of the review. See Section 4.2.3.
- Performed existing engineering equivalency evaluation reviews. Performed a review of existing engineering equivalency evaluations (or created new evaluations) documenting the basis for acceptability. See Section 4.2.2.
- Pre-transition OMA reviews. Performed a review of pre-transition OMAs to determine those actions taking place outside of the main control room or outside of the primary control station(s). See Section 4.2.1.3.

Step 3 – VFDR Identification and characterization and resolution considerations. Identified variances from the deterministic requirements of NFPA 805, Section 4.2.3. Documented variances as either a separation issue or a degraded fire protection system or feature. Developed VFDR problem statements to support resolution.

Step 4 – Performance-Based evaluations (Fire Modeling or Fire Risk Evaluations) See Section 4.5.2 for additional information.

Step 5 – Final Disposition.

- Documented final disposition of the VFDRs in Attachment C (NEI 04-02 Table B-3).
- For recovery action compliance strategies, ensured the manual action feasibility analysis of the required recovery actions was completed. Note: if a recovery action cannot meet the feasibility requirements established per NEI 04-02, then alternate means of compliance was considered.
- Documented the post transition NFPA 805 Chapter 4 compliance basis.

Step 6 – Documented required fire protection systems and features. Reviewed the NFPA 805 Section 4.2.3 compliance strategies (including fire area licensing actions and engineering evaluations) and the NFPA 805 Section 4.2.4 compliance strategies (including simplifying deterministic assumptions) to determine the scope of fire protection systems and features 'required' by NFPA 805 Chapter 4. The 'required' fire protection systems and features are subject to the applicable requirements of NFPA 805 Chapter 3.

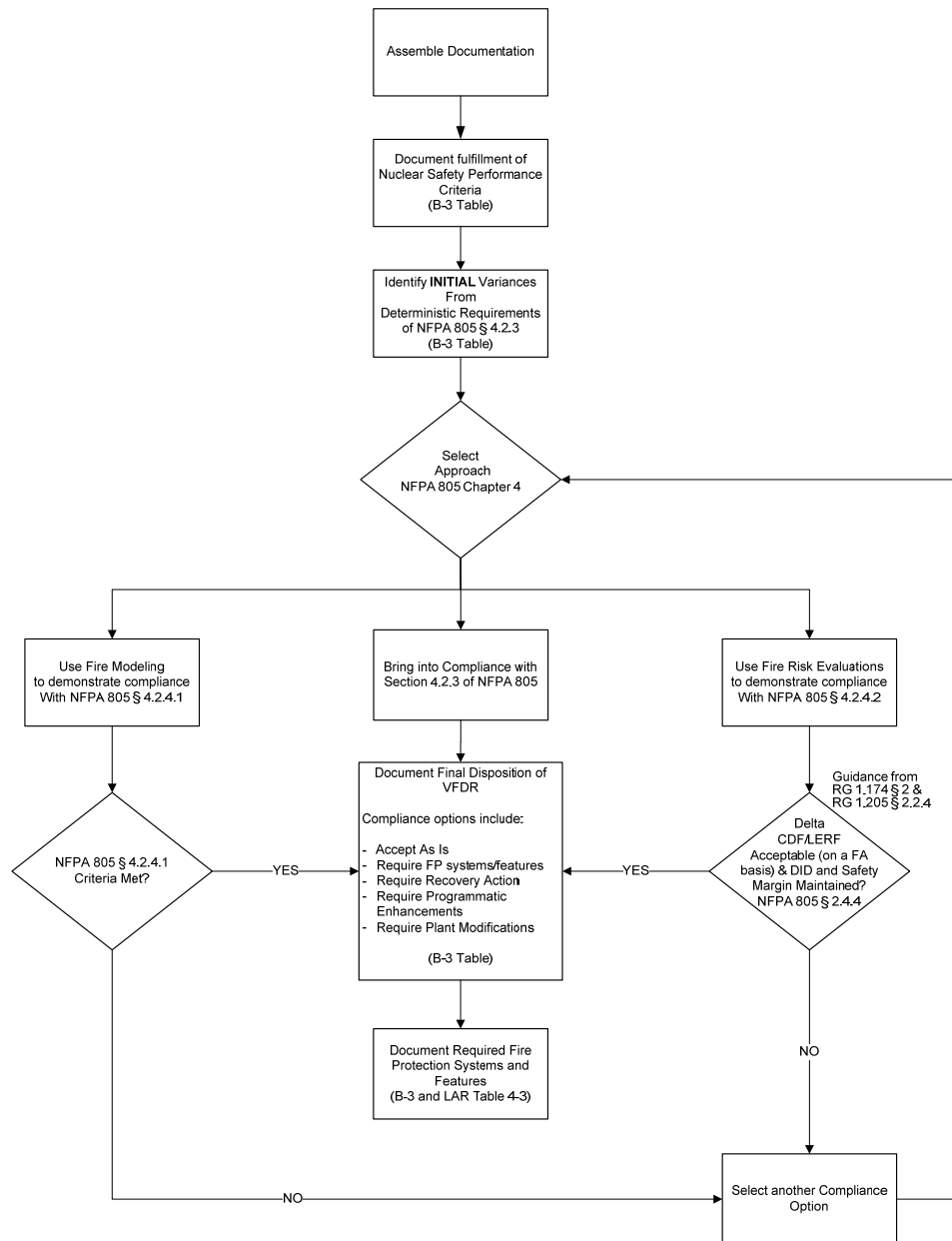


Figure 4-4 – Summary of Fire Area Review
[Based on FAQ 07-0054 Revision 1]

Results of the Evaluation Process

Attachment C contains the results of the Fire Area Transition review (NEI 04-02 Table B-3). On a fire area basis, Attachment C summarizes compliance with Chapter 4 of NFPA 805. [Optional - Attachment C also contains a description of key assumptions utilized in the At-Power Analysis and an overview of accomplishment of each of the performance goals.]

NEI 04-02 Table B-3 includes the following summary level information for each fire area:

- Regulatory Basis – NFPA 805 post-transition 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.
- Fire Suppression Activities Effect on Nuclear Safety Performance Criteria – A summary of the method of accomplishment is provided.
- Licensing Actions – Specific references to [exemption requests / deviations / safety evaluations] that will remain part of the post-transition licensing basis. A brief description of the condition and the basis for acceptability of the licensing action should be provided. [Optional: In addition summaries of Fire Risk Evaluations performed for variances from the deterministic requirements are also provided.] Attachment T contains items for which [ENTER Plant] is requesting concurrence of prior approval.
- EEEE – Specific references to EEEE that rely on determinations of “adequate for the hazard” that will remain part of the post-transition licensing basis. A brief description of the condition and the basis for acceptability should be provided.
- VFDRs – Specific variances from the deterministic requirements of NFPA 805 Section 4.2.3. Refer to Section 4.5.2 for a discussion of the performance-based approach.

Comment [e31]: NOTE TO LAR DEVELOPER:

Consistent with note in Section 4.2.3 summarizing the Fire Risk Evaluations as licensing actions is optional.

4.3 Non-Power Operational Modes

4.3.1 Overview of Evaluation Process

[ENTER Plant] implemented the process outlined in NEI 04-02 and FAQ 07-0040, Clarification on Non-Power Operations. The goal (as depicted in Figure 4-5) is to ensure that contingency plans are established when the plant is in a Non-Power Operational (NPO) mode where the risk is intrinsically high. During low risk periods, normal risk management controls and fire prevention/protection processes and procedures will be utilized.

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

- Reviewed the existing Outage Management Processes
- Identified Equipment/Cables:
 - Reviewed plant systems to determine success paths that support each of the defense-in-depth Key Safety Functions (KSFs), and

Comment [e32]: NOTE TO LAR DEVELOPER:

If you have deviated from the endorsed process, provide justification in this section

- Identified cables required for the selected components and determined their routing.
- Performed Fire Area Assessments (identify pinch points – plant locations where a single fire may damage all success paths of a KSF).
- Managed pinch-points associated with fire-induced vulnerabilities during the outage.

The process is depicted in Figures 4-5 and 4-6. The results are presented in Section 4.3.2.

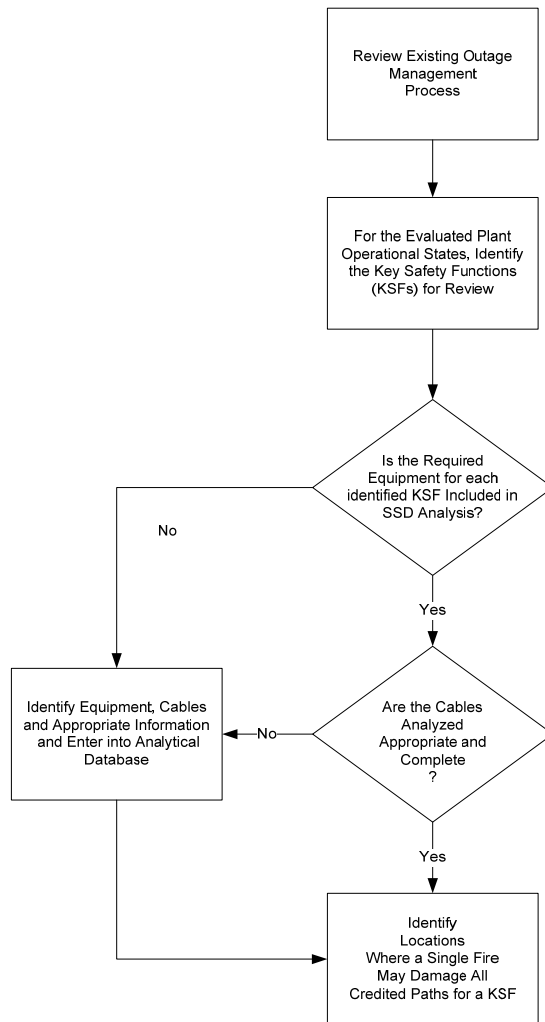


Figure 4-5 Review POSS, KSFs, Equipment, and Cables, and Identify Pinch Points

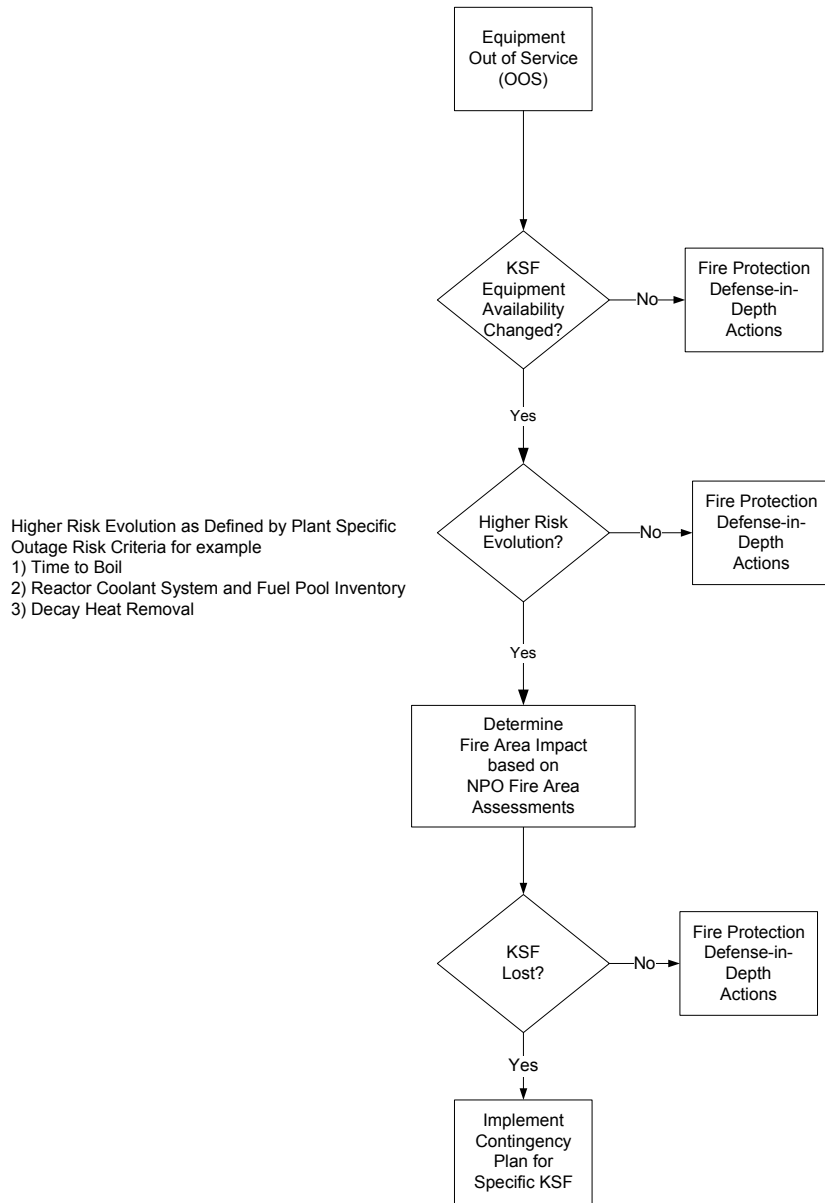


Figure 4-6 Manage Pinch Points

4.3.2 Results of the Evaluation Process

[Insert a discussion of the results of the NPO evaluation and reference to Attachment D. 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

4.4.1 Overview of Evaluation Process

The review of the fire protection program against NFPA 805 requirements for fire suppression related radioactive release was performed using the methodology contained in [ENTER Document]. The methodology consisted of the following:

- A review of fire pre-plans and fire brigade training materials to identify fire protection program elements (e.g., systems / components / procedural control actions / flow paths, etc.) that are being credited to meet the radioactive release goals, objectives, and performance criteria during all plant operating modes, including full power and non-power conditions.
- A review of engineering controls to ensure containment of gaseous and liquid effluents (e.g., smoke and fire fighting agents). This review included all plant operating modes (including full power and non-power conditions). Otherwise, provided a bounding analysis, quantitative analysis, or other analysis that demonstrates that the limitations for instantaneous release of radioactive effluents specified in the unit's Technical Specifications are met.

Comment [e33]: NOTE TO LAR DEVELOPER:

If you have deviated from the endorsed process, provide justification in this section

4.4.2 Results of the Evaluation Process

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

OR

The radioactive release review determined the fire protection program will be compliant with the requirements of NFPA 805 and the guidance in NEI 04-02 and RG 1.205 upon completion of the implementation items identified in Attachment E.

The site specific review of the direct effects of fire suppression activities on radioactive release is summarized in Attachment E.

[ENTER a discussion of any plant specific compliance strategies. See pilot submittals for examples of content and level of detail]

4.5 Fire PRA and Performance-Based Approaches

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 U, V, and W).

- NFPA 805 Performance-Based Approaches (discussed in Section 4.5.2).

4.5.1 Fire PRA Development and Assessment

In accordance with the guidance in RG 1.205, a Fire PRA model was developed for [ENTER Plant] in compliance with the requirements of Part 4 “Requirements for Fires At Power PRA,” of the ASME and ANS combined PRA Standard, ASME/ANS RA-Sa-2009, “Standard for Level 1/Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Application,” (hereafter referred to as Fire PRA Standard). [ENTER Licensee] conducted a peer review by independent industry analysts in accordance with RG 1.200 prior to a risk-informed submittal. 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 technical adequacy, using the guidance of Section 4.2 of RG 1.200. Summarize results in Attachment U. Describe the plant specific aspects of the PRA model. This information can be provided in Attachment U.]

4.5.1.2 Fire PRA

[Describe development of plant fire PRA. Identify guidance utilized in the development of the Fire PRA, such as NUREG/CR 6850/EPRI TR 1011989, approved FAQs, recent EPRI Fire PRA methodology development efforts. Describe any unique, plant specific aspects of the Fire PRA to minimize the need for RAIs. This information can be provided in Attachment V]

[Provide discussion/references to peer review conducted. Summarize results in Attachment V. See pilot submittals for examples of content and level of detail]

Fire Model Utilization in the Application

Fire modeling was performed as part of the Fire PRA development (NFPA 805 Section 4.2.4.2). RG 1.205, Regulatory Position 4.2 and Section 5.1.2 of NEI 04-02, provide guidance to identify fire models that are acceptable to the NRC for plants implementing a risk-informed, performance-based licensing basis.

The following fire models were used:

- [List fire models]

The acceptability of the use of these fire models is included in Attachment J.

4.5.1.3 Results of Fire PRA Peer Review

The [ENTER Plant] Fire PRA ([ENTER Plant Model Identifier]) was peer reviewed against the requirements of ASME/ANS RA-Sa-2009, Part 4.

Comment [e34]: NOTE TO LAR DEVELOPER:

Each Fire PRA method applied in the analyses should be described in either a referenced document or in the LAR itself. If a method comes from a referenced document, the referenced document should include a complete description of the method. For example a referenced description of a target selection process should specify the assumptions used concerning the heat release rate, hot gas layer formation, fire propagation, secondary fire formation, impact of adjacent combustibles, contribution of brigade response, etc..

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

4.5.1.4 Risk Insights

Risk insights were documented as part of the development of the Fire PRA. The total plant fire CDF/LERF was derived using the NUREG/CR-6850 methodology for fire PRA development and is useful in identifying the areas of the plant where fire risk is greatest. A review of the fire initiating events that collectively represent 95% of the calculated fire risk is included as Attachment W.

4.5.2 Performance-Based Approaches

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).

[NOTE TO LAR DEVELOPER: DEPENDING ON APPROACHES USED INCLUDE THE APPROPRIATE PORTIONS OF THE FOLLOWING SECTIONS 4.5.2.1 AND 4.5.2.2. If the Fire Modeling approach is not utilized replace the section text with this sentence: The fire modeling approach was not utilized for the transition.]

4.5.2.1 Fire Modeling Approach

Overview of Evaluation Process

Fire Modeling Evaluations were completed as part of the [ENTER Plant] NFPA 805 transition. These Fire Modeling Evaluations were developed using the [ENTER Process]. This methodology is based upon the requirements of NFPA 805, industry guidance in NEI 04-02, and RG 1.205.

NFPA 805 Section 4.2.4.1 identifies the specific use of fire modeling as a performance-based method. The Fire Modeling Evaluation process consists of the following steps:

- Step 1 – Identified the targets
- Step 2 – Established damage thresholds
- Step 3 – Determined limiting condition(s)
- Step 4 – Established fire scenarios (Maximum Expected and Limiting)
- Step 5 – Determined protection of required nuclear safety success path(s)
- Step 6 – Provided operations guidance, as necessary.

The acceptance criteria for the Fire Modeling Evaluation consist of two parts.

- **Target Damage Occurs?** – The fire modeling analysis defines and evaluates a postulated scenario involving the Maximum Expected Fire Scenario (MEFS). If target set damage does not occur then first acceptance criterion is met.
- **MEFS<<LFS?** – The performance of fire modeling involves a degree of uncertainty. This uncertainty is addressed indirectly by the determination of the Limiting Fire Scenario (LFS). A comparison of MEFS and LFS is used to

Comment [e35]: NOTE TO LAR DEVELOPER:

This section is based on the ONS LAR and FAQ 07-0054

Comment [e36]: NOTE TO LAR DEVELOPER:

If you have deviated from the endorsed process, provide justification in this section

determine if a sufficient fire modeling margin exists. If sufficient fire modeling margin exists, then the fire modeling approach is acceptable. A quantitative risk assessment does not have to be performed since qualitatively the conclusion can be made that the VFDR has a minimal impact on risk (MEFS does not generate damage, and MEFS - LFS margin is sufficiently large to address uncertainties in modeling.)

Fire Model Utilization in the Application

RG 1.205, Regulatory Position 4.2 and Section 5.1.2 of NEI 04-02, provide guidance on documenting the fire models used, and justifying that these fire models and methods are acceptable for use in performance-based analyses when performed by qualified users, have been verified and validated, and are used within their limitations and with the rigor required by the nature and scope of the analyses. The following fire models were used:

- [List fire models]

The acceptability of the use of these fire models are included in Attachment J.

Results of Evaluation Process

Disposition of VFDRs

The [ENTER Plant] [existing post-fire SSA / NSCA and the NFPA 805 transition project activities] have identified a number of variances from the deterministic requirements of NFPA 805 Section 4.2.3. These variances were dispositioned using the fire modeling evaluation process.

Each variance dispositioned using a Fire Model Evaluation was assessed against the Fire Model Evaluation acceptance criteria described above. The results of these calculations are summarized in [Attachment C / or other docketed plant specific reference].

4.5.2.2 Fire Risk Approach

Overview of Evaluation Process

The Fire Risk Evaluations were completed as part of the [ENTER Plant] NFPA 805 transition. These Fire Risk Evaluations were developed using the [ENTER Process]. This methodology is based upon the requirements of NFPA 805, industry guidance in NEI 04-02, and RG 1.205. These are summarized in Table 4-1.

Table 4-1 Fire Risk Evaluation Guidance Summary Table

Document	Section(s)	Topic
NFPA 805	2.2(h), 4.2.4, A.2.2(h), A.2.4.4, D.5	Change Evaluation (2.2(h), 2.2.9, 2.4.4 A.2.2(h), A.2.4.4, D.5) Risk of Recovery Actions (4.2.4) Use of Fire Risk Evaluation (4.2.4.2)
NEI 04-02 Revision 2	4.4, 5.3, Appendix B, Appendix I, Appendix J	Change Evaluation, Change Evaluation Forms (App. I), No specific discussion of Fire Risk Evaluation

Table 4-1 Fire Risk Evaluation Guidance Summary Table

Document	Section(s)	Topic
RG 1.205 Revision 1	C.2.2.4, C.2.4, C.3.2	Risk Evaluations (C.2.2.4) Recovery Actions (C.2.4)

During the transition to NFPA 805, variances from the deterministic approach in Section 4.2.3 of NFPA 805 were evaluated using a Fire Risk Evaluation per Section 4.2.4.2 of NFPA 805. [A Fire Risk Evaluation was performed for each fire area containing variances from the deterministic requirements of Section 4.2.3 of NFPA 805 (VFDRs). – or – A Fire Risk Evaluation was performed for the following fire areas.]

If the Fire Risk Evaluation meets the acceptance criteria, this is confirmation that a success path effectively remains free of fire damage and that the performance-based approach is acceptable per Section 4.2.4.2 of NFPA 805.

The Fire Risk Evaluation process consists of the following steps (Figure 4-7 depicts the Fire Risk Evaluation process used during transition. This is generally based on FAQ 07-0054 Revision 1:

Step 1 – Preparation for the Fire Risk Evaluation.

- Definition of the Variances from the Deterministic Requirements. The definition of the VFDR includes a description of problem statement and the section of NFPA 805 that is not met, type of VFDR (e.g., separation issue or degraded fire protection system), and proposed evaluation per applicable NFPA 805 section.
- Preparatory Evaluation – Fire Risk Evaluation Team Review. Using the information obtained during the development of the NEI 04-02 B-3 Table and the Fire PRA, a team review of the VFDR was performed. Depending on the scope and complexity of the VFDR, the team may include the Safe shutdown/NSCA Engineer, the Fire Protection Engineer, and the Fire PRA Engineer. The purpose and objective of this team review was to address the following;
 - Review of the Fire PRA modeling treatment of VFDR
 - Ensure discrepancies were captured and resolved

Step 2 – Performed the Fire Risk Evaluation

- The Evaluator coordinated as necessary with the Safe shutdown/NSCA Engineer, Fire Protection Engineer and Fire PRA Engineer to assess the VFDR using the Fire Risk Evaluation process to perform the following:
 - Change in Risk Calculation with consideration for additional risk of recovery actions and required fire protection systems and features due to fire risk.
 - Fire area change in risk summary

Step 3 – Reviewed the Acceptance Criteria

- The acceptance criteria for the Fire Risk Evaluation consist of two parts. One is quantitatively based and the other is qualitatively based. The quantitative figures

Comment [e37]: NOTE TO LAR DEVELOPER: Depending on the performance-based methods used these sentences may vary.

of merit are Δ CDF and Δ LERF. The qualitative factors are defense-in-depth and safety margin.

- o Risk Acceptance Criteria. The transition risk evaluation was measured quantitatively for acceptability using the Δ CDF and Δ LERF criteria from RG 1.174, as clarified in RG 1.205 Regulatory Position 2.2.4.
- o Defense-in-Depth. A review of the impact of the change on defense-in-depth was performed, using the guidance NEI 04-02. NFPA 805 defines defense-in-depth as:
 - Preventing fires from starting
 - Rapidly detecting fires and controlling and extinguishing promptly those fires that do occur, thereby limiting damage
 - Providing adequate level of fire protection for structures, systems and components important to safety; so that a fire that is not promptly extinguished will not prevent essential plant safety functions from being performed.

In general, the defense-in-depth requirement was considered to be satisfied if the proposed change does not result in a substantial imbalance among these elements (or echelons).

The review of defense-in-depth was qualitative and addressed each of the elements with respect to the proposed change. Defense-in-depth was performed on a [compartment/ fire scenario/fire area].

Fire protection features and systems relied upon to ensure defense-in-depth were identified as a result of the assessment of defense-in-depth.

- o Safety Margin Assessment. A review of the impact of the change on safety margin was performed. An acceptable set of guidelines for making that assessment is summarized below. Other equivalent acceptance guidelines may also be used.
 - Codes and standards or their alternatives accepted for use by the NRC are met, and
 - Safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) are met, or provides sufficient margin to account for analysis and data uncertainty.

The requirements related to safety margins for the change analysis are described for each of the specific analysis types used in support of the FRE.

Comment [A38]: NOTE TO LAR DEVELOPER

This additional guidance is based upon the NRC feedback on this topic at the 11/18/11 Meeting ML113210461 – Slide 15)

Consider adding site specific information as necessary

Prepare for Fire Risk Evaluation

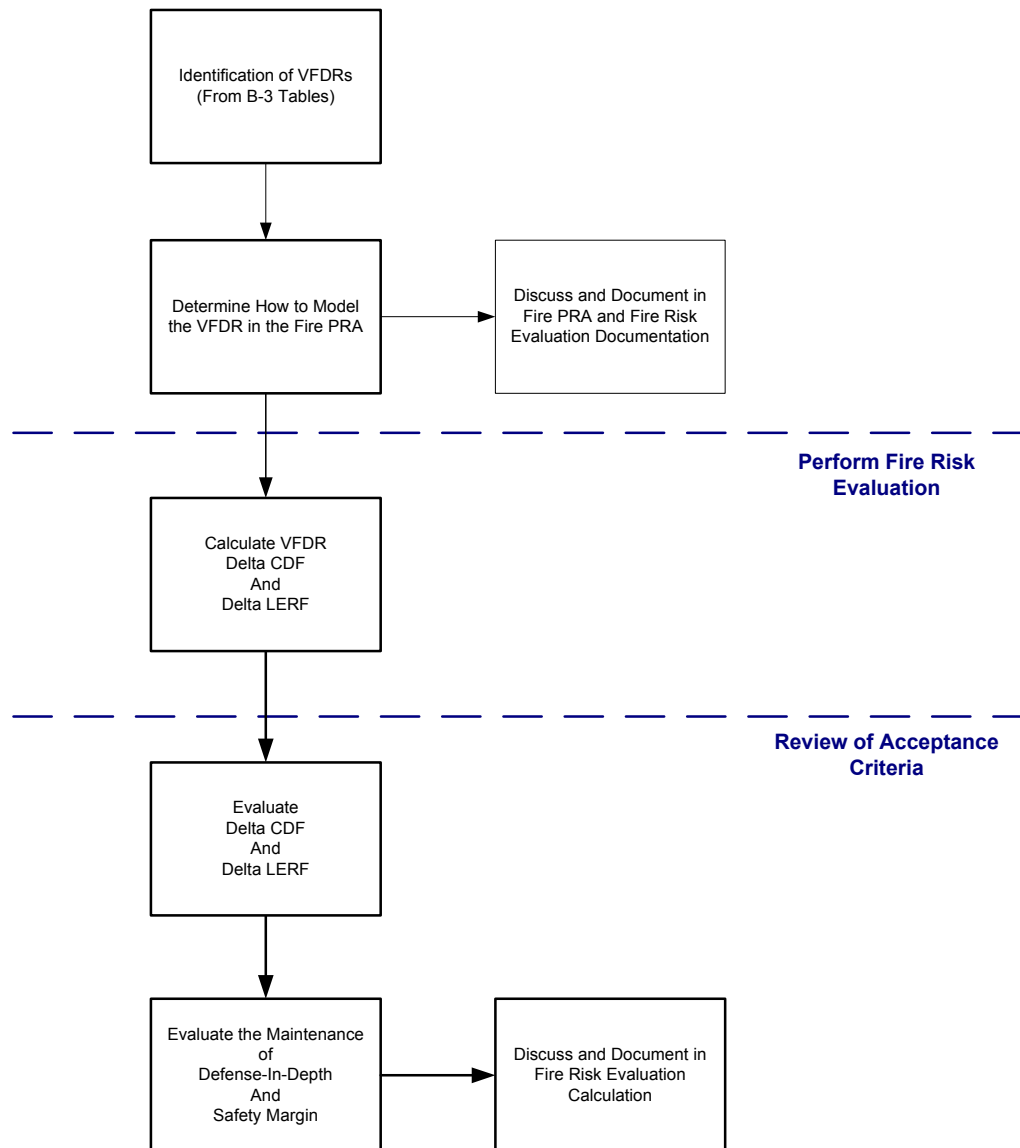


Figure 4-7 – Fire Risk Evaluation Process (NFPA 805 Transition)
[Based on FAQ 07-0054 Revision 1]

Results of Evaluation Process

Disposition of VFDRs

The [ENTER Plant] [existing post-fire SSA / NSCA and the NFPA 805 transition project activities] have identified a number of variances from the deterministic requirements of NFPA 805 Section 4.2.3. These variances were dispositioned using the fire risk evaluation process.

Each variance dispositioned using a Fire Risk Evaluation was assessed against the Fire Risk Evaluation acceptance criteria of Δ CDF and Δ LERF; and maintenance of defense-in-depth and safety margin criteria from Section 5.3.5 of NEI 04-02 and RG 1.205. The results of these calculations are summarized in [Attachment C / or other docketed plant specific reference].

Following completion of transition activities and planned modifications and program changes, the plant will be compliant with 10 CFR 50.48(c).

Risk Change Due to NFPA 805 Transition

In accordance with the guidance in RG 1.205, Section C.2.2.4, Risk Evaluations, risk increases or decreases for each fire area using Fire Risk Evaluations and the overall plant should be provided. Note that the risk increase due to the use of recovery actions was included in the risk change for transition for each fire area.

RG 1.205 Section C.2.2.4.2 states in part

“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.”

The risk increases and decreases are provided in Attachment W.

4.6 Monitoring Program

4.6.1 Overview of NFPA 805 Requirements and NEI 04-02 Guidance on the NFPA 805 Fire Protection System and Feature 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.”

Comment [e39]: NOTE TO LAR DEVELOPER: Revised to reflect FAQ10-0059 Revision 5 and non-pilot RAls

As part of the transition review, the adequacy of the inspection and testing program to address fire protection systems and equipment within plant inspection and the compensatory measures programs should be reviewed. In addition, the adequacy of the plant corrective action program in determining the causes of equipment and programmatic failures and minimizing their recurrence should also be reviewed as part of the transition to a risk-informed, performance-based licensing basis.

4.6.2 Overview of Post-Transition NFPA 805 Monitoring Program

This section describes the process that will be utilized to implement the post-transition NFPA 805 monitoring program. The monitoring program will be implemented after the safety evaluation issuance as part of the fire protection program transition to NFPA 805. See item for implementation in Attachment S. The monitoring process is comprised of four phases.

- Phase 1 – Scoping
- Phase 2 – Screening Using Risk Criteria
- Phase 3 – Risk Target Value Determination
- Phase 4 – Monitoring Implementation

Figure 4-8 provides detail on the Phase 1 and 2 processes.

The results of these phases will be documented in the [ENTER Plant Specific Document] developed during implementation.

Phase 1 – Scoping

In order to meet the NFPA 805 requirements for monitoring, the following categories of SSCs and programmatic elements will be reviewed during the implementation phase for inclusion in the NFPA 805 monitoring program:

- Structures, Systems, and Components required to comply with NFPA 805, specifically:
 - Fire protection systems and features
 - Required by the Nuclear Safety Capability Assessment
 - Modeled in the Fire PRA
 - Required by Chapter 3 of NFPA 805
 - Nuclear Safety Capability Assessment equipment⁴
 - Nuclear safety equipment
 - Fire PRA equipment
 - NPO equipment
 - Structures, systems and components relied upon to meet radioactive release criteria
- Fire Protection Programmatic Elements

Comment [e40]: NOTE TO LAR DEVELOPER:

Plant/owner-operator specific initiatives have been undertaken to optimize fire protection surveillance and testing practices and frequencies based upon performance in accordance with the guidance in EPRI Technical Report (TR) 1006756, "Fire Protection Surveillance Optimization and Maintenance Guide for Fire Protection Systems and Features". This is allowed under traditional regulatory framework using a fire protection standard license condition and by ensuring that the program and its results were satisfactory to insurance representative. Therefore, there are established programs that could be used, enhanced, or modified in an effort to meet the monitoring requirements as discussed in NFPA 805. If a licensee plans to continue to utilize this methodology post-transition, a discussion of its use should be included in the monitoring section of the LAR and NEI 04-02 Table B-1 Transition of Fundamental FP Program and Design sections of the LAR and if not already included in fire protection program documents an item for implementation should be included.

Comment [e41]: NOTE TO LAR DEVELOPER:

Depending on organization of Attachment S, reference a specific implementation item.

⁴ For the purposes of the NFPA 805 Monitoring, "NSCA equipment" is intended to include Nuclear Safety Equipment, Fire PRA equipment, and NPO equipment.

Phase 2 – Screening Using Risk Criteria

The equipment from Phase 1 scoping will be screened to determine the appropriate level of NFPA 805 monitoring. As a minimum, the SSCs identified in Phase 1 will be part of an inspection and test program and system/program health reporting. If not in the current program, the SSCs will be added in order to assure that the criteria can be met reliably.

The following screening process will be used to determine those SSCs that may require additional monitoring beyond normal inspection and test program and system/program health reporting and will be documented in the [ENTER Plant specific document to be developed during implementation].

1. Fire Protection Systems and Features

Those fire protection systems and features identified in Phase 1 are candidates for additional monitoring in the NFPA 805 program commensurate with risk significance.

Risk significance is determined at the component, programmatic element, and/or functional level on an individual fire area basis. Compartments smaller than fire areas may be used provided the compartments are independent (i.e., share no fire protection SSCs). If compartments smaller than fire areas are used the basis will be documented in the [ENTER Plant specific document to be developed during implementation].

The Fire PRA is used to establish the risk significance based on the following screening criteria:

Risk Achievement Worth (RAW) of the monitored parameter ≥ 2.0

(AND) either

Core Damage Frequency (CDF) \times (RAW) $\geq 1.0\text{E-}7$ per year

(OR)

Large Early Release Frequency (LERF) \times (RAW) $\geq 1.0\text{E-}8$ per year

CDF, LERF, and RAW_(monitored parameter) are calculated for each fire area. The 'monitored parameter' will be established at a level commensurate with the amenability of the parameter to risk measurement (e.g., a fire barrier may be more conducive to risk measurement than an individual barrier penetration).

Fire protections systems and features that meet or exceed the criteria identified above are considered High Safety Significant (HSS) will be included in the monitoring program contained in the site Maintenance Rule Program described in [ENTER maintenance rule program reference]. The remaining required fire protection systems and features will be monitored via the existing inspection and test program and/or in the existing system / program health reporting as described in [ENTER existing fire protection inspection and test program and system/program health reporting references].

2. Nuclear Safety Capability Assessment Equipment

Required NSCA equipment, except the NPO scope, identified in Phase 1 will be screened for safety significance using the Fire PRA and the Maintenance Rule guidelines differentiating HSS equipment from Low Safety Significant (LSS) equipment.

Comment [e42]: NOTE TO LAR DEVELOPER:

These are example criteria. The licensees may submit criteria that are different than above for review and approval in the NFPA 805 LAR.

The screening will also ensure that the Maintenance Rule functions are consistent with the required functions of the NSCA equipment.

HSS NSCA equipment not currently monitored in Maintenance Rule will be included in the Maintenance Rule. All NSCA equipment that are not HSS are considered LSS and need not be included in the monitoring program.

For non-power operational modes, the qualitative use of fire prevention to manage fire risk during Higher Risk Evolutions does not lend itself to quantitative risk measurement. Therefore, fire risk management effectiveness is monitored programmatically similar to combustible material controls and other fire prevention programs. Additional monitoring beyond inspection and test programs and system/program health reporting is not considered necessary.

3. SSCs Relied upon for Radioactive Release Criteria

The evaluations performed to meet the radioactive release performance criteria are qualitative in nature. The SSCs relied upon to meet the radioactive release performance criteria are not amenable to quantitative risk measurement. Additionally, since 10 CFR Part 20 limits (which are lower than releases due to core damage and containment breach) for radiological effluents are not being exceeded, equipment relied upon to meet the radioactive release performance criteria is considered inherently low risk. Therefore, additional monitoring beyond inspection and test programs and system/program health reporting is not considered necessary.

4. Fire Protection Programmatic Elements

Monitoring of programmatic elements is required in order to “assess the performance of the fire protection program in meeting the performance criteria”. These programs form the bases for many of the analytical assumptions used to evaluate compliance with NFPA 805 requirements. Programmatic aspects include:

- Transient Combustible Control; Transient Exclusion Zones
- Hot Work Control; Administrative Controls
- Impairment and compensatory measures including program compliance and effectiveness
- Fire Brigade Effectiveness

Monitoring of programmatic elements is more qualitative in nature since the programs do not lend themselves to the numerical methods of reliability and availability.

Therefore, monitoring is conducted using the existing system and program health programs. Fire protection health reports, self-assessments, regulator and insurance company reports provide inputs to the monitoring program.

Phase 3 – Risk Target Value Determination

Phase 3 establishes the target values for reliability and availability for the fire protection systems and features the met or exceeded the screening criteria and the HSS NSCA equipment established in Phase 2.

Target values for reliability and availability for the fire protection systems and features are established at the component level, program level, or functionally through the use of

Comment [e43]: NOTE TO LAR DEVELOPER:

If the Fire PRA and Maintenance Rule are not used to identify HSS NSCA SSCs that require monitoring, the licensee should fully describe the process used.

the pseudo system or 'performance monitoring group' concept. The actual action level is determined based on the number of component, program or functional failures within a sufficiently bounding time period (~2-3 operating cycles). In addition, the EPRI Technical Report (TR) 1006756, "Fire Protection Surveillance Optimization and Maintenance Guide for Fire Protection Systems and Features" (Reference 28) will be used as input for establishing reliability targets, action levels, and monitoring frequency.

Comment [e44]: NOTE TO LAR DEVELOPER:

This is optional.

Since the HSS NSCA equipment have been identified using the Maintenance Rule guidelines, the associated equipment specific performance criteria will be established as in the Maintenance Rule, provided the criteria are consistent with Fire PRA assumptions.

When establishing the action level threshold for reliability and availability, the action level will be no lower than the fire PRA assumptions. Adverse trends and unacceptable levels of availability, reliability, and performance will be reviewed against established action levels. The monitoring program failure criteria and action level targets will be documented in the [ENTER Plant specific document to be developed during implementation].

Note that fire protection systems and features, NSCA equipment, SSCs required to meet the radioactive release criteria, and fire protection program elements that do not meet the screening criteria in Phase 2 will be included in the existing inspection and test programs and the system and program health programs. Reliability and availability criteria will not be assigned.

Phase 4 – Monitoring Implementation

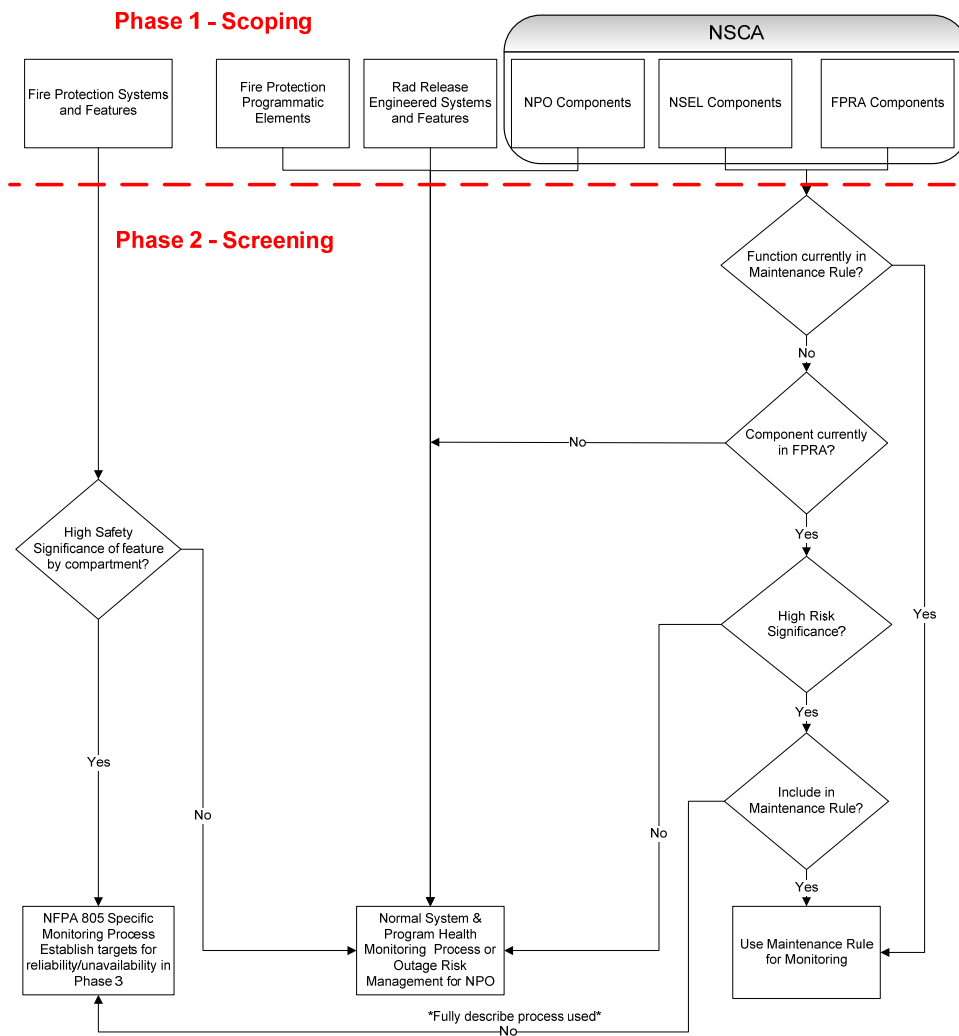
Phase 4 is the implementation of the monitoring program, once the monitoring scope and criteria are established. Monitoring consists of periodically gathering, trending, and evaluating information pertinent to the performance, and/or availability of the equipment and comparing the results with the established goals and performance criteria to verify that the goals are being met. Results of monitoring activities will be analyzed in timely manner to assure that appropriate action is taken. The corrective action process will be used to address performance of fire protection and nuclear safety SSCs that do not meet performance criteria.

For fire protection systems and features and NSCA HSS equipment that are monitored, unacceptable levels of availability, reliability, and performance will be reviewed against the established action levels. If an action level is triggered, corrective action in accordance with [ENTER appropriate procedure] will be initiated to identify the negative trend. A corrective action plan will then be developed to ensure the performance returns to the established level.

When applicable, a sensitivity study can be performed to determine the margin below the action level that still provides acceptable fire PRA results to help prioritize corrective actions if the action level is reached.

A periodic assessment will be performed (e.g., at a frequency of approximately every two to three operating cycles), taking into account, where practical, industry wide operating experience. This will be conducted as part of [ENTER established assessment activity]. Issues that will be addressed include:

- Review systems with performance criteria. Do performance criteria still effectively monitor the functions of the system? Do the criteria still monitor the effectiveness of the fire protection and NSCA systems?
- Have the supporting analyses been revised such that the performance criteria are no longer applicable or new fire protection and NSCA SSCs, programmatic elements and/ or functions need to be in scope?
- Based on the performance during the assessment period, are there any trends in system performance that should be addressed that are not being addressed?



Since the HSS SSCs have been identified using the Maintenance Rule guidelines, the associated SSC specific performance criteria will be established as in the Maintenance Rule, provided the criteria are consistent with Fire PRA assumptions. The actual action level is determined based on the number of component, program or functional failures within a sufficiently bounding time period (~2-3 operating cycles). Adverse trends and unacceptable levels of availability, reliability, and performance will be reviewed against established action levels. The Monitoring Program failure criteria and action level targets will be documented.

Comment [e45]: NOTE TO LAR DEVELOPER:

If the maintenance rule guidelines are not used, provide sufficient detail of the program/process that will be used.

4.7 Program Documentation, Configuration Control, and Quality Assurance

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, [ENTER Plant] has documented analyses to support compliance with 10 CFR 50.48(c). The analyses are being performed in accordance with [ENTER Licensee]'s processes for ensuring assumptions are clearly defined, that results are easily understood, that results are clearly and consistently described, and that sufficient detail is provided to allow future review of the entire analyses.

Analyses, as defined by NFPA 805 Section 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. Note these analyses do not include items such as periodic tests, hot work permits, fire impairments, etc.

The Fire Protection Design Basis Document 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 created/have been created] as part of transition to 10 CFR 50.48(c) to ensure program implementation following receipt of the safety evaluation. Appropriate cross references will be established to supporting documents as required by [ENTER Licensee] processes. [Optional include figure if necessary for clarity. Figure 4-9 depicts the planned post-transition documentation and relationships.]

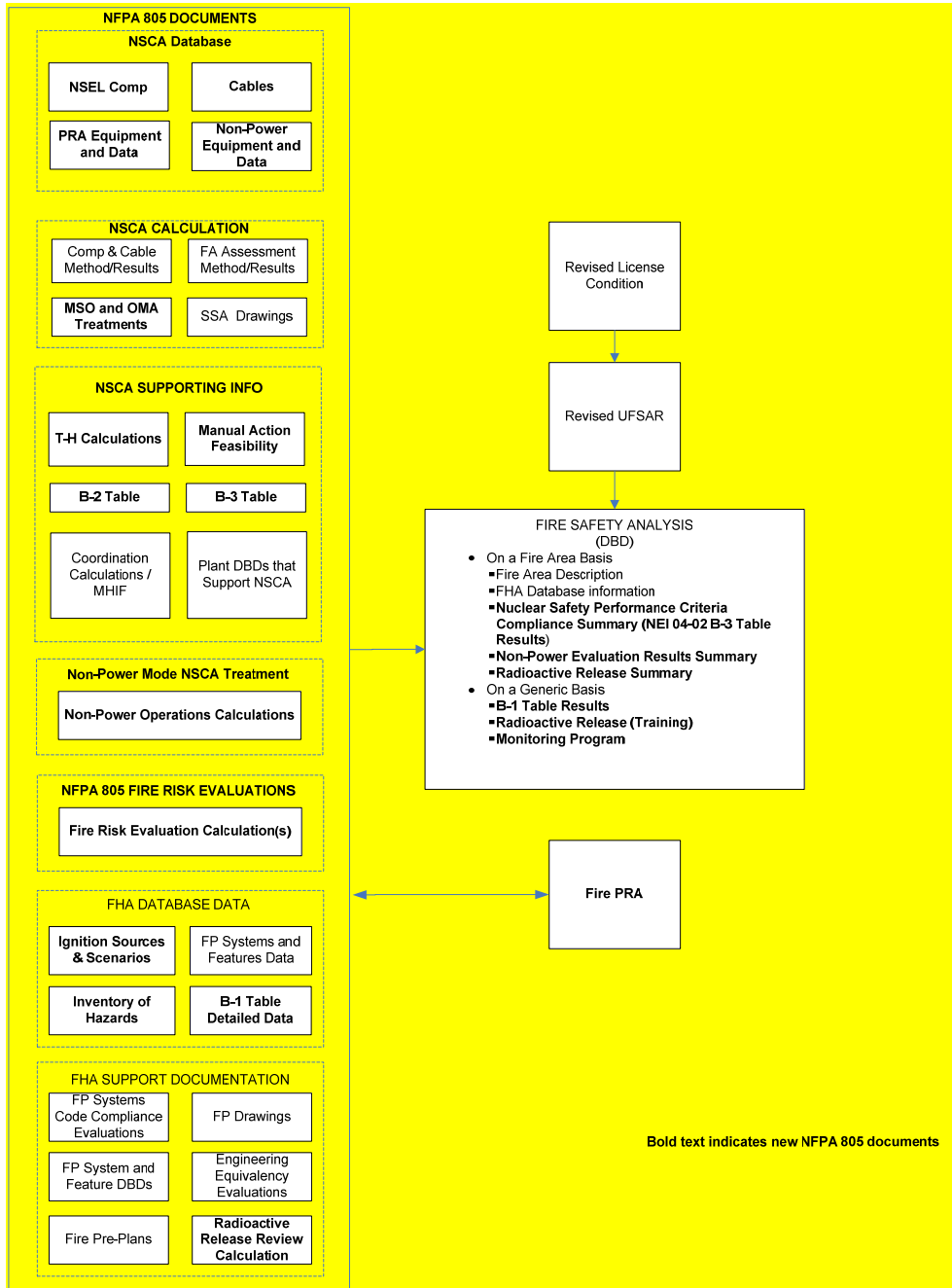


Figure 4-9 – NFPA 805 Planned Post-Transition Documents and Relationships

4.7.2 Compliance with Configuration Control Requirements in Section 2.7.2 and 2.2.9 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 fire protection program are reviewed appropriately. The RI-PB post transition change process methodology is based upon the requirements of NFPA 805, and industry guidance in NEI 04-02, and RG 1.205. These requirements are summarized in Table 4-2.

Comment [e46]: NOTE TO LAR DEVELOPER:

Provide additional plant specific detail see example Oconee RAI 7-05 Response Dated 9/27/10 (ML102720409) and HNP RAI 7-01 dated 8/13/2009 (ML092320120)

Table 4-2 Change Evaluation Guidance Summary Table

Document	Section(s)	Topic
NFPA 805	2.2(h), 2.2.9, 2.4.4, A.2.2(h), A.2.4.4, D.5	Change Evaluation
NEI 04-02	5.3, Appendix B, Appendix I, Appendix J	Change Evaluation, Change Evaluation Forms (Appendix I)
RG 1.205	C.2.2.4, C.3.1, C.3.2, C.4.3	Risk Evaluation, Standard License Condition, Change Evaluation Process, Fire PRA

The Plant Change Evaluation Process consists of the following 4 steps and is depicted in Figure 4-10:

- Defining the Change
- Performing the Preliminary Risk Screening.
- Performing the Risk Evaluation
- Evaluating the Acceptance Criteria

Change Definition

The Change Evaluation process begins by defining the change or altered condition to be examined and the baseline configuration as defined by the Design Basis and Licensing Basis (NFPA 805 Licensing Basis post-transition).

1. The baseline is defined as that plant condition or configuration that is consistent with the Design Basis and Licensing Basis (NFPA 805 Licensing Basis post-transition).
2. The changed or altered condition or configuration that is not consistent with the Design Basis and Licensing Basis is defined as the proposed alternative.

Preliminary Risk Review

Once the definition of the change is established, a screening is then performed to identify and resolve minor changes to the fire protection program. This screening is consistent with fire protection regulatory review processes in place at nuclear plants under traditional licensing bases. This screening process is modeled after the NEI 02-03 process. This process will address most administrative changes (e.g., changes to the combustible control program, organizational changes, etc.).

The characteristics of an acceptable screening process that meets the “assessment of the acceptability of risk” requirement of Section 2.4.4 of NFPA 805 are:

- The quality of the screen is sufficient to ensure that potentially greater than minimal risk increases receive detailed risk assessments appropriate to the level of risk.
- The screening process must be documented and be available for inspection by the NRC.
- The screening process does not pose undue evaluation or maintenance burden.

If any of the above is not met, proceed to the Risk Evaluation step.

Risk Evaluation

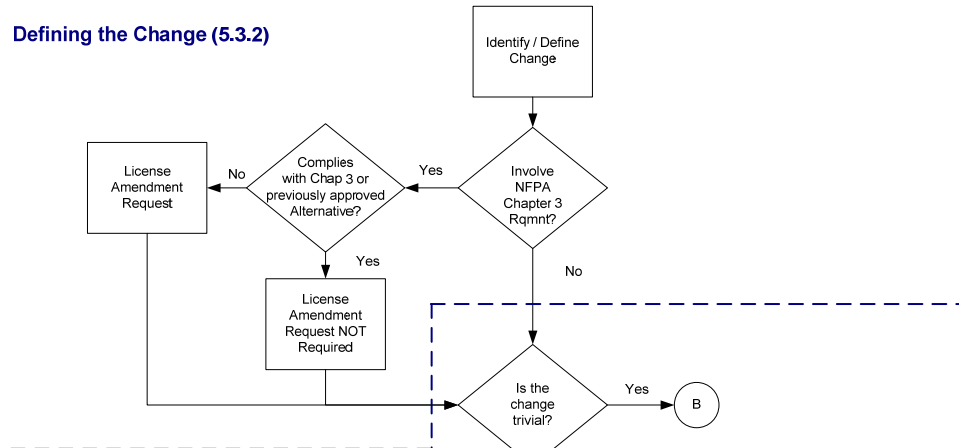
The screening is followed by engineering evaluations that may include fire modeling and risk assessment techniques. The results of these evaluations are then compared to the acceptance criteria. Changes that satisfy the acceptance criteria of NFPA 805 Section 2.4.4 and the license condition can be implemented within the framework provided by NFPA 805. Changes that do not satisfy the acceptance criteria cannot be implemented within this framework. The acceptance criteria require that the resultant change in CDF and LERF be consistent with the license condition. The acceptance criteria also include consideration of defense-in-depth and safety margin, which would typically be qualitative in nature.

The risk evaluation involves the application of fire modeling analyses and risk assessment techniques to obtain a measure of the changes in risk associated with the proposed change. In certain circumstances, an initial evaluation in the development of the risk assessment could be a simplified analysis using bounding assumptions provided the use of such assumptions does not unnecessarily challenge the acceptance criteria discussed below.

Acceptability Determination

The Change Evaluations are assessed for acceptability using the Δ CDF (change in core damage frequency) and Δ LERF (change in large early release frequency) criteria from the license condition. The proposed changes are also assessed to ensure they are consistent with the defense-in-depth philosophy and that sufficient safety margins were maintained.

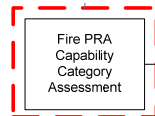
Defining the Change (5.3.2)



Preliminary Risk Screening (5.3.3)

Risk Evaluation (5.3.4)

PRA Capability Category Assessment



Acceptance Criteria (5.3.5)

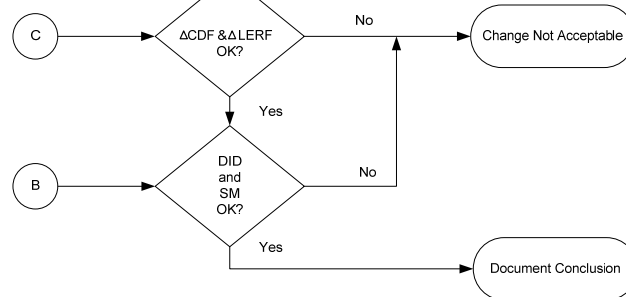


Figure 4-10 Plant Change Evaluation [NEI 04-02 Figure 5-1]
Note references in Figure refer to NEI 04-02 Sections

[Provide plant specific overview of configuration control process. For example:

The [ENTER Plant] Fire Protection Program configuration is defined by the program documentation. To the greatest extent possible, the existing configuration control processes for modifications, calculations and analyses, and Fire Protection Program License Basis Reviews will be utilized to maintain configuration control of the Fire Protection program documents. The configuration control procedures which govern the various [ENTER Plant] documents and databases that currently exist will be revised to reflect the new NFPA 805 licensing bases requirements.

Several NFPA 805 document types such as: NSCA Supporting Information, Non-Power Mode NSCA Treatment, etc., generally require new control procedures and processes to be developed since they are new documents and databases created as a result of the transition to NFPA 805. The new procedures will be modeled after the existing processes for similar types of documents and databases. System level design basis documents will be revised to reflect the NFPA 805 role that the system components now play.

The process for capturing the impact of proposed changes to the plant on the Fire Protection Program will continue to be a multiple step review. The first step of the review is an initial screening for process users to determine if there is a potential to impact the Fire Protection program as defined under NFPA 805 through a series of screening questions/checklists contained in one or more procedures depending upon the configuration control process being used. Reviews that identify potential Fire Protection program impacts will be sent to qualified individuals (Fire Protection, Safe Shutdown/NSCA, Fire PRA) to ascertain the program impacts, if any. If Fire Protection program impacts are determined to exist as a result of the proposed change, the issue would be resolved by one of the following:

- **Deterministic Approach:** Comply with NFPA 805 Chapter 3 and 4.2.3 requirements
- **Performance-Based Approach:** Utilize the NFPA 805 change process developed in accordance with NEI 04-02, RG 1.205, and the NFPA 805 fire protection license condition to assess the acceptability of the proposed change. This process would be used to determine if the proposed change could be implemented "as-is" or whether prior NRC approval of the proposed change is required.

This process follows the requirements in NFPA 805 and the guidance outlined in RG 1.174 which requires the use of qualified individuals, procedures that require calculations be subject to independent review and verification, record retention, peer review, and a corrective action program that ensures appropriate actions are taken when errors are discovered.]

4.7.3 Compliance with Quality Requirements in Section 2.7.3 of NFPA 805

Fire Protection Program Quality

[ENTER Licensee] will maintain the existing Fire Protection Quality Assurance program.

Comment [A47]: NOTE TO LAR DEVELOPER

Additional guidance was provided by the NRC on this topic at the 11/18/11 Meeting ML113210461 – Slide 17)

The NRC requested some plant-specific references to processes and procedures that would be modified to meet these requirements. Example: Oconee RAI 7-05 Response Dated 9/27/10 ML102720409.

Or

[ENTER Plant] will utilize the existing Fire Protection Quality Assurance program with the following revisions: [list revisions]. These revisions are included as implementation items (See Item for Implementation for Attachment S).

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.

Comment [e48]: NOTE TO LAR DEVELOPER:

Depending on organization of Attachment S, reference a specific implementation item.

Fire PRA Quality

[Provide discussion of plant specific process for maintaining Fire PRA post-transition. For example:

Configuration control of the Fire PRA model will be maintained by integrating the Fire PRA model into the existing processes used to ensure configuration control of the internal events PRA model. This process complies with Section 1-5 of the ASME PRA Standard and ensures that [ENTER Licensee] maintains an as-built, as-operated PRA model of the plant. The process has been peer reviewed. Quality assurance of the Fire PRA is assured via the same processes applied to the internal events model.

This process follows the guidance outlined in RG 1.174 which requires the use of qualified individuals, procedures that require calculations be subject to independent review and verification, record retention, peer review, and a corrective action program that ensures appropriate actions are taken when errors are discovered. Although the entire scope of the formal 10 CFR 50 Appendix B program is not applied to the PRA models or processes in general, often parts of the program are applied as a convenient method of complying with the requirements of RG 1.174. For instance, the procedure which addresses independent review of calculations for 10 CFR 50 Appendix B is applied to the PRA model calculations, as well.

With respect to Quality Assurance Program requirements for independent reviews of calculations and evaluations, those existing requirements for Fire Protection Program documents will remain unchanged. [ENTER Licensee] specifically requires that the calculations and evaluations in support of the NFPA 805 LAR, exclusive of the Fire PRA, be performed within the scope of the QA program which requires independent review as defined by [ENTER Licensee] procedures. As recommended by NUREG/CR-6850, the sources of uncertainty in the Fire PRA were identified and specific parameters were analyzed for sensitivity in support of the NFPA 805 Fire Risk Evaluation process.

Specifically with regard to uncertainty, an uncertainty and sensitivity matrix was developed and included with [ENTER Licensee Document]. In addition, sensitivity to uncertainty associated with specific Fire PRA parameters was quantitatively addressed in [ENTER Licensee Document].

While the removal of conservatism inherent in the Fire PRA is a long-term goal, the Fire PRA results were deemed sufficient for evaluating the risk associated with this application. While [ENTER Licensee] continues to strive toward a more "realistic" estimate of fire risk, use of mean values continues to be the best estimate of fire risk. During the Fire Risk Evaluation process, the uncertainty and sensitivity associated with specific Fire PRA parameters were considerations in the evaluation of the change in risk relative to the applicable acceptance thresholds.]

Specific Requirements of NFPA 805 Section 2.7.3**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

Calculational models and numerical methods used in support of compliance with 10 CFR 50.48(c) were 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 applied 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.

During the transition to 10 CFR 50.48(c), work was performed in accordance with the quality requirements of Section 2.7.3 of NFPA 805. Personnel who used and applied engineering analysis and numerical methods (e.g. fire modeling) in support of compliance with 10 CFR 50.48(c) are competent and experienced as required by NFPA 805 Section 2.7.3.4.

Post-transition, for personnel performing fire modeling or Fire PRA development and evaluation, [ENTER LICENSEE] will develop and maintain qualification requirements for individuals assigned various tasks. Position Specific Guides will be developed to identify and document required training and mentoring to ensure individuals are appropriately qualified per the requirements of NFPA 805 Section 2.7.3.4 to perform assigned work. See Attachment S for an Implementation Item.

NFPA 805 Section 2.7.3.5 – Uncertainty Analysis

Uncertainty analyses were performed as required by 2.7.3.5 of NFPA 805 and the results were considered in the context of the application. This is of particular interest in fire modeling and Fire PRA development. Note: 10 CFR 50.48(c)(2)(iv) states that NFPA 805 Section 2.7.3.5 is not required for the deterministic approach because conservatism is included in the deterministic criteria.

4.8 Summary of Results**4.8.1 Results of the Fire Area Review**

A summary of the NFPA 805 compliance basis and the required fire protection systems and features is provided in Table 4-3. The table provides the following information from the NEI 04-02 Table B-3:

- Fire Area / Fire Zone: Fire Area/Zone Identifier.

Comment [A49]: NOTE TO LAR DEVELOPER

Additional guidance was provided by the NRC on this topic at the 6/27/12 Public Meeting ML12178A409 – Slide 9)

The NRC indicated that some licensees are to committing to compliance to NFPA 805 Section 2.7.3 for future engineering analyses.

Licensees should ensure the compliance statements apply to future engineering analyses and that appropriate implementation items are created to ensure requirements of 2.7.3 of NFPA 805 are met for future analyses.

Comment [e50]: NOTE TO LAR DEVELOPER:

This is optional.

Comment [e51]: NOTE TO LAR DEVELOPER:

If Table 4-3 becomes too large to incorporate in the text, move to Attachment C.

- Description: Fire Area/Zone Description.
- NFPA 805 Regulatory Basis: Post-transition NFPA 805 Chapter 4 compliance basis (Note: Compliance is determined on a Fire Area basis therefore a compliance basis is not provided for individual fire zones.)
- Required Fire Protection System / Feature: Detection / suppression required in the Fire Area based on NFPA 805 Chapter 4 compliance. Other Required Features may include Electrical Raceway Fire Barrier Systems, fire barriers, etc. The documentation of required fire protection systems and features does not include the documentation of the fire area boundaries. Fire area boundaries are required and documentation of the fire area boundaries has been performed as part of reviews of engineering evaluations, licensing actions, or as part of the reviews of the NEI 04-02 Table B-1 process. [The information is provided on a fire zone basis]. The basis for the requirement of the fire protection system / feature is designated as follows:
 - S – Separation Criteria: Systems/Features required for Chapter 4 Separation Criteria in Section 4.2.3
 - E – EEEE/LA Criteria: Systems/Features required for acceptability of Existing Engineering Equivalency Evaluations / NRC approved Licensing Action (i.e., Exemptions/Deviations/Safety Evaluations) (Section 2.2.7)
 - R – Risk Criteria: Systems/Features required to meet the Risk Criteria for the Performance-Based Approach (Section 4.2.4)
 - D – Defense-in-depth Criteria: Systems/Features required to maintain adequate balance of Defense-in-Depth for a Performance-Based Approach (Section 4.2.4)

Comment [e52]: NOTE TO LAR DEVELOPER:

If the information in Table 4-3 is provided only on a fire area basis, this parenthetical statement can be removed.

Comment [e53]: NOTE TO LAR DEVELOPER:

If the information in Table 4-3 is provided only on a fire area basis, this parenthetical statement can be removed.

Attachment W contains the results of the Fire Risk Evaluations, additional risk of recovery actions, and the change in risk on a fire area basis.

4.8.2 Plant Modifications and Items to be Completed During the Implementation Phase

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

[ENTER a specific discussion to satisfy the following safety evaluation template finding: "The licensee did not identify any 1) known outstanding plant changes that would require a change to the fire PRA model, or 2) any planned plant changes that would significantly impact the PRA model, beyond those identified and scheduled to be implemented as part of the transition to the 10 CFR 50.48(c) FPP, as set forth in the license condition (see Section 4.0 of this safety evaluation)."]

Comment [e54]: NOTE TO LAR DEVELOPER

Attachment S may also include completed modifications. Ensure the cross references to Attachment S are correct.

Comment [e55]: NOTE TO LAR DEVELOPER:

This refers specifically to modifications other than those listed in Attachment S and is limited to the implementation period.

For example: "The Fire PRA model represents the as-built, as-operated and maintained plant as it will be configured at the completion of the transition to NFPA 805. The Fire PRA model includes credit for the planned implementation of PSW. Following installation of PSW and the attendant installation details, additional refinements surrounding the PSW modification may need to be incorporated into the FPRA model. However, these changes are not expected to be significant and will likely result in additional risk improvement in areas where limited credit for PSW was taken. No

other significant plant changes are outstanding with respect to their inclusion in the Fire PRA model. Additional modifications discussed in Attachment S have no direct impact on the fire risk quantification results.”]

4.8.3 Supplemental Information –Other Licensee Specific Issues

4.8.3.1 [ENTER Other Licensee Specific Issues]

[ENTER discussion of resolution of other licensee specific issues]

Table 4-3 Summary of NFPA 805 Compliance Basis and Required Fire Protection Systems and Features

Fire Area	Fire Zone	Description	NFPA 805 Regulatory Basis	Required Suppression System (S, E, R, D)	Required Detection System (S, E, R, D)	Required ³ Fire Protection Feature (S, E, R, D)	Required Fire Protection Feature and System Details ¹
AB		Auxiliary Building	4.2.4.2 ⁴				
AB	59	Unit 3 Decay Heat Removal Cirs, Seal Supply Filter/Pipe Room				None	
AB	60	Unit 3 LPI Room Hatch Area			R	None	Detection – LPI hatch
AB	61	Unit 3 HPI Room Hatch Area			R	None	Detection – HPI hatch ²
AB	62	Unit 3 Operators Panel/Chem Sample Hood			R	None	Detection – Waste Control
AB	63	Unit 3 LDST, LD Filters, LD Filter Hatch				None	
AB	64	Unit 2 Emerg Aux Service Water Pump			R	None	Detection – ASW SWGR area / PSW pump area
AB	65	Unit 2 MWHT, Misc Wst Evp, CBAST, RC Bld Xfer Pmp, RC Bld HT			R	None	Detection – 1 st floor hallway
AB	66	Unit 2 Decay Heat Removal Cirs, Seal Supply Filter/Pipe Room				None	
AB	67	Unit 2 LPI Room Hatch Area			R	None	Detection – LPI hatch
AB	68	Unit 2 HPI Room Hatch Area			R	None	Detection – HPI hatch ²

Notes:

1. Refer to Attachment C for each area for additional information
2. Modification Required
3. Fire Protection Features in this Table only refer to those features 'installed in the Fire Area that have a corresponding Chapter 3 requirement'
4. Compliance includes reliance on simplifying deterministic assumptions

NOTE THIS IS AN EXAMPLE OF THE CONTENT AND LEVEL OF DETAIL

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 fire protection requirements. 10 CFR 50.48 endorses, with exceptions, 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).

“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 fire protection program plan required by 10 CFR 50.48(a) are inconsistent with NFPA 805, the fire protection 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 (ML081400292). The following tables provide a cross reference of fire protection regulations associated with the post-transition [ENTER Plant] fire protection 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 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 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 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 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 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 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 Section 3.3 and Chapter 4 NEI 04-02 B-3 Table
(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 appropriate reference and compliance statement]

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

10 CFR 50.48(a) Section(s)	Applicability/Compliance Reference
(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. [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 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 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 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 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 used.
(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 used.
(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 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 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.
(iv) <i>Uncertainty analysis.</i> 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.
(v) <i>Existing cables.</i> 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 complies with a flame propagation test that was found acceptable to the NRC as documented in NEI 04-02 Table B-1.
(vi) <i>Water supply and distribution.</i> 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 compliance basis] See 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
<p>(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;</p> <p>(A) Satisfies the performance goals, performance objectives, and performance criteria specified in NFPA 805 related to nuclear safety and radiological release;</p> <p>(B) Maintains safety margins; and</p> <p>(C) Maintains fire protection defense-in-depth (fire prevention, fire detection, fire suppression, mitigation, and post-fire safe shutdown capability).</p>	<p>The use of performance-based methods for NFPA 805 Chapter 3 [is requested. See Attachment L / is not requested.]</p>
(3) <i>Compliance with NFPA 805.</i>	See below
<p>(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.</p>	<p>The 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.</p>
<p>(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.</p>	<p>The LAR and transition report summarize the evaluations and analyses performed in accordance with Chapter 2 of NFPA 805.</p>
<p>(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:</p> <p>(i) Satisfy the performance goals, performance objectives, and performance criteria specified in NFPA 805 related to nuclear safety and radiological release;</p> <p>(ii) Maintain safety margins; and</p> <p>(iii) Maintain fire protection defense-in-depth (fire prevention, fire detection, fire suppression, mitigation, and post-fire safe shutdown capability).</p>	<p>[No risk-informed or performance-based alternatives to compliance with NFPA 805 (per 10 CFR 50.48(c)(4)) were utilized. Risk-informed or performance-based alternatives were utilized. See Attachment P.]</p>

5.2 Regulatory Topics

5.2.1 License Condition Changes

The current [ENTER Plant] fire protection license condition [ENTER Specific License Condition] is being replaced with the standard license condition based upon Regulatory Position 3.1 of RG 1.205, as shown in Attachment M.

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 fire protection licensing basis.

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.

5.3 Regulatory Evaluations

5.3.1 No Significant Hazards Consideration

A written evaluation of the significant hazards consideration of a proposed license amendment is required by 10 CFR 50.92. According to 10 CFR 50.92, a proposed amendment to an operating license involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not:

- Involve a significant increase in the probability or consequences of an accident previously evaluated; or
- Create the possibility of a new or different kind of accident from any accident previously evaluated; or
- Involve a significant reduction in a margin of safety.

This evaluation is contained in Attachment Q.

Based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public. [ENTER Plant] has evaluated the proposed amendment and determined that it involves no significant hazards consideration.

5.3.2 Environmental Consideration

Pursuant to 10 CFR 51.22(b), an evaluation of the LAR has been performed to determine whether it meets the criteria for categorical exclusion set forth in 10 CFR

51.22(c). That evaluation is discussed in Attachment R. The evaluation confirms that this LAR meets the criteria set forth in 10 CFR 51.22(c)(9) for categorical exclusion from the need for an environmental impact assessment or statement.

5.4 Revision to the UFSAR

After the approval of the LAR, in accordance with 10 CFR 50.71(e), the [ENTER Plant] UFSAR will be revised. The format and content will be consistent with NEI 04-02 FAQ 12-0062.

Comment [A56]: NOTE TO LAR DEVELOPER

This additional guidance is based upon the NRC feedback on this topic at the 11/18/11 Meeting ML113210461 – Slide 14)

5.5 Transition Implementation Schedule

The following schedule for transitioning [ENTER Plant] to the new fire protection licensing basis requires NRC approval of the LAR in accordance with the following schedule:

- Implementation of new NFPA 805 fire protection program to include procedure changes, process updates, and training to affected plant personnel. This will occur [ENTER] 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.

[Insert references]

ATTACHMENTS

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

[ENTER] Pages Attached

Provide a compliance statement for each section/subsection and a corresponding implementing reference

Comment [e57]: NOTE TO LAR DEVELOPER:

Review the B-1 tables in the pilot SEs to help ensure the correct element /sub-element partitioning of the NFPA 805 Chapter 3 requirements.

Additionally, be aware that some "parent" elements contain technical requirements. One example is 3.3.12 RCPs.

Comment [e58]: NOTE TO LAR DEVELOPER:

The withdrawal of FAQ 0025 left the 'minimum' pre-plan content up to the license. Given this it may be prudent to include a list for NRC approval

Comment [e59]: NOTE TO LAR DEVELOPER:

Plant/owner-operator specific initiatives have been undertaken to optimize fire protection surveillance and testing practices and frequencies based upon performance in accordance with the guidance in EPRI Technical Report (TR) 1006756, "Fire Protection Surveillance Optimization and Maintenance Guide for Fire Protection Systems and Features". This is allowed under traditional regulatory framework using a fire protection standard license condition and by ensuring that the program and its results were satisfactory to insurance representative. Therefore, there are established programs that could be used, enhanced, or modified in an effort to meet the monitoring requirements as discussed in NFPA 805. If a licensee plans to continue to utilize this methodology post-transition, a discussion of its use should be included in the monitoring section of the LAR and NEI 04-02 Table B-1 Transition of Fundamental FP Program and Design sections of the LAR and if not already included, include it. ... [1]

Comment [e60]: Seismic standpipes/Hose Stations – The NRC has agreed that it is not applicable to plants with construction permits prior to July 1976.

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

[ENTER] Pages Attached

~~Security-Related Information—Withheld Under 10 CFR 2.390~~

[ENTER Your Utility Here]

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

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

[ENTER] Pages Attached

~~Security-Related Information—Withheld Under 10 CFR 2.390~~

[ENTER Your Utility Here]

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

[Optional - Provide discussion of strategies used to meet the nuclear safety performance criteria]

Fire Area Transition

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

D. NEI 04-02 Non-Power Operational Modes Transition

[ENTER] Pages Attached

Comment [A61]: NOTE TO LAR DEVELOPER

Ensure that any recovery actions that are relied upon for non-power operations or any pre-fire actions to prevent spurious operation (e.g., removal of power to a component) are listed in this attachment.

This additional guidance is based upon the NRC feedback on this topic at the 11/18/11 Meeting ML113210461 – Slide 18)

E. NEI 04-02 Radioactive Release Transition

[ENTER] Pages Attached

Radioactive Release Analysis [this is an example. Information can be presented in other ways as long as content is addressed.]

Compartmentation

[Describe and justify the radioactive release analysis compartmentation]

Training Review

[Describe training review process and provide a discussion of any changes made to address radioactive release goals, objectives and performance criteria]

Pre-Fire Plan Review

[Describe pre-fire plan review process and table organization]

NEI 04-02 Table E-1 Radioactive Release Compartment Review						
Compartment	Fire Area	Pre-Fire Plan	Screened In?	Evaluation	Revisions	Conclusion
Lube Oil Purification pad	Identification/name of the compartments being covered by the pre-plan. Consider second column if required to define the exact compartment under consideration	N	Provide information that this pre-plan is screened in (affects radioactive release) or screened out (cannot affect radioactive release). This can be a yes/no column provided the process to determine this is presented elsewhere.	Describe how the pre-fire plan supports the containment and monitoring of potentially contaminated gaseous and liquid effluents.	Describe any changes to the pre-fire plan made to address radioactive release goals, objectives and performance criteria	

Engineered Controls Review

[Describe engineered controls review process and table organization]

NEI 04-02 Table E-2 Radioactive Release Transition Engineered Controls Review

Fire Area	Fire Area	RCA or RCZ?	Screened In?	Engineered Controls		Conclusions
				Liquid Effluents	Gaseous Effluents	
Lube Oil Purification pad		N	Provide information that this compartment is screened in (affects radioactive release) or screened out (cannot affect radioactive release). This can be a yes/no column provided the process to determine this is presented elsewhere.	Describe how liquid effluents are contained within the station boundaries. This should cover all plant operating modes. Otherwise, provide a reference to an analysis, detailed elsewhere, that demonstrates that the limitations for radioactive effluent release specified in the unit's Technical Specifications are met.	Describe how gaseous effluents are contained within the station boundaries. This should cover all plant operating modes. Otherwise, provide a reference to an analysis, detailed elsewhere, that demonstrates that the limitations for radioactive effluent release specified in the unit's Technical Specifications are met.	Not Required

F. Fire-Induced Multiple Spurious Operations Resolution

[ENTER] Pages Attached

MSO Process Summary

The following provides the guidance from FAQ 07-0038, Revision 3, along with the process and results.

Step 1 – Identify potential MSOs of concern

Information sources that may be used as input include:

- Post-fire safe shutdown analysis (NEI 00-01, Revision 1, Chapter 3)
- Generic lists of MSOs (e.g., from Owners Groups and/or later versions of NEI 00-01, if endorsed by NRC for use in assessing MSOs)
- Self assessment results (e.g., NEI 04-06 assessments performed to address RIS 2004-03)
- PRA insights (e.g., NEI 00-01 Revision 1, Appendix F)
- Operating Experience (e.g., licensee event reports, NRC Inspection Findings, etc.)

Results of Step 1:

[Insert discussion of results. See pilot plant LARs, RAIs, and SEs for more information.]

Step 2 – Conduct an expert panel to assess plant specific vulnerabilities (e.g., per NEI 00-01, Rev. 1 Section F.4.2).

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.

The documentation of the results of the expert panel should include how the expert panel was conducted including the members of the expert panel, their experience, education, and areas of expertise. The documentation should include the list of MSOs reviewed as well as the source for each MSO. This documentation should provide a list the MSOs that were included in the PRA and a separate list of MSOs that were not kept for further analysis (and the reasons for rejecting these MSOs for further analysis).

Describe the expert panel process (e.g., when it was held, what training was provided to the panel members, what analyses were reviewed to identify MSOs, how was consensus achieved on which MSOs to keep and any dispute resolution process criteria used in decision process, etc.).

[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.

Results of Step 2:

[Insert discussion of results. See pilot plant LARs, RAIs, and SEs for more information.]

Step 3 – Update the Fire PRA model and NSCA to include the MSOs of concern.

This includes the:

- Identification of equipment (NUREG/CR-6850 Task 2)

Comment [e62]: NOTE TO LAR DEVELOPER:

This original Table version of this information can still be used. The information however is better suited for a non-tabular format.

- Identification of cables that, if damaged by fire, could result in the spurious operation (NUREG/CR-6850 Task 3, Task 9)
- Identify routing of the cables identified above, including associating that routing with fire areas, fire zones and/or Fire PRA physical analysis units, as applicable.

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 conditions associated with MSOs do not require 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. In other instances, the update of the PRA may not be warranted if the contribution is negligible. 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.

Results of Step 3:

[Insert discussion of results. See pilot plant LARs, RAIs, and SEs for more information.]

Step 4 – Evaluate for NFPA 805 Compliance

The MSO combinations included in the NSCA should be evaluated with respect to compliance with the deterministic requirements of NFPA 805, as discussed in Section 4.2.3 of NFPA 805. For those situations in which the MSO combination does not meet the deterministic requirements of NFPA 805 (VFDR), the issue with the components and associated cables should be mitigated by other means (e.g., performance-based approach per Section 4.2.4 of NFPA 805, plant modification, etc.).

The performance-based approach may include the use of feasible and reliable recovery actions. The use of recovery actions to demonstrate the availability of a success path for the nuclear safety performance criteria requires that the additional risk presented by the use of these recovery actions be evaluated (NFPA 805 Section 4.2.4).

Results of Step 4:

[Insert discussion of results. See pilot plant LARs, RAIs, and SEs for more information.]

Step 5 - Document Results

The results of the process should be documented. The results should provide a detailed description of the MSO identification, analysis, disposition, and evaluation results (e.g., references used to identify MSOs; the composition of the expert panel, the expert panel process, and the results of the expert panel process; disposition and evaluation results for each MSO, etc.). 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.

Results of Step 5:

[Insert discussion of results. See pilot plant LARs, RAls, and SEs for more information.]

~~Security-Related Information—Withheld Under 10 CFR 2.390~~

[ENTER Your Utility Here]

Attachment G – Recovery Action Transition

G. Recovery Actions Transition

[ENTER] Pages Attached

In accordance with the guidance provided in NEI 04-02, FAQ 07-0030, Revision 5, and RG 1.205, the following methodology was used to determine recovery actions required for compliance (i.e., determining the population of post-transition recovery actions). The methodology consisted of the following steps:

- Step 1: Define the primary control station(s) and determine which pre-transition OMAs are taken at primary control station(s) (Activities that occur in the Main Control Room are not considered pre-transition OMAs). Activities that take place at primary control station(s) or in the Main Control Room are not recovery actions, by definition.
- Step 2: Determine the population of recovery actions that are required to resolve VFDRs (to meet the risk acceptance criteria or maintain a sufficient level of defense-in-depth).
- Step 3: Evaluate the additional risk presented by the use of recovery actions required to demonstrate the availability of a success path
- Step 4: Evaluate the feasibility of the recovery actions
- Step 5: Evaluate the reliability of the recovery actions

An overview of these steps and the results of their implementation are provided below.

Step 1 - Clearly define the primary control station(s) and determine which pre-transition OMAs are taken at primary control station(s)

The first task in the process of determining the post-transition population of recovery actions was to apply the NFPA 805 definition of recovery action and the RG 1.205 definition of primary control station to determine those activities that are taken at primary control station(s).

Results of Step 1:

[Insert discussion of the results of the primary control station review. For example

Based on the definition provided in RG 1.205, and the additional guidance provided in FAQ 07-0030, the following locations are considered taking place at the primary control station(s):

- List location(s) considered the primary control station(s). If multiple panels were previously approved for alternative/dedicated shutdown provide documentation.
- List location(s)/activities necessary to enable primary control station(s). As necessary, provide documentation of prior approval of activities required to enable the alternative/dedicated shutdown strategy.

Table G-1 - Recovery Actions and Activities Occurring at the Primary Control Station(s) identify the activities that occur at the primary control station(s). Activities necessary to enable the primary control station(s) are also identified in Table G-1 as primary control station(s) activities. These activities do not require the treatment of additional risk.]

Step 2 – Determine the population of recovery actions that are required to resolve VFDRs (to meet the risk or defense-in-depth criteria)

On a fire area basis all VFDRs were identified in the NEI 04-02 Table B-3 (See Attachment C). Each VFDR not brought into compliance with the deterministic

approach was evaluated using the performance-based approach of NFPA 805 Section 4.2.4. The performance-based evaluations [resulted / did not result] in the need for recovery actions to meet the risk acceptance criteria or maintain a sufficient level of defense-in-depth).

Results of Step 2:

The final set of recovery actions are provided in Table G-1 - Recovery Actions and Activities Occurring at the Primary Control Station(s).

Step 3: Evaluate the Additional Risk of the Use of Recovery Actions

NFPA 805 Section 4.2.3.1 does not allow recovery actions when using the deterministic approach to meet the nuclear safety performance criteria. However, the use of recovery actions is allowed by NFPA 805 using a risk informed, performance-based, approach, provided that the additional risk presented by the recovery actions is evaluated in accordance with NFPA 805 Section 4.2.4.

Results of Step 3:

The set of recovery actions that are necessary to demonstrate the availability of a success path for the nuclear safety performance criteria (See Table G-1) were evaluated for additional risk using the process described in NEI 04-02, FAQ 07-0030, Revision 5, and RG 1.205 and compared against the guidelines of RG 1.174 and RG 1.205. The additional risk is provided in Attachment W.

[Insert a discussion of the results of the review of activities for an adverse impact on risk. For example:

All of the recovery actions were reviewed for adverse impact and dispositioned in Calculation XYZ "NFPA 805 Fire PRA Application Calculation". None of the recovery actions were found to have an adverse impact on the Fire PRA.

Step 4: Evaluate the Feasibility of Recovery Actions

Recovery actions were evaluated against the feasibility criteria provided in the NEI 04-02, FAQ 07-0030, Revision 5, and RG 1.205. Note that since actions taken at the primary control station are not recovery actions their feasibility is evaluated in accordance with procedures for validation of off normal procedures.

Results of Step 4:

[Insert discussion of the results of the feasibility evaluation, including any items for implementation. For example

Each of the feasibility criteria in FAQ 07-0030 were assessed for the recovery actions listed in Table G-1. The results of the assessment are included in Calculation XYZ entitled "Recovery Action Evaluation in Support of Nuclear Safety Capability Assessment". This calculation also references the thermal-hydraulic analysis used to evaluate the timing of actions

Implementation items resulting from the feasibility evaluation are included in the corrective action program. These items include:

- Development/revision of procedures.

- Revisions to the Training Program to reflect procedure changes.
- Revision to the drill development procedure.

These items include are included in Table S-3.]

Step 5: Evaluate the Reliability of Recovery Actions

The evaluation of the reliability of recovery actions depends upon its characterization.

- The reliability of recovery actions that were modeled specifically in the Fire PRA were addressed using Fire PRA methods (i.e., HRA).
- The reliability of recovery actions not modeled specifically in the Fire PRA are bounded by the treatment of additional risk associated with the applicable VFDR. In calculating the additional risk of the VFDR, the compliant case recovers the fire-induced failure(s) as if the variant condition no longer exists. The resulting delta risk between the variant and compliant condition bounds any additional risk for the recovery action even if that recovery action were modeled.

Results of Step 5:

[Insert discussion of the results of the reliability evaluation, including any items for implementation. For example

No specific recovery actions were added to the Fire PRA. For the bounding reliability treatment see results in Attachment W.]

[ENTER Your Utility Here]

Table G-1 Recovery Actions and Activities Occurring at the Primary Control Station(s)

Fire Area	Component	Component Description	Actions	VFDR	RA/PCS

H. NFPA 805 Frequently Asked Question Summary Table

[ENTER] Pages Attached

Note: The NFPA 805 FAQ process will continue through the transition of non-pilot NFPA 805 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.

[Instructions to LAR developer: In the Table H-1 include approved FAQs that have been submitted to the NRC and used in the development of the LAR that are not yet incorporated into the latest revision NEI 04-02 endorsed by Regulatory Guide 1.205. If you choose to use information from an unapproved FAQ, provide justification in Attachment H for the deviation from the approved guidance]

This table includes the approved FAQs that have not been incorporated into the current endorsed revision of NEI 04-02 and utilized in this submittal:

Comment [e63]: NOTE TO LAR DEVELOPER:

This is an example only. Its accuracy must be verified prior to LAR submittal.

Table H-1 - NEI 04-02 FAQs Utilized in LAR Submittal				
No.	Rev.	Title	FAQ Ref.	Closure Memo
06-0008	9	NFPA 805 Fire Protection Engineering Evaluations	ML090560170	ML073380976
06-0022	3	Acceptable Electrical Cable Construction Tests	ML090830220	ML091240278
07-0030	5	Establishing Recovery Actions	ML103090602	ML110070485
07-0032	2	Clarification of 10 CFR 50.48(c), 10 CFR 50.48(a) and GDC 3 clarification	ML081300697	ML081400292
07-0035	2	Bus Duct Counting Guidance for High Energy Arcing Faults	ML091610189	ML091620572
07-0038	3	Lessons learned on Multiple Spurious Operations	ML103090608	ML110140242
07-0039	2	Lessons Learned - NEI B-2 Table	ML091420138	ML091320068
07-0040	4	Non-Power Operations Clarification	ML082070249	ML082200528
08-0042	0	Fire Propagation from Electrical Cabinets	ML080230438 ML091460350	ML092110537
08-0043	1	Electrical Cabinet Fire Location	ML083540152 ML091470266	ML092120448
08-0044	0	Large Oil Fires	ML081200099 ML091540179	ML092110516
08-0046	0	Incipient Fire Detection Systems	ML081200120 ML093220197	ML093220426
08-0047	1	Spurious Operation Probability	ML082770662	ML082950750
08-0048	0	Fire Ignition Frequency	ML081200291 ML092180383	ML092190457
08-0049	0	Cable Fires	ML081200309 ML091470242	ML092100274
08-0050	0	Non Suppression Probability	ML081200318 ML092510044	ML092190555
08-0051	0	Hot Short Duration	ML083400188 ML100820346	ML100900052
08-0052	0	Transient Fire Growth Rate and Control Room Non-Suppression	ML081500500 ML091590505	ML092120501

Table H-1 - NEI 04-02 FAQs Utilized in LAR Submittal				
No.	Rev.	Title	FAQ Ref.	Closure Memo
07-0054*	1	Demonstrating Compliance with Chapter 4 of NFPA 805	ML103510379	ML110140183
09-0056	2	Radioactive Release Transition	ML102810600	ML102920405
09-0057	3	New Shutdown Strategy	ML100330863	ML100960568
08-0053	0	Kerite-FR Cable Failure Thresholds	ML08260021	ML120060267
10-0059	5	NFPA 805 Monitoring	ML111180481	
12-0062	0	UFSAR Content	ML120790015	

* Note: The FAQ submittal number was 08-0054 but the NRC closure memo for the FAQ was listed as 07-0054. 07-0054 was used to be consistent with the Closure Memo.

Comment [e64]: NOTE TO LAR DEVELOPER:

FAQ is under development – may need to discuss if closure is not received prior to LAR submittal.

I. Definition of Power Block

[ENTER] Page Attached

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

For the purposes of establishing the structures included in the Fire Protection 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 – Power Block Definition	
Power Block Structures	Fire Area(s)

J. Fire Modeling V&V

[ENTER] Pages Attached

[ENTER Your Utility Here]

[ENTER Plant Specific Modeling For Example]

Table J-1 V & V Basis for Fire Models / Model Correlations Used

Calculation	Application	V & V Basis	Discussion

K. Existing Licensing Action Transition

[ENTER] Pages Attached

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

[ENTER] Pages Attached

Approval Request 1

NFPA 805 Section [ENTER SECTION]

[ENTER Request]

Basis for Request:

[ENTER Basis]

Acceptance Criteria Evaluation:

Nuclear Safety and Radiological Release Performance Criteria:

[Provide sufficient detail such that the reviewer can reach the conclusion that the criteria are met]

Safety Margin and Defense-in-Depth:

[Provide sufficient detail such that the reviewer can reach the conclusion that the criteria are met]

Conclusion:

[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

Comment [e65]: NOTE TO LAR DEVELOPER:

See HNP and ONS LARs and RAIs for expected level of detail.

M. License Condition Changes

[ENTER] Pages Attached

[ENTER Your Utility Here]

Attachment M – License Condition Changes

[INSERT License Condition. Use RG 1.205, NEI 04-02 and the Pilot SEs as a starting point]

N. Technical Specification Changes

[ENTER] Page Attached

[INSERT Technical Specification Changes and explain the basis and justification for the changes (include strike through and re-type as necessary)]

O. Orders and Exemptions

[ENTER] Page Attached

Exemptions

Rescind the following exemptions granted against 10 CFR 50, Appendix R dated [ENTER Dates]

- [Provide Bulleted list of exemptions]

Specific details regarding these exemptions are contained in Attachment K.

or

[ENTER Plant] was licensed to operate after January 1, 1979 and therefore licensing actions associated with 10 CFR 50 Appendix R were not issued as exemptions to the regulation. Therefore no exemptions need to be rescinded.

Orders

No Orders need to be superseded or revised.

OR

The following Orders need to be [superseded / revised]:

- [Provide Bulleted list of orders]

[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 ([INSERT TAC No's]) 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 fire protection program will not affect measures required by B.5.b.

Comment [e66]: NOTE TO LAR DEVELOPER:

Deviations do not need to be rescinded, since they are not exemptions from the regulations. This is consistent with the HNP LAR/SE

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].

OR

The following risk-informed or performance-based alternatives to compliance with NFPA 805 (per 10 CFR 50.48(c)(4)) were utilized by [ENTER Plant].

- [Provide Bulleted list of risk-informed or performance-based alternatives. Also provide the required detail to demonstrate compliance with 10 CFR 50.48(c)(4).

[ENTER] Pages Attached

Q. No Significant Hazards Evaluations

[ENTER] Pages Attached

[ENTER Your Utility Here]

Attachment Q – No Significant Hazards Evaluation

[INSERT No Significant Hazards Evaluation. Utilize NEI 06-02, License Amendment Request Guidelines, for guidance.]

R. Environmental Considerations Evaluation

[ENTER] Pages Attached

[ENTER Your Utility Here]

Attachment R –Environmental Considerations

[INSERT Environmental Considerations Evaluations. Utilize NEI 06-02, License Amendment Request Guidelines, for guidance.]

~~Security-Related Information—Withheld Under 10 CFR 2.390~~

[ENTER Your Utility Here]

Attachment S –Modifications and Implementation Items

S. Modifications and Implementation Items

[ENTER] Pages Attached

[ENTER Your Utility Here]

Attachment S –Modifications and Implementation Items

Tables S-1, Plant Modifications Completed, and S-2, Plant Modifications Committed, provided below, include 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.

Table S-1 Plant Modifications Completed

Item	Rank	Unit	Problem Statement	Proposed Modification	In FPRA	Comp Measure	Risk Informed Characterization

Table S-2 Plant Modifications Committed

Item	Rank	Unit	Problem Statement	Proposed Modification	In FPRA	Comp Measure	Risk Informed Characterization

Comment [A67]: NOTE TO LAR DEVELOPER:

If modifications yet to be installed have been modeled in the PRA, then include an item for implementation that verifies the validity of the reported change-in-risk. This item should include a plan of action should the as-built change-in-risk exceed the estimates reported in the LAR (Generic RAI 25)

[ENTER Your Utility Here]

Attachment S –Modifications and Implementation Items

Table S-3, Items provided below are those items (procedure changes, process updates, and training to affected plant personnel) that will be completed prior to the implementation of new NFPA 805 fire protection program. This will occur [ENTER] months after NRC approval.

Table S-3 Implementation Items

Item	Unit	Description	LAR Section / Source
1	1, 2, 3	[Example for level of detail B-1 Items 3.2.2.4, 3.3.1.2(2), 3.3.1.3.3, 3.3.3, 3.3.5.2, 3.3.9, 3.4.3.c.3 – Revise technical documents and administrative procedures as needed for implementation of NFPA 805.]	4.1.2 and Attachment A

T. Clarification of Prior NRC Approvals

[ENTER] Pages Attached

Introduction

The elements of the pre-transition fire protection program licensing basis for which specific NRC previous approval is uncertain are included in this attachment. Also included is sufficient detail to demonstrate how those elements of the pre-transition fire protection program licensing basis meet the requirements in 10 CFR 50.48(c) (RG 1.205, Revision 1, Regulatory Position 2.2.1).

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

Prior Approval Clarification Request [ENTER #]

Pre-transition Fire Protection Program Licensing Basis:

[ENTER an explanation of the pre-transition fire protection program 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.]

U. Internal Events PRA Quality

[ENTER] Pages Attached

[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. See example below.]

Comment [e68]: NOTE TO LAR DEVELOPER:

Address the following information in Attachment U:

Provide a general discussion of the standards against which the Internal Events PRA has been reviewed. Ensure that RG 1.200 Revision 2 has been considered. (Generic RAI 23)

Please identify any changes made to the internal events or fire PRA since the last full scope peer review of each of these PRA models that are consistent with the definition of a "PRA upgrade" in ASME/ANS-RA-Sa-2009, as endorsed by Regulatory Guide 1.200. Also, please address the following:

- i) If any changes are characterized as a PRA upgrade, please identify if a focused scope peer review was performed for these changes consistent with the guidance in ASME/ANS-RA-Sa-2009, as endorsed by Regulatory Guide 1.200, and describe any findings from that focused-scope peer review and the resolution of these findings for this application.
- ii) If a focused-scope peer review has not been performed for changes characterized as a PRA upgrade, please describe what actions will be implemented to address this review deficiency.

Provide a table for any supporting requirements that are not Capability Category II, that were not already identified in the table discussed above. This table should include the following information: an identifier, the subject supporting requirement, any peer review text for the subject supporting requirement, the resolution of the capability category classification.

Include the following statement, or similar: "The Peer Review Report(s) will be made available."

Refer to the pilot plant LARs, RAIs and SEs

Table U-1 Internal Events PRA Peer Review – Facts and Observations

SR	Topic	Status	Finding/Observation	Disposition
[INSERT SR IDENTIFIER]	[INSERT SR TOPIC]	[INSERT STATUS]	[INSERT PEER REVIEW REPORT TEXT]	[INSERT DISPOSITION OF F&O FOR THIS APPLICATION]

Comment [e69]: NOTE TO LAR DEVELOPER

Provide a table of the LATEST Full Scope Peer Review F&O's that includes the following information: an identifier, the supporting requirement referenced in the F&O, the Peer Review Report text for the F&O, the licensee's disposition of the F&O for this application. To expedite the staff's review, include both the resolved and unresolved F&O's

Only 'finding' F&Os need to be addressed. 'Suggestion' F&Os do not need to be presented. For plants whose most recent internal events peer review was performed under the 'A, B, C, D' F&O system that predated the current 'finding – suggestion' system, A & B F&Os are interpreted to be findings under the new system. C & D F&Os are considered to be only suggestions.

NOTE: If a more recent Focused Scope Peer Review was conducted for one or more elements, the F&Os resulting from that 'Focused Scope Peer Review' can replace the corresponding F&Os for those elements covered in the 'Full Scope Peer Review'

Ensure that the disposition of F&Os provides sufficient detail of how it was resolved.

Ensure that F&Os that are closed by an appropriate process (i.e., focused-scope or full peer review) and not as the result of another process that is not endorsed.

This additional guidance is based upon the NRC feedback on this topic at the 11/18/11 Meeting ML113210461 – Slide 16. Generic RAI 6.

V. Fire PRA Quality

[ENTER] Pages Attached

[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. See example below.]

Comment [e70]: NOTE TO LAR DEVELOPER:

Address the following information in Attachment V:

To expedite the staff's review include a subsection in the V attachment to describe the deviations from NUREG/CR 6850 approaches (including those involving justifications) and/or unreviewed analysis methods used in the Fire PRA models. NOTE: If unreviewed analysis methods (UAMs) are utilized ensure that appropriate sensitivity analyses have been conducted. (Generic RAIs 14 and 27)

NRC expectations on this topic were discussed at the 7/24/12 management meeting and are documented in the meeting summary (ML122200690).

Include the following statement, or similar: “The Peer Review Report will be made available.”

Refer to the pilot plant LARs, RAIs and SEs

[The Fire PRA is adequate to support the NFPA 805 Licensing Basis. A Peer Review was conducted during the period of [ENTER timeframe]. The Peer Review noted a number of facts and observations (F&Os). The F&Os and the disposition of the F&Os are provided in Table V-1. [ENTER a status summary of the resolution of the F&Os and its impact on the application (both pre and post transition).]

The Fire PRA meets Capability Category II in most but not all cases. A limited number of ASME/ANS areas were identified by the peer review team as meeting Category I only requirements. The capability categories are defined in ASME/ANS RA-Sa-2009. These are listed in Table V-2 with the planned disposition. The impact of those areas where only the Capability Category I requirement was met was evaluated in Table V-2.]

[illegible]

Provide a table of the LATEST Full Scope Peer review F&O's that includes the following information: an identifier, the supporting requirement referenced in the F&O, the Peer Review Report text for the F&O, the licensee's disposition of the F&O for this application. To expedite the staff's review, include both the resolved and unresolved F&O's.

Please identify any changes made to the internal events or fire PRA since the last full scope peer review of each of these PRA models that are consistent with the definition of a "PRA upgrade" in ASME/ANS-RA-Sa-2009, as endorsed by Regulatory Guide 1.200. Also, please address the following:

Ensure that F&Os that are closed by an appropriate process (i.e., focused-scope or full peer review) and not as the result of another process that is not endorsed.

Comment [e72]: NOTE TO LAR DEVELOPER:

Provide a table for any supporting requirements that are not Capability Category II, that were not already identified in the table discussed above. This table should include the following: and identifier, the subject supporting requirement, any peer review text for the subject supporting requirement, the resolution of the capability category classification.

~~Security-Related Information—Withheld Under 10 CFR 2.390~~

[ENTER Your Utility Here]

Attachment W – Fire PRA Insights

W. Fire PRA Insights

[ENTER] Pages Attached

W.1 Fire PRA Overall Risk Insights

Risk insights were documented as part of the development of the Fire PRA. The total plant fire CDF/LERF was derived using the NUREG/CR-6850 methodology for Fire PRA 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 2.2.4.2 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.”

W.2.1 Methods Used to Determine Changes in Risk

[Insert a discussion that describes the methods used to determine the changes in risk. The description should include:

- A summary of the types of VFDRs evaluated (e.g., unprotected cables, degraded ERFBS or barrier, etc.) If the treatment involved a performance-based evaluation, then provide a discussion of how the variance was modeling in the fire PRA including assumptions and insights on how the PRA modeling of these cables contributes to the delta risk calculations
- A summary of the PRA model alterations used to determine the changes in risk. If any of these model alterations used data or methods not included in the fire PRA peer review please describe the method

W.2.2 Risk Acceptance Criteria

[Insert a discussion of the total risk increase/decrease and how RG 1.174 acceptance criteria are met. This information needs to be provided on a fire area basis. The total risk increase/decrease for the entire plant is also required. The focus of the discussion and the level of detail that will be required to address the total plant risk varies depending on whether there is an overall risk decrease, risk increase, or if the risk increase is very small. In the case of a risk decrease or a very small increase, the total

Comment [e73]: NOTE TO LAR DEVELOPER:

This additional guidance is based upon the NRC feedback on the 'generic RAIs' issued with the Waterford 3 LAR Audit questions

Generic RAIs 22 and 24 address this topic.

plant risk need not be reported. This is consistent with the guidance in RG 1.174, 2.2.4. An exception to this guidance would occur if the fire risk by itself is very close to or above $1\text{E-}04/\text{yr}$ for CDF or $1\text{E-}05/\text{yr}$ for LERF. If there is a risk increase, then a justified claim that the total plant risk is not above $1\text{E-}04/\text{yr}$ for CDF and $1\text{E-}05/\text{yr}$ for LERF must be provided. That claim need not be based on a simple arithmetic sum of the figures of merit from the various hazard groups but can be a qualitative assessment. It is noted that risk increases greater than $1\text{E-}05/\text{yr}$ or $1\text{E-}06/\text{yr}$ for CDF or LERF, respectively are unlikely to be approved]

[If there is a risk decrease or if the increase is small]

The total change in risk associated with the transition to NFPA 805 results in a [risk decrease/very small risk increase] and the total plant fire risk is below $1\text{E-}04/\text{yr}$ for CDF and $1\text{E-}05/\text{yr}$ for LERF.

[If there is a risk increase]

The total change in risk associated with the transition to NFPA 805 results in a risk increase of $X.X\text{E-}X$ and $X.X\text{E-}X$ for CDF and LERF, respectively. The total plant risk is not higher than $1\text{E-}04/\text{yr}$ for CDF or $1\text{E-}05/\text{yr}$ for LERF.

[Insert discussion/justification to support the claim for total plant risk]

Comment [A74]: NOTE TO LAR DEVELOPER

Additional NRC feedback on this topic was provided at the 11/18/11 Meeting ML113210461 – Slide 13)

[ENTER Your Utility Here]

Table W-1 Fire Initiating Events Representing 95% of the Calculated Fire Risk

Scenario	Description	Contribution	Risk insights	CCDP	IF	CDF

2 [ENTER Plant / Unit]

Total

NOTE TO LAR DEVELOPER:

Plant/owner-operator specific initiatives have been undertaken to optimize fire protection surveillance and testing practices and frequencies based upon performance in accordance with the guidance in EPRI Technical Report (TR) 1006756, "Fire Protection Surveillance Optimization and Maintenance Guide for Fire Protection Systems and Features". This is allowed under traditional regulatory framework using a fire protection standard license condition and by ensuring that the program and its results were satisfactory to insurance representative. Therefore, there are established programs that could be used, enhanced, or modified in an effort to meet the monitoring requirements as discussed in NFPA 805. If a licensee plans to continue to utilize this methodology post-transition, a discussion of its use should be included in the monitoring section of the LAR and NEI 04-02 Table B-1 Transition of Fundamental FP Program and Design sections of the LAR and if not already included in fire protection program documents an item for implementation should be included

NOTE TO LAR DEVELOPER

Provide a table of the LATEST Full Scope Peer review F&O's that includes the following information: an identifier, the supporting requirement referenced in the F&O, the Peer Review Report text for the F&O, the licensee's disposition of the F&O for this application. To expedite the staff's review, include both the resolved and unresolved F&O's.

NOTE: If a more recent Focused Scope Peer Review was conducted for one or more elements, the F&Os resulting from that 'Focused Scope Peer Review' can replace the corresponding elements of the 'Full Scope Peer Review'

Please identify any changes made to the internal events or fire PRA since the last full scope peer review of each of these PRA models that are consistent with the definition of a "PRA upgrade" in ASME/ANS-RA-Sa-2009, as endorsed by Regulatory Guide 1.200. Also, please address the following:

- i) If any changes are characterized as a PRA upgrade, please identify if a focused scope peer review was performed for these changes consistent with the guidance in ASME/ANS-RA-Sa-2009, as endorsed by Regulatory Guide 1.200, and describe any findings from that focused-scope peer review and the resolution of these findings for this application.
- ii) If a focused-scope peer review has not been performed for changes characterized as a PRA upgrade, please describe what actions will be implemented to address this review deficiency. Ensure that the disposition of F&Os provides sufficient detail of how it was resolved. The NRC has also expressed interest in "Suggestion" F&Os and their resolution.

Ensure that F&Os that are closed by an appropriate process (i.e., focused-scope or full peer review) and not as the result of another process that is not endorsed.

This additional guidance is based upon the NRC feedback on this topic at the 11/18/11 Meeting ML113210461 – Slide 16)