
Progress Energy
Shearon Harris Nuclear Power Plant
Docket 50-400

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



Transition Report
Revision 0 [DRAFT]
May 31, 2008

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Executive Summary

[To be completed later]

1.0 INTRODUCTION

The Nuclear Regulatory Commission (NRC) has adopted a voluntary alternative rule for fire protection requirements at nuclear power plants, 10 CFR 50.48(c). Progress Energy has implemented the process for transitioning from its current fire protection licensing basis for the Shearon Harris Nuclear Power Plant (HNP) to compliance with the new requirements. This document describes the transition process that applied by Progress Energy for HNP and the results that demonstrate compliance with the new voluntary requirements.

1.1 Background

1.1.1 NFPA 805 – Requirements and Guidance

On July 16, 2004 the Nuclear Regulatory Commission amended 10 CFR Part 50.48, *Fire Protection*, to add a new subsection, 10 CFR 50.48(c), that established acceptable fire protection requirements. The change to 10 CFR 50.48 endorses, with exceptions, the National Fire Protection Association's 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) and Section (f).

As stated in 10 CFR 50.48 (c)(3)(i), any licensee's adoption of a risk-informed, performance-based program that complies with the rule is voluntary. Compliance with this rule may be adopted as an acceptable alternative method for complying with either 10 CFR 50.48 (b), for plant 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).

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

A depiction of the primary document relationships is shown below:

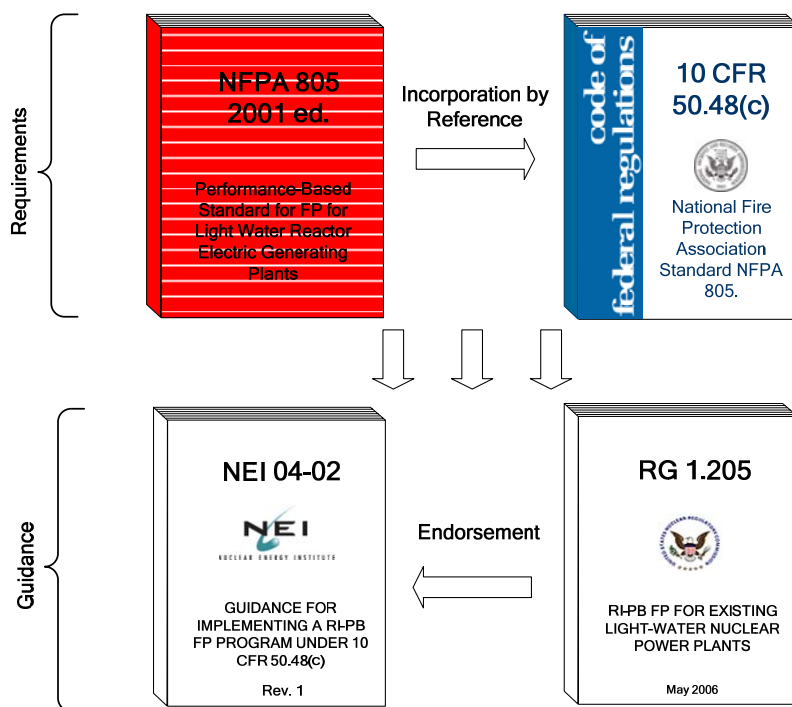


Figure 1-1 NFA 805 Transition – Implementation Requirements / Guidance

1.1.2 HNP Transition to 10 CFR 50.48(c)

1.1.2.1 Start of Transition

HNP determined to transition its fire protection licensing basis to the performance-based alternative in 10 CFR 50.48(c). A letter of intent was submitted by Progress Energy to the NRC on June 10, 2005 (ADAMS Accession No. ML051720404) for HNP to adopt NFA 805 in accordance with 10 CFR 50.48(c). This letter of intent also addressed other Progress Energy plants (Brunswick Steam Electric Plant, H.B. Robinson Steam Electric Plant, and Crystal River Unit 3 Nuclear Generating Plant). The letter of intent requested three years of enforcement discretion and proposed that HNP be considered a pilot plant for the NFA 805 transition process.

The NRC responded to Progress Energy on September 19, 2005 (ADAMS Accession No. ML052140391). In the response, the NRC agreed that HNP should be an NFA 805 Transition Pilot Plant. The NRC also sent a letter to Progress Energy on April 29, 2007, granting a third year of enforcement discretion (ADAMS Accession No. ML070590625).

1.1.2.2 HNP Transition Process

The HNP NFA 805 transition was conducted as part of a fleet Fire Protection Initiatives Project for each Progress Energy site. The Fire Protection Initiatives Project included high level activities to:

- Complete safe shutdown analysis / 10 CFR 50, Appendix R Reconstitution (activities started in 2003)
- Develop Fire PRAs using NUREG/CR 6850 as guidance and revise Internal Events PRA to support the Fire PRAs

- Transition to 10CFR50.48(c) / NFPA 805

The project was implemented using a comprehensive project plan and individual procedures/instructions for individual scopes of work. These procedures/instructions (e.g., “FPIP” series procedures referenced in this report) were developed for the purposes of NFPA 805 transition. Appropriate technical content from these procedures were and will be incorporated into technical documents and configuration control procedures, as necessary.

1.1.2.3 NFPA 805 Pilot Plant Summary

The HNP NFPA 805 transition underwent a series of reviews and observation meetings as part of the Transition Pilot Plant process, with the following goals:

- Increase communication between the NRC and transitioning licensees
- Develop transition lesson learned reports from observation visits
- Improve the NFPA 805 Regulatory Guide and Inspection Procedures
- Gain insights on the Enforcement Discretion Policy
- Develop License Amendment Request and Safety Evaluation Report templates

A summary of the major Pilot Plant activity is shown below:

| Item | Date | Location | Summary |
|------|-------------------|--|---|
| 1 | 11/7/05-11/11/05 | Charlotte, NC | Pilot Observation Meeting [ML060250033, ML060250034] |
| 2 | 3/27/06—3/30/06 | Raleigh, NC | Pilot Observation Meeting [ML061500468, ML061520285] |
| 3 | 10/16/06-10/19/06 | Seneca, SC (Oconee) | Pilot Observation Meeting [ML070280007, ML070320285] |
| 4 | 11/6/06-11/8/06 | Raleigh, NC | Pilot Observation Meeting [ML063330521, ML070820251, ML063310386, ML071210207, ML071060267] |
| 5 | 3/6/07-3/8/07 | Raleigh, NC | Pilot Observation Meeting / Public Meeting [ML070950030, ML070960489, ML071160447] |
| 6 | 5/30/07-6/1/07 | Raleigh/Apex, NC | Pilot Observation Meeting / Public Meeting [ML071930362, ML071930339] |
| 7 | 7/10/07-7/13/07 | Seneca, SC (Oconee) | Pilot Observation Meeting / Public Meeting [ML072270014, ML072610448, ML072610455, ML072140380] |
| 8 | 8/6/07-8/9/07 | Bethesda, MD | Pilot Observation Meeting / Public Meeting [ML072830064, ML072890127, ML072910745] |
| 9 | 11/5/07-11/8/07 | Atlanta, GA (NRC Region II Offices) | Pilot Observation Meeting / Public Meeting [ML073321171, ML073270905] |
| 10 | 12/7/07 | Rockville, MD (NRC Headquarters) | Pilot Observation Meeting / Public Meeting – FAQ 07-0040, Non-Power Operations [MLXXXXXXXXX] |
| 11 | 12/12/07 | Washington, DC (NEI Headquarters) | Pilot Observation Meeting / Public Meeting – Fire PRA Human Reliability Analysis (HRA) and Operator Manual Action Reconciliation [MLXXXXXXXXX] |

| Item | Date | Location | Summary |
|------|---------------|-------------|--|
| 12 | 1/7/08-1/8/08 | Raleigh, NC | Pilot Observation Meeting / Public Meeting ; Review of LAR/Transition Report detail. [MLXXXXXXXXX] |

1.2 Purpose

The purpose of the HNP Transition Report is as follows:

- (1) Describe the process implemented by Progress Energy to transition the HNP fire protection program to demonstrate compliance with the requirements in 10 CFR 50.48(c);
- (2) Summarize the results of HNP's transition process;
- (3) Explain the bases for Progress Energy's conclusions that the HNP fire protection program, with certain modifications, comply with those requirements; and
- (4) To describe the new HNP fire protection licensing basis.

2.0 OVERVIEW OF EXISTING FIRE PROTECTION PROGRAM

Progress Energy Harris Nuclear Plant's license condition 2.F states:

"F. Fire Protection Program (Section 9.5.1)

Carolina Power & Light Company shall implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report for the facility as amended and as approved in the Safety Evaluation Report (SER) dated November 1983 (and supplements 1 through 4), and the Safety Evaluation dated January 12, 1987, subject to the following provision below. The licensees may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire."

In addition to the license condition discussed above, the following encompass the pre-transition HNP fire protection program licensing basis:

- NUREG 1038, dated November 1983, Sections ???
 - List all Licensee submittals that support this SER
- NUREG 1038, dated ???, Supplement 1 Sections ???
 - List all Licensee submittals that support this SER
- NUREG 1038, dated ???, Supplement 2 Sections ???
 - List all Licensee submittals that support this SER
- NUREG 1038, dated ???, Supplement 3, Sections ???
 - List all Licensee submittals that support this SER
- NUREG 1038, dated ???, Supplement 4, Sections ???
 - List all Licensee submittals that support this SER
- Safety Evaluation dated January 12, 1987, Sections ???

- List all Licensee submittals that support this SER

3.0 TRANSITION PROCESS

3.1 Background

The process for transitioning from compliance with the current fire protection licensing basis to the new requirements is described in general in Section 4.0 of NEI 04-02. It 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) file a License Amendment Request (LAR); (5) complete transition activities that can be completed prior to the receipt of the License Amendment; (6) receive License Amendment; and (7) complete implementation of the new licensing basis.

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 below 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 performance-based methods. (The NRC permits licensees to use performance-based methods to comply with the fundamental fire protection requirements but those applications must be approved through the NRC's license amendment process, as discussed above.) HNP implemented this process by first determining the extent to which its current fire protection program supported findings of deterministic compliance with the requirements in NFPA 805. Risk-informed, performance-based methods were then applied to the requirements for which deterministic compliance could not be shown.

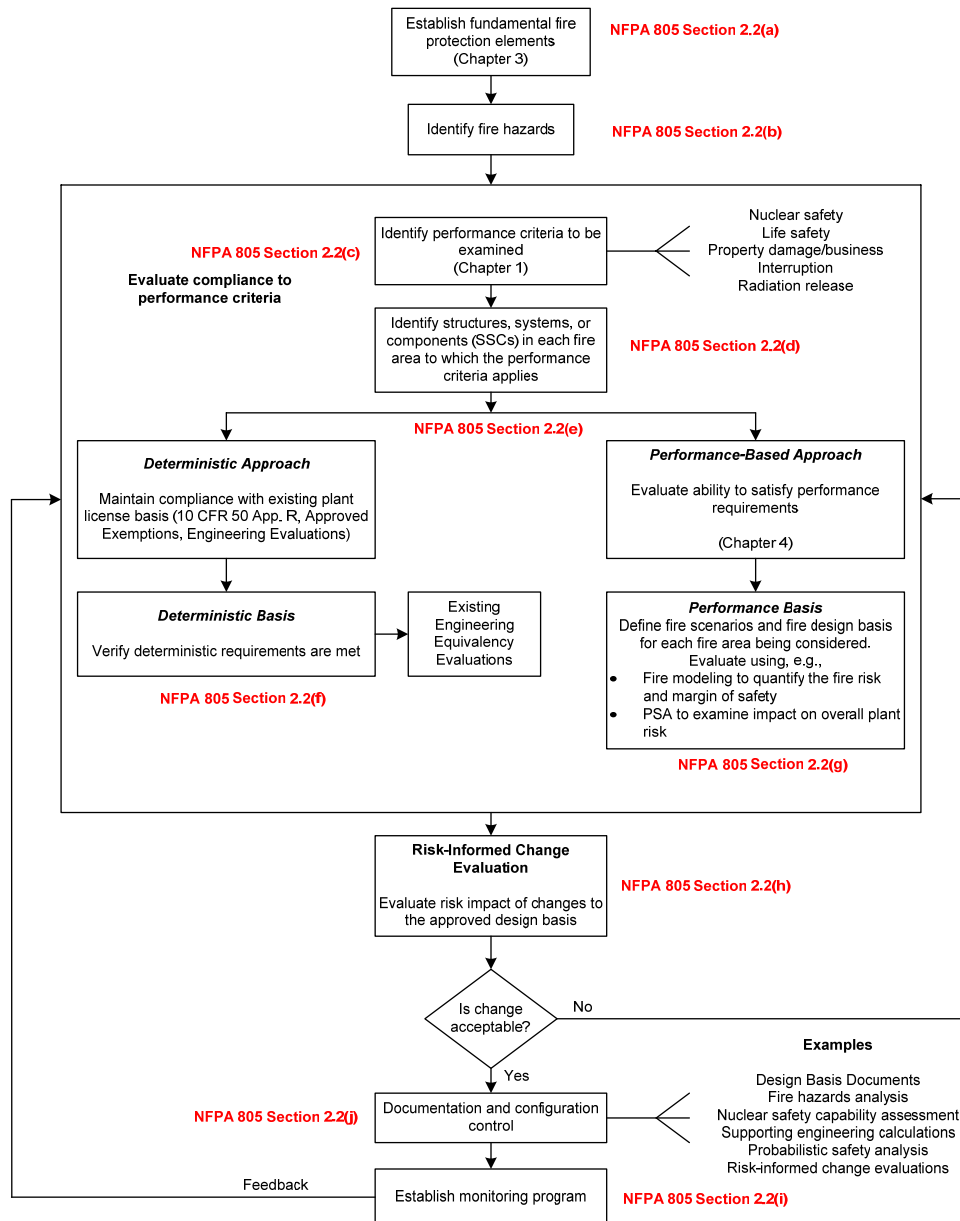


Figure 3-1 NFA 805 Process [NEI 04-02 Figure 3-1 based on Figure 2-2 of NFA 805]

3.3 NEI 04-02 – NFA 805 Transition Process

NFA 805 contains technical processes and requirements for a risk-informed, performance-based fire protection program. NEI 04-02 was developed to provide guidance on the overall process (programmatic, technical, and licensing) of the transition from a traditional fire protection licensing basis to a new one based upon NFA 805, as shown below in Figure 3-2.

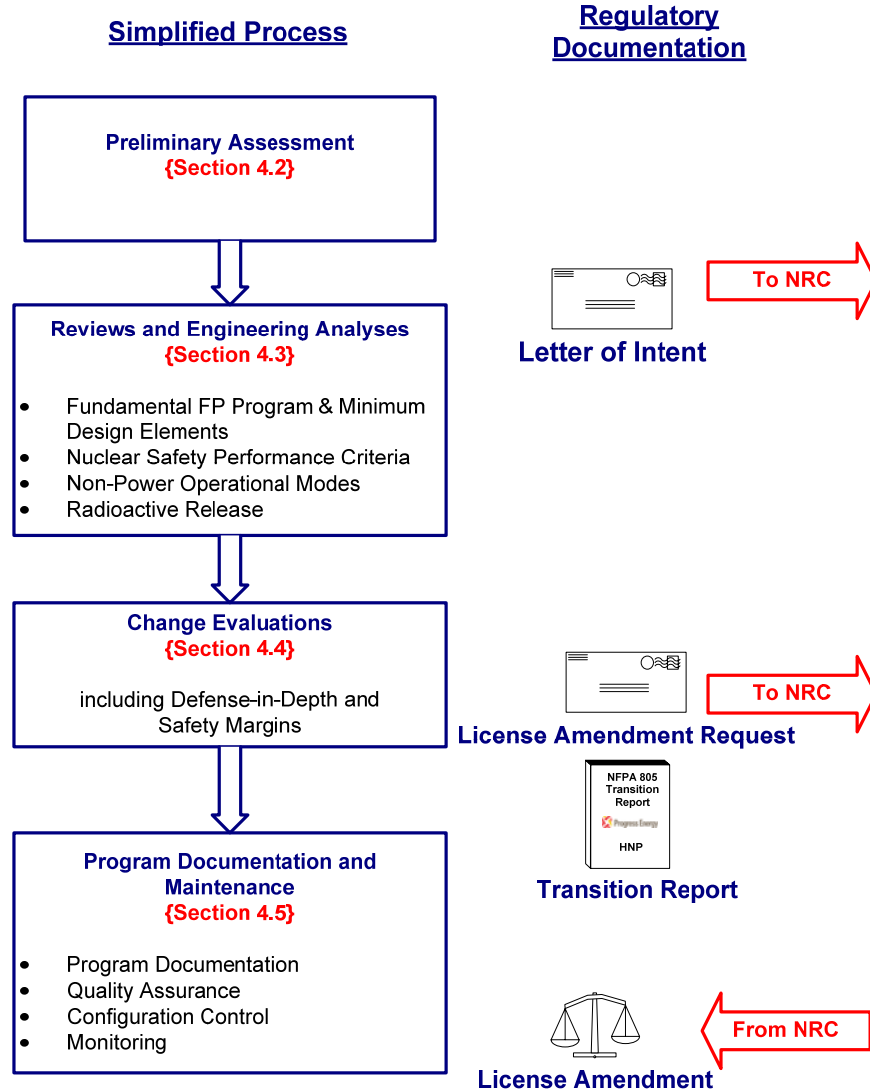


Figure 3-2 Implementing the New Licensing Basis [NEI 04-02 Figure 3-3]

Section 4.0 of NEI 04-02 describes the detailed process for assessing a fire protection program for the extent to which complies with NFPA 805, as shown below in Figure 3-3. HNP conducted the detailed evaluation processes by establishing teams comprised of knowledgeable plant personnel. The assessment processes used by these teams and the results of the assessments are discussed in detail below.

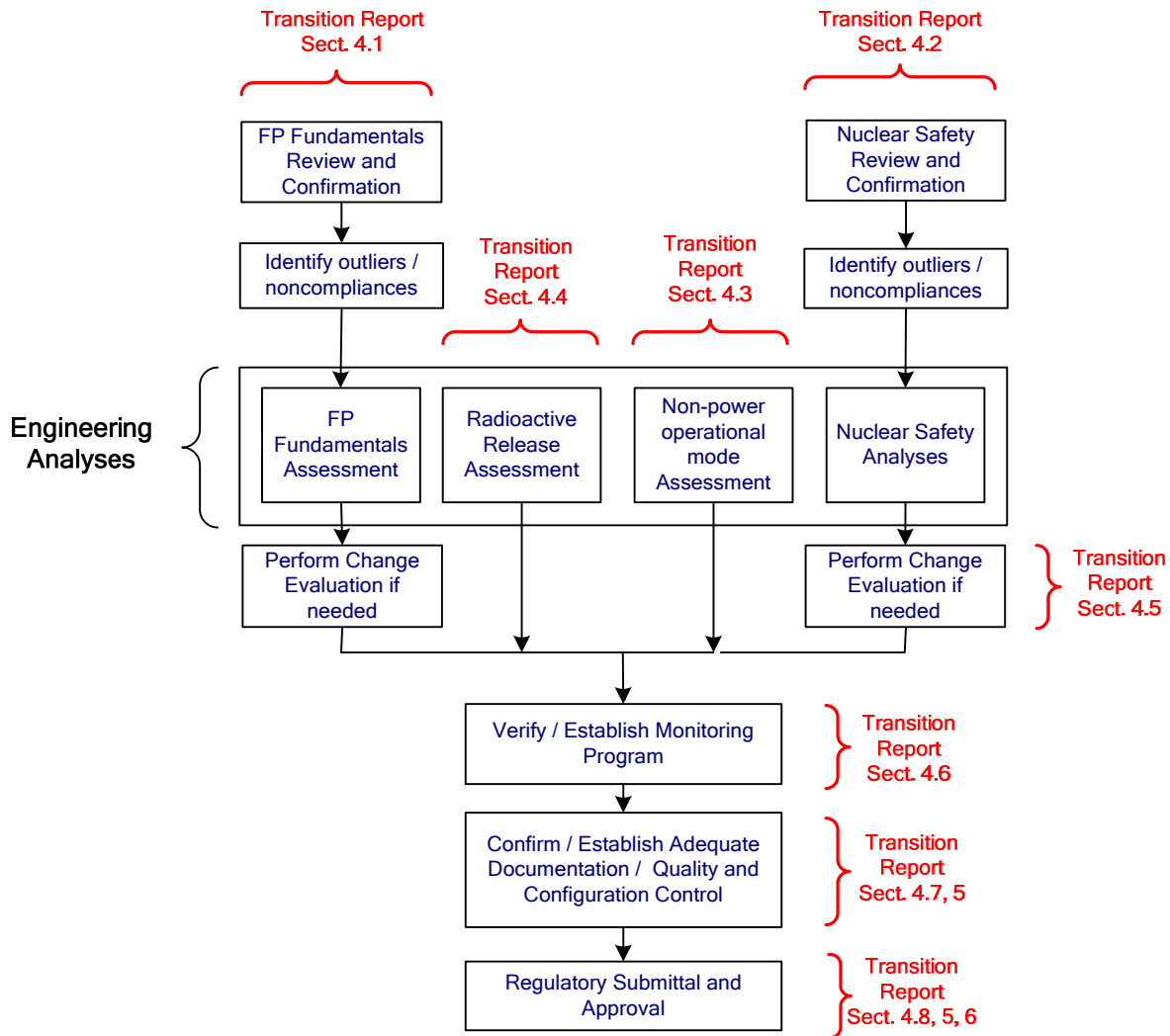


Figure3-2 Transition Process (Simplified) [based on NEI 04-02 Figure 4-1]

3.4 NEI 04-02 Frequently Asked Questions (FAQs)

The NRC staff has worked with two pilot plants (HNP and Oconee Nuclear Station) to refine the infrastructure that facilitated the transition to the new licensing basis. Both the NRC staff and the industry recognized the need for additional clarifications and guidance beyond that provided in Regulatory Guide 1.205 and NEI 04-02, Revision 1. In a letter to the NRC, the NEI requested that the NRC staff establish a process that provides timely clarifications of additional staff positions usually communicated via RG 1.205 and NEI 04-02. The NRC staff accepted an NEI proposal on a proposed process, with several modifications, as described in a July 12, 2006, letter to NEI (ADAMS Accession No. ML061660105). This process was named the NFPA 805 Frequently Asked Question (FAQ) Process. The process was intended as a structured avenue to seek NRC staff interpretations and clarifications of NEI 04-02 guidance and NFPA 805 requirements, in accordance with 10 CFR 50.48(c), in a timely manner.

Under the FAQ Process, transition issues (referred to as FAQs) requiring additional clarifications were submitted, in accordance with the above proscribed process, to the NEI NFPA 805 Task Force for review, and subsequently presented to the NRC during public FAQ meetings. The process continued with written comments from the NRC, when appropriate, and formal revisions of the FAQs. Once an acceptable FAQ is submitted to the NRC, the NRC staff issued a publicly available memorandum to file which indicated that the revised FAQ is acceptable guidance for transitioning to NFPA 805, and should be incorporated into NEI 04-02. These closure memos are preliminary extensions of the implementation guidance in NEI 04-02. Final official closure of the FAQs occurs when an updated Regulatory Guide 1.205, endorsing the revised NEI 04-02, is approved by the NRC.

The FAQs listed in Attachment H were used as guidance as part of the HNP transition to NFPA 805.

4.0 COMPLIANCE WITH NFPA 805 REQUIREMENTS

4.1 Fundamental Fire Protection Program Elements and Minimum Design Requirements

The Fundamental Fire Protection Program and Design Elements are established in Chapter 3 of NFPA 805. Section 4.3.1 of NEI 04-02 (Implementing Guide) sets out a systematic process for determining the extent to which the current licensing basis meets these criteria and for identifying the fire protection program changes that would be necessary for complete compliance. Appendix B-1 of the Implementing Guide provides guidance on documenting the comparison of the Fire Protection Program Fundamentals of Chapter 3 to NFPA 805 to the appropriate NRC Guidance Documents (BTP9.5-1, NUREG 0800, etc.).

4.1.1 Overview of Evaluation Process

The comparison of the HNP Fire Protection Program to NFPA 805 Chapter 3 (NEI 04-02 Table B-1) was performed using the methodology contained in Progress Energy Fire Protection Initiatives Project (FPIP) Project Instruction FPIP-0120, NFPA 805 Chapter 3 Fundamental Transition, and the guidance contained in FAQ 07-0036, Incorporation of Pilot Plant Lessons Learned - Table B-1. The methodology depicted in Figure 4-1 is outlined below.

- Review each section and subsection of NFPA 805 Chapter 3 against the current fire protection program. For each section/subsection determine the appropriate compliance statements:
 - Complies
 - Complies with Clarification
 - Complies Via Previous NRC Approval
 - Complies with Use of Existing Engineering Equivalency Evaluations (EEEEEs)
 - Requires NRC Approval
- Document the results of the review.
 - Complies

Provide an implementing reference for the compliance statement in the Reference Document Field.

- For administrative requirements such as required procedures, control of combustibles and ignition sources, fire brigade requirements, etc. provide a reference to the site or corporate procedure that provides the control required by the program. In general, the reference should be to the highest level document that satisfies the requirement. For example the requirement for ensuring the plant has procedures for inspection and maintenance of systems would reference the program procedure that establishes this requirement, rather than providing a list of all testing and inspection procedures.
- For system requirements such as water supply, automatic detection and suppression, manual suppression, fire extinguishers, and fire barriers (Note that only the suppression and detection systems required by Chapter 4 of NFPA 805 need to be transitioned in the new program. Reference FAQ 06-0004) provide the following:
 - i. For active systems (including extinguishers), a reference to the code compliance evaluation packages with a summary of evaluated deviations and the edition of code and a statement of the ability of the system(s) to meet its functional requirement.

NFPA standards referenced by NFPA 805 and committed to shall be evaluated point by point and shall consider the following.

 1. Identify the applicable code year.
 2. Identify the applicable sections of the standard.
 3. Identify the deviations and justifications to the applicable sections
 - ii. For passive systems, a reference to specifications, design documents or test reports that demonstrate compliance with the systems.
- Complies with Clarification
Describe the clarification in the compliance basis field.
- Complies Via Previous NRC Approval
 - Enter appropriate excerpts from licensee submittals regarding the issue for which previous approval is being claimed and include in the reference document field. These excerpts are especially important if the licensee has clearly articulated a position/condition and the NRC generically accepted the overall fire protection feature / system.
 - Enter the excerpt from the NRC documents that provided the formal approval of the fire protection system / feature.
 - Also provide a reference for the compliance statement in the reference document field. See discussion above for the types of references to be included.
- Complies with Use of Existing Engineering Equivalency Evaluations (EEEEs)
 - Enter “Complies with the use of Existing Engineering Equivalency Evaluation” into the compliance basis field.
 - Enter a summary of the bases of acceptability of the engineering evaluation into the compliance basis field.

- Also provide a reference for the compliance statement in the reference document field. See discussion above for the types of references to be included.

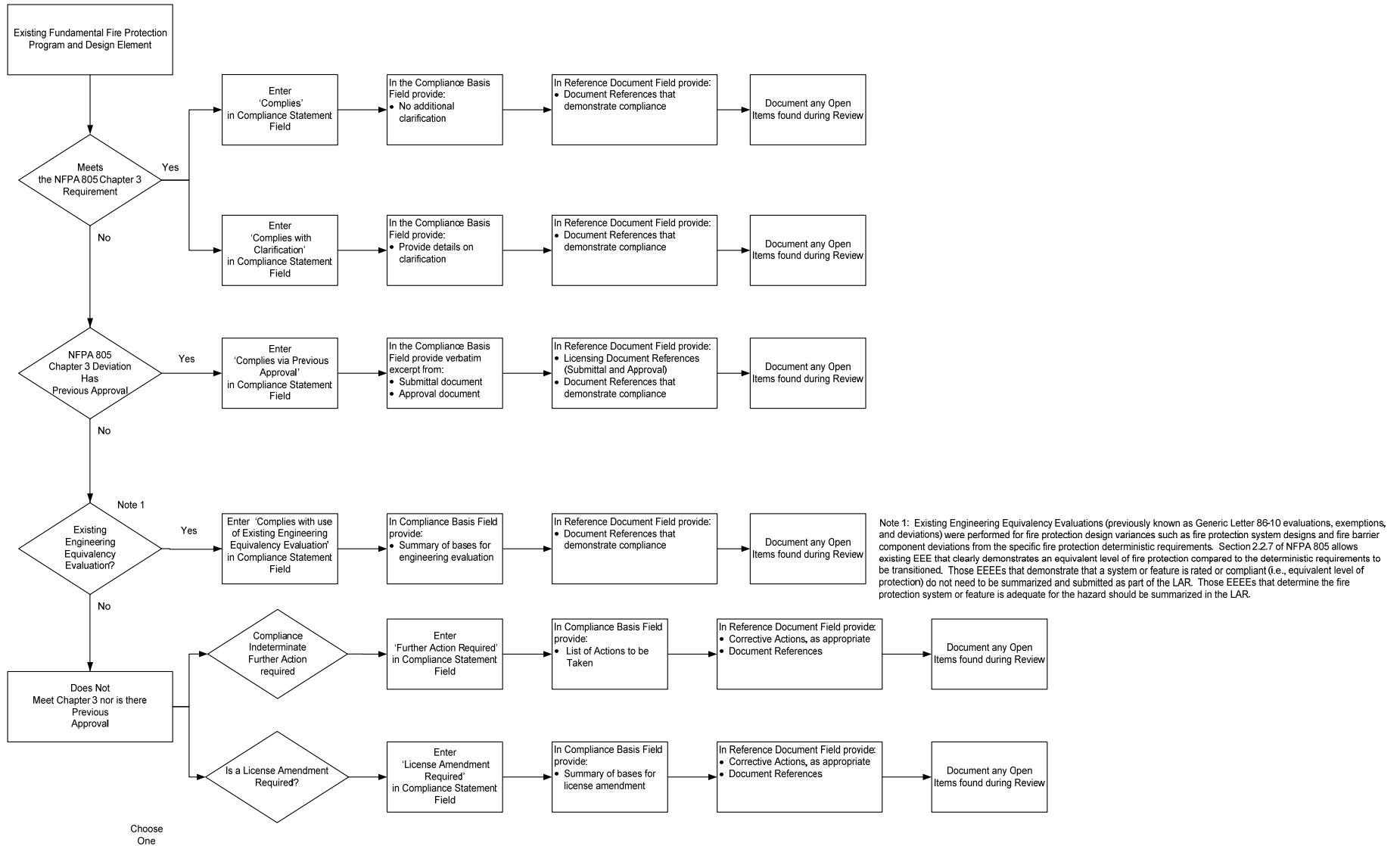


Figure 4-1 - Fundamental Program and Design Elements Transition Process [based on NEI 04-02 Figure 4-2/FAQ 07-0036]

4.1.2 Results of the Evaluation Process

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

Requirements in NFPA 805 Chapter 3 that are met or for which the NRC previously approved alternatives are included in Attachment A to the Transition Report. References to the document(s) that justify that position are included.

4.1.2.2 NFPA 805 Chapter 3 Requirements not Previously Approved by NRC

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

- Section 3.7 Fire Extinguishers
Specifically HNP does not comply with NFPA 10

For these cases performance-based evaluations were conducted to demonstrate that the current practice/configuration is 'equivalent' to the deterministic requirements of Chapter 3. These evaluations are summarized in Attachment L of the Transition Report.

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

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

- Section 3.9.4 Fire Suppression for Diesel Driven Fire Pumps
Specifically HNP does have suppression for the outdoor diesel fire pumps
- We should summarize the HVAC issue
List/summarize the HNP Submittals and then the NRC response which leads us to believe that we have previous approval

These requirements and their justification are included in Attachment A to the Transition Report. References to the document(s) that justify that position are included.

4.2 Nuclear Safety Performance Criteria Transition Review

The Nuclear Safety Performance Criteria are established in Section 1.5 of NFPA 805. Chapter 4 of NFPA 805 provides the methodology to determine the fire protection systems and features required to achieve the performance criteria outline in Section 1.5. Section 4.3.2 of NEI 04-02 (Implementing Guide) sets out a systematic process for determining the extent to which the current licensing basis meets these criteria and for identifying the fire protection program changes that would be necessary for complete compliance. Appendix B-2 of the Implementing Guide provides guidance on documenting the transition of Nuclear Safety Capability Assessment Methodology and the Fire Area compliance strategies.

4.2.1 Nuclear Safety Capability Assessment Methodology Review

4.2.1.1 Overview of Evaluation Process

The comparison of the HNP Fire Protection Program to NEI 00-01 Chapter 3 (NEI 04-02 Table B-2) was performed using the methodology contained in Project Instruction FPIP-0127, NFPA

805 Nuclear Safety Capability Assessment Transition Review, and the guidance contained in FAQ 07-0039, Lessons Learned – NEI 04-02 B-2 and B-3 Tables. The methodology steps depicted in Figure 4-2 are outlined below.

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

Step 2 – Determine and document NEI 00-01 applicability of NEI 00-01 sections. Correlate the NFPA 805 2.4.2 section to the corresponding section of NEI 00-01 Chapter 3. Based upon the content of the NEI 00-01 methodology statements, determine if the section is applicable to the plant.

Step 3 – Perform comparison of plant-specific safe shutdown methodology to applicable sections of NEI 00-01. Determine if failure to maintain strict alignment with the guidance in NEI 00-01 could have adverse consequences. Document whether the plant aligns with the NEI guidance and provide the basis for the alignment statement.

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

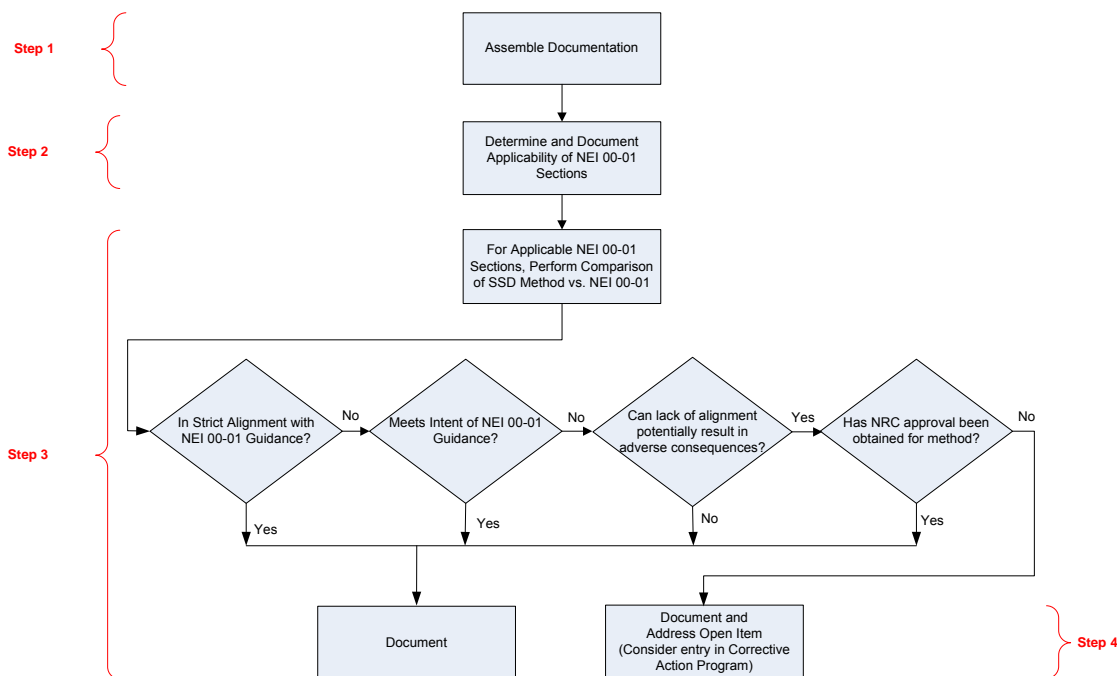


Figure 4-2 – Summary of Nuclear Safety Methodology Review Process (FAQ 07-0039)

4.2.1.2 Results from Evaluation Process

The HNP methodology aligns with the guidance in NEI 00-01. NEI 00-01 methodology has been supplemented by the guidance for analyzing Multiple Spurious Operations (FAQ 07-0038) and the guidance for evaluating the additional risk associated with the use of Recovery Actions as compliance strategies (FAQ 07-0030). Attachment B contains the NEI 04-02 B-2 Table. Attachment F contains the details of the MSO Methodology. Attachment G contains the Recovery Action Methodology.

4.2.2 Fire Area-by-Fire Area Transition

4.2.2.1 Overview of Evaluation Process

The Fire Area-by-Fire Area Transition of the HNP Fire Protection Program (NEI 04-02 Table B-3) was performed using the methodology contained in Project Instruction FPIP-0127, NFPA 805 Nuclear Safety Capability Assessment Transition Review, and the guidance contained in FAQ 07-0039, Lessons Learned – NEI 04-02 B-2 and B-3 Tables. The methodology for performing the Fire Area-by-Fire Area Transition depicted in Figure 4-3, are outlined below.

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

Step 2 – Assess accomplishment of performance goals. Document the fulfillment of the NFPA 805 performance goals for the selected fire area. Also document the method of accomplishment in summary level form for the fire area.

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

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

Step 5 – Document results and define Open Items / Change Evaluations. This step includes documenting Fire Protection Systems and Features Determination, Fire Suppression Activities, and Open Items / Change Evaluations.

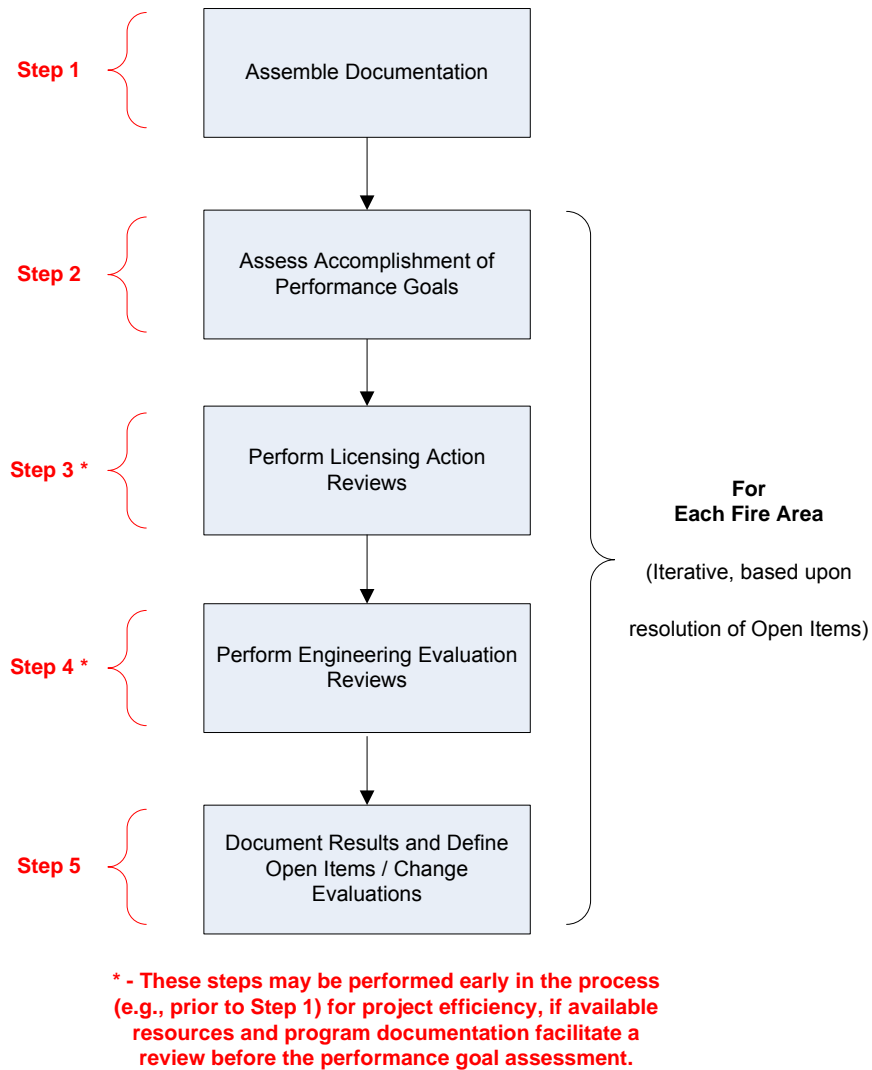


Figure 4-3 – Summary of Fire Area-by-Fire Area Review (FAQ 07-0039)

4.2.2.2 Results of the Evaluation Process

4.2.2.2.1 Results of the Existing Engineering Equivalency Evaluation Review

The Existing Engineering Equivalency Evaluation (EEEE) review was performed using the methodology contained in Project Instruction FPIP-0125, Transition of Existing Engineering Equivalency Evaluations, and the guidance contained in FAQ 07-0033, Transition of Existing Engineering Equivalency Evaluations. The methodology for performing the EEEE review included the following:

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

- Determination that the standard license condition is met, and
- Determination that the evaluation reflects the plant as-built condition.
- Determination that the EEEE is technically adequate.

Attachment J of the Transition Report contains the results of the EEEE review.

Thirty-three EEEEs were reviewed at HNP. [Enter Number] are determinations that the fire protection system/feature are equivalent to the requirements of NFPA 805 Chapter 3. In accordance with the guidance provided in RG 1.205, Revision 0, Regulatory Position C.3.2.4 [Enter Number] EEEEs support deviations from the requirements / methods of NFPA 805. These are:

| Table 4-1 EEEEs to Be Included in the LAR | | | |
|--|--------------|-----------------------------|--------------------------------|
| EEEE | Topic | NFPA 805 Requirement | Basis for Acceptability |
| | | | |
| | | | |

4.2.2.2 Results of the Licensing Action Review

The existing licensing actions (deviation request) review was performed using the methodology contained in Project Instruction FPIP-0127, NFPA 805 Nuclear Safety Capability Assessment Transition Review. The methodology for the licensing action review included the following:

- Determination that the basis of acceptability of the licensing action for inclusion into the monitoring program
- Determination that the basis of acceptability is still valid

Attachment K of the Transition Report contains the results of the Licensing Action Review.

[Enter Number] Licensing Actions were reviewed at HNP. [Enter Number] are no longer necessary post transition. Since, HNP is a post 1979 plant, 10 CFR 50 Appendix R exemptions were not necessary. Therefore these deviations do not have to be revoked as part of the License Amendment process. The following Table contains a summary of the deviations that are no longer required post-transition:

| Table 4-2 Licensing Actions No Longer Necessary | | | |
|--|--------------|--------------------------------|---------------------------|
| Licensing Action | Topic | Fire Area NFPA 805 Ch 3 | Basis for Deletion |
| | | | |
| | | | |

4.3 Non-Power Operational Modes

[Requires update upon resolution of FAQ 07-0040]

4.3.1 Overview of Evaluation Process

The review of the HNP Fire Protection Program against NFPA 805 requirements for High Risk Evolutions performed during non-power operational modes (NEI 04-02 Table F-1) was performed using the methodology contained in Project Instruction FPIP-0126, Non-Power Operational Modes Transition Review. The methodology steps depicted in Figure 4-4, are outlined below.

Step 1 - Review plant outage process. The purpose of this review is to identify those systems and equipment that are relied upon to provide Key Safety Functions (KSF) during each outage evolution.

Step 2 - Identify required equipment. For systems relied upon to achieve, or support, one or more of the outage evolutions, and the Key Safety Functions, identify the components required for each of the high risk outage evolutions.

Step 3 – Perform circuit analysis. For each new electrically operated component that is added to perform, or support, an outage function, a circuit analysis shall be completed and documented.

Step 4 – Identify equipment/cable or recovery action location.

Step 5 – Perform Fire Area Assessment. Identify those areas where a single fire might damage (or impede) all credited paths, or affect recovery actions used to perform a KSF. For those fire areas where a single fire may damage all credited paths used to perform a KSF, consider and incorporate options into the outage management and planning procedures to reduce the risk from fire depending upon the significance of the potential damage:

Step 6 – Prepare documentation. Summarize the results of this fire area assessment, and document the vulnerabilities identified. This report shall also include any recommendation for modifying procedures utilized to manage risk during plant shutdown and outage periods to ensure that Key Safety Functions are not compromised in the event of a fire during high risk evolutions. Include summary of the tasks that were performed to demonstrate that the nuclear safety performance criteria are met for High Risk Evolutions that are performed during non-power operational modes.

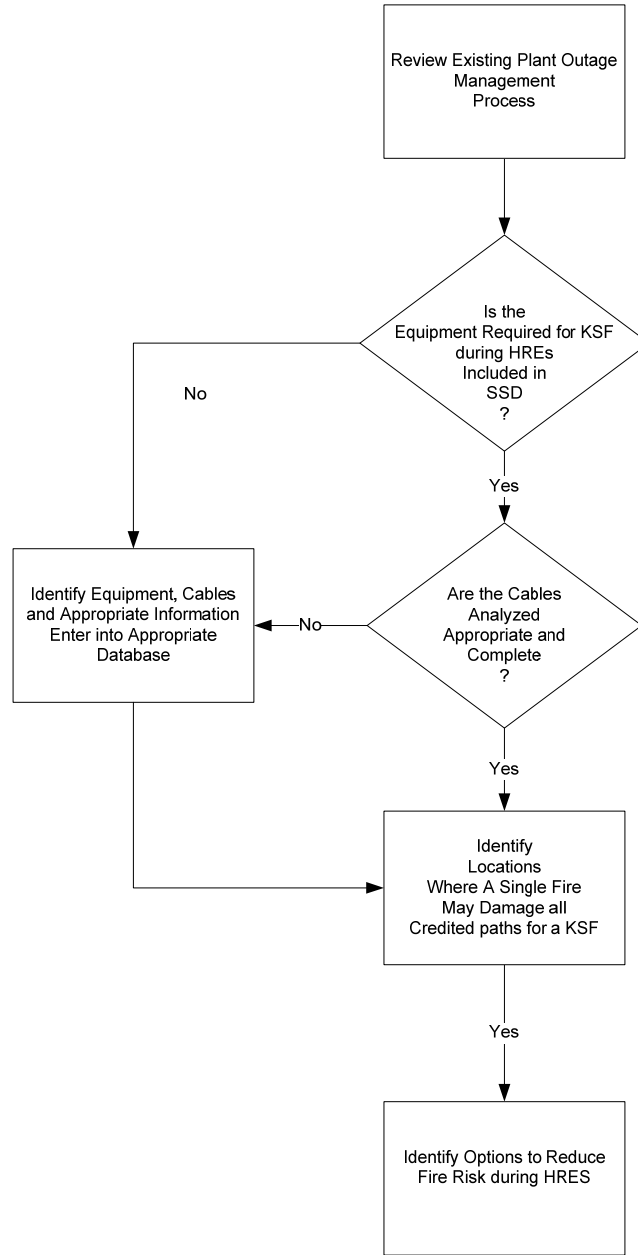


Figure 4-4 – Non-Power Operational Modes Review Process

4.3.2 Results of the Evaluation Process

[To be completed later]

4.4 Radioactive Release Performance Criteria

4.4.1 Overview of Evaluation Process

The review of the HNP Fire Protection Program against NFPA 805 requirements for fire event and fire suppression related radioactive release (NEI 04-02 Table G-1) was performed using the

methodology contained in Project Instruction FPIP-0121, Radiological Release Reviews During Fire Fighting Operations. The methodology steps are outlined below.

Step 1 - Perform Pre-Fire Plan review. Review the site pre-fire plans for locations that have the potential for radiological contamination. The review shall be conducted by an “expert panel” to ensure specific steps are included for containment and monitoring of potentially contaminated materials.

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

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

Step 4 – Provide documentation.

4.4.2 Results of the Evaluation Process

4.5 Change Evaluations

4.5.1 Fire PRA Development and Acceptance

[LATER – Discuss HNP Fire PRA development, reviews and results from the NRC ‘acceptance’ review, high level findings, etc. and how this process establishes the foundation for the new post-transition fire protection license condition and use in the change evaluation process in RG 1.205]

4.5.2.1 Fire PRA Development

[LATER]

4.5.2.2 Fire PRA – NRC Review

The identification and resolution of the high level findings from the Fire PRA peer review process are summarized below (RG 1.205, Revision 0, Regulatory Position C.4.3 and NEI 04-02, Rev. 1, Section 5.1.3).

As part of the Pilot Program for NFPA-805, the NRC reviewed the HNP Fire PRA, such that a separate peer review of the fire PRA was not required. In accordance with by RG 1.205, Revision 0, Regulatory Position C.4.3 the following high level findings resulted from the NRC’s review of the HNP Fire PRA:

- **[LATER]**

The schedule for completion of these actions is:

- **[LATER]**

4.5.2 NFPA 805 Risk-Informed, Performance-Based Change Evaluation Process

Risk-Informed, performance-based change evaluations were performed as part of the HNP NFPA 805 transition. Progress Energy Project Instruction FPIP-0128, NFPA 805 Change Evaluations, was developed based upon the industry guidance in primary documents NFPA 805, NEI 04-02 Revision 1, and Regulatory Guide 1.205, Revision 0.

| Document | Section(s) | Topic |
|-----------------------------|---|--|
| NFPA 805 | 2.2(h), 2.2.9, 2.4.4, 4.2.4, A.2.2(h), A.2.4.4, D.5 | Change Evaluation Risk of Recovery Actions (4.2.4) |
| NEI 04-02 Revision 1 | 4.4, 5.3, Appendix B, Appendix I, Appendix J | Change Evaluation, Change Evaluation Forms (App. I) |
| Reg. Guide 1.205 (May 2006) | B.2.2, B.2.3, C.3.2 | LAR reporting requirements (B.2.2) Risk of operator manual actions (B.2.3) Change Evaluations (C.3.2) Circuit Analysis (C.3.3) PSA Peer Review (C.4.3) |

The Plant Change Process consists of the following subtasks:

- Change Definition
- Preliminary Risk Review
- Risk Evaluation
- Acceptability Determination

4.5.2.1 Change Definition

The Change Evaluation process started with definition of the change or altered condition to be examined and the baseline configuration as defined by the Licensing Basis (current pre-transition licensing basis).

4.5.2.2 Preliminary Risk Review

Once the definition of the change is established and groupings/organizations are established, a preliminary risk review was performed to identify and resolve minor changes to the fire protection program. This step is not utilized for the transition process as the variances from the deterministic requirements were deemed not to be minor.

4.5.2.3 Risk Evaluation

For changes that were not determined to be minor, the changes were assessed using risk-informed, performance-based techniques (including, but not limited to fire modeling and PRA). The risk evaluations, depending upon the nature of the change, were performed as either limiting or bounding fire modeling/fire risk analysis or detailed integrated analyses.

4.5.2.4 Acceptability Determination

The risk evaluation shall be measured quantitatively for acceptability using the Δ CDF and Δ LERF criteria from Section 5.3.5 of NEI 04-02 and Regulatory Guide 1.205. The results of the

acceptability determination were documented in calculations. An evaluation to ensure maintenance of defense-in-depth and safety margins was also performed.

4.5.3 NFPA 805 Risk-Informed, Performance-Based Change Evaluation Results

HNP's pre-transition post-fire safe shutdown analysis revalidation efforts and the NFPA 805 transition project activities have identified a number of variances from the pre-transition fire protection licensing basis. These variances have been and are being addressed by a number of plant and programmatic changes to correct the variances and reduce risk. Following completion of transition activities and planned modifications and program changes, the plant is compliant with 10 CFR 50.48(c).

No performance based changes evaluations performed as part of the transition process require NRC approval per the criteria provided in RG 1.205 Regulatory Position C.3.1.

4.5.4 Risk Change Due to NFPA 805 Transition

In accordance with the guidance in Regulatory Position C.2.2 of RG 1.205, Revision 0, the total risk change associated with pre-transition fire protection program variances that will meet the NFPA 805 performance-based approach (via the change evaluation process) was estimated with the following results:

- Less than $X \times 10^{-X}$ change in core damage frequency/year (Δ CDF/yr)
- Less than $X \times 10^{-X}$ change in large early release frequency/year (Δ LERF/yr)

In accordance with the guidance in Regulatory Position C.2.2 of RG 1.205, Revision 0, the total risk change associated with NFPA 805 transition was estimated with the following results:

- Less than $X \times 10^{-X}$ change in core damage frequency/year (Δ CDF/yr)
- Less than $X \times 10^{-X}$ change in large early release frequency/year (Δ LERF/yr)

In addition, the changes associated with transition to NFPA 805 have been assessed for impact on fire protection defense-in-depth and safety margin. Defense-in-depth and safety margins are maintained.

In accordance with the guidance Regulatory Position C.2.2 of Regulatory Guide, the estimated change in risk associated with the HNP transition to NFPA 805 is consistent with the acceptance guidelines of Regulatory Guide 1.174, and therefore, considered acceptable.

4.6 Monitoring Program

In order to assess the impact of the transition to NFPA 805 on the current monitoring program, the HNP fire protection program documentation hierarchy, maintenance program process / procedures and plant change processes were reviewed. Sections 4.5.3 and 5.2 of the NEI 04-02 Implementing Guidance were used during the review. The results of those reviews follow.

4.6.1 Overview of Evaluation of the Existing Monitoring Program

Section 2.6 of NFPA 805 states:

"A monitoring program shall be established to ensure that the availability and reliability of the fire protection systems and features are maintained and to assess the performance

of the fire protection program in meeting the performance criteria. Monitoring shall ensure that the assumptions in the engineering analysis remain valid”

The intent of the monitoring transition effort was to confirm the adequacy of the existing surveillance, testing, maintenance, compensatory measures, and oversight processes for transition to NFPA 805. This review considered the following:

1. The adequacy of the scope of systems and equipment within existing plant programs (i.e., are the necessary fire protection program systems and features included).

Identify all of the fire protection systems and features and nuclear safety equipment relied on to demonstrate compliance with NFPA 805.

Identify the engineering assumptions made to demonstrate that systems and features provide compliance with NFPA 805. The system and equipment availability should equal or exceed the availability assumed in the risk assessment.

Identify bases for acceptability of engineering equivalency evaluations and licensing actions.

2. The performance criteria for the availability and reliability of fire protection systems and features relied on to demonstrate compliance.

In fire areas for which compliance is based on previous NRC approval of compliance with deterministic requirements, the concepts of availability and reliability do not necessarily apply, e.g., suppression systems are always assumed to operate. In these areas, existing surveillance and testing may be assumed to be adequate.

In fire areas for which compliance is established by applying risk-informed techniques, use the assumptions in the risk analyses to establish these criteria. Where criteria already have been established for other purposes, such as compliance with the Maintenance Rule or the Technical Specifications, review those criteria for acceptability. If any differences between the existing criteria and the assumptions in risk calculations do not materially affect a demonstration of compliance with NFPA 805, adopt the existing criteria and document the basis for that adoption. If the differences do materially affect compliance with NFPA 805, either adopt different criteria or modify the fire protection program, whichever is easier.

3. The adequacy of the plant corrective action program in determining causes of equipment and programmatic failures and in minimizing their recurrence.
4. The adequacy of the program used to determine effectiveness of the corrective action program.

4.6.1.1 Extent of Reliance on Current Programs

[Summarize the extent to which current programs/processes have been relied on.]

4.6.1.2 Overview of Additional Program Elements

The monitoring program has been upgraded in the following ways:

[Describe upgrades. Describe a decision process for determining the appropriate responsibility for monitoring that should be included for fire protection equipment (i.e.,

does it go in the Maintenance program or the fire protection equipment operability control process).]

4.7 Program Documentation, Configuration Control, and Quality Assurance

4.7.1 Compliance with Documentation Requirements in Section 2.7.1 of NFPA 805

HNP has [developed/revised] the Fire Protection Program document that defines the personnel responsible for establishing and implementing the fire protection program and 2) the fire protection policy for the major fire protection program elements (procedures) and 3) the fire protection features (equipment) to which those elements are applied. *[This is the document that contains long-term compliance information for the Fundamental Elements and Minimum design requirements and the process portions (monitoring, change process, evaluation method procedures) of NFPA 805]*

[Summarize this document]

HNP has [developed/revised] the Fire Protection Design Basis Document that demonstrates compliance with nuclear safety criteria of NFPA 805. *[This is the document that contains long-term compliance information for the Nuclear Safety Criteria portion of NFPA 805.]*

[Summarize this document]

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

[Summarize the extent to which current programs/processes have been relied on and any modifications to those processes. The summary may be brief, as shown in the following example. These may include, but are not limited to,

- Guidance similar to NEI 02-03 for assessing changes
- A procedure for the change process if the change does not pass a screening process.]

4.7.3 Compliance with Quality Assurance Requirements in Section 2.7.2 of NFPA 805

[Summarize the extent to which current programs/processes have been relied on and any modifications to those processes. The summary may be brief, as shown in the following example.]

The existing fire protection quality assurance program is sufficient for a risk-informed, performance-based program transition. The scope of fire protection features that fall under the umbrella of the fire protection quality assurance program may change based upon whether the feature(s) will continue to be credited (directly or via defense in depth analyses) under the new risk-informed, performance-based program.]

4.8 Summary of Results

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

Attachment C contains the results of the Fire Area Transition review (NEI 04-02 Table B-3). The B-3 Tables include the following summary level information for each fire area:

- Regulatory Basis – Both pre and 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. Specifically included are [???
- Reference Documents – Specific References to Operating Procedures and the Nuclear Safety Capability Assessment
- Licensing Actions – Specific References to Deviation Requests that will remain part of the post-transition licensing basis and the Basis for Acceptability of that Licensing Action. Note these bases that are subject to change need to be reviewed for inclusion in the monitoring program.
- Engineering Equivalency Evaluations – Specific References to Engineering Equivalency Evaluations that rely on determinations of adequate for the Hazard that will remain part of the post-transition licensing basis and the Basis for Acceptability of that Engineering Equivalency Evaluation. Note these bases that are subject to change need to be reviewed for inclusion in the monitoring program.
- Open Items – Specific References to Open Items such as modifications or procedural changes. These open items are required to demonstrate compliance post-transition.

A higher level summary is provided below in Table 4-2. The table provides the following information

- Fire Area: Fire Area Identifier
- Area Description: Fire Area Description
- FSA Reference: Reference to the HNP Fire Safety Analysis for the Fire Area
- NFPA 805 Reg. Basis (Post Transition): Post-transition NFPA 805 Chapter 4 reference for the Fire Area
- Risk Insights: Summary of risk insights (CDF and LERF) from the Fire PRA
- Change Evaluations: Reference to Change Evaluation (HNP Fire Safety Analysis Calculation), Documentation (Yes/No) of a change evaluation for the fire area.
- Non-Power Operations Measures Required? (Yes/No): Measures required as a result of the non-power operations
- Radioactive Release Results Measures Required? (Yes/No): Measures required as a result of the radioactive release review
- Chapter 3 Variances? (Yes/No) Variances from NFPA 805 Chapter
- Suppression Required? (Yes/No): Confirmation of requirement for fire suppression in the Fire Area based on NFPA 805
- Detection Required? (Yes/No): Confirmation of requirement for fire detection in the Fire Area on NFPA 805
- Modifications? (Yes/No): Indication whether or not modifications have been or planned for implementation for the Fire Area.

Table 4-3 Fire Area Compliance Summary

| Fire Area | Area Description | FSA Reference | NFPA 805 4.2 NSCA Reg. Basis (Post Transition) | Risk Insights (Current Values or below screening) | Change Evaluations (Yes/No) | Non-Power Operations Measures Required? (Yes/No) | Radioactive Release Results Measures Required? (Yes/No) | Chapter 3 Variances? (Yes/No) | Suppression Req'd? (Yes/No) | Detection Req'd? (Yes/No) | Modifications (Yes/No) |
|-----------|---|------------------|--|---|-----------------------------|--|---|-------------------------------|-----------------------------|---------------------------|------------------------|
| 12-A-BAL | Reactor Auxiliary Building Units 1 And 2 Balance | HNP-M/MECH-11106 | 4.2.3.2, 4.2.3.3.a | CDF < X E-XX LERF < X E-XX | Yes | TBD | | | No | No | TBD |
| 1-A-CSR | Cable Spreading Room B, Reactor Auxiliary Building | HNP-M/MECH-1120 | 4.2.4 | CDF < X E-XX LERF < X E-XX | yes | TBD | | | Yes | Yes | TBD |
| 1-A-EPB | Electrical Penetration Area B In Reactor Auxiliary Building | HNP-M/MECH-1113 | 4.2.4 | CDF < X E-XX LERF < X E-XX | Yes | TBD | | | No | No | TBD |

4.8.2 Plant Modifications

The following plant modifications have been installed:

| Completed Modifications | |
|--------------------------------|--|
| ECR Number | Description |
| EC 48802 | Remove Thermo-lag Wall and Replace with Interam Wrap in ACP |
| EC 56427 | Re-power 1CC-208 and 1CC-251 from an Alternate MCC |
| EC 56428 | Provide Alternate Power for WC-2B and 1AF-130 |
| EC 55938 | Eliminate Non-feasible Manual Action for Dampers CZ-D73 and CZ-D74 |
| EC 58008 | Install RWST Level Indicator at the ACP (RF-13) |
| EC 59104 60257 | Install Manual Transfer Switch for C CSIP (RF-13) |
| EC 52769 | Establish VCT Valve Gallery as Fire Area/Install Fire Rated Cable for 1CS-165 and 1CS-166 (RF-13) |
| EC60436 | Re-power 1CC-252 from Alternate MCC and Provide Cable Protection for 1CC-252 Cables (RF-13) |
| EC 60434 63858 | Re-analyze Fire Area 1-A-BAL-B1 as 3 New Areas (RF-13) |
| EC 60435 | Provide Cable Protection for 1CH-279 Cables in 1-A-CSR (RF-13) |
| EC 60828 | Evaluate Racking Out of Breaker for 1CS-167, 168, 169 and 170 During Operations |

In Process and Planned Modifications for NFPA 805

| ECR Number | Description |
|-------------------|--------------------|
|-------------------|--------------------|

5.0 NFPA 805 IMPLEMENTATION

5.1 Post Transition Documentation

[Roadmap of post-transition documentation, including UFSAR]

5.2 Transition Implementation Schedule

The following schedule for transitioning HNP to the new fire protection licensing basis requires NRC approval of the license amendment request by December 31, 2008.

- Fire PRA update: 2nd Quarter 2009
A Fire PRA update will be completed 2nd Quarter of 2009 to address relevant Facts and Observations (F&Os) and incorporate transition related changes. This update will establish the post transition baseline fire protection program risk as defined in RG 1.205, Revision 0, Regulatory Position C.3.2.6, which addresses post transition cumulative risk of changes.
- Implementation of new program: 1st Quarter 2009.
 - This includes procedure changes, process updates, and training to affected plant personnel to implement the NFPA 805 FP program.
- Completion of NFPA 805 transition modifications: 4th Quarter 2010.

Appropriate compensatory measures for any outstanding NFPA 805 related modifications will be maintained at the time of NFPA 805 program implementation.

6.0 REGULATORY EVALUATION

6.1 Introduction – 10 CFR 50.48

On July 16, 2004 the Nuclear Regulatory Commission amended 10 CFR Part 50.48, *Fire Protection*, to add a new subsection, 10 CFR 50.48(c), that established acceptable fire protection requirements. The change to 10 CFR 50.48 endorses, with exceptions, the National Fire Protection Association's 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) and Section (f).

The voluntary adoption of 10 CFR 50.48(c) by HNP does not obviate the need to comply with 10 CFR 50.48(a) and 10 CFR 50, Appendix A, General Design Criterion (GDC) 3, Fire Protection. The NRC addressed the overall adequacy of the regulations during the promulgation of 10 CFR 50.48(a) (Reference Federal Register Notice 69 FR 33536 dated June 16, 2004, ADAMS Accession No. ML041340086).

The following tables provide a cross reference of fire protection regulations associated with the post-transition HNP fire protection program and applicable industry and HNP documents that address the topic.

| 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 HNP NEI 04-02 B-1 Table |
| (ii) Identify the various positions within the licensee's organization that are responsible for the program; | NFPA 805 Section 3.2.2 HNP NEI 04-02 B-1 Table |
| (iii) State the authorities that are delegated to each of these positions to implement those responsibilities; and | NFPA 805 Section 3.2.2 HNP NEI 04-02 B-1 Table |
| (iv) Outline the plans for fire protection, fire detection and suppression capability, and limitation of fire damage | NFPA 805 Chapters 3 and 4 HNP 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 HNP NEI 04-02 B-1 Table |
| (ii) Automatic and manually operated fire detection and suppression systems; and | NFPA 805 Sections 3.5 through 3.10 and Chapter 4 HNP NEI 04-02 B-1 and B-3 Tables |
| (iii) The means to limit fire damage to structures, systems, or components important to safety so that the capability to shut down the plant safely is ensured. | NFPA 805 Chapter 4 HNP NEI 04-02 B-3 Table |

| 10 CFR 50.48(a) Section(s) | Applicability / Compliance Reference |
|---|---|
| (3) The licensee shall retain the fire protection plan and each change to the plan as a record until the Commission terminates the reactor license. The licensee shall retain each superseded revision of the procedures for 3 years from the date it was superseded. | NFPA 805 Section 2.7.1.1 requires that documentation be maintained for the life of the plant. [HNP reference for record retention] |

| 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 HNP 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 HNP 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 HNP 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 Section 4.2.1 HNP NEI 04-02 B-3 Table |

| 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. Copies of NFPA 805 may be purchased from the NFPA Customer Service Department, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101 and in PDF format through the NFPA Online Catalog (www.nfpa.org) or by calling 1-800- 344-3555 or 617-770-3000. Copies are also available for inspection at the NRC Library, Two White Flint North, 11545 Rockville Pike, Rockville, Maryland 20852-2738, and at the NRC Public Document Room, Building One White Flint North, Room O1-F15, 11555 Rockville Pike, Rockville, Maryland 20852-2738. Copies are also available at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html . | General Information. NFPA 805 (2001 edition) is the edition adopted by Progress Energy for HNP. |
| (2) Exceptions, modifications, and supplementation of NFPA 805. As used in this section, references to NFPA 805 are to the 2001 Edition, with the following exceptions, modifications, and supplementation: | General Information. NFPA 805 (2001 edition) is the edition adopted by Progress Energy for HNP. |

| 10 CFR 50.48(c) Section(s) | Applicability / Compliance Reference |
|---|--|
| (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 HNP 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 HNP 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 path at HNP. |
| (iv) Uncertainty analysis. An uncertainty analysis performed in accordance with Section 2.7.3.5 is not required to support deterministic approach calculations. | Uncertainty analysis was not performed for deterministic calculations at HNP. |
| (v) Existing cables. In lieu of installing cables meeting flame propagation tests as required by Section 3.3.5.3, a flame-retardant coating may be applied to the electric cables, or an automatic fixed fire suppression system may be installed to provide an equivalent level of protection. In addition, the italicized exception to Section 3.3.5.3 is not endorsed. | Electrical cable construction at HNP complies with a flame propagation test that was found acceptable to the AHJ as documented in NEI 04-02 Table B-1. |
| (vi) Water supply and distribution. The italicized exception to Section 3.6.4 is not endorsed. Licensees who wish to use the exception to Section 3.6.4 must submit a request for a license amendment in accordance with paragraph (c)(2)(vii) of this section. | HNP "complies via previous NRC approval" as documented in the NEI 04-02 Table B-1. |
| (vii) Performance-based methods. Notwithstanding the prohibition in Section 3.1 against the use of performance-based methods, the fire protection program elements and minimum design requirements of Chapter 3 may be subject to the performance-based methods permitted elsewhere in the standard. Licensees who wish to use performance-based methods for these fire protection program elements and minimum design requirements shall submit a request in the form of an application for license amendment under § 50.90. The Director of the Office of Nuclear Reactor Regulation, or a designee of the Director, may approve the application if the Director or designee determines that the performance-based approach; (A) Satisfies the performance goals, performance objectives, and performance criteria specified in NFPA 805 related to nuclear safety and radiological release; (B) Maintains safety margins; and (C) Maintains fire protection defense-in-depth (fire prevention, fire detection, fire suppression, mitigation, and post-fire safe shutdown capability). | The HNP LAR requests the use of performance-based methods for NFPA 805 Chapter 3 requirements based upon FAQ 06-0008 (Closure Memo MLXXXXXXXXX). This request is in accordance with 10 CFR 50.48(c)(2)(vii). |
| (3) <i>Compliance with NFPA 805</i> . | See below |

| 10 CFR 50.48(c) Section(s) | Applicability / Compliance Reference |
|---|---|
| <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 HNP 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 HNP 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>No risk-informed or performance-based alternatives to compliance with NFPA 805 (per 10 CFR 50.48(c)(4)) were utilized by HNP.</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>Not applicable to HNP.</p> |
| <p>(ii) Maintain safety margins; and</p> | <p>Not applicable to HNP.</p> |
| <p>(iii) Maintain fire protection defense-in-depth (fire prevention, fire detection, fire suppression, mitigation, and post-fire safe shutdown capability).</p> | <p>Not applicable to HNP.</p> |

6.2 Regulatory Topics

6.2.1 License Condition Changes

6.2.2 Technical Specifications

6.2.3 Orders and Exemptions

6.3 Regulatory Evaluations

6.3.1 Significant Hazards Consideration

6.3.2 Environmental Consideration

Attachment A – NEI 04-02 Table B-1 - Transition of Fundamental FP Program and Design Elements (NFPA 805 Chapter 3)

??? Pages

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

???

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

??? Pages

Attachment D – NEI 04-02 Table F-1 Non-Power Operational Modes Transition

??? Pages

Attachment E – NEI 04-02 Table G-1 – Radioactive Release Transition

??? Pages

Attachment F – Fire-Induced Multiple Spurious Operations – Resolution Methodology

[The methodology provided in NEI 04-02 as modified by FAQ 07-0038 to address multiple spurious operations (MSOs) will be included in this Attachment]

Attachment G – Operator Manual Actions – Transition to Recovery Actions

The assumptions, criteria, methodology, and overall results of the operator manual action transition to recovery actions are included in Attachment M. (Regulatory Position C.1 and NEI-04-02, Rev. 1, Section 4.6). Operator manual actions and repairs have been transitioned as “recovery actions” in the new NFPA 805 licensing basis. Operator manual actions have been evaluated in accordance with NEI 04-02, Revision 1, for feasibility and reliability. Additional considerations from FAQ 06-0012 (MLXXXXXX), FAQ 06-0011 (MLXXXXXX), and FAQ 07-0030 (MLXXXXXX) were included in assessment transition of operator manual actions.

[Additional detail to be provided later.]

Attachment H – NEI 04-02 Frequently Asked Question – Summary Table

The NRC staff worked with two pilot plants (HNP and Oconee Nuclear Station) to refine the infrastructure that facilitated the transition to the new licensing basis. Both the NRC staff and the industry recognized the need for additional clarifications and guidance beyond that provided in RG 1.205, Revision 0, and NEI 04-02, Revision 1. In a letter to the NRC, the NEI requested that the NRC staff establish a process that provides timely clarifications of additional staff positions usually communicated via RG 1.205, Revision 0, and NEI 04-02. The NRC staff accepted an NEI proposal on a proposed process, with several modifications, as described in a July 12, 2006, letter to NEI (ADAMS Accession No. ML061660105). This process was named the NFPA 805 Frequently Asked Question (FAQ) Process. The process was intended to serve as a structured avenue to seek NRC staff interpretations and clarifications of NEI 04-02 guidance and NFPA 805 requirements, in accordance with 10 CFR 50.48(c), in a timely manner.

Under the FAQ Process, transition issues (referred to as FAQs) requiring additional clarifications were submitted, in accordance with the above proscribed process, to the NEI NFPA 805 Task Force for review, and subsequently presented to the NRC during public FAQ meetings. The process continued with written comments from the NRC, when appropriate, and formal revisions of the FAQs. Once an acceptable FAQ was submitted to the NRC, the NRC staff issued a publicly available memorandum to file which indicated that the revised FAQ is acceptable guidance for transitioning to NFPA 805, and should be incorporated into NEI 04-02. These closure memos are preliminary extensions of the implementation guidance in NEI 04-02. Final official closure of the FAQs occurs when an updated RG 1.205, Revision 0, endorsing the revised NEI 04-02, is approved by the NRC.

The FAQs in Table XXX below were used as guidance as part of the HNP transition to NFPA 805.

Note: As requested by the NRC (FAQ 06-0019) the structures considered part of the 'power block' are included in Attachment ???. These structures are included in the HNP fire protection program in accordance with 10 CFR 50.48(c) and NFPA 805.

NEI 04-02 FAQs – Status and Reference Table

| No. | Rev. | Title | FAQ Ref. | FAQ NRC Comment Ref. | Technical Agreement | Closure Memo | NEI 04-02 Rev. 2? |
|---------|------|--|---|---|--------------------------------------|--------------------------------------|-------------------|
| 06-0001 | 0 | Alternate method for Engineering Evaluations | ML061440419 | ML062060303 | WITHDRAWN 12/14/06 ML063480169 | WITHDRAWN 12/14/06 ML063480169 | N/A |
| 06-0002 | 1c | NEI 04-02 Section 5.3.3 and App. I, Order of Questions for Change Analysis Screening | ML061440420 ML063170357 ML063350515 | ML062060303 | 01/04/07 ML070030276 | 01/04/07 ML070030276 | Yes |
| 06-0003 | 1b | Change Analysis Screening | ML061440422 ML063170355 | ML062060303 | 01/04/07 ML070030242 | 01/04/07 ML070030242 | Yes |
| 06-0004 | 0 | Clarify NFPA 805 Chapter 4 and 3 relationship for 'required' FP systems/features | ML061440430 | ML062060303 ML063350442 | | | No |
| 06-0005 | 1 | Guidance on FPP-related changes | ML062350095 ML063180544 | ML072400021 | | | No |
| 06-0006 | 2 | High-low pressure interface definition and NEI 00-01/NFPA 805 discrepancies | ML062350109 ML063170360 ML063540308 | ML062890268 | 03/12/07 ML070030117 | 03/12/07 ML070030117 | Yes |
| 06-0007 | 3 | NFPA 805 Chapter 3 Requirements for Fire Brigades | ML062350121 ML070030325 ML070510442 ML071550408 | ML063170365 ML071380338 | 6/21/07 ML071940375 | | Yes |
| 06-0008 | 6 | Alternate method for Engineering Evaluations | ML062860250 ML070510499 ML070800007 ML071020160 ML071020169 ML071080099 ML071340180 | ML063350442 ML071380177 ML071380182 ML072050214 ML072740231 | | | Yes |
| 06-0009 | | NEI 04-02 Typo Corrections | | N/A | | | Yes |

NEI 04-02 FAQs – Status and Reference Table

| No. | Rev. | Title | FAQ Ref. | FAQ NRC Comment Ref. | Technical Agreement | Closure Memo | NEI 04-02 Rev. 2? |
|---------|------|---|---|----------------------------|----------------------------------|------------------------|-------------------|
| 06-0010 | | Incorporate Regulatory Guide 1.205 Baseline concept into NEI 04-02 | | N/A | | | No |
| 06-0011 | 2 | Clarify III.G.3 Compliance Transition | ML062890271 ML070510505 ML072740248 | ML072400023 | | | Yes |
| 06-0012 | 4 | Clarify Manual Action Transition in Appendix B | ML062860255 ML063170362 ML070850610 ML071380229 ML071570260 | ML063350442 ML071380186 | 6/21/07 ML071940375 | | Yes |
| 06-0013 | | Clarify Chapter 4 Methodology Transition Process Bases on Pilot Plant Results | | | SUPERSEDED FAQ 07-0039 | | N/A |
| 06-0014 | | Cumulative Risk | | | | | No |
| 06-0015 | | Guidance on not-red determination | | | WITHDRAWN 09/21/07 | | N/A |
| 06-0016 | 1 | Ignition Source counting guidance for Electrical Cabinets | ML070030348 ML071020174 | ML070640555 | 5/17/07 ML071510425 | | Yes |
| 06-0017 | 2 | Ignition Source counting guidance for High Energy Arcing Faults (HEAF) | ML070030383 ML071350432 ML071570255 | ML071730038 | 6/21/07 ML071940375 | 9/26/07 ML072500300 | Yes |
| 06-0018 | 1 | Ignition Source counting guidance for Main Control Board (MCB) | ML070030427 ML071020181 | ML070640562 | 5/17/07 ML071510425 | 9/7/07 ML072500273 | Yes |
| 06-0019 | 3 | Define “power block” and “plant” | ML070030437 ML071340184 ML072550063 ML072740255 | ML070510365 | | | Yes |
| 06-0020 | 1 | Definition of “applicable” | ML070030443 ML071340188 | ML070510369 | 5/17/07 ML071510425 | | Yes |

NEI 04-02 FAQs – Status and Reference Table

| No. | Rev. | Title | FAQ Ref. | FAQ NRC Comment Ref. | Technical Agreement | Closure Memo | NEI 04-02 Rev. 2? |
|---------|------|--|---|----------------------------|--|--------------|-------------------|
| 06-0021 | 1a | Clarify that air drops are acceptable. | ML070030457 ML071340192 | ML070510417 | 5/17/07 ML071510425 | | Yes |
| 06-0022 | 1 | Identify a list of typical flame propagation tests which are considered acceptable. | ML070030459 ML072340055 | ML072740236 | | | Yes |
| 06-0023 | 0 | Grant exception for Diesel Generator Day Tanks located within Diesel Generator Buildings. | ML070030470 | | WITHDRAWN 5/17/07 ML071510425 | | N/A |
| 06-0024 | 1 | Define what “adequate clearance” is. | ML070030472 ML072340062 | ML071380189 | 8/23/07 ML | | Yes |
| 06-0025 | 1b | Define minimum acceptable pre-plan scope. | ML070030476 ML071340194 | ML070300588 | 7/19/07 ML072080246 | | Yes |
| 06-0026 | 0 | Clarify NFPA code requirements for gear maintenance | ML070030480 | ML071380194 | WITHDRAWN 5/17/07 ML071510425 | | N/A |
| 06-0027 | 0 | Clarify the “where provided” statement. | ML071380236 | | | | Yes |
| 06-0028 | 2 | Clarify intent of “familiarization with plant fire prevention procedures, fire reporting, and plant emergency alarms” regarding scope of or depth of the training. | ML070030489 ML071340195 ML071550415 | ML070510427 ML071380349 | 6/21/07 ML071940375 | | Yes |
| 06-0029 | | Clarify zone of influence for NUREG 6850 Task 8. | | | WITHDRAWN 6/21/07 ML071940375 | | N/A |
| 07-0030 | | Risk of recovery actions | | | | | No |
| 07-0031 | 0 | Misc Binning Issues | ML071380238 | ML072880327 | | | Yes |

NEI 04-02 FAQs – Status and Reference Table

| No. | Rev. | Title | FAQ Ref. | FAQ NRC Comment Ref. | Technical Agreement | Closure Memo | NEI 04-02 Rev. 2? |
|---------|------|--|-------------|-------------------------|----------------------------|-----------------|----------------------|
| 07-0032 | 0 | 10CFR 50.48(a) and GDC 3 clarification | ML071930378 | | | | Yes |
| 07-0033 | 0 | Review of Existing Engineering Equivalency Evaluations | ML071930379 | ML072700037 | | | Yes |
| 07-0034 | | Determination of non-vented Cabinets | | | | | Yes |
| 07-0035 | 0 | Bus Duct counting guidance for High Energy Arcing Faults | ML071650151 | | | | Yes |
| 07-0036 | 0 | Define compliance categories for Table B-1 | ML072320416 | ML072700038 | | | Yes |
| 07-0037 | | Environmental considerations for equipment | | | WITHDRAWN ML | | N/A |
| 07-0038 | 0 | Lessons learned for MSOs | ML072740262 | | | | Yes |
| 07-0039 | 0 | Provide update of NEI 04-02 B-2 and B-3 Processes | ML072740268 | | | | Yes |
| 07-0040 | | Clarification on Non-Power Operations | | | | | No |
| 07-0041 | | Chapter 3 Codes and Standards | | | | | No |

Attachment I – Definition of Power Block

For the purposes of establishing the structures included in the HNP fire protection program in accordance with 10 CFR 50.48(c) and NFPA 805, the following plant structures are considered to be part of the 'power block'. The following table provides the clarification that was requested by the NRC as part of FAQ 06-0019, Define Power Block (**MLXXXXXXXXXX**).

| Building | Comments |
|----------------|----------|
| [LATER] | |
| | |
| | |
| | |
| | |
| | |
| | |

Attachment J – Existing Engineering Equivalency Evaluation Transition

??? Pages

Attachment K – Existing Licensing Action Transition

??? Pages

Attachment L – NFPA 805 Chapter 3 Requirements to be Included in LAR

??? Pages

Attachment M - License Condition Changes

Replace the current HNP fire protection license condition 2.F with the standard license condition in Regulatory Position C.3.1 of RG 1.205, Revision 0, as modified by Frequently Asked Question (FAQ) 06-0008, as shown below. In support of this change, HNP has developed a fire Probabilistic Risk Assessment (PRA) which has been reviewed and been found acceptable by the NRC during the course of its observation of HNP’s transition to NFPA 805 as a Pilot Plant. Outstanding high level findings from the NRC’s pilot observations of the Fire PRA are included in Attachment Q

=====

Carolina Power & Light shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c) as specified in the license amendment request dated May 31, 2008 and as approved in the safety evaluation report dated _____ (and supplements dated _____). Except where NRC (AHJ) approval for changes or deviations is required by 10 CFR 50.48(c) and NFPA 805, the licensee may make changes to the fire protection program without prior approval of the Commission if those changes satisfy the provisions set forth in 10 CFR 50.48(a), 10 CFR 50.48(c), and the following:

- (a) Prior NRC review and approval is not required for a change that results in a net decrease in risk for both CDF and LERF. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the change evaluation.
- (b) Prior NRC review and approval is not required if the change results in a net calculated risk increase less than 1E-7/yr for CDF and less than 1E-8/yr for LERF. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the change evaluation. Change reports need not be submitted to the NRC for these changes.
- (c) Where the calculated plant change risk increase is < 1E-6/yr, but ≥1E-7/yr for CDF or < 1E-7/yr, but ≥1E-8/yr for LERF, the licensee must submit a summary description of the change to the NRC following completion of the change evaluation. The proposed change also must be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. If the NRC does not object to the change within 90 days, the licensee may proceed with implementation of the proposed change.

Carolina Power & Light may perform change evaluations for deviations from the codes, standards, and listings referenced in NFPA 805, without a 10 CFR 50.90 submittal, as long as the specific requirement for the feature is not included in NFPA 805 Chapter 3, and the NFPA 805 change process is used. **[FAQ 06-008 Closure memo MLXXXXXXXXX]**

Revoke the following license condition 2.F:

“F. Fire Protection Program (Section 9.5.1)

Carolina Power & Light Company shall implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report for the facility as amended and as approved in the Safety Evaluation Report (SER) dated

November 1983 (and supplements 1 through 4), and the Safety Evaluation dated January 12, 1987, subject to the following provision below. The licensees may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.”

It is HNP’s understanding that implicit in the revocation of this license condition, all prior Fire Protection Program SERs and commitments have been superseded in their entirety by the revised license condition.

No other license conditions need to be revoked or revised.

HNP implemented the following process for determining that these are the only license conditions required to be either revised or revoked to implement the new fire protection program which meets the requirements in 10 CFR 50.48(a) and 50.48(c):

- A review was conducted of the HNP Facility Operating License NPF-63, Amendment 126, by HNP licensing staff and Progress Energy fire protection staff. The review was performed by reading the Operating License and performing electronic searches. Outstanding License Amendment Requests that have been submitted to the NRC were also reviewed for potential impact on the license conditions.

Attachment N – Technical Specification Changes

Revoke the following Technical Specifications:

- Section 6.8.1. Written procedures shall be established, implemented, and maintained covering the activities referenced below:
 - h. Fire protection program implementation

The Bases for Technical Specification 3/4.3.3.5 states

“This capability is consistent with General Design Criterion 3 and Appendix R to 10 CFR Part 50”.

The bases for Technical Specification 3/4.3.3.5 should be revised to state:

“This capability is consistent with General Design Criterion 3 and 10 CFR 50.48(c).”

No other Technical Specifications or Bases need to be revised.

HNP implemented the following process for determining that these are the only Technical Specifications required to be either revised or revoked.

- A review was conducted of the HNP Technical Specifications by HNP licensing staff and Progress Energy fire protection staff. The review was performed by reading the Technical Specifications and performing electronic searches. Outstanding Technical Specification changes that have been submitted to the NRC were also reviewed for potential impact on the license conditions.

HNP determined that these changes to the Technical Specifications are adequate for HNP’s adoption of the new fire protection licensing basis, for the following reasons.

- The requirement for establishing, implementing, and maintaining fire protection procedures is now contained in the regulation (10 CFR 50.48(c) NFPA 805 Chapter 3).
- 10 CFR 50, Appendix R is no longer an appropriate basis for the HNP fire protection program. 10 CFR 50.48(c) is an appropriate reference.

Attachment O - Orders and Exemptions

No Orders or Exemptions need to be revoked or revised. HNP implemented the following process for making this determination:

- A review was conducted of the HNP docketed correspondence by HNP licensing staff and Progress Energy fire protection staff. The review was performed by reviewing the correspondence files and performing electronic searches of internal HNP records and the NRC's ADAMS document system.

This review is not complete. However the following general process will be followed:

- *Review to determine if any orders need to be revoked (Look at wording in Thermo-Lag / Hemyc orders)*
- *Review docket for all exemptions granted for fire protection program:*
 - *These exemptions will be evaluated as 'previously approved alternatives' and documented in the B-1 and / or B-3 Tables.*
 - *List these exemptions as 'revoked' in this section of the LAR. Note those that will be revoked and not 'brought forward' as previously approved alternatives.*

Note: Since HNP does not have exemptions (post 1979 plant), it is not expected that exemptions will be revoked. Those deviations that were approved will be transitioned, as necessary, in the NEI 04-02 B-1, and B-3 Tables.

Attachment P – Performance-Based Methods - NFPA 805 Chapter – 10 CFR 50.48.(c)(2)(vii)

In accordance with 10 CFR 50.48(c)(2)(vii), Carolina Power & Light requests approval of the following performance-based method for the use of performance-based methods for specific sections of NFPA 805 Chapter 3.

Method:

All fire protection systems and features required by NFPA 805 Chapter 3 will continue to be required (unless specifically addressed separately from this process in an LAR). Secondary features (See Table below) may be changed based on an evaluation, using the required methods in a similar manner that was previously allowed under the Generic Letter 86-10 license condition, without prior NRC approval.

Specifically, the method applies to sections of NFPA 805 Chapter 3 containing referenced codes, standards, and listings. Note the 'method' applies to the secondary features of the referenced codes, standards, and listings contained within these sections, and the process cannot be used to change the NFPA 805 Chapter 3 specific requirements.

Each individual change will be evaluated using the NFPA 805 change process (NFPA 805 performance goals / objectives /criteria, defense-in-depth and safety margins evaluation).

Certain fire protection systems and features have performance requirements that are conditional upon NFPA 805 Chapter 4 requirements. These systems and features are:

- Fire Alarm and Detection Systems [NFPA 805 Section 3.8]
- Automatic and Manual Water-Based Fire Suppression Systems [NFPA 805 Section 3.9]
- Gaseous Fire Suppression Systems [NFPA 805 Section 3.10]
- Passive Fire Protection Features [NFPA 805 Section 3.11]

For these systems and features, the performance requirements are established by the deterministic and/or performance-based analyses used in demonstrating how the NFPA 805 Chapter 4 performance criteria are met. Fire Protection Engineering Analyses may be used to demonstrate how these systems and features meet the NFPA 805 Chapter 4 criteria (e.g., coverage/performance of a detection / suppression system, ability of fire barriers to withstand expected fire hazards, etc.). These Fire Protection Engineering Analyses, however, are allowed under 10 CFR 50.48(c) and do not require specific permission under 10 CFR 50.48(c)(2)(vii), "Performance-Based Methods".

This method does not apply to NFPA 805 Chapter 3 changes that do not relate to referenced codes, standards, or listings. These types of changes continue to require individual 10 CFR 50.90 license amendment requests addressing the specific deviation.

The following provides the sections of NFPA 805 that will utilize this method.

Column Heading Definition:

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

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

| Section | Title | FP Eng. Analysis Process Applicable | FP Eng. Analysis Process Not Applicable | Referenced Code / Standard / Listing |
|---------|--|-------------------------------------|---|--|
| 3.1 | General | | X | |
| 3.2 | Fire Protection Plan | | X | |
| 3.2.1 | Intent | | X | |
| 3.2.2 | Management Policy Direction and Responsibility | | X | |
| 3.2.3 | Procedures | | X | |
| 3.3 | Prevention | | X | |
| 3.3.1 | Fire Prevention for Operational Activities | X | | 3.3.1.2 (2) NFPA 701 (5) NFPA 30 (6) “applicable NFPA codes and standards” 3.3.1.2.1 NFPA 51B NFPA 241 |
| 3.3.2 | Structural | X | | 3.3.2 NFPA 220 |
| 3.3.3 | Interior Finishes | X | | 3.3.3 NFPA 101 |
| 3.3.4 | Insulation Materials | | X | |

| Section | Title | FP Eng. Analysis Process Applicable | FP Eng. Analysis Process Not Applicable | Referenced Code / Standard / Listing |
|---------|---|-------------------------------------|---|---|
| 3.3.5 | Electrical | X | | 3.3.5.1 ...electrical wiring shall be listed for plenum use.. (Note 1) |
| 3.3.6 | Roofs | X | | NFPA 256 |
| 3.3.7 | Bulk Flammable Gas Storage | X | | 3.3.7.1 NFPA 50A |
| 3.3.8 | Bulk Storage of Flammable and Combustible Liquids | X | | NFPA 30 |
| 3.3.9 | Transformers | | X | |
| 3.3.10 | Hot Pipes and Surfaces | | X | |
| 3.3.11 | Electrical Equipment | | X | |
| 3.3.12 | Reactor Coolant Pumps | | X | |
| 3.4 | Industrial Fire Brigade | See sub-sections | | |
| 3.4.1 | On-Site Fire Fighting Capability | X | | (a)(1), (2), and (3) NFPA 600 NFPA 1500 NFPA 1582 |
| 3.4.2 | Pre-Fire Plans | | X | |
| 3.4.3 | Training and Drills | X | | (a)(1) NFPA 600 NFPA 1500 |
| 3.4.4 | Fire Fighting Equipment | X | | "...with the applicable NFPA standards." |
| 3.4.5 | Off-Site Fire Department Interface | | X | |
| 3.4.6 | Communications | | X | |

| Section | Title | FP Eng. Analysis Process Applicable | FP Eng. Analysis Process Not Applicable | Referenced Code / Standard / Listing |
|---------|---|-------------------------------------|---|--|
| 3.5 | Water Supply | X | | 3.5.1(b) NFPA 13 NFPA 15 3.5.2 NFPA 22 3.5.3 NFPA 20 3.5.10 NFPA 24 3.5.13 ANSI B31.1 3.5.15 NFPA 24 |
| 3.6 | Standpipe and Hose Stations | X | | 3.6.1 NFPA 14 3.6.3 "Listed electrically safe fixed fog nozzles..." |
| 3.7 | Fire Extinguishers | X | | NFPA 10 |
| 3.8 | Fire Alarm and Detection Systems | | | See sub-sections |
| 3.8.1 | Fire Alarm | X | | NFPA 72 |
| 3.8.2 | Detection | X | | NFPA 72 |
| 3.9 | Automatic and Manual Water-Based Fire Suppression Systems | X | | 3.9.1 NFPA 13 NFPA 15 NFPA 750 NFPA 16 |

| Section | Title | FP Eng. Analysis Process Applicable | FP Eng. Analysis Process Not Applicable | Referenced Code / Standard / Listing |
|---------|---|-------------------------------------|---|--|
| 3.10. | Gaseous Fire Suppression Systems | X | | 3.10.1 NFPA 12 NFPA 12A NFPA 2001 |
| 3.11 | Passive Fire Protection Features | See sub-sections | | |
| 3.11.1 | Building Separation (Note 2) | X | | NFPA 80A |
| 3.11.2 | Fire Barriers | X | | NFPA 251 ASTM E 119 |
| 3.11.3 | Fire Barrier Penetrations | X | | "...listed fire-rated door assemblies or listed fire rated fire dampers..." (1) NFPA 80 (2) NFPA 90A (3) NFPA 101 |
| 3.11.4 | Through Penetration Fire Stops | X | | "...with a fire test protocol acceptable to the AHJ or be protected by a listed fire-rated device...." |
| 3.11.5 | Electrical Raceway Fire Barrier Systems (ERFBS) | | X | (Note 3) |

Note 1 – Flame propagation tests/standards for electrical cable construction are addressed by FAQ 06-0022. [MLXXXXXXXX]

Note 2 – Section 3.11.1 of NFPA 805 also contains an exception for performance-based analysis.

Note 3 – Generic Letter 86-10, Supplement 1 is not considered a referenced code, standard, or listing referenced in NFPA 805 for the purposes of this method. However, Section 3.11.5 of NFPA 805 is conditional based on NFPA 805 Chapter 4 and performance-based methods are allowed for this section.

Conclusion:

The use of the described method will ensure that the following requirements of 10 CFR 50.48(c)(2)(vii) are met:

| 10 CFR 50.48(c)(2)(vii) Requirement | Method of Accomplishment |
|--|--|
| (a) The required NFPA 805 performance goals, performance objectives, and performance criteria are satisfied. | The fire protection engineering analysis process includes the assessment of impact on NFPA 805 performance goals, performance objectives, and performance criteria are satisfied. Impact will be assessed per risk-informed, performance-based change process in NEI 04-02 Chapter 5 and Appendices I and J and supplemented by RG 1.205, Revision 0, Regulatory Position 3.2. |
| (b) Safety margins are maintained. | Maintaining safety margins will be ensured using the risk-informed, performance-based change process in NEI 04-02 Chapter 5 and Appendices I and J and supplemented by RG 1.205, Revision 0, Regulatory Position C.3.2. |
| (c) Fire protection defense-in-depth is maintained. | Maintaining fire protection defense-in-depth will be ensured using the risk-informed, performance-based change process in NEI 04-02 Chapter 5 and Appendices I and J and supplemented by RG 1.205 Regulatory Position C.3.2. |

Attachment Q – Risk-Informed, Performance-Based Alternatives to NFPA 805 – 10 CFR 50.48(c)(4)

No risk-informed, performance-based alternative methods (10 CFR 50.48(c)(4)) have been applied to demonstrate compliance with NFPA 805 requirements.

Attachment R – UFSAR Changes

A discussion of the changes to the Updated Final Safety Analysis Report (UFSAR) necessitated by the license amendment is provided in this appendix. These changes will be made in accordance with 10 CFR 50.71(e) by applying HNP's UFSAR update procedures. (RG 1.205, Regulatory Position C.2.2 and NEI-04-02, Rev. 1, Section 4.6.1).

[No UFSAR updates are being provided at this time]

Attachment S – Plant Modifications

The modifications necessary to support the new licensing basis are identified and described briefly in this attachment (RG 1.205, Revision 0, Regulatory Position C.2.2. and NEI-04-02, Rev. 1, Section 4.6.1).

| Completed Modifications | |
|--------------------------------|--|
| ECR Number | Description |
| EC 48802 | Remove Thermo-lag Wall and Replace with Interam Wrap in ACP |
| EC 56427 | Re-power 1CC-208 and 1CC-251 from an Alternate MCC |
| EC 56428 | Provide Alternate Power for WC-2B and 1AF-130 |
| EC 55938 | Eliminate Non-feasible Manual Action for Dampers CZ-D73 and CZ-D74 |
| EC 58008 | Install RWST Level Indicator at the ACP (RF-13) |
| EC 59104 60257 | Install Manual Transfer Switch for C CSIP (RF-13) |
| EC 52769 | Establish VCT Valve Gallery as Fire Area/Install Fire Rated Cable for 1CS-165 and 1CS-166 (RF-13) |
| EC60436 | Re-power 1CC-252 from Alternate MCC and Provide Cable Protection for 1CC-252 Cables (RF-13) |
| EC 60434 63858 | Re-analyze Fire Area 1-A-BAL-B1 as 3 New Areas (RF-13) |
| EC 60435 | Provide Cable Protection for 1CH-279 Cables in 1-A-CSRB (RF-13) |
| EC 60828 | Evaluate Racking Out of Breaker for 1CS-167, 168, 169 and 170 During Operations |

| In Process and Planned Modifications for NFPA 805 | |
|--|--------------------|
| ECR Number | Description |
| | |
| | |

Attachment T – Clarification of Prior NRC Approvals

The elements of HNP's current fire protection licensing basis for which specific NRC previous approval is uncertain are identified below. Also provided below is sufficient detail to demonstrate how those elements of the current fire protection licensing basis meet the requirements in 10 CFR 50.48(c). (RG 1.205, Revision 0, Regulatory Position C.2.2).

[No Information is being provided at this time.]

Attachment U – Significant Hazards Consideration

Pursuant to 10 CFR 50.91, HNP has determined, based on the following analysis of the proposed actions to implement NFPA 805, that this amendment request involves No Significant Hazards Consideration under the standards established by the NRC in 10 CFR 50.92.

The transition does not involve a significant increase in the probability or consequences of an accident previously evaluated because:

[Insert discussion for each change to a license condition or Technical Specification and the totality of the changes]

The transition does not create the possibility of a new or different kind of accident from any kind of accident previously evaluated because:

[Insert discussion for each change to a license condition or Technical Specification and the totality of the changes]

The transition does not involve a significant reduction in the margin of safety because:

[Insert discussion for each change to a license condition or Technical Specification and the totality of the changes]

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

Involve a significant increase in the probability or consequences of an accident previously evaluated

NFPA 805, taken as a whole, provides an acceptable alternative for satisfying General Design Criterion 3 (GDC 3) of Appendix A to 10 CFR Part 50, meets the underlying intent of the NRC's existing fire protection regulations and guidance, and achieves defense-in-depth and the goals, performance objectives, and performance criteria specified in Chapter 1 of the standard and, if there are any increases in core damage frequency (CDF) or risk, the increase will be small and consistent with the intent of the Commission's Safety Goal Policy. **[cite]**

Create the possibility of a new or different kind of accident from any kind of accident previously evaluated

The requirements in NFPA 805 address only fire protection and the impacts of fire on the plant have already been evaluated.

Involve a significant reduction in the margin of safety.

NFPA 805 continues to protect public health and safety and the common defense and security because the overall approach of NFPA 805 is consistent with the key principles for evaluating license basis changes, as described in RG 1.174, is consistent with the defense-in-depth philosophy, and maintains sufficient safety margins. **[cite]**

Attachment V – Environmental Consideration

Pursuant to 10 CFR 51.22(b), an evaluation of the license amendment request (LAR) has been performed to determine whether it meets the criteria for categorical exclusion set forth in 10 CFR 51.22(c). That evaluation shows that the criteria for a categorical exclusion are satisfied for the following reasons. The LAR does not involve:

A significant hazards consideration.

This conclusion is supported by the determination of no significant hazards consideration.

A significant change in the types or significant increase in the amounts of any effluents that may be released offsite.

Compliance with NFPA 805 explicitly requires the attainment of performance criteria, objectives, and goals for radioactive releases to the environment. Therefore, this LAR will not change the types or amounts of any effluents that may be released offsite.

A significant increase in the individual or cumulative occupational radiation exposure.

Compliance with NFPA 805 explicitly requires the attainment of performance criteria, objectives, and goals for occupational exposures. Therefore, this LAR will not change the types or amounts of occupational exposures.

In summary, 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.