FAQ Number 07-0039 **FAQ Revision** 0

FAQ Title Lessons Learned – NEI 04-02 B-2 and B-3 Tables

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

Purpose of FAQ:

The purpose of this FAQ is to provide updates to NEI 04-02 to reflect lessons learned from pilot plant activities, NFPA 805 task force meetings, and NRC reviews and discussions.

Is this Interpretation of guidance? Yes / No

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

Details:

NEI 04-02 guidance needing interpretation (include section, paragraph, and line numbers as applicable):

NEI 04-02 Section 4.3.2, Nuclear Safety Performance Criteria Transition Review and Appendix B.2, Transition of Nuclear Safety Performance Criteria.

FAQ Number 07-0039 **FAQ Revision** 0

FAQ Title Lessons Learned – NEI 04-02 B-2 and B-3 Tables

Circumstances requiring guidance interpretation or new guidance:

NEI 04-02 guidance was written with templates on Tables B-2 and B-3. Lessons learned during actual development of the tables warrant additional clarification.

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

None.

Potentially relevant existing FAQ numbers:

Response Section:

Proposed resolution of FAQ and the basis for the proposal:

See the proposed attached proposed NEI 04-02 markups.

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

See the attached NEI 04-02 markups.

4.3.2 Nuclear Safety Performance Criteria Transition Review

The nuclear safety performance goals, objectives, and criteria are very similar to the requirements contained in Sections III.G and III.L of 10 CFR 50, Appendix R or applicable sections of NUREG-0800. Each nuclear plant has an approved fire protection program that must demonstrate compliance with the safe shutdown requirements in Sections III.G and III.L of 10 CFR 50, Appendix R (or applicable sections of NUREG-0800), or has documented exemptions/deviations from these requirements. For these reasons, a substantial part of an existing fire protection program can be transitioned to a new NFPA 805 licensing basis by performing a transition review and by addressing NFPA 805 topics not typically addressed in a previously approved fire protection program (i.e., fires originating in non-power operational modes and fires resulting in radioactive release).

The deterministic branch of Figure 2.2 of NFPA 805 recognizes the new fire protection licensing basis may include components of the existing plant Fire Protection Program (including approved exemptions / deviations, and correctly implemented 10 CFR 50.59 and Fire Protection Regulatory reviews) that can be shown to comply with Chapters 1, 2 and 4. This would be considered compliance with deterministic compliance in NFPA 805 Chapter 4. Therefore, these components of the existing fire protection program could be transitioned to the new licensing basis without the need for a risk-informed, performance-based change evaluation. Otherwise, additional Fire Protection Regulatory reviews may be used to demonstrate equivalence.

Just as in the Fundamental Fire Protection Program and Design Elements review discussed in Section 4.3.1, Fire protection program features and systems, associated with a pre-transitional licensing basis, although previously reviewed and approved by the NRC, may have been changed since initial NRC approval. Such changes are part of the Licensee's approved Fire Protection Program if they have been made in accordance with the correct application of the guidelines of Generic Letter 86-10, and evaluated under the requirements of 10 CFR 50.59, or the fire protection standard license condition (Fire Protection Program Regulatory Reviews). The fire protection standard license condition allows changes to the "approved fire protection program without prior approval of the Commission if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire." Where the changes from the original NRC review and approval have been made appropriately using an approved change process, the changes are considered an acceptable part of the CLB. Licensees may rely on these changes to claim compliance but the NRC may inspect those changes and conclude that they do not comply with NFPA 805. However, they are not considered previously approved by the NRC for the purposes of superseding requirements in Chapter 3 and as such should be submitted to the NRC for approval as a license amendment request.

A systematic approach should be taken when assessing the transitioning plant fire protection program against the nuclear safety requirements of Chapters 1, 2 and 4 of NFPA 805. This is necessary to provide clear documentation of acceptance prior to moving forward with a new licensing basis. Specific acceptance of a plant configuration, as well as changes since original acceptance, should be documented. The review should consist of two fundamental items:

1. Review of the safe shutdown methodology for basic attributes (Chapters 1 and 2 of NFPA 805)
2. Fire area by fire area review (Chapter 4 of NFPA 805)

The safe shutdown methodology review evaluates the existing post-fire safe shutdown analyses against the guidance provided in Section 2.4.2 of NFPA 805 for the Nuclear Safety Capability Assessment. This methodology review is implemented by a review of NEI 00-01, Revision 1 Chapter 3, "Deterministic Methodology", as discussed in Appendix B-2 of this guidance. (The NRC Staff has reviewed Revision 1 of NEI 00-01 and concluded that Chapter 3 provides an acceptable deterministic approach for analysis of post-fire safe shutdown (Reference RIS 2005-30 and Regulatory Guide 1.205)) This review ensures that the basic elements (systems and equipment selection, circuit selection, equipment and cable location, and fire area assessment) are adequate to support transition to a new licensing basis for fires originating at power operations. Differences identified during the transition review must be reconciled prior to transition to a new risk-informed, performance-based licensing basis. Where the licensing basis is unclear or silent on methodologies, care should be taken to establish a licensing basis going forward. Guidance on performing and documenting the NFPA 805 Chapter 2 methodology reviews is provided in the tables in Appendix B-2 of this guidance.

A simplified flowchart of the fire area by fire area transition review is provided as Figure 4-3 below.

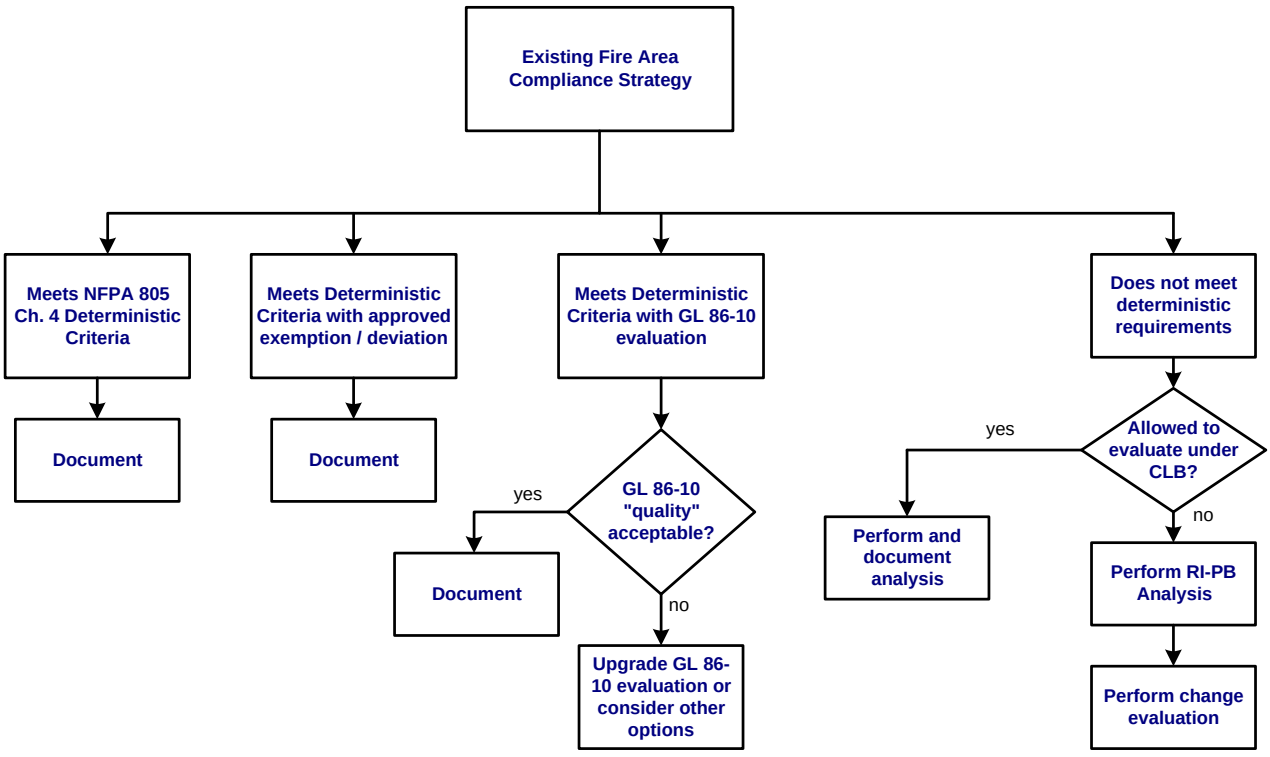


Figure 4-3 - Fire Area by Fire Area Transition Process (Simplified)

The fire area by fire area review determines whether the CLB is intact and documented adequately to support the transition. The review is intended to identify and document how each fire area:

1. Aligns with the NFPA 805 Chapter 4 deterministic methods for meeting the nuclear safety performance criteria in NFPA 805 Section 1.5; or
2. Aligns with the NFPA 805 Chapter 4 deterministic methods for meeting the nuclear safety performance criteria in NFPA 805 Section 1.5 with approved exemptions or deviations from 10 CFR 50 Appendix R; or
3. Aligns with the NFPA 805 Chapter 4 deterministic methods for meeting the nuclear safety performance criteria in NFPA 805 Section 1.5 with correctly implemented supporting engineering evaluations (i.e., Generic Letter 86-10 evaluations or calculations); or
4. Does not align with the NFPA 805 Chapter 4 methods for meeting the nuclear safety performance criteria in NFPA 805 Section 1.5 and either can or cannot be evaluated under the CLB. Items outside the CLB would be evaluated using risk-informed, performance-based methods as part of the transition review.

Differences identified during the fire area by fire area transition review must be reconciled prior to transition to a new risk-informed, performance-based licensing basis. Items that can be addressed within the bounds of the CLB prior to the transition (i.e., by performance of a Generic Letter 86-10 evaluation) should be addressed and documented as part of the transition process. Differences that cannot be resolved within the bounds of the CLB may also be resolved by changing the plant/program to align with the NFPA 805 Chapter 4 deterministic methods for meeting the nuclear safety performance criteria in NFPA 805 Section 1.5.

Manual actions (credited for III.G.2 compliance) being transitioned to recovery actions that do not have previous approval should be evaluated using the change process. See Appendix B-2 of this document for additional guidance.

Where the licensing basis is unclear or silent on fire area compliances, care should be taken to establish a licensing basis going forward. Guidance on performing and documenting the NFPA 805 Chapter 4 reviews is provided in the tables in Appendix B-2 of this guidance.

B.2 Transition of Nuclear Safety Performance Criteria

B.2.1 Methodology Review

B.2.1.1 Background

Nuclear Safety Performance Criteria (NSPC) are established in Section 1.5.1 of NFPA 805. There are four substantial differences between these NSPC and traditional fire protection requirements from 10 CFR 50, Appendix R/NUREG-0800. These differences arise from the statements of the criteria, the scope of their applicability, and the nuclear safety goal they support. These differences are described below and guidance is provided on how to apply these differences in an evaluation of the extent to which the fire protection programs meet NFPA 805.

- The NSPC established in Section 1.5.1 of NFPA 805 require that "Fire protection features shall be capable of providing reasonable assurance that, in the event of a fire, the plant is not placed in an unrecoverable condition."

  This requirement on fire protection features introduces a change from the traditional requirements, which focus on achieving and maintaining safe shutdown in the event of a fire. By shifting the focus from safe shutdown to avoiding an unrecoverable condition, NFPA 805 introduces flexibility in the analysis necessary to show that the NSPC have been met. In particular, in many cases it will be sufficient to show that a plant can achieve and maintain hot shutdown (standby) in the event of a fire.

- A second substantial difference between the NSPC and existing requirements arises from the scope of applicability of the NSPC. NFPA 805 specifies the minimum fire protection requirements for existing light water nuclear power plants during all phases of plant operation, including degraded conditions, shutdown and decommissioning.

  By including all phases of plant operation, including shutdown, degraded conditions, and decommissioning, NFPA 805 requires additional analyses of fire protection features that have not generally been conducted by power plant licensees. Strategies for addressing this broadened scope of analysis of fire protection features for all plant conditions are discussed in the guidance in Appendix F of this document.

- A third substantial difference between the NSPC and existing requirements arises from the Nuclear Safety Goal ("NSG") in Section 1.3.1 of NFPA 805. It states "The nuclear safety goal is to provide reasonable assurance that a fire during any operational mode and plant configuration will not prevent the plant from achieving and maintaining the fuel in a safe and stable condition."

  By including any plant configuration, the NSG may require additional analyses of fire protection features. Because analyses of all configurations cannot be performed, bounding configurations must be identified and analyzed. An evaluation may show that existing fire protection analyses have included the bounding configurations for operation.

- The fourth substantial difference arises from the focus on maintaining the fuel in a safe and stable condition. Safe and Stable Conditions are defined in Section 1.6.56 of NFPA 805 as "For fuel in the reactor vessel, head on and tensioned, safe and stable conditions are defined as the ability to maintain K(eff) < 0.99, with a reactor coolant temperature at or below the

requirements for hot shutdown for a boiling water reactor and hot standby for a pressurized water reactor. For all other configurations, safe and stable conditions are defined as maintaining K(eff) < 0.99 and fuel coolant temperature below boiling."

Thus, the definition of safe and stable conditions provides more flexibility in showing that the NSPC have been met than for non-power modes of operation.

B.2.1.2 Methodology Review Process

Summary

The suggested methodology for transition of the Nuclear Safety Performance Criteria is as follows:

Section 2.4.2 of NFPA 805 establishes the methodology for conducting a safety capability assessment for determining achievement of the nuclear safety criteria in NFPA 805 Chapter 1. To a large extent, the activities to be undertaken to implement this methodology have already been completed for the purposes of determining compliance with the existing requirements.

Tables B-2 and B-3 of this Appendix outline a recommended method to review the acceptability of a program for transition by examining the basic components of a nuclear safety capability assessment. These worksheets organize the transition of the 'pre-transitional safe shutdown analysis' to the 'nuclear safety analysis' as follows:

1. Nuclear Safety Capability System and Equipment Selection
2. Nuclear Safety Capability Circuit Analysis
3. Nuclear Safety Equipment and Cable Location
4. Fire Area Assessment

The review should be conducted against the methodology provided in NEI 00-01, Revision 1 Chapter 3, "Deterministic Methodology". This review is intended to ensure that the transitioning nuclear safety analysis meets basic established criteria for identification and analysis of equipment and cables. Exceptions and clarifications identified during the transition review should be documented in order to provide a well-established baseline for future changes.

Note: NEI 00-01, Revision 1 Chapter 3 contains methodology and "acceptable methods", but does not contain regulatory requirements. These are methods that "can" and "may" be used to perform an analysis in an acceptable and/or efficient manner. Judgment will be necessary to determine the impact of a lack of alignment with NEI 00-01 guidance on the acceptability of the methodology transition.

Suggested Process

A summary level diagram of the steps to be used in performing the Methodology Review is shown as Figure XX.

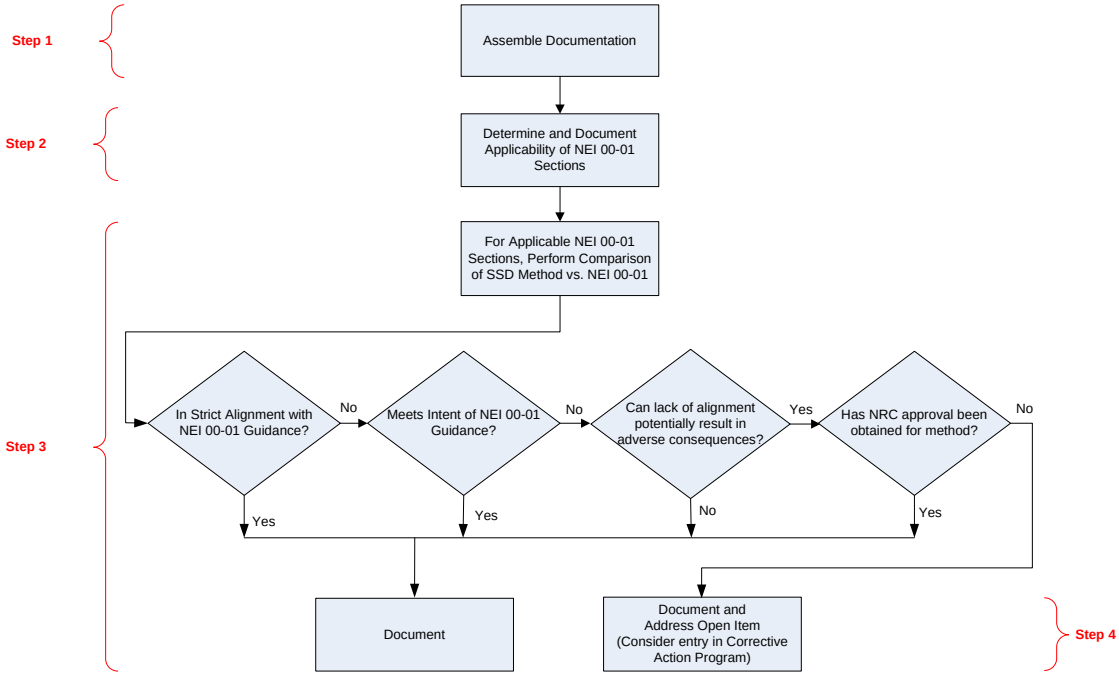


Figure XX – Summary of Nuclear Safety Methodology Review Process

Step 1 - Assemble Documentation

Gather industry and plant-specific information.

Industry Documentation

- NFPA 805, 2001 edition
- Applicable Sections of NEI 00-01, Revision 1
- Outstanding Frequently Asked Questions (FAQs) related to the Nuclear Safety Methodology Transition and status documents such as NRC comments and comment resolutions.

Plant specific calculations/analyses

Gather core methodology documents and plant specific calculations/analyses for:

- Safe shutdown system and equipment selection (NFPA 805 Section 2.4.2.1)
- Safe shutdown cable identification (NFPA 805 Section 2.4.2.2)
- Safe shutdown equipment and cable location (NFPA 805 Section 2.4.2.3)

- Fire area assessment and supporting analyses (operator manual action feasibility) (NFPA 805 Section 2.4.2.4)

Step 2 – Determine and Document NFPA 805 Applicability of NEI 00-01 Sections

Step 2.1 – Correlate the NFPA 805 Section 2.4.2 Section to the corresponding sections of NEI 00-01 Chapter 3.

Step 2.2

Based upon the content of the NEI 00-01 methodology statements, determine if the section is applicable to the plant. Examples where a section may not be applicable include:

- For a PWR, guidance provided in NEI 00-01 specifically for BWRs.
- Specific references to equipment/component types/cable types that are not used at the plant under review.

Step 3 – Perform Comparison of Plant Specific Safe Shutdown Methodology to Applicable Sections of NEI 00-01

For each applicable NEI 00-01 section that is determined in Step 2 to be applicable, a comparison should be performed of the plant safe shutdown methodology against the applicable NEI 00-01 section.

- Determine if failure to maintain strict alignment with the guidance in NEI 00-01 could have adverse consequences. Since NEI 00-01 is a guidance document, portions of its text could be interpreted as 'good practice' or intended as an example of an efficient means of performing the analyses. In some instances the commentary presents analytical preferences which can be performed in a number of different ways without impacting the validity of the results. These sections of NEI 00-01 can be dispositioned without further review. The basis for this determination should be documented.
- Document the following information for applicable NEI 00-01 Chapter 3 Sections:

  Alignment Statement

  - Aligns
  - Aligns with intent
  - Not in Alignment
  - Not in Alignment, but Prior NRC Approval
  - Not in alignment, but no adverse consequences

  Alignment Basis – A description supporting the Alignment Statement. This basis may also include a discussion of the relevance of the step to transition (for NEI 00-01 sections that are not considered to be necessary for successful performance of a safe shutdown analysis).

  Reference Document – Reference documents supporting the alignment statement and basis.

Comments and Other Details – Any clarification information to support the other statements.

Unit Applicability - If particular review attribute is only applicable to a single unit, designate the applicability of the single unit.

Step 4 - Document Open Items associated with the review of the NEI 00-01 guidance.
Document open items applicable to the methodology review.

Non-conformances associated with the existing safe shutdown methodology that are considered non-compliances with 10 CFR 50, Appendix R or the approved fire protection licensing basis must be entered into the corrective action program and dispositioned appropriately to ensure enforcement discretion.

Note: If the existing licensing basis is vague or silent on the methodologies identified, then a licensing basis should be clearly defined during the transition period. For example, if the existing licensing basis is vague or silent on the methodology for circuit analysis (selection and/or protection of circuits) or evaluation of the failures of circuits within a fire area (single failure, any and all, one-at-a-time, sequential/concurrent, cumulative effects) a licensing basis should be established against which changes can be assessed post transition.

B.2.1.3 Fire-Induced Circuit Failures (Multiple Spurious Actuations)

[Completed FAQ 07-0038 to be inserted here]

B.2.2 Fire Area – by – Fire Area Transition

B.2.2.1 Background

Table B-3 provides a worksheet for transitioning the fire area-by-fire area compliance. The current fire protection licensing basis for each fire area should be reviewed and summarized.

Transition of a fire area that is governed by Sections III.G.3/III.L of 10 CFR 50 Appendix R is not treated differently than other plant fire areas. While alternative or dedicated shutdown capability was omitted from the deterministic requirements in Chapter 4 of NFPA 805, the transition of a fire area is not different. However, the current licensing basis for an alternative/dedicated shutdown fire area may be more explicit than other fire areas, since many licensees have detailed alternative/dedicated shutdown Safety Evaluation Reports. It may require more detailed documentation to ensure future change evaluations accurately capture the baseline configuration. For example, a dedicated shutdown methodology may credit a unique power source or pump that is not part of the plant's safety systems or post-fire safe shutdown program. Post-transition changes to this equipment or methodology would need to be accurately captured for assessment of risk impact.

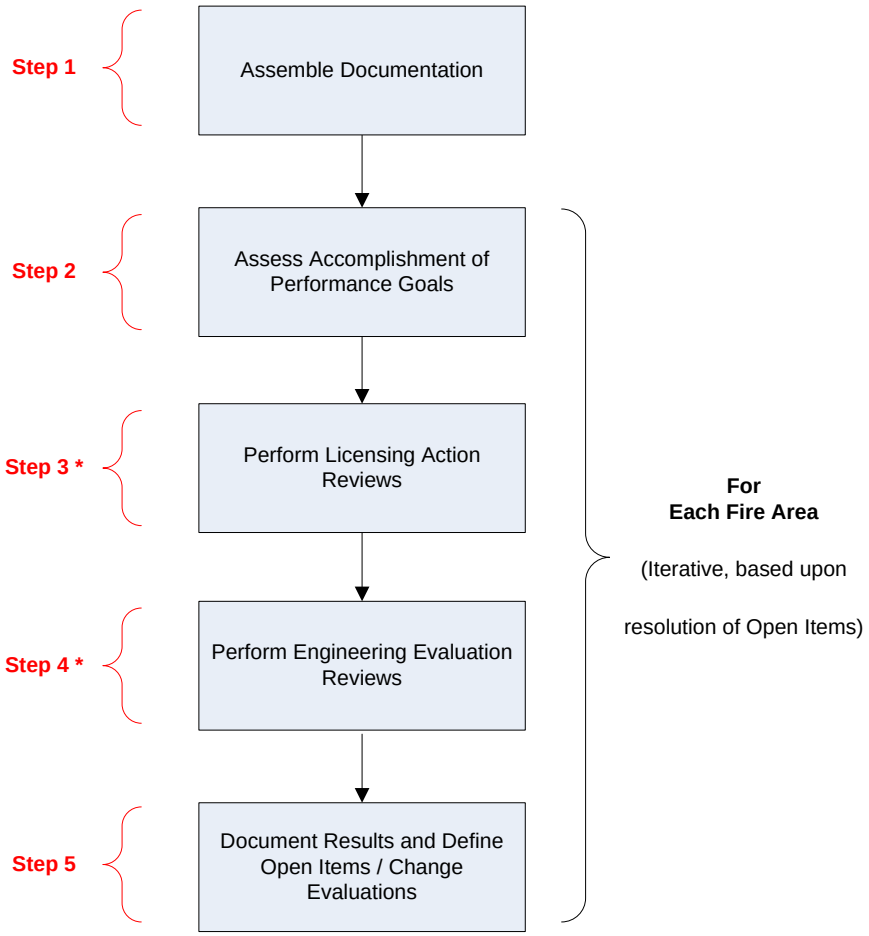
Items that have applicability for multiple fire areas can be addressed in a generic manner, such as by topic. In addition, multiple fire areas can be grouped together if their supporting licensing

bases and engineering evaluations are applicable to multiple fire areas (e.g., plants that have multiple alternative/dedicated shutdown fire areas that are being transitioned to a new licensing basis).

B.2.2.2 Fire Area – By – Fire Area Transition Review Process

Fire Area-by-Fire Area Transition Review

A summary level diagram of the steps to be used in developing the Nuclear Safety Fire Area-by-Fire Area transition review is shown as Figure YY.



*** - These steps may be performed early in the process (e.g., prior to Step 1) for project efficiency, if available resources and program documentation facilitate a review before the performance goal assessment.**

Figure YY – Summary of Fire Area-by-Fire Area Review

Step 1 - Assemble Documentation

Gather industry and plant-specific fire area analysis analytical and licensing basis documents. The documentation should be organized by fire area to the extent possible. Examples of documentation to be assembled include:

Industry Documentation:

- NEI 04-02 and Regulatory Guide 1.205 (and associated Frequently Asked Questions, Regulatory Issues Summaries)

Plant specific calculations/analyses

- Fire area compliance assessment and supporting analyses
- Operator manual action feasibility assessments
- Engineering evaluations related to the fire area (e.g., GL 86-10 evaluations)
- Resolution of multiple spurious operations

Licensing basis/regulatory documents related to fire area compliance

- Exemptions, Exemption Requests (or Deviations, Deviation Requests) and supporting correspondence
- Safety evaluation reports
- Inspection reports
- Response to generic letters, etc.

Corrective action documents related to compliance with 10 CFR 50, Appendix R, such as:

- Unapproved or 'not allowed' operator manual actions (including feasibility issues)
- Cable separation/protection issues
- Raceway fire barrier deficiencies
- Concerns related to fire-induced spurious actuations

Step 2 – Assess Accomplishment of Performance Goals

Document the fulfillment of the NFPA 805 performance goals for the selected fire area. To complete the 'Performance Goals' documentation for the fire area:

Select the appropriate 'Performance Goal' for evaluation.

Document the 'Method of Accomplishment' in summary level form for the fire area. Attempt to use concise, consistent terminology that provides a high level summary of credited strategies. This consistency should be utilized for statements within a given fire area and for similar statements in different fire areas. Examples of high level statements are:

- Train A charging pump via the reactor coolant pump seal injection flowpath.
- Cooldown using RHR Pump A and RHR heat exchanger A using cold shutdown repairs.
- AFW Pump 2 feeding the A and B Steam Generators.

Document comments when additional information is needed to document information related to accomplishment of the specific performance goal in that fire area.

Provide a list of the reference documents used to support the accomplishment of the performance goals.

Document open items related to the performance goal review.

Document the pre-transition and post-transition regulatory basis for the fire area. Note that more than one regulatory basis may exist for the fire area. Statements should be high level, concise statements, such as:

Pre-Transition (examples)

- Appendix R Section III.G.2 with unapproved operator manual actions
- Appendix R, Section III.G.3 with exemptions
- Appendix R, Section III.G.1

Post-Transition (examples)

- NFPA 805, Section 4.2.3.1
- NFPA 805, Section 4.2.3.3(a) with PB approach per Section 4.2.4

Note: The information documented in the B-3 Tables is intended to be summary level information that provides a concise summary of information, with references to specific supporting analyses and documents. For example, the documentation of items such as fire-induced circuit failures and disposition of operator manual actions that are not allowed/approved are not expected to be documented in detail in B-3 Table.

For example, the results for the assessment of operator manual action feasibility (i.e., to be transitioned as “recovery actions” in a post-transition environment) is important in establishing the scope of the transition change evaluation. However, it is not practical to document the detailed results for each operator manual action in the B-3 tables. However, the document that contains the results of this assessment should be referenced in the transition documentation and clear traceability should be provided in order to provide a clear transition change evaluation scope.

Step 3 – Fire Area Licensing Action Review

Perform a review of the licensing aspects of the selected fire area.

Select the appropriate 'Reference Document' associated with the licensing action (e.g., correspondence between licensee and the NRC that form the basis for the overall licensing action). Perform a review of the Reference Document to determine if the bases for acceptability are still true.

Document the results of the review.

- Basis for Acceptability – Use concise, consistent statements. These "bases for acceptability" will need to be included (if not already) in the plant's monitoring program, so it is important that these statements be easily translatable into plant monitoring procedures.
- Statement that the bases for acceptability remain valid. If additional information is needed for confirmation (e.g., plant walkdowns), document this need as an open item.

"Gray areas" may arise during the determination of previous NRC approval. Refer to Section 2.3 of this guidance and Section 2.4 of Regulatory Guide 1.205 for guidance on this determination of what constitutes previous NRC approval.

Document the basis for the overall licensing action and assess for adequacy for transition.

Document any open items associated with the Licensing Action.

Step 4 – Perform Engineering Evaluation Review

Select the appropriate engineering evaluation for review. Perform a review of the evaluation to determine the bases for acceptability and to assess the evaluation for acceptance [FAQ 07-0033].

Document the purpose of the evaluation (e.g., acceptability of non-rated penetration) and using concise, consistent terminology, document the bases for acceptability of the engineering evaluation. These bases for acceptability will need to be included (if not already) in the plant monitoring program, so it is important that these statements be easily translatable into plant monitoring procedures.

Document the review of the evaluation against the criteria in Section XX [Refer to FAQ 07-0033]. If the Engineering Evaluation is deemed to be adequate for transition, document the basis for this conclusion. If the evaluation is not deemed necessary or adequate for transition, document the basis for this conclusion.

Document any open items associated with the Engineering Evaluation.

Step 5 – Document Results and Define Open Items / Change Evaluations

Fire Protection Systems and Features Determination

Reviewing and documenting the assessment of performance goal accomplishment for each fire area (using deterministic and risk-informed, performance-based methods), reviewing fire area licensing actions, and reviewing engineering evaluations provides input to the scope of fire protection systems and features 'required' by NFPA 805 Chapter 4. The 'required' fire protection systems and features are then subject to the applicable requirements of NFPA 805 Chapter 3. The 'required' fire protection systems and features should be documented, with focus on:

- Fixed suppression systems
- Detection systems
- Electrical Raceway Fire Barrier Systems

Fire Suppression Activities

Section 2.4.1 of NFPA 805 states that the "effects of fire suppression activities on the ability to achieve the nuclear safety performance criteria shall be evaluated."

Provide a summary of how this requirement is implemented for the fire area.

Open Items / Change Evaluations

Documenting the assessment of performance goal accomplishment for each fire area, reviewing fire area licensing actions, and reviewing engineering evaluations may result in the creation of open items that may need to be reviewed and assessed as part of the change evaluation process (refer to Section 5.3 of this guidance).

Note: Following completion of the risk-informed, performance-based change evaluations or other decisions to resolve open items (e.g., plant modifications, other analyses), the B-3 Tables should be updated to reflect the key attributes of the analyses, scope of modification, etc.

~~Information to be reviewed for each fire area and summarized in the worksheets is discussed in the following sub-sections.~~

~~***B.2.2.1 Pre-transitional Licensing Basis***~~

~~The current fire protection licensing basis (e.g., compliance with Sections III.G.1, III.G.2, III.G.3, III.L and III.J of 10 CFR 50, Appendix R, etc.) including approved exemptions/deviations will be summarized. It is important that the bases for exemptions/deviations be captured during the transition process in order to effectively move forward to a new basis. This will allow the change process to focus on changes from the original bases more effectively. If the bases for an exemption or deviation are found during the review to be incorrect, the issue(s) should be entered into a corrective action program for resolution as part~~

~~of the transition. This should be documented in the 'Appendix R Compliance Methods' and 'Exemption/Deviation' columns of the B-3 worksheet.~~

~~B.2.2.2 Fire Protection Features Credited~~

~~Licensing and design basis references for fire protection features (suppression, detection, barriers, etc.) should be reviewed. This includes exemptions/deviations, SERs, Generic Letter 86-10 evaluations/code compliance evaluations, etc. Ensuring the fire protection feature credited to meet the nuclear safety performance criteria is adequate for the hazard requires an assessment in accordance with Chapter 3 of NFPA 805. If the bases for acceptability of the fire protection feature cannot be found or is inadequate the issue(s) should be entered into a corrective action program for resolution as part of the transition. This should be documented in the 'Evaluations' and 'Exemption/Deviation' columns of the B-3 worksheet as appropriate.~~

~~B.2.2.3 Outstanding Current Licensing Basis Issues~~

~~References to items that have been identified as being outside of the currently approved Fire Protection Program (such as corrective action documents, inspection findings and violations, and generic industry issues) should be included in the B-3 worksheets. This will provide a complete and concise description of items that will require resolution as part of the transition or as part of a risk-informed performance-based assessment. This compilation of corrective action items includes pre-existing items and those that were identified as part of the transition reviews.~~

B.2.2.4 Recovery Actions

[Completed FAQ 07-0030 and 06-0012 to be inserted here]

Table B-2 Nuclear Safety Capability Assessment

Methodology Review

NFPA 805 Section: 2.4.2.1 Nuclear Safety Capability System and Equipment Selection

Aligns	The same systems used for post reactor trip inventory control will also be used for inventory control. Specifically, the CVCS system using the boric acid tank(s) and the RWST as sources of makeup water are used to maintain pressurizer level.	TP-E/ELEC-0001, Safe Shutdown in Case of Fire and Fire Hazards Analysis, Rev. 0, 6/2/2006	Sections B.2.2, B.4

NEI 00-01 Ref	NEI 00-01 Guidance
3.1.2.4 Decay Heat Removal	[BWR] Systems selected for the decay heat removal function(s) should be capable of: - Removing sufficient decay heat from primary containment, to prevent containment over-pressurization and failure. - Satisfying the net positive suction head requirements of any safe shutdown systems taking suction from the containment (suppression pool). - Removing sufficient decay heat from the reactor to achieve cold shutdown. [PWR] Systems selected for the decay heat removal function(s) should be capable of: - Removing sufficient decay heat from the reactor to reach hot shutdown conditions. Typically, this entails utilizing natural circulation in lieu of forced circulation via the reactor coolant pumps and controlling steam release via the Atmospheric Dump valves. - Removing sufficient decay heat from the reactor to reach cold shutdown conditions. This does not restrict the use of other systems.

Applicability	Comments
Applicable	

Alignment Statement	Alignment Basis	Comments	Unit	Reference Document	Doc. Details
Aligns	Test Plant uses the Auxiliary Feedwater System and Steam Generator PORVs to remove decay heat while in hot standby. Once temperature is reduced to about 350F, the RHR system is placed in service to complete the cooldown ot cold shutdown conditions.			TP-E/ELEC-0001, Safe Shutdown in Case of Fire and Fire Hazards Analysis, Rev. 0, 6/2/2006	Sections B.2.4, B.4

NEI 00-01 Ref	NEI 00-01 Guidance
3.1.2.5 Process Monitoring	The process monitoring function is provided for all safe shutdown paths. IN 84-09, Attachment 1, Section IX "Lessons Learned from NRC Inspections of Fire Protection Safe Shutdown Systems (10CFR50 Appendix R)" provides guidance on the instrumentation acceptable to and preferred by the NRC for meeting the process monitoring function. This instrumentation is that which monitors the process variables necessary to perform and control the functions specified in Appendix R Section III.L.1. Such instrumentation must be demonstrated to remain unaffected by the fire. The IN 84-09 list of process monitoring is applied to alternative shutdown (III.G.3). IN 84-09 did not identify specific instruments for process monitoring to be applied to redundant shutdown (III.G.1 and III.G.2). In general, process monitoring instruments similar to those listed below are needed to successfully use existing operating procedures (including Abnormal Operating Procedures). BWR - Reactor coolant level and pressure - Suppression pool level and temperature - Emergency or isolation condenser level - Diagnostic instrumentation for safe shutdown systems

Table B-3 Fire Area Transition

Unit	Fire Area Name	Description
1	Test FA	Test Fire Area No. 1

Fire Zone	Description
Test Fire Zone	Fire Zone - For Testing

Regulatory Basis	Phase
NFPA 805, Section 4.2.3.2	Post-Transition
NUREG-0800, BTP CMEB 9.5-1, Section C.5.b (1) and C.5.b (2) with deviation	Pre-Transition

Performance Goal	Method of Accomplishment	Comments
Decay Heat Removal - CSD	Cool down using RHR Train B from the Control Room.	
Decay Heat Removal - HSB	Feed the B Steam Generator using the Train B AFW pump (or Train A or turbine-driven AFW pump) from the Control Room.	
Process Monitoring	Monitor process indication Train B from the Control Room.	
RCS Inventory Control	Maintain inventory using the normal (or alternate) charging line and Charging Pump B from the Control Room. Maintain RCP seal integrity by seal injedtion (or thermal barrier cooling..	
RCS Pressure Control	Control pressure using train B (or Train A) pressurizer heaters and pressurizer PORVs (or pressurizer and reactor head vent systems) from the Control Room.	
Reactivity Control	Trip reactor from the Control Room. Borate from the boric acid tank via the emergency boration flowpath. Use Charging Pump CSIPB and charge via the normal (or alternate) charging line	
Vital Auxiliaries - CCW, ESW, CWS	Operate Train B CCW, ESW and CWS from the Control Room.	
Vital Auxiliaries - Electrical	Control Train A and Train B Off Site Power and Emergency Diesel Generator B-SB from the Control Room.	
Vital Auxiliaries - HVAC	Operate HVAC systems from Control Room.	

Reference Document	Document Detail
Test Plant FSAR Amendment 53, , Rev. ,	page 5
test plant reference, safe shtudown analysis, Rev. 1, 1/1/1997	

Licensing Action	Basis	Date
Deviation from C.5.b for not proviiding 3-hr fire barrier (doors) between the intake structures.	The deviation was based on the exterior doors to the Train A and Train B cubicles being installed in labrynth sheild walls and the doors being separated by more than 20 feet.	6/1/1985
Deviation from installing seismic hose stations in safety related areas per NUREG-0800, BTP CMEB 9.5-1, Section C.6.c.	Deviaton was approved based on the separtion of redundant safe shutdown equipment by 3-hour rated seismic category 1 fire barriers and alternative means of manual fire fighting.	10/31/1986

Suppression Installed	Suppression Required	Suppression Comments
No	No	There are no fixed suppression systems installed.

Detection Installed	Detection Required	Detection Comments
Yes	Yes	Detection system is required.

Unit	Fire Area Name	Description
1	Test FA	Test Fire Area No. 1

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Fire Suppression Not Installed. Fire Fighting activities will not affect nuclear safety performance criteria per Calc. 1987-011 Rev. 1

Fire Area Comments

This is a test fire area for FAQ 07-0038.

Open Item ID	Open Item	Disposition	Open/Closed
219	The hot standby manual action credited in procedure 56.1 to realign RCP seal return to the CSIP suction involves the manipulation of manual valves.. Under the current licensing basis, this action is allowable and will be classified as Bin C per PRO-11.2 therefore, a change evaluation is not required.	Calculation xyz will formally document the basis.	Open

Corrective Action Reference	CR 5661099
Change Eval / Modification Candidate	No
Change Eval / Modification	N/A
Supporting Detail	Cable 1B11175 is wrapped in the area. Therefore, the CCW support components remain available for cooling.

Open Item ID	Open Item	Disposition	Open/Closed
266	The hot standby manual action credited in Doc-09-11 to shut valve 12 and open MO-122 is not expected to be required due to the expected availability of MO-981. Under the current licensing basis, this action is allowable and will be classified as Bin G per Doc-09-011 therefore, a change evaluation is not required.		Open

Corrective Action Reference	CR 790032
Change Eval / Modification Candidate	No
Change Eval / Modification	N/A
Supporting Detail	