

## Public Comment Resolution – SRP 9.5.1.2

### Comments from the Nuclear Energy Institute (NEI)

(Comment numbers added by Nuclear Regulatory Commission (NRC) Staff)

**Table 1: Resolution of Comments from NEI**

Comment #	Comment	Resolution
General Comment 1	The SRP should be revised to include pilot plant and non-pilot plant lessons learned.	The NRC agrees with the comment, and plans to update Standard Review Plan (SRP) Section 9.5.1.2 as necessary to reflect future lessons learned and the resolution of frequently asked questions (FAQs). Absent comments on specific portions of the SRP where such lessons may be incorporated, the NRC staff is unable to incorporate the lessons the commenter had in mind in the initial version of SRP 9.5.1.2.
General Comment 2	Each section of the SRP should appropriate cross references to NEI 04-02 (text and Appendices).	The SRP provides a general reference to Regulatory Guide (RG) 1.205 and NEI 04-02, and specific references where it was judged important to call attention to specific parts of these documents. As RG 1.205 endorses, with some exceptions and clarifications, NEI 4-02, it would be redundant in some cases to refer to both documents in a given SRP section. Further, NEI 4-02 has a table of contents that clearly guides the reader to the appropriate sections. In response to specific comments made by NEI, other specific references to NEI 4-02 sections have been added. No further references were added as a result of this general comment.
General Comment 3	Ensure that all comments incorporated in the text are also incorporated into the Table in the back.	The comment was incorporated.
1	<p>[Note: The comment numbers were added by NRC staff to facilitate resolution.]</p> <p><b>I. <u>AREAS OF REVIEW</u></b></p> <p>Revise sentence as follows:</p> <p>The staff also considered the guidance provided by RG 1.205 which endorses with exceptions Nuclear Energy Institute (NEI) NEI 04-02, “Guidance for Implementing a Risk-Informed Performance-Based Fire Protection Program Under 10 CFR 50.48(c)” revision 2 endorsed in RG</p>	The comment was incorporated.

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1.205		
2	<p><b><u>Review Areas</u></b></p> <p>This document uses RG 1.189 as a reference for the contents of a fire protection program. NFPA 805 Section 3.2 provides the requirements for a fire protection plan. Since NFPA 805 is included by reference in 10 CFR 50.48(c) the requirements in Section 3.2 take precedence over the information in RG 1.189.</p>	<p>Section 3.2 of the National Fire Protection Association (NFPA) standard NFPA 805 discusses the fire protection <i>plan</i>. The <i>review areas</i> section in the SRP refers to the fire protection <i>program</i>. The statement of considerations (SOC) for 10 CFR 50.48(c) states that "... the NRC reviewed the NFPA 805 fire protection criteria versus the guidance in RG 1.189, 'Fire Protection for Operating Nuclear Power Plants.'" The SOC goes on to address each of the eight elements of an acceptable fire protection program in RG 1.189.</p> <p>No change to SRP 9.5.1.2 is warranted.</p>
3	<p>The listing of 25 items in Section I under "Review Areas" should be deleted (items identified are redundant and, for some items, inconsistent with Section III Review Procedures and the matrix table (Attachment 1). Level of detail requested in Section I is also inconsistent with Section III Review Procedures and the matrix table (Attachment 1).</p> <p>The paragraph should simply state:</p> <p>"The staff reviews the overall RI/PB FPP described in the LAR with respect to the acceptance criteria in this SRP, <b>the Review Procedures (Section III)</b> and the Acceptance Review Matrix attached to this SRP section (Attachment 1)." <del>Specifically, the staff reviews the following, as applicable:</del> [Then delete items 1 through 25 in this section]</p> <p>OR REVISE ITEMS AS IDENTIFIED BELOW:</p> <p>Item 7. Since this section of 10 CFR 50.48(c)(2)(vii) is not mandatory for transition to 10 CFR 50.48(c), it is suggested that the sentence end with "..., if provided."</p> <p>Item 8. Since this section of 10 CFR 50.48(c)(4) is not mandatory for transition to 10 CFR 50.48(c), it is suggested that the sentence end with "..., if provided."</p>	<p>The staff agrees with the comment and has deleted items 1 through 25, referencing Section III, "Review Procedures," instead.</p>

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	<p>Item 10. The discussion incorrectly refers to NFPA 805 Section 2.4 with a title of “Fire Modeling, Nuclear Safety Capability Assessment, and Fire Risk Evaluations.” The title of NFPA 805 Section 2.4 is “Engineering Analyses.”</p> <p>Item 13 – Recommend that the guidance repeat the exception in 10 CFR 50.48(c)(2)(iii) rather than paraphrase the exception using different terminology.</p> <p>Item 16 – Radioactive Release and Nuclear Safety are separate performance criteria and should not be combined in the SRP. NFPA 805 and the implementing guidance in NEI 04-02 and RG 1.205 treat these goals and criteria separately.</p> <p>Item 22 states “Fire-induced multiple spurious operations (MSOs), including the process used to identify and screen MSOs and how each is evaluated in the fire PRA.”</p> <p>The proposed process for MSO resolution in FAQ 07-0038 Rev. 1 (ML082700815), discussed at NFPA 805 Pilot Meetings, and documented in the Pilot Plant LARs do not include a screening process. Recommend removing reference to a screening process.</p> <p>Item 24 – This item is incorrect as it states that recovery actions are not in accordance with NFPA 805 requirements. Recovery actions are allowed by NFPA 805.</p>	
4	<p><b>II. <u>ACCEPTANCE CRITERIA</u></b></p> <p><b><u>SRP Acceptance Criteria</u></b></p> <p>Item 2 – Recommend adding a FAQ clarification to RG 1.205 (similar to the statement provided for NUREG/CR-6850.</p> <p>Item 4 – RG 1.189 is currently Revision 1.</p> <p>Item 4 – RG 1.189 should not be referenced in this document. The ‘requirements of NFPA 805 Chapter 3’ are not consistently reflected in RG 1.1.89. This could lead to regulatory uncertainty.</p>	<p>Item 2 – The comment was incorporated by adding reference to interim staff guidance contained in approved FAQs.</p> <p>Item 4 – The revision number for RG 1.189 was corrected.</p> <p>Item 4 – The NRC staff disagrees with this comment. Note that RG 1.205 and NEI 04-02 both reference RG 1.189 as a source of guidance. RG 1.189 provides the staff’s current expectations with respect to a deterministic fire protection program (FPP). It can not be deleted since it reflects "one acceptable approach" to meeting FPP requirements. In addition, RG 1.189 provides significant information on the staff’s interpretation of fire protection defense-in-depth. Finally,</p>

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	<p>Item 9 – The process for NFPA 805 transition in NEI 04-02 (RG 1.205) does not include NUREG-1852. The NRC response to NUREG-1852 industry and public comments clearly emphasize that NUREG-1852 is not applicable to an RI-PB NFPA 805 transition (ML0726809550, Item 24) item</p> <p><i>NEI 04-02 (to the extent to which it is endorsed in RG 1.205) provides guidance on performing HRA for OMAs (referred to as “recovery actions” there) as part of a RI/PB fire PRA under NFPA 805. NUREG-1852 provides one coherent set of feasibility and reliability criteria for NRC reviewers to use when evaluating future OMA exemptions or license amendment requests that may be submitted on a non-RI/PB basis. Reference to the RI/PB methods in NEI 04-02 (via RG 1.205) would be inappropriate in NUREG-1852, although the type of criteria offered in NUREG-1852 are implicit to an HRA under a RI/PB fire PRA.</i></p> <p>NEI 00-01, Guidance for Post-Fire Safe Shutdown Circuit Analysis, Revision 1, dated January 2005 – NEI 00-01 contains the preferred methods of demonstrating compliance with certain aspects of NFPA 805. Its use was endorsed in RG 1.205 and therefore it should be listed here.</p>	<p>NRC staff guidance on the technical content and quality of engineering equivalency evaluations currently references RG 1.189 as one source. No change to the SRP was made.</p> <p>Item 9 – The NRC staff does not agree with this portion of the comment. The human reliability analysis (HRA) conducted as part of the fire probabilistic risk assessment (PRA) should meet the requirements of the American Society of Mechanical Engineers (ASME) PRA standard. However, a licensee may choose to use the fire modeling performance-based (PB) approach of NFPA 805, Section 4.2.4.1, which requires that all recovery actions (RAs) are feasible. The SRP references NUREG-1852 as one acceptable approach for judging the feasibility of such RAs. The reference to NUREG-1852 was retained. In Section III.3.2.2 of the SRP, reference to “reliability” of RAs was removed from the last sentence in the third paragraph. In addition, NFPA 805 Appendix B.5.2(e) was added as another acceptable approach. No other changes to the SRP were made as a result of this part of the comment. (See also the second part of NEI comment #17.)</p>
5	<p>III.1.3 Self-Approval of Certain FPP Changes (Letters added to facilitate comment resolution.)</p> <p>(a) The last sentence in the first paragraph on page 9.5.1.2-9 should be revised to reflect RG 1.205:</p> <p style="padding-left: 40px;">“Note that Regulatory Position 3.2.4 of RG 1.205 lists FPP changes that must be submitted for review and approval prior to implementation, except where otherwise permitted by the approved license condition.”</p> <p>(b) The document is written at a fairly high level, which leaves a lot of “latitude” (room for interpretation) on the part of the reviewer. For example, in Section III.1.3, it states that the “staff will ... determine</p>	<p>(a) Revision 1 of RG 1.205 provides examples of changes that must be submitted for prior NRC review and approval in Section 3.2.3. The last sentence referred to in the comment was changed to reference the correct RG 1.205 Section. No other changes are required to address this comment.</p> <p>(b) In response to this comment, the quoted portion of the sentence in Section III.1.3 has been deleted. That sentence was redundant to the last sentence in the first paragraph of SRP Section III.5.1, which refers to SRP Section 19.1, as is retained. SRP 19.1 provides adequate, approved guidance for NRC reviewers on this topic.</p> <p>(c) The note regarding topical reports was moved to III.1.8 as suggested by the comment.</p>

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	<p>whether the licensee has adequate processes in place to ensure that acceptable PRA technical adequacy is maintained ...” The process to maintain a PRA is typically reviewed and assessed during the Peer Review through a consensus process by a team of PRA-knowledgeable participants. Is the staff suppose to “reproduce that process” to determine if an adequate process exists? Can the staff simply look at the PRA Peer Review results to make that determination? There is nothing in the SRP to ensure consistency from review to review.</p> <p>(c) III.1.3 – Self-Approval of Certain FPP Changes: At the end of this section there is a note that talks about a Topical Report. In the context of this section, this note suggests that the analysis methods being applied must have specific NRC approval. The specific reference to NEI 04-02 that is provided was intended to refer to the overall transition method. As such, this note seems to be misplaced or a clarification is needed as to the necessity and applicability of a Topical Report. In the absence of any TR, what criteria will the NRC use to establish adequacy for this item? Or should this note be moved to III.1.8?</p>	
6	<p>III.1.8 Risk-Informed, Performance-Based Alternatives to Compliance with NFPA 805</p> <p>First sentence – Change “PB, RI” to “RI/PB” for consistency with remainder of document.</p>	The comment was incorporated.
7	<p>(Letters added to facilitate comment resolution.)</p> <p>(a) The wording on Regulatory Position 3.2.3 of RG 1.205 does not reflect the wording in RG 1.205. Specifically, the SRP items (d) and (e) provides different wording than RG 1.205.</p> <p>(b) Section III.1.8, in the last set of bullets, leaves no doubt that if PRA methods are used to perform risk assessments, the ASME/ANS PRA Standard (RA-S-2008 or RA-Sa-2009) or ANS Fires PRA Standard (58.23-2007) needs to be used. Note that Regulatory Guide 1.200,</p>	<p>(a) The NRC staff notes that this list, with minor editorial differences, is in NEI 04-02, Revision 2, Section 2.4.1. RG 1.205 Regulatory Position 3.2.3 has been re-numbered to Regulatory Position 2.2.3. Since RG 1.205 endorses NEI 04-02 (with exceptions and clarifications), the list of what to submit was removed from the Regulatory Guide. No change to the SRP was made as a result of this comment.</p> <p>(b) The NRC staff cannot find any reference to the American Nuclear Society (ANS) or ASME PRA standard in SRP Section 9.5.1.2. RG 1.205 has been revised to refer to RG 1.200, Revision 2, which</p>

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	Rev. 2 endorses Standard RA-Sa-2009 – while the supporting requirements are similar to the other cited Standards, use of those other Standards would create bookkeeping, logistic, and regulatory difficulties during a review. Therefore, if a Fire PRA is used, it needs to be developed against RA-Sa-2009. Also noted (as required in the Standard and RG 1.200), a peer review of the Fire PRA must be performed (also against RA-Sa-2009).	endorses the proper ASME PRA standard. No change to the SRP is required.
8	<p><b>III.2 FUNDAMENTAL FIRE PROTECTION PROGRAM ELEMENTS AND MINIMUM DESIGN REQUIREMENTS</b></p> <p>(Letters added to facilitate resolution.)</p> <p>(a) Revise first sentence of second paragraph as follows “....FPP complies with NFPA 805 Chapter 3 requirements.”</p> <p>(b) Third paragraph Alternatives to NFPA 805 Chapter 3 are, in many instances, not Exemption or Deviation Requests, since the topics in NFPA 805 are primarily associated with Branch Technical Position 9.5-1 and pre-dated 10 CFR 50, Appendix R and associated exemption or deviation requests. Recommend that the previous approval of the NRC statements in the SRP not be focused solely on exemptions and deviations.</p>	<p>(a) The comment was incorporated.</p> <p>(b) The comment was incorporated. The text was changed to refer to “... previous NRC approvals, including approved exemptions or deviations ...” to make it clear that prior approval is not limited to exemptions or deviations.</p>
9	<p><b>III.2.2 Definition of Power Block</b></p> <p>Section II.2.2 “Definition of Power Block”; suggest deleting wording “which defines power block as “structures that have equipment required for nuclear plant operations.” and replace with “and RG 1.205”. The FAQ (definition for power block) when resolved will be incorporated into the RG and ultimately may create inconsistency with the definition provided in the proposed SRP.</p>	The comment was incorporated.
10	<p><b>III.3 NUCLEAR SAFETY PERFORMANCE CRITERIA</b></p> <p>Section III.3 should be a lead-in to the entire Nuclear Safety Performance Criteria discussion (i.e., both the methodology review</p>	The comment was incorporated.

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	<p>and the fire-area-by-fire area review). Revise first sentence as follows:</p> <p>“Chapter 2 of NFPA 805 provides the methodology to be used in implementing a PB FPP. <u>Chapter 4 of NFPA 805 establishes the methodology to determine the fire protection systems and features required to achieve the performance criteria outlined in NFPA 805 Section 1.5.</u> NEI 04-02 Section 4.3.2 sets out a systematic process for evaluating the existing post-fire safe shutdown analysis against the methodology requirements provided in Chapter 2 of NFPA 805 <u>and the methods for achieving the nuclear safety performance criteria in Chapter 4 of NFPA 805.</u></p> <p>Move the last sentence of this section to III.3.1, since it addresses the ‘methodology’ transition.</p>	
11	<p>(Letters added to facilitate comment resolution.)</p> <p><b>III.3.1 Transition and Implementation</b></p> <p>(a) First sentence. Typo, change to “...the FPP and the plant as ....”</p> <p>(b) Section III.3.1 really deals with the ‘transition of the methodology’. Revise title of section as follows:</p> <p><b>III.3.1 <u>Nuclear Safety Compliance Assessment Methodology</u></b> <del>Transition and Implementation</del></p> <p>(c) Revise third paragraph as follows:</p> <p>The staff will ensure that the licensee completed a systematic approach to transition the FPP to the new requirements in NFPA 805. As endorsed in RG 1.205, <u>Section 4.3.2 and</u> Section B-2 of Appendix B to NEI 04-02 describes one acceptable approach to documenting the comparison of an existing FPP with the requirements of NFPA 805 and industry guidance document NEI 00-01. <u>RG 1.205 endorses the deterministic post-fire safe shutdown analysis methodology provided in Chapter 3 of NEI 00-01.</u></p> <p>(d) Relocate fourth paragraph to section III.3.2 and</p>	<p>(a), (b), (c), and (d) – The comments were incorporated.</p> <p>(e) The comment was incorporated by adding the following sentence to the last paragraph: “One acceptable means of demonstrating compliance is the guidance in NEI 04-02, to the extent endorsed by RG 1.205.”</p>

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	<p>(e) revise the fifth paragraph as follows:</p> <p>The staff will review the LAR to determine whether the nuclear safety performance criteria have been met consistent with the requirements in NFPA 805 <b>and guidance in NEI 04-02 and RG 1.205</b>. The staff will ensure licensee compliance with the following requirements:</p>	
12	<p>(Letters added to facilitate comment resolution.)</p> <p><b>III.3.1.2 Existing Cables</b></p> <p>(a) This section deals with NFPA 805 paragraph 3.3.5.3 as such it does not belong in the Nuclear Safety Performance Criteria Section (III.3.1.2). Relocate this discussion to Section. III.2 Fundamental Fire Protection Program Elements and Minimum Design Requirements and renumber following subsections.</p> <p>(b) Section III.3.1.2, Existing Cables, states, “Most existing plants reference earlier versions of IEEE 383 and have approved FPPs based on this standard. Plants that reference IEEE 383 are not required to meet IEEE 1202 when transitioning to a RI/PB FPP.” Several plants were essentially completed prior to the first edition of IEEE 383 in 1974 and do not have cables that can be specifically listed as IEEE 383 compliant, but do have a licensing basis that is equivalent to IEEE 383. This is addressed in FAQ 06-0022 and some statement allowing this deviation should be provided in this section. This will ensure the broader scope of what is allowable for existing plant cable insulation to be made clearer in the future.</p>	<p>(a) This comment was incorporated; the section is now III.2.4.</p> <p>(b) The NRC staff addressed this comment by adding the following at the bottom of the section: "Plants that have a licensing basis that does not reference [Institute of Electrical and Electronic Engineers] IEEE 383 should demonstrate that the installed cables meet cable fire spread acceptance criteria at least as stringent as those in IEEE 383-1974. This equivalency should be documented in the SER [safety evaluation report]."</p>
13	<p>(Letters added to facilitate comment resolution.)</p> <p><b>III.3.1.3 Fire-Induced Multiple Spurious Operations</b></p> <p>(a) Section 2.4.2.2 of NFPA 805 does not include discussion on multiple spurious operations. Recommend that the characterization of “...including multiples..” as an NFPA 805 “requirement” be removed.</p> <p>(b) The statement “The analysis should generally be performed and</p>	<p>(a) (Section re-numbered to III.3.1.2 as a result of NEI comment #12.) The comment was incorporated. Additional text was added to address multiple spurious operation:</p> <p>“NEI 00 01, Revision 1, “Guidance for Post-Fire Safe Shutdown Circuit Analysis,” and RG 1.205 Regulatory Position 3.3 provide one acceptable approach to circuit analysis for a plant implementing an FPP under 10 CFR 50.48(c). NEI 04 02, Section B.2.1, provides one</p>

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	arranged by fire area, although in some cases an alternative spatial approach may prove to be practical.” should be removed, since it is not based on existing requirements or guidance.	acceptable approach for identifying multiple spurious operations (MSOs) when analyzing the post-fire safe-shutdown circuits.”  (b) The requirement to perform the analyses on a fire area basis comes from NFPA 805, Section 2.4.2.4. The part of the comment regarding an alternative spatial approach is incorrect; there is guidance because the PRA standard and NUREG/CR-6850 both require plant partitioning on at least a fire area basis, but preferably by compartment or “physical analysis unit.” No change made to DG-1218 was made.
14	<p><b>III.3.1.3 Transition of Operator Manual Actions to Recovery Actions</b></p> <p>Since it appears the NRC’s intention is to outline specific ‘methodologies’ used in transition in this section, revise to add new section III.3.1.3 to address the transition of OMAs to Recovery Actions (note section III.3.1.3 will be renumber to III.3.1.2 via comment on ‘existing cables’</p> <p>Include the following relocated text from section III.3.2.1 :</p> <p><b><u>OMAs that are currently allowed or were previously reviewed and approved by the NRC’s Office of NRR that meet the NFPA 805 definition of an RA automatically shall imply use of the PB approach as outlined in NFPA 805 paragraph 4.2.4</u></b></p>	<p>The commenter recommended adding a section titled “Transition of Operator Manual Actions to Recovery Actions” which would become Section III.3.1.3 under the new numbering scheme resulting from NEI comment #12. The staff added the suggested section. Also, the following sentence was added in the new section to address the comment: “OMAs [operator manual actions] that transition to RAs [recovery actions], that are used to demonstrate the availability of a success path for the nuclear safety performance criteria, whether or not currently allowed or previously approved in the plant’s existing licensing basis, automatically shall imply use of the PB approach as outlined in NFPA 805, Section 4.2.4. The staff will verify that these OMAs have been evaluated using PB methods.”</p>
15	<p><b>III.3.2 Specific Compliance with NFPA 805 by Fire Area</b></p> <p>This section deals with the transition by fire area in which the nuclear safety performance criteria are demonstrated for each fire area. Suggest bringing forward the last paragraph of Section III.3.1 and revising this section as follows:</p> <p>In evaluating nuclear safety performance criteria transition, staff will reference Section 1.5 of NFPA 805, which establishes the nuclear safety performance criteria, and Chapter 4 of NFPA 805, which provides the methodology to determine the fire protection systems and</p>	<p>The comment was incorporated by adding the following sentence: “When using the PB [performance-based] approach of NFPA 805 Section 4.2.4, the user shall be permitted to utilize deterministic methods for simplifying assumptions within the fire area as allowed by Section 4.2.2.” See also NEI comment #17.</p>

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	<p>features required to achieve the performance criteria outlined in Section 1.5.</p> <p>The staff will review the LAR to ensure that each fire area has been evaluated and determined to comply with the requirements of NFPA 805. The staff will verify that each fire area either meets NFPA 805 paragraph 4.2.3 deterministic requirements; meets the NFPA 805 paragraph 1.5 performance criteria as demonstrated using PB methods as allowed under NFPA 805 paragraph 4.2.4 <b><u>(with or without simplifying deterministic assumptions)</u></b>; or meets the NFPA 805 paragraph 1.5 performance criteria as demonstrated using RI or PB alternatives to compliance with NFPA 805 pursuant to 10 CFR 50.48(c)(4). Refer to paragraph III.1.8 of this SRP Section for further information on alternatives.</p>	
16	<p><b>III.3.2.1 Deterministic Compliance with NFPA 805 Section 4.2.3</b></p> <p>Fifth paragraph, last sentence – FAQ 07-0033 was specifically developed for transitioning engineering evaluations for NFPA 805. This FAQ should be referenced rather than/or to supplement NUREG-0800/RG 1.189. See suggested revisions below.</p> <p>Revise this section for clarity:</p> <p>For each fire area where the licensee has selected the deterministic approach to demonstrate compliance, the staff will verify that the deterministic requirements of NFPA 805 paragraph 4.2.3 are met. Licensees may demonstrate compliance through:</p> <p>a) Compliance with the deterministic requirements of NFPA 805 through the use of previously approved exemptions/deviations from their current licensing basis; or,</p> <p>Previously approved exemptions/deviations (normally from Appendix R requirements) describe plant configurations that the staff has</p>	<p>The NRC staff agrees with part of the comment regarding FAQ 07-0033. NEI 04-02, Revision 2, incorporated that FAQ into Appendix B.3. The reference to NUREG-0800 and RG 1.189 was removed and RG 1.205 and NEI 04-02 referenced instead.</p> <p>The NRC staff does not agree with the references to NFPA 805 Chapter 3; Chapter 3 is covered in SRP Section III.2.</p>

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	<p>determined to be acceptable, notwithstanding that Appendix R or NFPA-805 may require some other configuration. Such plant configurations may be deemed to satisfy the deterministic requirements of NFPA-805 provided the basis for acceptability of these previously approved exemption/deviations continues to be valid.</p> <p>b) The use of an engineering equivalency evaluation of an existing configuration to demonstrate an equivalent level of fire protection compared to the deterministic requirements. [NFPA 805 paragraph 2.2.7]</p> <p>EEEEEs that support deviations from the requirements and methods of <b>Chapter 3 of</b> NFPA 805 must be submitted for NRC approval as part of the transition to NFPA 805. [RG 1.205 regulatory position 2.3] These EEEEEs include those commonly referred to as a “Generic Letter 86-10 evaluations, which were developed by the licensee without prior NRC review or approval. The staff will verify that EEEEEs supporting deviations from the requirements and methods of <b>Chapter 3 of</b> NFPA 805 clearly demonstrate an equivalent level of fire protection compared to the deterministic requirements. Guidance for acceptable EEEEEs is provided in <b>NEI 04-02 Section B-1</b>, <del>NUREG-0800, Section 9.5.1, “Fire Protection,” and in Regulatory Guide 1.189, “Fire Protection for Operating Nuclear Power Plants.”</del></p>	
17	<p>(Letters added to facilitate comment resolution.)</p> <p><b>III.3.2.2 Performance-Based Compliance with NFPA 805 Section 4.2.4</b></p> <p>(a) 1<sup>st</sup> paragraph, 2<sup>nd</sup> sentence. Recommend changing to:</p> <p>“A PB approach is necessary if the deterministic requirements of NFPA 805, Section 4.2.3 (as discussed in Section III.3.2.1) are not satisfied. As discussed in Section 4.2.2 of NFPA 805, the PB approach shall be permitted to utilize deterministic methods for</p>	<p>(a) The comment was incorporated. See also NEI comment #15.</p> <p>(b) The NRC staff does not agree with this portion of the comment. The HRA conducted as part of the fire PRA should meet the requirements of the ASME PRA standard. However, a licensee may choose to use the fire modeling PB approach of NFPA 805, Section 4.2.4.1, which requires that all RAs are feasible. The SRP references NUREG-1852 as one acceptable approach for judging the feasibility of such RAs. The reference to NUREG-1854 was retained. In Section III.3.2.2 of the SRP, reference to “reliability” of</p>

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	<p><i>the licensee has chosen to use the PB approach because the licensee credits RAs, the NRC staff will review the licensee’s evaluation of the additional risk per Section III.5.4 of this SRP.”</i></p> <p>(c) III.3.2.2 – this section seems to allow the use of Fire Modeling only. This was explicitly rejected by the ACRS in a prior interaction related to RG 1.205. Are we to assume that this is now acceptable?</p>	
18	<p><b>III.3.3 Non-Power Operational Modes</b></p> <p>Recommend reference to FAQ 07-0040.</p> <p>The fourth paragraph should be replaced with FAQ 07-0040 information.</p>	The comment was incorporated.
19	<p><b>III.4 RADIOACTIVE RELEASE PERFORMANCE CRITERIA</b></p> <p>1<sup>st</sup> paragraph second sentence should be rewritten to reflect NFPA 805 wording in Section 1.5.3.</p> <p><i>“The staff will verify that the LAR documents that radiation release to any unrestricted area due to the direct effects of fire <b>suppression</b> activities (but not involving fuel damage) remains as low as reasonably achievable, not to exceed the limits in 10 CFR Part 20.”</i></p>	The comment was incorporated.
20	<p><b>III.5 RISK ASSESSMENTS AND PLANT CHANGE EVALUATIONS</b></p> <p>SRP 9.5.1.2 leans heavily on Regulatory Guide (RG) 1.174. The principles in FG 1.174 (<i>sic</i>) include small change in risk, maintaining defense-in-depth (DID), and maintaining safety margin. These concepts are also repeated in SRP 9.5.1.2, most notably in Section III.5.2, where the DID philosophy from RG 1.174 has been adapted for a fire protection milieu. Using RG 1.174 is a reasonable approach, and for licensees that have submitted RG 1.174 license amendment requests, the process should be easily repeated and defensible to the</p>	The NRC staff agrees with the comment. No change to the draft SRP 9.5.1.2 is necessary.

## Public Comment Resolution – SRP 9.5.1.2

**Table 1: Resolution of Comments from NEI**

Comment #	Comment	Resolution
	NRC.	
21	<p><b>III.5.1 Fire PRA Technical Adequacy</b></p> <p>The last sentence of the first paragraph of this section appears redundant to the last sentence of the second paragraph</p>	The redundant sentence in the second paragraph was deleted.
22	<p><b>III.5.2 Defense-in-Depth and Safety Margins</b></p> <p>Delete all references to ‘nuclear’ safety defense in depth. Defense in Depth is clearly defined in the regulation (NFPA 805) Section 1.2. By meeting the nuclear safety performance criteria and defense-in-depth as defined in NFPA 805 (which is more restrictive than core damage/containment failure) the process as documented in NEI 04-02 and endorsed in Regulatory Guide 1.205 revision 0 is adequate and meets the requirements of NFPA 805 Section 2.4.4.2.</p>	The NRC staff does not agree with deleting reference to nuclear safety defense in depth because NFPA 805, Section 2.4.4.2, requires both fire protection and nuclear safety defense-in-depth to be considered. However, this section of SRP 9.5.1.2 was simplified by removing the list of nuclear safety defense-in-depth attributes and, instead, referencing the existing guidance in SRP Section 19.2.
23	<p>[Nuclear safety DID is achieved when an adequate balance of the following elements is provided: ...]</p> <p>Delete this section.</p>	See the response to comment #22; the section was deleted but a reference to SRP 19.2 was added.
24	Section III.5.2, Defense-in-Depth and Safety Margins, has a bullet list item under the DID discussion that states, “The intent of the GDC of 10 CFR Part 50, Appendix A, is preserved.” It appears this is intended to specifically mean GDC 3, but that is not clearly stated in this section as it is in Section IV. This should be revised to clearly state the scope intended.	See the response to comment #22; this list has been deleted.
25	Last paragraph – Recommend changing to “Note that the deterministic approach in NFPA 805 for meeting the performance criteria, <b>as described in Section III.3.2.1</b> , shall be deemed to satisfy the DID and safety margin requirements. [NFPA 805 paragraphs 2.4.4.2 and 2.4.4.3]	The comment was incorporated.
26	(Letters added to facilitate comment resolution.)	(a) The NRC staff does not agree with the comment, which is contrary

## Public Comment Resolution – SRP 9.5.1.2

**Table 1: Resolution of Comments from NEI**

Comment #	Comment	Resolution
	<p><b>III.5.3 Plant Change Evaluations</b></p> <p>(a) Last paragraph page 9.5.1.2-17 – The Industry asserts that for the purposes of assessing allowable changes per RG 1.174, it is inappropriate to aggregate the fire base line risk with the internal events PRA model CDF or other external events calculated CDFs. As discussed in EPRI report #1010068, December 2005, “Aggregation of Quantitative Risk Assessment Results,” aggregation of results from multiple models that have significant differences in their levels of uncertainty and/or conservatisms, can result in biased results. There are currently industry efforts underway to reduce the uncertainties associated with Fire PRA results, and it is expected that these efforts will result in lower overall Fire CDFs with lower associated uncertainties. These refinements will likely also lead to smaller calculated delta CDFs. Until this work is complete, it seems appropriate to compare fire delta CDFs to the Fire baseline CDF for the purposes of RG 1.174 reviews.</p> <p>(b) Doesn’t reference the Regulatory Guide or NEI 04-02</p>	<p>to the regulatory positions set forth in RG 1.174. The acceptance guidelines in RG 1.174 employ total core damage frequency (CDF) and total large early release frequency (LERF) when the risk increase of proposed changes is above the “very small” threshold. The concept of total CDF and total LERF includes contributions from external events as well as internal events. No change to the draft SRP was made as a result of this part of the comment.</p> <p>(b) The comment was incorporated.</p>
27	<p><b>III.5.3.1 LAR to Implement NFPA 805 (“Transition”)</b></p> <p>Recommend that the first sentence be revised to</p> <p style="padding-left: 40px;"><i>“The staff will verify that the LAR identifies all FPP non-compliances with the pre-transition CLB, as discussed in Section III.3.2.1, that the licensee does not intend to bring into deterministic compliance under NFPA 805.</i></p> <p>Recommend that the first bullet be revised to: <b>[no text was provided in comment.]</b></p>	<p>Sections III.5.3.1 and III.5.3.2 were deleted as redundant to the introductory text. This comment is not applicable as a result.</p>
28	<p>(Letters added to facilitate comment resolution.)</p> <p><b>III.5.5 Fire Risk Evaluations</b></p> <p>(a) Fourth paragraph states, “In any case, the effects of the changes on the reliability and unavailability of c or on operator actions...” The underlined section does not make sense and needs to be</p>	<p>(a) The sentence was corrected; the “c” should have said “structures, systems, and components.”</p> <p>(b) This section, III.5.5, provides guidance for the NRC staff to use in its review of license amendment requests related to risk-informed, performance-based fire protection programs. The guidance provided</p>

## Public Comment Resolution – SRP 9.5.1.2

**Table 1: Resolution of Comments from NEI**

Comment #	Comment	Resolution
	<p>revised/corrected to be understandable.</p> <p>(b) This section requires that each type of change be described in sufficient detail to allow the staff to review the methods. Alternatively, a previously approved method can be invoked. This refers back to III.1.3 and the note regarding a Topical Report. The concern here is that the greater the detail provided the less flexibility provided industry and the Fire PRA methods and technology matures. From a practical standpoint, once a specific method is approved, no other method can be employed without prior NRC approval. The details on ‘how’ these analyses are performed are varied and potentially very complex. As with many other engineering analyses, the rigor to be applied to any specific methodology is inherently graded based on the conservatism in the input parameters. As such, we have a potential conflict between providing information to satisfy this requirement without creating technology boundaries. It is noted that the issuance of an NRC NUREG by itself does not constitute equivalent to an SER on a Topical Report. We can easily find ourselves in a situation where we are unable to apply methods that are more realistic without NRC approval while at the same time be forced to undertake sensitivity studies using other methods that suggest more conservative approaches.</p> <p>(c) Second to last paragraph – missing letter in last line.</p> <p>(d) Last paragraph. It says the staff will review any use of the PB approach. How does this reconcile with the self-approval provisions where these analyses are not submitted to the NRC?</p> <p>(e) Qualitative evaluation of change impact is mentioned. In addition, changes on the reliability and unavailability of operator actions is also required. Given the limitations of the state-of-the-art of fire PRA in general, and in HRA in particular, guidance is required to provide the scope and level of depth for a quantitative evaluation of the cumulative risk and combined changes beyond that referenced in Reg Guide 1.205 Section 3.2.6.</p>	<p>in the SRP is consistent with the guidance in RG 1.174. The staff does not agree with the statement in the comment that “once a specific method is approved, no other method can be employed without prior NRC approval.” RG 1.205, Revision 1, provides guidance on the types of methods that are acceptable to the NRC. No change to the SRP was made as the result of this comment.</p> <p>(c) This appears to refer to the same issue as comment (a) and has been corrected.</p> <p>(d) This comment was incorporated by removing the “for any use of the PB approach” so that the sentence applies to fire risk evaluations submitted to the NRC.</p> <p>(e) The NRC staff considers qualitative risk assessments to be appropriate when the assessment clearly demonstrates that any risk increases, if quantified, would likely be well within the acceptance guidelines. RG 1.205 provides guidance for fire risk evaluations by referencing RG 1.174 and RG 1.200, and SRP Sections 19.1 and 19.2. No change to the SRP was made as a result of this comment.</p>

## Public Comment Resolution – SRP 9.5.1.2

**Table 1: Resolution of Comments from NEI**

Comment #	Comment	Resolution
29	<p><b>III.6 MONITORING PROGRAM</b></p> <p>Another example is in Section III.6 (Monitoring Program) in which the staff is to review the monitoring program. This program requires licensees “to establish and monitor acceptable levels of availability, reliability, and performance of fire protection systems and features.” How the terms “reliability” and “availability” are defined is not discussed, nor is the manner in which the acceptable levels of these parameters should be defined. Individual licensees are likely to develop their own “definitions” and levels of acceptance. How is a reviewer to judge these adequate?</p>	Section III.6 of the SRP was modified to reference NEI 04-02, Section 4.5.3 and Appendix E, as acceptable guidance for implementing the required monitoring program.
30	<p>Attachment 1 – III.2.3:</p> <p>This item should be revised as follows to be consistent with Section III.2.3</p> <p>The LAR addresses <b>process for resolving issues with</b> electrical raceway fire barrier systems <b>issues</b> (e.g., Hemyc and MT) if applicable.”</p>	The proposed comment is not consistent with III.2.3. No change was made to the SRP as a result of this comment.
31	<p>Attachment 1 – III.3.1:</p> <p>This item should be revised as follows to be consistent with Section III.3.1:</p> <p>The LAR describes the licensee’s approach to establishing nuclear safety performance criteria and <del>the results of implementing the approach.</del> <b>is consistent with Chapter 2 of NFPA 805.”</b></p>	The NRC staff cannot find the text referred to in the comment. Attachment 1 has been changed to match the text in the SRP main body. No further changes were made as a result of this comment.
32	<p>Attachment 1 – III.3.2:</p> <p>Please number the items in this sub-section of the table to be consistent with text.</p>	The comment was incorporated.
33	<p>Attachment 1 – III.3.2 [Compliance Summary]</p> <p>Summary Level information Fire Hazards and risk insights are in the</p>	Reference to CDF and LERF were deleted from III.3.2 and now only appear in III.5. The qualifier, “if applicable,” was added to entries in

## Public Comment Resolution – SRP 9.5.1.2

**Table 1: Resolution of Comments from NEI**

Comment #	Comment	Resolution
	<p>FSA document. The FSA needs to be completed prior to implementation (may be included as supplemental information)</p> <p>Compliance summary for each fire area, including identifying fire hazards, reporting CDF and LERF values, identifying the significant core damage sequences and initiating events”, is within the context of RI/PB alternatives per section III.3.2.3. Therefore, a suggested lead-in could be “If RI/PB alternatives are selected, describe compliance summary for each fire area.....”</p> <p>CDF and LERF need to be reported? Are these delta CDF and delta LERF? For those FPP elements in certain fire areas in which PRA resolution or state-of-the-art does not allow quantification, what are the acceptable risk metrics or alternate reporting risk measures?</p>	<p>Attachment 1 as appropriate to indicate that certain attributes only apply if the related requirement applies. No other changes to the SRP were made as a result of this comment.</p>
34	<p>Attachment 1 – III.3.2 [Exemptions, Deviations, EEEEs]</p> <p>Exemptions, deviations, and EEEEs that the licensee desires to incorporate into the new licensing basis” is not discussed in Section III.3.2. Suggest relocating and adding with III.3.2 which states “The LAR evaluates each fire area for compliance to NFPA 805 requirements” and add “including exemptions, deviations, and EEEEs ...:</p>	<p>Reference to exemptions, deviations and existing engineering equivalency evaluations (EEEs) was removed from III.3.2 in Attachment 1. Item III.3.2.1 in Attachment 1 now states: “Documentation of previous NRC approval claimed to meet NFPA 805 Section 2.2.7 for meeting the deterministic requirements (Section 4.2.3)”</p>

## Public Comment Resolution – SRP 9.5.1.2

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### Comments from the National Fire Protection Association (NFPA)

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**Table 2: Resolution of Comments from NFPA**

<b>Comment #</b>	<b>Comment</b>	<b>Resolution</b>
1	NFPA supports the use of guidance documents that will help existing plants implement risk-informed, performance-based fire protection programs pursuant to the requirements set forth in NFPA 805.	The comment supports issuance of SRP 9.5.1.2. No change to SRP section 9.5.1.2 is required.
2	NFPA 805 Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants (2006 edition) is a performance based standard that describes the methodology for applying performance-based requirements, fundamental fire protection program design and elements, determination of fire protection systems and features, and fire protection during decommissioning and permanent shutdown.	The NRC staff notes that 10 CFR 50.48 would have to be revised in order to incorporate the newer edition of NFPA 805. This will be considered at such point in time that the rule is being revised. No change to SRP 9.5.1.2 is required.

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