

September 8, 2008

Chris L. Burton, Vice President  
Shearon Harris Nuclear Power Plant  
Carolina Power & Light Company  
Post Office Box 165, Mail Code: Zone 1  
New Hill, North Carolina 27562-0165

SUBJECT: SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1 - SUMMARY OF  
CONFERENCE CALL WITH PROGRESS ENERGY TO DISCUSS LICENSE  
AMENDMENT REQUEST TO ADOPT NATIONAL FIRE PROTECTION  
ASSOCIATION 805 PERFORMANCE-BASED STANDARD FOR FIRE  
PROTECTION FOR LIGHT WATER REACTOR GENERATING PLANTS  
(2001 EDITION) (TAC NO. MD8807)

Dear Mr. Burton:

On August 14, 2008, the U.S. Nuclear Regulatory Commission (NRC) staff (the staff) conducted a conference call with representatives from Progress Energy to discuss the results of the acceptance review of Carolina Power and Light Company (the licensee) license amendment request (LAR) HNP-08-061, "Request for License Amendment to Adopt National Fire Protection Association (NFPA) 805 Performance-Based Standard for Fire Protection for Light Water Reactor Generating Plants (2001 Edition)," for Shearon Harris Nuclear Plant, Unit 1, dated May 29, 2008 (Agencywide Documents Access and Management System Accession No. ML081560641).

The acceptance review was conducted per Office of Nuclear Reactor Regulation, Office Instruction (Operating Reactor Licensing) LIC-109, "Acceptance Review Procedures," May 2008. The staff discussed eight issues pertaining to HNP-08-061, which in the staff's opinion, do not meet the NRC's technical acceptance criteria:

- The submittal does not reflect the current as-built plant configuration, and it does not provide a detailed, proposed configuration (sufficient for risk analysis purposes).
- The submittal is not clear in identifying the scope of the requested licensing action, specifically in identifying clearly the committed modifications and deviations from existing deterministic fire protection requirements. A detailed listing of the non-conformances being addressed during transition, including a description of the disposition of each, should be provided.
- A more detailed description of the existing fire protection licensing basis needs to be provided.
- The licensee proposes to obtain NRC approval to accept non-conforming electrical raceway fire barrier systems (Hemyc and MT), Operator Manual Actions transitioning to Recovery Actions and Multiple Spurious Operations. The submittal and supporting calculations do not provide a sufficient basis to conclude that the risk-informed decisions proposed are acceptable. The submittal does not provide a justification that the fire probabilistic risk analysis (PRA) being used, and the manner in which it is being used, are of sufficient quality

for the specific changes being made. The supporting calculations conclude that the change in risk is not acceptable.

- The submittal does not discuss the use of fire models acceptable to the NRC.
- The submittal does not provide the results of the evaluation of risk associated with the use of recovery actions required by NFPA 805 Section 4.2.4. The treatment of recovery action feasibility does not address multiple spurious actuations and their potential impact on available time to implement recovery actions (there is no discussion of thermal-hydraulic analyses). The treatment of operator manual actions transitioning to recovery actions amounts to a general discussion of method, rather than a detailed demonstration of acceptability.
- Large early release frequency (LERF) calculations have not been performed. No justification was provided for the use of a ratio between internal event core damage frequency (CDF) and LERF.
- The discussion regarding fire PRA quality is insufficient to determine that staff review findings have been adequately addressed. There is no discussion of the extent of condition, or of what changes were made to address the staff-identified deficiencies. Insufficient justification is provided for fire PRA standard supporting requirements that are met at capability category I.

The staff requested that the licensee provide a date by August 22, 2008, by which they can supplement their LAR to address these eight issues. The staff emphasized the need for early submittal to avoid adverse impact to the project schedule. The licensee agreed to formally submit the requested information under oath or affirmation. No staff decisions were made during the conference call.

Enclosure 1 contains staff comments and observations (review checklist) on the HNP-08-061 discussed with the Progress Energy. Enclosure 2 provides a list of the participants.

Sincerely,

**/RA/**

Marlayna Vaaler  
Project Manager  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing

Docket No. 50-400

Enclosures: As stated

cc w/enclosures: See next page

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 Plant Licensing Branch II-2  
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Attribute	Source	Sufficient for Review?	Comments
Review the Licensee's submittal and verify that it includes an evaluation of the risk impact associated with major issues such as the operator manual actions, Hemyc, and circuit analysis of possible multiple spurious actuations (either quantitative or qualitative) as appropriate.	RG 1.205	No	This information is buried in the Supporting Material (FSAs). A summary of this information should be provided in either the LAR or the Transition Report.
Review the Transition Report, if one is included in the Licensee's submittal, to verify that it meets the minimum content as defined in Nuclear Energy Institute (NEI) 04-02 Sections 3.4, 4.6.2, and regulatory guide (RG) 1.205	NEI 04-02 RG 1.205	Yes	Transition Report is provided as Enclosure 3 to LAR Letter. Note: Transition Report does not include Administration Section
Feed and Bleed: 10 CFR 50.48(c)(2)(iii) specifically notes that use of feed-and-bleed as the sole fire-protected safe shutdown path for maintaining reactor coolant inventory, pressure control, and decay heat removal capability is not permitted for pressurized-water reactors (PWRs). This is noted in section 2.2 of NEI 04-02. Verify that a statement to this effect as well as a description of any dependence on feed-and-bleed in the fire protection program is included in the LAR.	10 CFR 50.48(c)(iii)	Yes	Includes a declaration that Feed and Bleed is not sole Safe Shutdown protected path. Included in Table 5-3 of Transition Report
Existing Cables: [10 CFR 50.48(c)(2)(v)] A LAR is acceptable if the licensee states that the cable installed in the plant meets a flame propagation test that is acceptable to the AHJ. FAQ 06-0022 documents flame propagation tests that are acceptable to the NRC.	10 CFR 50.48(c)(v)	Yes	Includes a declaration that cables used at Harris meet flame propagation tests acceptable to NRC. Included in Table 5-3 of Transition Report.

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<p>Water Supply and Distribution: [10 CFR 50.48(c)(2)(vi)]: This paragraph provides that a “provisional” manual fire-fighting standpipe/hose station system may not be used in place of seismically qualified standpipes and hose stations unless previously approved in the licensing basis. Licensees who wish to use the italicized exception in Section 3.6.4 of NFPA 805 must submit a request for a license amendment in accordance with paragraph (c)(2)(vii). However, because the NRC considers seismically qualified standpipes and hose stations of such importance, the NRC believes that licensees who wish to use the exception in Section 3.6.4 of NFPA 805 via a license amendment may have difficulty satisfying the three criteria in paragraph (c)(2)(vii).</p>	<p>10 CFR 50.48(c)(2)(vi)</p>	<p>Yes</p>	<p>Includes a declaration that water supply and distribution has been previously approved by NRC. Provided in Table 5-3 of Transition Report.</p>
<p>If the licensee proposes to implement modifications as part of the transition to a risk-informed, performance-based fire protection program, verify that for each modification proposed, the LAR contains a description of the modification, a schedule for implementation of the modification and a risk-informed justification, including compensatory actions, for the acceptability of the schedule for the modification. Regulatory Issue Summary (RIS) 2005-07, “Compensatory Measures to Satisfy the Fire Protection Program Requirements,” provides guidance on compensatory measures acceptable to the NRC.</p>	<p>RG 1.205</p>	<p>No</p>	<p>Modifications have been assumed in calculations provided in supporting material, but only summary description and no justification has been provided with respect to risk. Section 4.8.3 is too general to provide a justification of risk related to non-compliances. In addition, Section 4.5.4 states that <u>upon completion of modifications</u>, the total change in risk associated with the transition to NFPA 805 <u>will be</u> consistent with the acceptance guidelines in Regulatory Guide 1.174.</p>
<p>Section 4.6.1 of NEI 04-02 states that the LAR should include an “updated transition schedule”. The licensee should provide not only a transition schedule, but also a risk-informed justification for the timing of the schedule, demonstrating that the transition will be completed in a</p>	<p>NEI 04-02</p>	<p>No</p>	<p>Insufficient justification has been provided beyond a statement that compensatory measures have been applied to each non-compliance.</p>



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timely enough manner to avoid unacceptable risk due existing non-compliances with the current fire protection program that will not be resolved until transition is complete.			
Verify that the Licensee's submittal package documents the plant's risk-informed fire protection license condition. One acceptable approach would be to use the standard license condition from RG 1.205, if necessary supplemented by FAQ 06-0008.	RG 1.205	Yes	Included as Attachment M of Transition Report
Verify that all prior fire protection SERs and commitments are superseded by the issuance of the new license condition. Review the Licensee's submittal package and verify that it includes a listing of all SER sections that contain fire protection commitments.	10CFR50.48(c) RG 1.205 NEI 04-02	Yes	This attribute has been addressed in a variety of places; primarily in the Attachment A (NEI 04-02, Table B-1), Attachment B (NEI 04-02, Table B-2), Attachment C (NEI 04-02, Table B-3) and Attachment K of the Transition Report.
Verify that the Licensee's submittal package includes a list of all submittals made to support those SERS.	NEI 04-02	Yes	This attribute has been addressed in a variety of places; primarily in the Attachment A (NEI 04-02, Table B-1), Attachment B (NEI 04-02, Table B-2), Attachment C (NEI 04-02, Table B-3) and Attachment K of the Transition Report.
Verify that the Licensee's submittal package includes a discussion of the existing "approved fire protection program" so it can be superseded by the new license conditions. Verify that the Licensee's submittal package includes all prior approvals, documented in the transition tables (B-1, B-2, and B-3) with enough information to be stand-alone and therefore supersede the previous documentations.	NEI 04-02	No	Description of CLB in Transition Report Section 2.0, "Overview of Existing Fire Protection Program" is limited to quoting the existing Fire Protection License Condition (No details have been provided with respect to Appendix R, NUREG 0800, BTP Appendix A, etc.)
Verify that the Licensee's submittal package documents how the plant meets the process used to identify any other license conditions for fire protection	NEI 04-02	Yes	Included as Attachment M of Transition Report

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In accordance with 10 CFR 50.48(c)(3)(i), the LAR should contain a list of any other license conditions that need to be revised or suspended, the necessary revisions to these other license conditions, and an explanation of why these revisions are adequate to accomplish the plants' adoption of NFPA 805.	10 CFR 50.48(c)(3)(i)	Yes	Included as Attachment M of Transition Report
Verify that the Licensee's submittal package documents not only identify the other license conditions, but also describe the process used to identify the other license conditions.	10 CFR 50.48(c)	Yes	Included as Attachment M of Transition Report
Verify that the Licensee's submittal package discusses which Technical Specifications needing modification were identified, and the process used for their identification. Verify that the package includes:	10 CFR 50.48(c) NEI 04-02	Yes	Included as Attachment N of Transition Report
All administrative/audit technical specifications needing to be revoked	NEI 04-02	Yes	Included as Attachment N of Transition Report
Equipment technical specifications to be revised. Ensure they are consistent with 10 CFR 50.48(c)	10 CFR 50.48(c)	Yes	Included as Attachment N of Transition Report
Revised technical specification sections and their associated bases	10 CFR 50.48(c) NEI 04-02	Yes	Included as Attachment N of Transition Report
Verify that the Licensee's submittal package documents how the plant meets the process used to identify any other license conditions for fire protection	10 CFR 50.48(c) NEI 04-02	Yes	Included as Attachment M of Transition Report
Verify that the Licensee's submittal package documents not only identify the orders and exemptions, but also describe the process used to identify the orders and exemptions.		Yes	Included as Attachment O of Transition Report
Verify that the Licensee's submittal package documents include a statement on No Significant Hazards Consideration, in accordance with 10 CFR 50.91 and	10 CFR 50.91 10 CFR 50.92 NEI 04-02,	Yes	Included as Attachment U of Transition Report

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10 CFR 50.92. Appendix H of NEI 04-02 provides one acceptable statement to the NRC staff that shows that the Licensee's submittal package, including the LAR meets the criteria for No Significant Hazards Consideration.	Appendix H		
Verify that the Licensee's submittal package documents includes a statement on Environmental Considerations in accordance with 10 CFR 51.22(b) and (c). Appendix H of NEI 04-02 provides one example of an acceptable statement.	10 CFR 50.22(b) and (c) NEI 04-02, Appendix H	Yes	Included as Attachment V of Transition Report
Verify that the Licensee's submittal package documents how the plant meets the requirements of 10 CFR 50.48(c)(3)(i), which requires licensees include discussion of any changes Updated Final Safety Analysis Report (UFSAR).	10 CFR 50.48(c)(3)(i)	Yes	Included as Attachment R of Transition Report
Verify that the Licensee's submittal package documents include discussion of any changes to UFSAR necessitated by the license amendment and a statement that the changes will be made in accordance with 10 CFR 50.71(e) As per NEI 04-02 Section 4.6.,1. Furthermore, verify the adequacy of the commitment made by the licensee to make changes to the UFSAR.	NEI 04-02, Section 4.6.1	Yes	Included as Attachment R of Transition Report
NRC established the frequently asked questions (FAQ) process in accordance with RIS 2007 19 – "Process For Communicating Clarifications of Staff Positions Provided in Regulatory Guide 1.205 Concerning Issues Identified During the Pilot Application of National Fire Protection Association Standard 805" to clarify issues encountered during the pilots transition. Therefore, licensees may rely on FAQ resolutions to comply with 10 CFR 50.48(c). Relying on FAQs is acceptable to the NRC staff within	RIS 2007-19	Yes	Included as Attachment H of Transition Report

Attribute	Source	Sufficient for Review?	Comments
the constraints defined in the FAQs.			
Verify that the licensee's submittal package includes, a fire protection license condition that provides risk acceptance criteria for risk-informed, performance-based changes to the fire protection program. To be considered acceptable, the license condition must require the licensee to implement and maintain in effect all provisions of the approved fire protection program, with specific references to the NFPA 805 transition license submittal and subsequent Safety Evaluation Report. The license condition must also provide acceptance criteria for self approved and NRC approved changes.	RG 1.205	Yes	Included as Attachment M of Transition Report
Use of Performance-Based Methods to make changes to Fundamental Fire Protection Program and Design Elements must be requested through the submittal of a LAR. Review of LARs submitted in accordance with 10 CFR 50.48(c)(2)(vii) will focus on review of the technical aspects of the approach or method proposed by the licensee compared to the requirement(s) in Chapter 3 and the performance goals, objectives and criteria of NFPA 805.	10 CFR 50.48(c)(2)(vii)	Yes	Included as Attachment P of Transition Report
10 CFR 50.48(c) allows licensees to request approval to use risk-informed or performance-based alternatives to compliance with NFPA 805. A licensee may submit a LAR to use risk-informed or performance-based alternatives to compliance with NFPA 805. Verify the adequacy of methods and licensee's evaluation and conclusions with regard to meeting the margins of safety and defense-in-depth criteria of NFPA 805.	10 CFR 50.48(c)(4)	Yes	Included as Attachment Q of Transition Report

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Licensees may use performance-based Fire Protection Engineering Evaluations to demonstrate compliance to Fundamental Fire Protection Program and Design Elements during transition.	RG 1.205 NEI 04-02	Yes	Included as Attachment J of Transition Report
Verify that the Licensee's submittal package documents a summary of the MSO methodology used. The methodology used should be consistent with and implement the lessons learned from pilot plant and preceding non-pilot plant activities as reflected in the changes from the FAQ process, as applicable to the applicant's particular situation. It should contain sufficient information concerning methods, tools, and acceptance criteria used to enable the staff to determine the acceptability of the licensee's methodology. The analysis should generally be performed and arranged by Fire Areas, although in some cases an alternative spatial approach may prove to be more practical. If an expert panel process was used, it should be documented with results clearly presented. The MSO analysis should generally conform with requirements found in NEI 04-02, Section B.2.1.3 and RG 1.205, Section C.3.3	RG 1.205, C.3.3 NEI 04-02, B.2.1.3	Yes	Included as Attachment F of Transition Report
Verify that the licensee's methodology includes a feasibility determination, including an evaluation of egress and task lighting. An evaluation of the risk impact associated with the operator manual actions (either qualitative or quantitative), must be described and included as appropriate. Quantitative risk calculations should be in accordance with Section 4.2.4.2 of NFPA 805 (a bounding calculation approach is acceptable). The description of the transition of OMA to recovery action should include: 1) whether the operator	NFPA 805, Section 4.2.4	No	Description of methodology does not meet this level of detail (discussing egress and task lighting). Does not include discussion of methodology to correlate Thermal-Hydraulic Analyses with Multiple Spurious Actuation scenarios to determine allowable recovery action timelines.  Risk of credited recovery actions has not been adequately addressed.

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<p>manual actions are currently allowed or were previously reviewed and approved by the NRC's Office of Nuclear Reactor Regulation (NRR), and 2) reference to documentation that demonstrates prior review and approval by the NRC. Operator manual actions that are currently allowed and/or have been previously reviewed and approved by the NRC (as documented in an approved exemption/deviation) can be transitioned without a change evaluation (the risk associated with their use must still be evaluated).</p>			
<p>Verify that the Licensee's submittal package clearly documents previously approved alternatives to the fundamental fire protection program requirements of NFPA 805 Chapter 3 that are being carried forward to the NFPA 805 Licensing Basis, in the LAR.</p>	<p>RG 1.205 NEI 04-02</p>	<p>Yes</p>	<p>Included in Attachment A (NEI 04-02, Table B-2) and Attachment K of Transition Report</p>
<p>Verify that the Licensee's submittal package documents all previously approved variations, and the documentation which demonstrates prior NRC approval of an alternative to Chapter 3 requirements, as well as approval of noncompliance with existing license regulatory requirements, is referenced. Any items for which previous NRC approval is unclear should be listed and evaluated via a plant change analysis.</p>	<p>RG 1.205 NEI 04-02</p>	<p>Yes</p>	<p>Included in Attachment A (NEI 04-02, Table B-2) and Attachment K of Transition Report</p>
<p>If Existing Engineering Equivalency Evaluations are used, the licensee must affirm in the LAR that they of appropriate quality, or, provide documentation as part of the LAR for staff review.</p>	<p>NEI 04-02</p>	<p>Yes</p>	<p>Section 4.2.2.2 and Attachment J of Transition Report</p>
<p>Verify that the LAR has described any current variances with deterministic fire protection requirements that will be carried over to the NFPA 805 performance-based licensing basis. The total risk increase associated with</p>	<p>RG 1.205</p>	<p>No</p>	<p>Contained in Supporting Material (FSAs); No risk numbers have been supplied in either the LAR or the Transition Report.</p>

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all fire protection program non-compliances (based on current deterministic fire protection program regulations) that the licensee does not intend to bring into compliance and the total risk change associated with plant changes planned for the transition to NFPA 805 should be estimated and reported.			
Verify that the Licensee's submittal package documents a performance monitoring program, including a description and rationale for its implementation and the performance monitoring strategy for the proposed licensing basis change in accordance with RG 1.174.	NEI 04-02 RG 1.174	Yes	Described in Section 4.6 of the Transition Report
Verify that the Licensee's submittal package states that the fire PRA peer review contains the following elements: a) a review of the methods used in the PRA and a determination of whether the application of those methods was done correctly in the Fire PRA baseline model, b) a comparison of the PRA models against the plant design and procedures to validate that they reflect the as-built and as operated plant, 3) a review of key assumptions to determine if they are appropriate and to assess their impact on the PRA results.	RG 1.174 RG 1.205	No	Submittal does not go to this level of detail with respect to the staff review or the subsequent peer review.
Verify that the Licensee's submittal package documents: 1) a description of high level findings, 2) details of questions arising during the peer review and any findings and their implemented or proposed (with commitment) resolution, 3) the findings related to the pedigree of the model and their relationship to current/planned plant configuration.	RG 1.174 RG 1.205	No	The licensee's basis for the technical adequacy of their fire PRA model is discussed in Section 4.5.1. There are several omissions which are directly relevant to the staff's ability to conduct its licensing review: a. The staff conducted a review of the draft fire PRA model and identified deficiencies - these are simply dispositioned in Table 4-3 as "Closed, per industry peer review." There is no discussion of the extent of condition, nor of what changes were

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			made to address the staff-identified deficiencies. b. The staff and industry peer review of the fire PRA identified elements of the ANS standard which are met at capability category I - in many cases; these are dispositioned in Table 4-5 as "Cat. I is acceptable" with no further basis
Verify that the Licensee's submittal package documents how the plant defines the term "Power Block" The definition should be compatible with the one given in the glossary of NFPA 805 defines Power Block as 1.6.46* Power Block. Structures that have equipment required for nuclear plant operations. The interpretation of this term has significant implications on the licensing basis of the licensee. Therefore, the licensees are required to describe the boundaries of the power block as a part of their submittal to the NRC (One acceptable approach of interpreting the definition acceptable to the staff is provided in FAQ resolution 06-19 ML 070510365	FAQ 06-0019	Yes	Included as Attachment I of Transition Report
The Fundamental Fire Protection Program and Design Elements are established in Chapter 3 of NFPA 805. Section 4.3.1 of NEI 04-02 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.	Yes	Yes	Described in Section 4.1 and included as Attachment A (NEI 04-02, Table B-1) of Transition Report
The Methodology to be used to implement a performance-based Fire Protection Program is provided in NFPA 805 Chapter 2. Section 4.3.2 sets out a systematic process for evaluating the existing post-fire safe shutdown analysis against the methodology requirements provided in NFPA 805 Chapter 2.	NFPA 805 Chapter 2 RG 1.205 NEI 00-01, Revision 1	Yes	Described in Section 4.2.1 and included as Attachment B (NEI 04-02, Table B-2) of Transition Report



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Regulatory Guide 1.205 endorses the deterministic safe shutdown analysis methodology provided in Chapter 3 of NEI 00-01, Revision 1.			
<p>The Nuclear Safety Performance Criteria are established in NFPA 805, Section 1.5. NFPA 805, Chapter 4, provides the methodology to determine the fire protection systems and features required to achieve the performance criteria outlined in Section 1.5. Section 4.3.2 of NEI 04-02 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. Verify that the Licensee's submittal package documents the methodology for performing the Fire Area-by-Fire Area Transition of its Fire Protection Program. NEI 04-02 Table B-3 is one acceptable approach (additional guidance is contained in FAQ 07-0039, Lessons Learned – NEI 04-02 B-2 and B-3 Tables).</p>	NFPA 805, Chapter 4 NEI 04-02	Yes	Described in Section 4.2.2 and included in Attachment C (NEI 04-02, Table B-3) of Transition Report
<p>Review the Licensee's treatment of non-power operations, considering the following:</p> <p>Licensees are not required to prepare a complete PRA to model non-power operations; instead they can use a simplified approach of maximizing outage safety by focusing on the availability of systems that provide and support key safety functions as well as on measures that can reduce both the likelihood and consequences of adverse events.</p> <p>RG 1.205 endorses the approach documented in NEI 04</p>	NEI 04-02, Section 4.3.3	Yes	Described in Section 4.3 and included in Attachment D (NEI 04-02, Table F-1) of Transition Report

Attribute	Source	Sufficient for Review?	Comments
<p>02. Section 4.3.3 of NEI 04 02, Revision 1, states that the nuclear safety goal of NFPA 805 requires evaluation of the effects of a fire 'during any operational mode and plant configuration. NEI 04 02 Section 4.3.3 further goes on to provide a strategy that "...demonstrate[s] that the nuclear safety performance criteria are met for High(er) Risk Evolutions (HRE) (HREs as defined by NUMARC 91-06) during non-power operational modes..."</p> <p>Review the Licensee's submittal package to verify that the licensee demonstrates that the nuclear safety performance criteria are met during Higher Risk Evolutions. To accomplish this objective, verify that the licensee has documented the following tasks using NEI 04-02, Table F-1 and the additional guidance provided in FAQ 07-0040:</p> <ul style="list-style-type: none"> <li>· Review of existing plant outage processes (outage management and outage risk assessments) to determine equipment relied upon to provide Key Safety Functions (KSF) including support functions during the required Plant Operating States (POSS).</li> <li>· Comparison of the equipment credited for achieving these Key Safety Functions (KSFs) against the equipment credited for nuclear safety.</li> <li>· For those components not already credited (or credited in a different way e.g., on versus off, open versus closed, etc.) analysis of the circuits in accordance with the nuclear safety methodology.</li> <li>· Identification of locations where 1) fires may cause damage to the equipment (and cabling) credited above, or 2) recovery actions credited for the KSF are</li> </ul>			

Attribute	Source	Sufficient for Review?	Comments
<p>performed</p> <ul style="list-style-type: none"> <li>· Identification of fire areas where a single fire may damage all the credited paths for a KSF.</li> <li>· For the above-mentioned areas the licensee may consider combinations of the following options to reduce fire risk depending upon the significance of the potential damage: <ul style="list-style-type: none"> <li>o Prohibition or limitation of hot work in fire areas during periods of increased vulnerability</li> <li>o o Verification of operable detection and /or suppression in the vulnerable areas.</li> <li>o Prohibition or limitation of combustible materials in fire areas during periods of increased vulnerability</li> <li>o Provision of additional fire patrols at periodic intervals or other appropriate compensatory measures (such as surveillance cameras) during increased vulnerability</li> <li>o Use of recovery actions to mitigate potential losses of key safety functions.</li> <li>o Identification and monitoring in-situ ignition sources for “fire precursors” (e.g., equipment temperatures).</li> </ul> </li> </ul>			
<p>Verify that the Licensee’s submittal package documents that radiation release to any unrestricted area due to the direct effects of fire protection activities (but not involving fuel damage) remain as low as reasonable achievable, not to exceed 10 CFR Part 20 limits. 10 CFR 50.48(c)(3)(i) requires licensees transitioning to</p>	<p>10 CFR 50.48(c)(3)(i) NEI 04-02 Appendices H &amp; G</p>	<p>Yes</p>	<p>Described in Section 4.4 and included in Attachment E (NEI 04-02, Table G-1) of Transition Report</p>

Attribute	Source	Sufficient for Review?	Comments
<p>NFPA 805 satisfy performance goals, objectives, and criteria provided in NFPA 805. Sections 1.3.2, 1.4.2, and 1.5.2 of NFPA 805 provide goals, performance objectives, and performance criteria associated with this regulatory requirement, respectively. Section 4.3 of Appendix H to NEI 04-02 provides one acceptable approach to documenting information that must be provided to the NRC in the LAR for staff evaluation. Appendix G of NEI 04-02 provides evaluations which the reviewer can consult as part of this review.</p>			
<p>Verify that the licensee has created a document that includes fire hazards identification and nuclear safety capability assessment, on a fire area basis, for all fire areas that could affect the nuclear safety or radioactive release performance criteria defined in NFPA 805 Chapter 1.</p>	NEI 04-02	Yes	Discussed in Section 4.7 of Transition Report
<p>Verify that the licensee has stated in the LAR that each analysis, calculation, or evaluation performed was independently reviewed.</p>	NFPA 805, Section 2.7.3.1	Yes	Discussed in Section 4.7.3 of Transition Report
<p>Verify that the LAR has identified acceptable draft or final standards as well as draft or final regulatory guides (or similar regulatory guidance) that served as a basis for addressing non-compliances through a fire PRA.</p>	RG 1.200	Yes	Discussed in Section 4.5.2 of Transition Report
<p>Verify that the LAR has identified acceptable draft or final PRA standards used to determine that the fire PRA is of sufficient technical quality to support addressing non-compliances during transition to NFPA 805.</p>	RG 1.200	No	LAR does not adequately address Fire PRA quality
<p>Verify that licensee has submitted documentation for staff review, in accordance with the guidance outlined in Section 4.2 of RG 1.200, for NRC review as they apply to NFPA 805 LARs. For example, the non-pilot plants</p>	RG 1.200	No	Staff Review/Peer Review Findings/F&Os have not been fully addressed in the submittal. There is no discussion of the extent of condition, or of what changes were made to address the staff-identified

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<p>must provide all “Significant” Facts &amp; Observations (“Findings”) from the peer review(s) conducted for the Fire PRA, their resolution (or plan for resolution, with schedule and commitments) and a list of all Significant Facts and Observations (F&amp;Os) from the internal events PRA peer reviews, (including supplemental or “focused-scope” reviews) that have the potential to impact the Fire PRA, and their resolutions The submittal shall also include significant findings from assessments against the endorsed PRA quality standards and their resolutions, if the peer reviews were not conducted in conformance with the endorsed standards and RG 1.200.</p>			<p>deficiencies.</p> <p>The staff and industry peer review of the fire PRA identified elements of the ANS standard which are met at capability category I - in many cases; these are dispositioned in Table 4-5 as "Cat. I is acceptable" with no further basis.</p>
<p>Verify that the LAR provides information about the processes that the licensee has established in order to ensure that PRA and fire modeling calculations in support of changes that it may choose to implement after transitioning to the NFPA 805 licensing basis remain valid.</p>	<p>NFPA 805, Section 2.7.1.1</p>	<p>Yes</p>	<p>Discussed in Section 4.7 of Transition Report</p>
<p>For each item of non-compliance that is carried forward to NFPA805 licensing basis as a risk-informed, performance-based change, verify that the licensee has provided the difference in CDF and LERF for the plant, with and without the item being in compliance.</p>	<p>NFPA 805, Section 2.4.4.1 RG 1.205</p>	<p>No</p>	<p>Modifications credited in the LAR are not sufficient to bring risk down to acceptable levels. Modifications yet to be postulated have not been integrated into the calculations so that they reflect accurate CDF and LERF values.</p>
<p>For each item of non-compliance that is carried forward to NFPA 805 licensing basis as a risk-informed, performance-based change, verify that the licensee has addressed defense-in-depth and safety margins as required by Sections 4.2.4.2 of NFPA 805 Code.</p>	<p>NFPA 805 Section 4.2.4.2 RG 1.205 NEI 04-02, Section 5.3</p>	<p>Yes</p>	<p>Discussed in Section 4.5.2.4 of Transition Report</p>
<p>If necessary, verify that licensee has provided the total CDF and LERF (internal events and external events) of</p>	<p>RG 1.205 RG 1.174</p>	<p>No</p>	<p>No risk details have been provided in the LAR. The LAR does not officially reference the supporting</p>

Attribute	Source	Sufficient for Review?	Comments
the plant as it will be configured upon completion of the transition, including all modifications to which the licensee commits in the LAR (licensee may use guidance provided in RG. 1.174 to use qualitative and quantitative information), to enable NRC staff to make decisions with respect to acceptability of plant changes using criteria provided in RG 1.174.	NEI 04-02, Section 5.3		calculations.
Verify that the baseline PRA model for the post-transition plant has incorporated (a) completed or planned modifications, and procedural changes that address non-compliances with respect to current licensing basis, (b) completed or planned modifications including which the licensee has implemented to reduce risk, and (c) non-compliances (with respect to current licensing basis) that have been carried forward without plant changes, during the transition, with risk justifications.	RG 1.205 NEI 04-02, Section 5.3	No	Submittal does not provide a sufficient risk justification for non-compliances being carried forward.
Item (c) above should generally consist of III.G.2 Operator Manual Action, Hemyc or other fire barriers which do not meet the acceptance criteria, and deviation from the assumption of multiple-spurious actuations. Item (c) may consist of any other non-compliances with deterministic requirements that are carried forward to the post-transition plant	RG 1.205 NEI 04-02, Section 5.3	Yes	Discussed in Appendix G of Transition Report
Verify that the licensee has provided the cumulative change in CDF and LERF associated with all non-compliances (credit for non-fire-related decreases in CDF and LERF may be taken as per Regulatory Guide 1.205, but only during the transition), relative to the base line CDF and LERF for the fully compliant plant.	NFPA 805, Section 2.4.4.1 RG 1.205	No	No risk details have been provided in the LAR. The LAR does not officially reference the supporting calculations.
Verify that the licensee has properly utilized the Fire PRA standard in establishing the required quality for the	ASME-RA-S-2007	No	Although discussed in Section 4.5.1.2 of the Transition Report, there is no detailed discussion of

Attribute	Source	Sufficient for Review?	Comments
application of the Fire PRA in the change evaluations. This should involve establishing those Supporting Requirements (SRs) that are needed and the Capability Category that must be met for each of those SRs.			Capability Category for individual supporting requirements in order to demonstrate acceptable quality to support change evaluations.
Section 5.3 of NEI 04-02 describes one acceptable approach to providing information to the NRC in the LAR for staff evaluation of the plant change process. NRC Staff has endorsed Section 5.3 of NEI 04-02.	NEI 04-02, Section 5.3	Yes	Described in Section 4.5.2 of the Transition Report
10 CFR 50.48(c) endorsed Section 2.7.2.2 "Supporting Documentation," of NFPA 805 without exceptions. Section 2.7.2.2 states that detailed supporting documentation shall be retrievable records. Section 4.5 of Appendix H NEI-04-02 also states licensee's responsibilities with respect to program documentation. The reviewer should verify that the licensee has stated that it complied with 10 CFR 50.48(c) with respect to archival documentation per guidance provided in Section 4.1 of Regulatory Guide 1.200 or other acceptable standard.	NFPA 805, Section 2.7.2.2 NEI 04-02, Section 4.5 of Appendix H RG 1.200, Section 4.1	Yes	Discussed in Section 4.7.2 of Transition Report
<p>Only fire models that are acceptable to the authority having jurisdiction shall be used in fire modeling calculations. The models currently evaluated by the NRC for use in NFPA 805 transition are as follows:</p> <ul style="list-style-type: none"> <li>- Fire Dynamics Tools (FDT) as documented in NUREG-1805</li> <li>- Fire-Induced Vulnerability Evaluation (FIVE), Revision 1</li> <li>- Consolidated Fire Growth and Smoke Transport Model, CFAST</li> <li>- MAGIC</li> </ul>	NFPA 805, Section 2.4.1.2.1	No	Acceptable fire models are not discussed in the LAR or the Transition Report. Specific fire models used are discussed in the Supporting Material provided.

Attribute	Source	Sufficient for Review?	Comments
<p>- Fire Dynamics Simulator (FDS)</p> <p>Verify that the licensee has identified the fire modeling tools that they have used</p>			
<p>The reviewer should verify that the licensee has stated that the fire models used have been used within the scope, limitations and assumptions prescribed for that method. The reviewer should use NUREG-1824 in making this determination.</p>	<p>NFPA 805, Section 2.4.1.2.2</p>	<p>Yes</p>	<p>Discussed in Section 4.7.3 of the Transition Report</p>
<p>The five fire models that have been approved for use by the NRC have been verified and validated by a joint effort by NRC Research and the Electric Power Research Institute (EPRI). This verification and validation effort has been documented in NUREG-1824/EPRI 1011999.</p>	<p>NFPA 805, Section 2.4.1.2.3 NUREG-1824</p>	<p>Yes</p>	<p>Discussed in Section 4.7.3 of the Transition Report</p>
<p>Verify that the licensee has stated and/or provided documentation that personnel performing fire modeling are competent in that field and experienced in the application of these methods as they relate to nuclear power plants, nuclear power plant fire protection and power plant operations.</p>	<p>NFPA 805, Section 2.7.3.4</p>	<p>Yes</p>	<p>Discussed in Section 4.7.3 of the Transition Report</p>
<p>Verify that the licensee has used core damage frequency (CDF) and Large Early Release Frequency (LERF) as measures for risk.</p>	<p>NFPA 805, Section 2.4.4.1</p>	<p>No</p>	<p>LERF calculations were not performed. Section 4.5.2.4 states that LERF calculations were not performed; that delta-LERF was estimated using the ratio of delta-CDF to delta-LERF</p>
<p>Verify that the licensee has addressed the risk contribution associated with all potentially risk-significant fire scenarios by reviewing the methods and approaches, and/or sample of calculations provided by the licensee in its LAR.</p>	<p>NFPA 805, Section 2.4.3.2</p>	<p>Yes</p>	<p>Fire PRA was based on NUREG/CR-6850 methods, which should address all potentially risk-significant fire scenarios.</p>
<p>Section 2.7.3.5 of NFPA 805 Code requires licensee to</p>	<p>NFPA 805,</p>	<p>Yes</p>	<p>Discussed in HNP-F/PSA-0081</p>



Attribute	Source	Sufficient for Review?	Comments
perform an uncertainty analysis to provide reasonable assurance that the performance criteria have been met.	Section 2.7.3.5 NEI 04-02, Section 5.3.4.5		
Verify that the levels of availability, reliability and performance established by the licensee are acceptable by evaluating the approaches used by the licensee to establish them.	NFPA 805, Section 2.6.1.	Yes	Described in Section 4.6 of the Transition Report
Verify that the licensee has included a statement in the LAR verifying that methods to monitor availability, reliability and performance have been established. These methods shall consider the plant operating experience and industry operating experience.	NFPA 805, Section 2.6.2	Yes	Described in Section 4.6 of the Transition Report
Section 2.6.3 of NFPA 805 requires the licensee to establish appropriate corrective actions, if the established levels of availability, reliability and performance are not met, to return to the established levels. It also requires the licensee to establish monitoring to ensure that the corrective actions are effective. Verify that the licensee has provided a statement in the LAR confirming that it has established procedures at the site to meet requirements of Section 2.6.3.	NFPA 805, Section 2.6.3	Yes	Described in Section 4.6.2 of the Transition Report
NFPA 805 Section 4.2.4.1.6 requires the licensee to provide guidance to plant personnel that details the credited success path(s) for each fire area, including the performance of recovery actions and repairs.	NFPA 805, Section 4.2.4.1.6	No	There is only a general reference to feasibility.



**List of Conference Call Participants**

August 14, 2008

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