FAQ Number 16-0076 **FAQ Revision** 0

FAQ Title NFPA 805 Fire PRA Update Process

Plant: NEI NFPA 805 Task Force Date: 2-25-2016

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Distribution: *(NEI Internal Use)*

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Purpose of FAQ:

To articulate the process for update of Fire PRAs supporting NFPA 805 plants, to reflect new methods and data, as appropriate.

Is this Interpretation of guidance? Yes /No

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

Details:

The NRC and industry have had discussions regarding the schedule for integration of new data or methods, such as heat release rates and ignition frequencies, into licensee Fire PRAs. The industry has proposed that this be done via the normal maintenance and upgrade process as the PRA Configuration Control program describes. This Program will ensure that such new information is integrated as appropriate.

Circumstances requiring guidance interpretation or new guidance:

As additional methods and data for Fire PRA become available for integration into licensee models, it is important that the NRC and licensees have a mutual understanding of when this information will be considered for inclusion in a licensee's PRA to support regulatory stability and predictability.

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

N/A

Potentially relevant existing FAQ numbers:

None

Response Section:

Proposed resolution of FAQ and the basis for the proposal:

All licensees transitioning to NFPA 805 support their applications with a Fire PRA that is peer reviewed using NRC-endorsed standards and guidance. This peer review involves, in addition to a thorough technical review, a review of the PRA maintenance procedures against the requirements in the NRC-endorsed ASME/ANS PRA Standard. The results of the peer review, including facts and observations related to the PRA maintenance procedures, are available for NRC review, and are closely evaluated during the NRC NFPA 805 audit. Any new information relevant to the licensee's Fire PRA, including new methods or data, is introduced into the PRA using the licensee's process. Several key aspects of this process are listed below:

- While undergoing a PRA update, a utility's "cutoff" time for considering new data varies from 6 months prior to 6 months after the start of the PRA update.
- Generally speaking, new data updates could take up to 8 months depending on the scope.
- In undergoing a PRA upgrade, the "cutoff" time required for considering new methods is anywhere from the beginning of the upgrade period to 6 months after the start of the PRA upgrade.
- The time required for a PRA upgrade can be anywhere from a few months to a few years depending on the complexity of the upgrade.
- The scope of sensitivity studies largely depend on the scope of the upgrades. Because of this, changes can take anywhere from a few days to many months.
- The time for completion with changes to several new methods or data incorporated into an update/upgrade/sensitivity study involves a small delay (up to 6 months). If a smaller delay occurs, it is usually the result of a large increase in devotion of person-hours towards it.
- For interim and periodic model updates, maintenance and upgrade procedures generally use a criteria of a greater than 10% change in the CDF or anywhere from a 1% to 20% change in the LERF. The licensee's periodic update process to evaluate the impact of a change and potentially incorporate it in the PRA typically takes place every 3-5 years.
- These update processes ensure that new information is evaluated for inclusion in PRAs when there is a measurable impact on the results and applications

There are three~~wo~~ relevant mechanisms by which a licensee's process would call for an update that would involve consideration of the new information such as new methods or data after completion of the NFPA 805 LAR.

- The first is the NFPA 805 license condition calling for a licensee to, prior to transition to self-approval, update their PRA model to reflect the as-built, as-operated plant following NFPA 805 modifications. Licensees may use the methods and data accepted in the SE, or may use other methods and data accepted for use in

regulatory applications, when completing the requantification of the NFPA 805 transition evaluation as required by the Transition License Condition and associated Implementation Items. Should a licensee use a significant risk reduction method such as the new heat release rates (i.e. NUREG-2178) which was not used to support its LAR. then all new information generally should be evaluated,

- The second is the licensee's PRA maintenance and upgrade process, to be used after transition to self-approval, as discussed above. Maintenance and upgrade procedures generally use a criteria of a greater than 10% change in the CDF or anywhere from a 1% to 20% change in the LERF to identify significant changes. Should the criteria be met, the PRA will be updated. Should the criteria not be met, then the PRA will not be updated, and the new information will be set aside until the next periodic/interim update or application of the PRA, at which point it will be considered.
- The third is a post transition fire risk evaluation of proposed plant modifications as part of the self-approval process or in support of a post transition risk informed LAR (i.e. self-approval risk acceptance guidelines are exceeded). The licensee will implement their PRA maintenance and update process to evaluate new information for the fire risk evaluation.

In the interim, a licensee's use of data and methods previously used to support NRC acceptance of the NFPA 805 LAR for review remains acceptable, and new information should be considered at the appropriate time as described.

Given the above, licensees transitioning to NFPA 805 should address new information consistent with Section 1-5 of the ASME/ANS PRA Standard RA-Sa-2009 and RG 1.200 Rev. 2 (or most recent revision) as follows:

- Prior to the submittal of the NFPA 805 LAR, the PRA Configuration Control program applies. The cumulative impact of new information which arises before the submittal will be evaluated by the licensee prior to submittal of the LAR, even if the timeliness of this new information requires that the assessment must be performed in less time than discussed at the beginning of this FAQ solution under "Proposed resolution of FAQ and the basis for the proposal" section. When new applicable information arises where the time is shorter than discussed at the beginning of this FAQ solution, tThis may be qualitative and need not involve incorporation of the new information. Licensees will indicate in the LAR whether new methods or data are used in order to facilitate NRC's review.
- During the NFPA 805 LAR review, the NRC staff may request that the licensee identify new information, and should a safety issue arise at any time prior to the issuance of the SE, the NRC will raise this issue and ask that its impact on the PRA results be evaluated and compared to acceptance guidelines.
- After the SE is issued, but before completing full transition, the NFPA 805 license condition calls for a licensee, prior to transition to self-approval, to update their PRA model to reflect the as-built, as-operated plant following NFPA 805 modifications. Licensees may use the methods and data accepted in the SE prior to completing the

requantification of the NFPA 805 transition change-in-risk as required by the Transition License Condition and associated Implementation Items, or may use alternative methods acceptable for use in regulatory applications. Should a licensee use a significant risk reduction method such as the new heat release rates (i.e. NUREG-2178) which was not used to support its LAR. then all new information generally should be evaluated

- After full transition to NFPA 805 has been completed, the cumulative impact of new information should be evaluated per the Configuration Control program when conducting a fire risk evaluation of proposed plant modifications as part of the self-approval process or in support of a post transition risk informed LAR (i.e. self-approval risk acceptance guidelines are exceeded). . New information must be evaluated even if this information becomes available such that the assessment must be performed in less time than discussed at the beginning of this FAQ solution under "Proposed resolution of FAQ and the basis for the proposal" section. Also, maintenance and upgrade procedures use criteria of a greater than 10% change in the CDF or greater than anywhere from a 1% to 20% change in the LERF to identify significant changes for the periodic or interim update. Should the criteria be met for a periodic or interim update, then the PRA update should be planned and implemented in a reasasonable timeframe consistent with the licensee's maintenance and upgrade program.. Should the criteria not be met, then the PRA may not be updated, and the new information may be set aside until the next periodic or interim update or application of the PRA, at which point it should be considered.

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

Regulatory Guide 1.205, Section 4.3, Fire Probabilistic Risk Assessment (5th Paragraph)

The staff will rely on the guidance in Regulatory Guide 1.200 to review all facility changes associated with implementing NFPA 805 that are submitted for prior staff review and approval. The staff will rely on this guidance to provide confidence that self-approved changes meet the acceptance guidelines. The licensee's self-approval process should include an evaluation of all unresolved peer review issues to assess the potential impact of the unresolved issue on the application-specific evaluation. Any unresolved issue that could have a substantive impact on the results must be resolved. The licensee's self-approval process should also include the methods for modeling the cause and effect relationship described in Regulatory Position 3.2.4. **Additionally, the licensee should assess the impact of new methods and data and consider incorporation of these new methods and data in their model, as appropriate, in accordance with their normal model maintenance and upgrade process consistent with Section 1-5 of the ASME/ANS PRA Standard RA-Sa-2009 and R.G. 1.200 Rev. 2.**