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From: Frumkin, Daniel
Sent: Wednesday, April 20, 2016 2:27 PM
To: ANDERSON, Victoria (vka@nei.org)
Cc: Hyslop, JS; Rosenberg, Stacey; Barrett, Harold; Casto, Greg; Miller, Barry
Subject: For May 3, 2016 FAQ Meeting - NFPA 805 PRA Update FAQ 16-0076
Attachments: NFPA 805 PRA Update FAQ 16-0076 4_20_16 with NRC comments.doc

Victoria,

Attached are NRC comments on FAQ 16-0076 for discussion during the May 3, 2016, Public FAQ Teleconference.

This document will be added to public ADAMS and will be linked to the meeting announcement.

Let me know if you have any questions,

Dan

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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)*

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

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

Commented [HJ1]: Proposed guidance is not in 04-02, contrary to "not..no." Double negative is confusing.

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 update 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:

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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 maintenance and update process for updates and upgrades 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 update procedures use criteria of a greater than 10% change (increase or decrease) in the CDF or greater than anywhere from a 1% to 20% change (increase or decrease) 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. Should the impact of a new method or data need to be evaluated for a risk informed application in a shorter time that indicated above, an assessment of the impact commensurate with the shorter time available will be performed. Although not necessarily as robust, such an evaluation will still need to be a realistic representation of the risk, or suitably conservative.

Commented [HJ2]: Not sure what this bullet means.

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There are two relevant mechanisms by which a licensee's process would call for an update¹ that would involve consideration of the new information such as new methods or data.

- 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 should evaluate the impact of the new information, e.g. method and data updates, prior to completing the requantification of the NFPA 805 transition change-in-risk as required by the Transition License Condition and associated Implementation Items.
- The second is the licensee's PRA maintenance and update process, as discussed above. Maintenance and update 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. Should the criteria be met, the PRA will be updated with the new information. 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.

Licensees who have not yet completed the steps necessary for self-approval should evaluate new methods or data as part of the update process called for in the license condition. Licensees who have already fully transitioned to NFPA 805 can conduct this evaluation as part of their next periodic update. Should self-approval be applied, the licensee will implement their PRA configuration control process according to RG 1.200 and Section 1-5 of the ASME/ANS PRA Standard. 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 above.

Licensees will indicate in the NFPA 805 LAR whether new methods or data are used. New methods and data may be included in a new LAR or introduced at a later stage. For a new LAR, new methods or data are those that become acceptable to the NRC after the licensee has finalized its PRA and before the submittal date, and thus are not included in the LAR. For the NFPA 805 stages that follow the submittal of a LAR, new methods or data are those acceptable to the NRC and have not been included in the original LAR or introduced in preceding stages.

Given the above, licensees transitioning to NFPA 805 should address new information 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.
- 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

¹ As indicated earlier, the update process refers to "updates" and "upgrades," and thus the term "update" as used in the following describes a change to the PRA model which can be either an update or an upgrade.

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issuance of the SE, the NRC will raise this issue and ask that its impact be evaluated on the PRA results and 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 should evaluate the impact of the new information, e.g. method and data updates, prior to completing the requantification of the NFPA 805 transition change-in-risk as required by the Transition License Condition and associated Implementation Items.
- After full transition to NFPA 805 has been completed, the cumulative impact of new information should be evaluated per the Configuration Control program when exercising self-approval for a plant change. For periodic or interim updates, maintenance and update 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 should be updated with the new information. 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 consider incorporation of new methods or data acceptable to the NRC in their model for risk informed applications and periodic/interim updates, as appropriate, in accordance with their normal model maintenance process. Licensees will indicate in the LAR whether new methods or data are used.**

Commented [HJ3]: See below

Commented [HJ4]: This new language should be added to NEI 04-02 which can be approved by RG 1.205.