August 10, 2012

MEMORANDUM TO: Alexander R. Klein, Chief
Fire Protection Branch
Division of Risk Assessment
Office of Nuclear Reactor Regulation

FROM: Charles E. Moulton, Fire Protection Engineer ***/RA/***
Fire Protection Branch
Division of Risk Assessment
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF THE JULY 24, 2012, CATEGORY 1 MEETING REGARDING NATIONAL FIRE PROTECTION ASSOCIATION STANDARD 805: NUCLEAR REGULATORY COMMISSION/NUCLEAR ENERGY INSTITUTE MANAGEMENT DISCUSSION

On July 24, 2012, the U.S. Nuclear Regulatory Commission (NRC) Division of Risk Assessment (DRA) management held a meeting with Nuclear Energy Institute (NEI) management to discuss questions requiring management attention related to National Fire Protection Association (NFPA) Standard 805.

The participants discussed, at a high level, the following topics:

- NRC schedule for completing NFPA 805 application reviews
  - DRA management presented a preliminary schedule for the completion of safety evaluations for those LARs which have completed the acceptance review process.
  - NEI representatives requested that this schedule be maintained and updated regularly.
  - DRA management stated that the schedule would be periodically updated, as necessary.

- Sensitivity studies for probabilistic risk assessments (PRAs)
  - The NRC staff provided a discussion on six questions which arose from the previous NFPA 805 management discussion public meeting with respect to the need and use of sensitivity studies.
    1. **When are sensitivity studies needed?** Sensitivity studies are used to characterize model uncertainty and parametric uncertainty for acceptable methods, and also indicate the importance of unacceptable methods. According to RG 1.174 (pg. 22), model uncertainty consists of alternate hypotheses, adjustment factors, or modeling approximations or methods. In the parlance of NFPA 805, examples of model uncertainty may arise from certain former Unreviewed Analysis Methods (UAMs) as

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well as deviations from NUREG/CR-6850 (EPRI 1011989). According to RG 1.174 (pg. 19), parametric uncertainty is associated with fundamental parameters of the PRA model. An example of a parameter is the λ in the manual non-suppression model. Both model and parameter uncertainty may apply to the same technical issue. Most issues identified by the staff with NFPA 805 are model uncertainty issues.

Sensitivity studies are also needed on methods that have been reviewed and determined to be unacceptable. These sensitivity studies do not convey any uncertainty since uncertainty is only relevant to acceptable models. Rather, sensitivity studies with respect to unacceptable methods merely inform the staff on the importance of these unacceptable methods in the NFPA 805 application, and may permit processing of the application independent of the method.

It should be noted that unacceptable methods must be fixed in the PRA and will become license conditions. Should an unacceptable method be identified during the acceptance review, NRC will not accept the application until the unacceptable method is fixed in the PRA.

2. **What needs to be reported to the NRC?** The licensee needs to report all information to support a decision on the License Amendment Request (LAR) to the NRC. The acceptance criteria that NRC generally use for risk informed decision-making are contained in RG 1.174, and require total CDF/LERF, fire CDF/LERF, fire ΔCDF/ΔLERF. For sensitivity studies, NRC needs the changes in fire CDF/LERF/ΔCDF/ΔLERF as a result of the sensitivity study assumption.
3. **What information needs to be in the LAR?** The key assumptions for model uncertainty must be identified and discussed in the LAR. The associated fire CDF/LERF/ΔCDF/ΔLERF due to the sensitivity study must be provided. The same discussions and results must be provided on parametric uncertainty for assumptions that have the potential to affect the decision.
4. **How will the NRC use these results?** NRC will evaluate these results versus RG 1.174. NRC, the authority having jurisdiction (AHJ), will make the judgment whether a particular risk result is acceptable.
5. **What constitutes acceptability of a sensitivity study?** Meeting the RG 1.174 guidelines with the sensitivity study and the associated assumptions gives NRC assurance that the decision on the LAR will not be affected. However, the guidelines in RG 1.174 are not hard limits, and the licensee should discuss the validity of the assumptions in the sensitivity study to assist the staff in its assessment of whether the decision is being affected. Draft NUREG-1855 is in the NRC review process, and it discusses a graduated approach for evaluating risk results relative to acceptance guidelines. In general, more justification will be needed for a given application when the risk results are closer to challenging or exceeding the acceptance guidelines than when the risk results are much lower than the acceptance guidelines. Among the factors of this graduated approach are monitoring and compensatory measures[1]. The decision on acceptability of an application is made on a case by case basis.
6. **If there is a big difference, what will the NRC need?** The decision is made on a case by case basis and will require detailed analyses of the assumptions or models provided by the licensee. NRC may not accept applications for which the sensitivity result exceeds the RG 1.174 guidelines and the licensee cannot justify that the sensitivity results are due to conservative assumptions or models.

[1] RG 1.174 establishes these measures, but they are not identified in a formal graduated process within this document.

- NFPA 805 model license condition from Regulatory Guide 1.205, Revision 1.
  - The NRC staff stated that they had received comments on the model license condition from the NEI Technical Specifications Task Force.
  - The NRC staff requested some background on these comments with respect to how they were developed, interactions with NEI's NFPA 805 Task Force, etc.
  - NEI representatives stated that a proposed revision to the license condition and related sections of the regulatory guide had been developed and was currently in an internal review process.
  - NEI representatives stated that the next step would be to discuss resolving these comments with the NRC.
  - The NRC staff stated a willingness to work with the industry to resolve their comments.
  - The NRC staff stated that staff contact with a licensee regarding scheduling the audit prior to the completion of the acceptance review does not indicate that the application has been accepted for review.

The participants agreed that the next meeting would take place on August 23, 2012, as a teleconference.

The meeting handouts are available in the Agencywide Documents Access and Management System. The review completion schedule is available at accession number ML122060038.

A list of meeting attendees is enclosed with this memorandum.

Enclosure:
As stated

- NFPA 805 model license condition from Regulatory Guide 1.205, Revision 1.
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The participants agreed that the next meeting would take place on July 24, 2012.

There were no handouts for the meeting.

A list of meeting attendees is enclosed with this memorandum.

Enclosure:
As stated

DISTRIBUTION:

DRA R/F	AKlein	PLain	APearson	HPeterson, RIII	MKing, RII
CMoulton	HBarrett	DHarrison	GMiller, RIV	JRogge, RI	BBeasley

ADAMS Accession No.: ML122200690

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Date	08 / 08 /12	08/ 10 /12	08 / 10 /12

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NATIONAL FIRE PROTECTION ASSOCIATION STANDARD 805
FREQUENTLY ASKED QUESTIONS PROCESS
LIST OF ATTENDEES

July 24, 2012

U. S. Nuclear Regulatory Commission Staff

A. Klein
B. Beasley
C. Moulton
H. Barrett
J. Giitter
J. Hyslop
P. Lain
R. Gallucci
S. Lee

Stakeholders

A. Ratchford (Kleinsorg Group)*
B. Downey (SCE&G)*
B. Mann (NEI)*
B. Najafi (EPRI)*
B. Simril (TVA)*
D. Goforth (Duke)*
D. Miskiewicz (Progress)*
E. Kleinsorg (Kleinsorg Group)*
F. dePeralta (Tri-en Corp)*
F. Mantine (First Energy)*
G. Chung (SCE&G)*
G. Harris (AmerenUE)*
J. Butler (NEI)*
J. Ertman (Progress)*
J. Walker (Kleinsorg Group)*
L. Young (Entergy)*
M. Fletcher (AmerenUE)*
M. Lilley (Constellation)*
N. Tyler (Constellation)*
P. Boulden (Appendix R Solutions) *
R. Brady (Aon)*
R. Dyer (NPPD)*
R. Fosdick (SWRI)*
R. Layton (PNNL)*
R. Najuch (First Energy)*
R. Neild (Constellation)*
S. Meyer (STARS)*
S. Weimer (Entergy)*
T. Jutras (EPM)*
V. Anderson (NEI)*
V. Rubano (FPL)*

* participated via phone

ENCLOSURE