

April 19, 2010

MEMORANDUM TO: AFPB File

FROM: Alexander R. Klein, Chief */RA/*
Fire Protection Branch
Division of Risk Assessment
Office of Nuclear Reactor Regulation

SUBJECT: CLOSE-OUT OF NATIONAL FIRE PROTECTION ASSOCIATION
STANDARD 805 FREQUENTLY ASKED QUESTION 09-0057 SAFE
SHUTDOWN STRATEGY CHANGE

The U. S. Nuclear Regulatory Commission (NRC) staff has reviewed National Fire Protection Association Standard 805 (NFPA 805) Frequently Asked Question (FAQ) 09-0057, Revision 3. FAQ 09-0057, Revision 3 was proposed by the transition team at the VC Summer nuclear plant (the authors) to provide guidance for transitioning licensees who currently use the Self-Induced Station Blackout (SISBO) strategy in their existing Fire Protection Program (FPP) and who wish to eliminate the SISBO strategy as part of their transition to the new Risk-Informed, Performance-Based fire protection licensing basis.

Additionally, these licensees would be expected to have committed to: a) make a change to their current FPP by using an alternate safe shutdown strategy (e.g. eliminate SISBO); b) incorporate the new strategy in the post-transition FPP, effectively eliminating SISBO post-transition; and c) model the alternate safe shutdown strategy in the fire Probabilistic Risk Assessment (FPRA) as the baseline for the transition process.

Industry Proposal

The authors of FAQ 09-0057, Revision 3 proposed guidance to be included in the industry document developed to provide guidance on performing the NFPA 805 transition process, Nuclear Energy Institute document NEI 04-02, "Guidance for Implementing a Performance-Based, Risk-Informed Fire Protection Program Under Title 10 of the *Code of Federal Regulations* (10 CFR) 50.48(c)" (NEI 04-02). The proposal primarily modifies section 4.1.1.

The NRC staff has summarized the authors' proposal as follows:

Where an alternate safe shutdown strategy (i.e., a new non-SISBO strategy) and associated equipment are selected to support evaluation of the plant against the performance criteria of NFPA 805, compliance with the deterministic approach (i.e., NFPA 805, section 4.2.3) or the performance based approach (i.e., NFPA 805, section 4.2.4) shall be demonstrated consistent with the requirements of the standard.

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For this case,

- An engineering evaluation shall indicate the alternate safe shutdown strategy: (1) satisfies the performance criteria, performance objectives, and goals for nuclear safety and radiological release; (2) maintains safety margins; and (3) maintains fire protection defense-in-depth.
- An engineering evaluation shall indicate, via a quantitative assessment of the change in risk comparing the deterministically compliant case and the new shutdown strategy, that the new strategy and its associated equipment meets the requirements for risk, defense-in-depth and safety margins in each fire area that the alternate safe shutdown strategy is used.
- The fire PRA representing the alternate safe shutdown strategy shall be the baseline and shall be used as a basis for future fire risk evaluations to perform quantitative assessments of deviations from the deterministic requirements of NFPA 805 Chapter 4 for areas where a performance-based evaluation has been performed utilizing an alternate safe shutdown strategy.

The proposal also requires minor changes in section 4.3.1 and the flowchart in Figure 4-3) to accommodate the use of the alternate strategy.

NRC Staff Evaluation

The NRC staff (the staff) has evaluated the FAQ 09-0057, Revision 3 proposals with respect to regulatory compliance and technical adequacy.

The proposed changes are technically adequate because they describe a new strategy that is consistent with the regulation. The staff also found that the change from the pre-transition safe shutdown strategy to one which is compliant with NFPA 805 for use as the baseline FPRA to be acceptable since it is consistent with NFPA 805 requirements. Therefore, the staff finds the proposed changes to NEI 04-02 to be acceptable.

In conclusion, the staff has reviewed the proposed changes to NEI 04-02 as presented in FAQ 09-0057, Revision 3 and finds that nothing in this FAQ would prevent continued endorsement of NEI 04-02. In accordance with RIS 2007-19, the guidance in this FAQ is acceptable for use by licensees in transition. The final endorsement of this FAQ will be addressed by the next revision to Regulatory Guide 1.205.

References:

For details regarding this FAQ, please see the following:

- FAQ 09-0057, Revision 0 (ADAMS accession number ML091811059)
- Industry presentation slides regarding the FAQ 09-0057 proposal (ADAMS accession number ML092440760)
- NRC Staff Response to FAQ 09-0057, Revision 0 (ADAMS accession number ML092740681)
- Industry response to NRC Staff comments (ADAMS accession number ML093020129)
- FAQ 09-0057, Revision 1 (ADAMS accession number ML093020058)
- NRC Staff Response to FAQ 09-0057, Revision 1 (ADAMS accession number ML093440733)
- FAQ 09-0057, Revision 2 (ADAMS accession number ML093520020)
- FAQ 09-0057, Revision 3 (ADAMS accession number ML100330863)
- NEI 04-02, Revision 2 (ADAMS accession number ML081130188)
- NFPA 805, 2001 Edition (available through the Public Document Room or NFPA)
- Regulatory Guide 1.205, Revision 1 (ADAMS accession number ML092730314)
- NFPA 805 FAQ Process Document, Revision 1 (ADAMS accession number ML061660105)
- RIS 2007-19 (ADAMS accession number ML071590227)

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