

November 17, 2016

Mr. Michael D. Tschiltz  
Director, Risk Assessment  
Nuclear Energy Institute  
1201 F St., NW, Suite 1100  
Washington, DC 20004-1218

SUBJECT: RESPONSE TO JULY 28, 2016, LETTER REGARDING RETIREMENT OF  
NATIONAL FIRE PROTECTION ASSOCIATION 805 FREQUENTLY ASKED  
QUESTION 08-0046 "INCIPIENT FIRE DETECTION SYSTEMS"

Dear Mr. Tschiltz:

The U.S. Nuclear Regulatory Commission's (NRC) Office of Nuclear Reactor Regulation (NRR) has reviewed Nuclear Energy Institute (NEI) letters dated July 28, 2016, (available in the NRC's Agencywide Documents Access and Management System (ADAMS) Accession No. ML16211A327) and October 27, 2016, (ADAMS Accession No. ML16302A293), regarding the NRC's letter dated July 1, 2016 (ADAMS Accession No. ML16167A444), stating that in light of the improved state of knowledge gained from the development of NUREG-2180, "Determining the Effectiveness, Limitations, and Operator Response for Very Early Warning Fire Detection Systems in Nuclear Facilities (DELORES-VEWFIRE)," the NRC is retiring National Fire Protection Association (NFPA) Standard 805 Frequently Asked Question (FAQ) 08-0046 "Incipient Fire Detection Systems" (closure memorandum available at ADAMS Accession No. ML093220426). The purpose of the interim position in the FAQ 08-0046 closure memorandum was to provide the current staff position for developing the probability of non-suppression in fire areas that have very early warning fire detection systems (VEWFDS) installed in certain types of electrical cabinets. The NRC Interim Staff Position was that, while the approach proposed by the Electric Power Research Institute (EPRI) in EPRI 1016735, "Fire PRA Methods Enhancements: Additions, Clarifications, and Refinements to EPRI 1011989" (December 2008) provides a high level approach to modeling VEWFDS, there are several other issues that should be addressed and conditions applied to improve accuracy/realism.

Your July 28<sup>th</sup> letter stated that the basis for FAQ 08-0046 retirement was the anticipated availability of replacement guidance, i.e., NUREG-2180, "Determining the Effectiveness, Limitations, and Operator Response for Very Early Warning Fire Detection Systems in Nuclear Facilities (DELORES-VEWFIRE)." Your letter also stated that you had identified numerous and necessary changes to NUREG-2180, and it would be premature to retire FAQ 08-0046 at this time. To clarify our actions regarding FAQ 08-0046, the staff recognized during the development of NUREG-2180 that some assumptions used in the FAQ were not able to be confirmed. Accordingly, its continued use could cause licensees that are considering future application of FAQ 08-0046 undue difficulty in defending some of the assumptions used in the FAQ's methodology.

During a September 20, 2016, public meeting (summary available at ADAMS Accession No. ML16270A592) we discussed concerns raised in your July 28, 2016, letter and our decision to retire FAQ 08-0046. We also discussed the regulatory implications for licensees that have incorporated the methodology provided in FAQ 08-0046 and what we believe represents a mutual understanding of the path forward on this issue. NRR's expectation is that future license amendment requests, fire risk evaluations supporting self-approval evaluations, or probabilistic risk assessment (PRA) maintenance and upgrades will not specifically credit the methodology provided in FAQ 08-0046.

Licensees with NFPA 805 applications crediting VEWFDS and currently undergoing NRC review will be assessed on a plant-by-plant basis. The staff has engaged with all applicable licensees to discuss site-specific options that allow for completion of the NFPA 805 safety evaluations. The NRC may request additional information in the form of a sensitivity study regarding VEWFDS credit (e.g., in-cabinet and area-wide applications). Insight from similar reviews involving changes to operating experience and licensee-specific pilot efforts or audits may also be considered in completing these reviews.

Licensees that have already received a safety evaluation (for applications crediting VEWFDS using the methodology provided in FAQ 08-0046) are expected to update their risk analyses periodically with nuclear industry operating experience and new information consistent with their current licensing bases and PRA maintenance and upgrade processes outlined in the ASME/ANS RA-Sa-2009 standard. For these licensees, the methodology provided in FAQ 08-0046 remains part of their current licensing basis until a replacement methodology becomes available. Once available, it is expected that licensees will consider and incorporate the replacement methodology consistent with their licensing bases and the PRA maintenance and upgrade process.

At this time NUREG-2180 (ADAMS Package Accession No. ML16286A001) is in the final publication process and will serve as an accepted method that supersedes the interim guidance provided in the FAQ 08-0046 closure memorandum. As discussed in a letter to you from the Office of Nuclear Regulatory Research on October 6, 2016, (ADAMS Accession No. ML16271A158), the staff concluded that based on interactions and feedback from NEI and licensees, no new information had been provided that changed the results discussed in the report and the NRC intends to issue NUREG-2180 as a final report. In addition, the FAQ 08-0046 closure memorandum included the following: "While implementing the fire Probabilistic Risk Analysis (PRA) maintenance and update process, if operating experience indicates that VEWFDS availability, reliability and effectiveness are not as high as currently modeled in the fire [probabilistic risk assessment], actions must be taken to update the analysis to reflect the new information." If a licensee is performing a periodic or interim PRA update, performing a fire risk evaluation in support of self-approval, or submitting a future risk informed license amendment request, the staff's expectation is that they will assess the impact of new operating experience and information on their PRA analyses and incorporate the change as appropriate per Regulatory Guide 1.200, Revision 2, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities," March 2009 (ADAMS Accession No. ML090410014).

The NRC remains committed to ensuring that plant fire PRAs reflect a high level of realism and believes that retiring FAQ 08-0046 as of July 29, 2016 serves that purpose. With regard to your comments on the current draft of NUREG-2180, including insights obtained by a tabletop pilot exercise conducted by industry members, please refer to the NRC's Office of Nuclear Regulatory Research letter dated October 6, 2016 (ADAMS Accession No. ML16271A158). If you have any questions regarding our activities in this area, please do not hesitate to contact me.

Sincerely,

*/RA/*

Joseph G. Giitter, Director  
Division of Risk Assessment  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission

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Joseph G. Giitter, Director  
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**ADAMS Package Accession No.: ML16327A460**

**ADAMS Enclosure Accession No.: ML16327A451**

**ADAMS Letter Accession No.: ML16253A111**

**\*via email**

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