

December 14, 2016

Mr. Anthony R. Pietrangelo  
Senior Vice President and Chief Nuclear Officer  
Nuclear Energy Institute  
1201 F St., NW, Suite 1100  
Washington, DC 20004-1218

SUBJECT: RESPONSE TO OCTOBER 27, 2016, LETTER REGARDING RECENT  
U.S. NUCLEAR REGULATORY COMMISSION ACTIONS RELATIVE TO  
INCIPIENT FIRE DETECTION SYSTEMS

Dear Mr. Pietrangelo:

Thank you for your letter dated October 27, 2016 (U.S. Nuclear Regulatory Commission (NRC) Agencywide Documents Access and Management System (ADAMS) Accession No. ML16302A293). In your letter, you described concerns with recent NRC actions related to very early warning fire detection (VEWFD) systems, specifically the decision to retire National Fire Protection Association (NFPA) Standard 805 Frequently Asked Question (FAQ) 08-0046, "Incipient Fire Detection Systems" (ADAMS Accession No. ML093220426), and issue NUREG-2180, "Determining the Effectiveness, Limitations, and Operator Response for Very Early Warning Fire Detection Systems in Nuclear Facilities (DELORES-VEWFIRE)" (ADAMS Accession No. ML16343A058). You expressed concerns with the staff's intention to finalize NUREG-2180 given industry issues with the methodology for crediting incipient detection presented in the NUREG. Your letter stated that the sole basis for retirement of the FAQ was the availability of draft NUREG-2180, and that the existence of an alternative method does not, in and of itself, justify non-acceptance of a method that is in use by licensees with licensing applications under review and design modifications at various stages of completion. You also stated that the NRC has yet to provide a documented technical basis that justifies withdrawing support for the use of the method provided in FAQ 08-0046.

The staff recognized during the development of NUREG-2180 that some assumptions used in the FAQ could not be confirmed. Accordingly, the continued use of the FAQ 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. In an April 21, 2016, public workshop on NUREG-2180, the staff informed stakeholders of its intent to retire the FAQ (ADAMS Accession Nos. ML16144A498 and ML16144A499). Subsequently, on July 1, 2016 (ADAMS Accession No. ML16167A444), the staff sent a letter to Mr. Michael D. Tschiltz of your staff, informing industry of the retirement of FAQ 08-0046.

The staff has continued to engage with industry representatives and the Nuclear Energy Institute (NEI) regarding FAQ 08-0046 and NUREG-2180, including a meeting on July 21, 2016, between NRC and the Electric Power Research Institute (EPRI) and a September 20, 2016, public meeting (summarized in ADAMS Accession No. ML16270A592). The staff also responded to letters from Ms. Victoria Anderson of your staff dated July 28, 2016 (ADAMS Accession Nos. ML16211A327 and ML16237A397). Our October 6, 2016, letter (ADAMS

Accession No. ML16271A158) focused on NUREG-2180, and our November 17, 2016, letter (ADAMS Accession No. ML16253A111) focused on FAQ 08-0046 and regulatory application of NUREG-2180.

The staff's position is that NUREG-2180 represents the most comprehensive and complete evaluation to date on the performance of VEWFD systems, human response, and operating experience related to detecting fires during the incipient stage in nuclear power plant installations. The NUREG also documents the technical basis for applying the methodology in a realistic manner and supports the NRC's decision to retire FAQ 08-0046. As discussed above, and in the NRC's letter dated October 6, 2016 (ADAMS Accession No. ML16271A158), the staff has made a considerable effort to work with stakeholders and address any concerns and comments received throughout the duration of the confirmatory research program that produced NUREG-2180. The subject of expert elicitation was also addressed in the NRC's October 6, 2016, letter. In summary, if NEI or industry conducts an expert elicitation, representatives from the NRC would be interested in observing the elicitation. In addition, Appendix G, "VEWFD Systems Data Collection" of NUREG-2180, developed in cooperation with EPRI, provides a framework for the collection of future operational experience. As future operational experience with VEWFD systems becomes available, updates to the methodology could be made, as appropriate. Based on our interactions and feedback from industry to this point, no new information has been provided that changes the results of the research program.

In addition, during the September 20, 2016, public meeting, the staff discussed the regulatory implications for licensees that have incorporated the methodology provided in FAQ 08-0046. We believe that we achieved a mutual understanding at the meeting among the staff and industry representatives on the path forward on this issue. As a result, our review of requests for NFPA-805 license amendments have been progressing well, and licensees that have already received license amendments to adopt NFPA-805 understand that their site-specific licensing basis remains as approved until applicable changes are considered per their probabilistic risk assessment (PRA) maintenance and update process. NUREG-2180 was published in December 2016 and, as such, serves as an accepted method for evaluating VEWFD systems that supersedes the interim guidance provided in the FAQ 08-0046 closure memorandum.

The NRC remains committed to ensuring that plant fire PRAs reflect a high level of realism, and we have determined that retiring FAQ 08-0046 and issuing NUREG-2180 serve that purpose. We look forward to continued productive engagement with industry on implementing risk-informed initiatives such as NFPA-805.

Sincerely,

/RA by Michael Johnson for/

Victor M. McCree  
Executive Director  
for Operations

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Package Accession No.: **ML16302A291** Response: **ML16326A381** \*via email

OFFICE	NRR/DRA	NRR/DORL	RES/DRA	OGC
NAME	J Glitter	A Boland	MThaggard	NLO
DATE	12/01/2016	12/02/ 2016	12/05/ 2016	11/22/2016
OFFICE	RES	NRR	EDO	
NAME	MWeber	WDean (BMcDermott for)	VMcCree (MJohnson for)	
DATE	12/13/2016	12/08/2016	12/14/2016	

A. Pietrangelo

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