**[7590-01-P]**

**NUCLEAR REGULATORY COMMISSION**

**[NRC-2015-0112]**

# Determining the Effectiveness, Limitations, and Operator Response for Very Early Warning Fire Detection Systems in Nuclear Facilities (DELORES-VEWFIRE)

**AGENCY**: Nuclear Regulatory Commission.

**ACTION**: Draft NUREG; request for comment.

**SUMMARY**: The NRC is making the proposed draft, NUREG-2180, "Determining the Effectiveness, Limitations, and Operator Response for Very Early Warning Fire Detection Systems in Nuclear Facilities (DELORES-VEWFIRE), Draft Report for Comment," available for public comment.

**DATES:** Submit comments by **[INSERT DATE 60 DAYS FROM DATE OF PUBLICATION IN *FEDERAL REGISTER*]**. Comments received after this date will be considered if it is practical to do so, but the Commission is able to ensure consideration only for comments received before this date.

**ADDRESSES:** You may submit comments by any of the following methods (unless this document describes a different method for submitting comments on a specific subject):

- **Federal Rulemaking Web Site:** Go to http://www.regulations.gov and search for Docket ID **NRC-2015-0112**. Address questions about NRC dockets to Carol Gallagher;

telephone: 301-415-3463; e-mail: Carol.Gallagher@nrc.gov. For technical questions, contact the individual listed in the FOR FURTHER INFORMATION CONTACT section of this document.

- **Mail comments to:** Cindy Bladey, Office of Administration, Mail Stop: OWFN-12-H08, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

For additional direction on obtaining information and submitting comments, see "Obtaining Information and Submitting Comments" in the SUPPLEMENTARY INFORMATION section of this document.

**FOR FURTHER INFORMATION, CONTACT**: Gabriel Taylor, Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone: 301-415-0781, e-mail: gabriel.taylor@nrc.gov.

**SUPPLEMENTARY INFORMATION**:

## I. Obtaining Information and Submitting Comments.

A. Obtaining Information.

Please refer to Docket ID **NRC-2015-0112** when contacting the NRC about the availability of information for this action. You may obtain publicly-available information related to this action by any of the following methods:

- **Federal Rulemaking Web Site:** Go to http://www.regulations.gov and search for Docket ID **NRC-2015-0112**.
- **NRC's Agencywide Documents Access and Management System (ADAMS):** You may obtain publicly-available documents online in the ADAMS Public Documents collection at http://www.nrc.gov/reading-rm/adams.html. To begin the search, select "ADAMS Public

Documents" and then select "Begin Web-based ADAMS Search." For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737, or by e-mail to pdr.resource@nrc.gov. The proposed draft NUREG-2180, "Determining the Effectiveness, Limitations, and Operator Response for Very Early Warning Fire Detection Systems in Nuclear Facilities (DELORES-VEWFIRE), Draft Report for Comment," is available electronically under ADAMS Accession No. ML15162A416.

- **NRC's PDR:** You may examine and purchase copies of public documents at the NRC's PDR, Room O1-F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

B. Submitting Comments.

Please include Docket ID **NRC-2015-0112** in your comment submission.

The NRC cautions you not to include identifying or contact information that you do not want to be publicly disclosed in your comment submission. The NRC will post all comment submissions at http://www.regulations.gov as well as enter the comment submissions into ADAMS. The NRC does not routinely edit comment submissions to remove identifying or contact information.

If you are requesting or aggregating comments from other persons for submission to the NRC, then you should inform those persons not to include identifying or contact information that they do not want to be publicly disclosed in their comment submission. Your request should state that the NRC does not routinely edit comment submissions to remove such information before making the comment submissions available to the public or entering the comment into ADAMS.

## II. Discussion.

Aspirated smoke detection systems have been available on the commercial market for more than four decades as an alternative technology to spot-type smoke detection for detecting products of combustion. In the United States, several nuclear power plants (NPPs) have installed these systems as early as the mid-1990s as an alternative method to conventional fire detection systems with the idea to provide advanced warning of potential fire threats. Recently, there has been indication that numerous licensees of NPPs transitioning to a performance-based fire protection program intend to install these types of systems configured as very early warning fire detection. In many, but not all cases, the choice to install these systems is based on the expectation that these systems may reduce the estimated fire risk in a fire probabilistic risk assessment (PRA).

In 2008, the NRC issued a staff interim position documented in a National Fire Protection Association Standard 805 Frequently Asked Question 08-0046, "Incipient Fire Detection Systems." This staff interim position provides guidance on the use of these systems and the associated fire PRA quantification for in-cabinet applications. At that time, there was limited test data and PRA experience available for those applications and as such a confirmatory research program was needed. Research was also needed to advance the state of knowledge related to the performance of these systems. This report documents the results and findings from the confirmatory research program.

Specific areas of this draft report where comments and additional relevant information or supporting data are sought include:

1. System availability, including system down time and surveillance test interval for the aspirated smoke detection systems used in nuclear and non-nuclear facilities.

2. Time duration between a very early warning fire detection system “alert” condition and the commencement of flaming conditions. Alternatively, the time duration of the incipient stage, from start of component degradation to flaming conditions. Include a description of the type of electrical enclosure (e.g., motor control center, relay rack, control panel, etc.) and voltage level of initiation component)

Dated at Rockville, Maryland, this 26 day of June 2015.

For the Nuclear Regulatory Commission.

Mark Henry Salley, Chief,
Fire Research Branch,
Division of Risk Analysis,
Office of Nuclear Regulatory Research.

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