

NUCLEAR REGULATORY COMMISSION

10 CFR Part 50

[Docket No. PRM-50-109; NRC-2014-0257]

**Improved Identification Techniques against Alkali-Silica Reaction Concrete Degradation
at Nuclear Power Plants**

AGENCY: Nuclear Regulatory Commission.

ACTION: Petition for rulemaking; notice of docketing, and request for comment.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) has received a petition for rulemaking (PRM) from Sandra Gavutis on behalf of C-10 Research and Education Foundation (C-10 or the petitioner), dated September 25, 2014, requesting that the NRC amend its regulations to provide improved identification techniques against Alkali-Silica Reaction (ASR) concrete degradation at nuclear power plants. The petition was docketed by the NRC on October 8, 2014, and has been assigned Docket No. PRM-50-109. The NRC is requesting public comments on this petition for rulemaking.

DATES: Submit comments by March 30, 2015. Comments received after this date will be considered if it is practical to do so, but the NRC is able to assure consideration only for comments received on or 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-2014-0257. Address questions about NRC dockets to Carol Gallagher; telephone: 301-287-3422; e-mail: Carol.Gallagher@nrc.gov. For technical questions, contact the individual(s) listed in the FOR FURTHER INFORMATION CONTACT section of this document.

- **E-mail comments to:** Rulemaking.Comments@nrc.gov. If you do not receive an automatic e-mail reply confirming receipt, then contact us at 301-415-1677.

- **Fax comments to:** Secretary, U.S. Nuclear Regulatory Commission at 301-415-1101.

- **Mail comments to:** Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, ATTN: Rulemakings and Adjudications Staff.

- **Hand deliver comments to:** 11555 Rockville Pike, Rockville, Maryland 20852, between 7:30 a.m. and 4:15 p.m. (Eastern Time) Federal workdays; telephone: 301-415-1677. For additional direction on accessing information and submitting comments, see “Obtaining Information and Submitting Comments” in the SUPPLEMENTARY INFORMATION section of this document.

FOR FURTHER INFORMATION CONTACT: Jessica Kratchman, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington DC 20555-0001; telephone: 301-415-5112, e-mail: Jessica.Kratchman@nrc.gov.

SUPPLEMENTARY INFORMATION:

I. Obtaining Information and Submitting Comments.

A. Obtaining Information.

Please refer to Docket ID NRC-2014-0257 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-2014-0257.

- **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 ADAMS accession number for each document referenced (if it is available in ADAMS) is provided the first time that it is mentioned in the SUPPLEMENTARY INFORMATION section.

- **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-2014-0257 in the subject line of your comment submission, in order to ensure that the NRC is able to make your comment submission available to the public in this docket.

The NRC cautions you not to include identifying or contact information in comment submissions 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, and 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. The Petitioner.

The petition states that C-10 is a non-profit organization that “evolved from” *Citizens within the Ten-Mile Radius*, which C-10 claims is a 5,000 member organization founded in 1986 to challenge evacuation plans for the [NextEra] Seabrook Station reactor. The petition represents that C-10 was established in 1991 to address the health and safety issues related to the [NextEra] Seabrook Station nuclear power plant. The petition further states that “C-10 has been engaging the NRC about concrete degradation at Seabrook since December 22, 2011,” and that the Union of Concerned Scientists assisted C-10 in preparing this petition.

III. The Petition.

Sandra Gavutis, Executive Director, submitted a PRM on behalf of C-10, dated September 25, 2014 (ADAMS Accession No. ML14281A124), requesting that the NRC amend its regulations to improve identification techniques against ASR concrete degradation at nuclear power plants. The NRC has determined that the petition meets the threshold sufficiency requirements for a PRM under § 2.802 of Title 10 of the *Code of Federal Regulations*, “Petition

for rulemaking,” and the petition has been docketed as PRM-50-109. The NRC is requesting public comments on this PRM.

IV. Discussion of the Petition.

At an NRC public meeting at Seabrook Station on June 24, 2014, the petitioner asked the NRC if the agency was investigating the U.S. nuclear fleet for ASR concrete degradation. The NRC staff responded that ASR concrete degradation could be adequately indicated through visual examination. However, an NRC position paper, “In Situ Monitoring of ASR-affected Concrete,” November 2012 (ADAMS Accession No. ML13108A047), states, “ASR can exist in concrete without indications of pattern cracking,” and that for “... structures exposed to ASR, internal damage occurs through the depth of the section but visible cracking is suppressed by heavy reinforcement....” When NextEra determined 131 locations with “assumed” ASR visual signs within multiple power-block structures at Seabrook Station during 2012, further engineering evaluations were not required by the NRC.

The petitioner requests that the NRC amend its regulations to improve identification techniques against ASR concrete degradation at U.S. nuclear power plants. The petitioner suggests that the reliance on a visual inspection does not “adequately identify Alkali-Silica Reaction (ASR), does not confirm ASR, or provide the current state of ASR damage (if present) without petrographic analysis under current existing code.” The petitioner asserts that codes and standards exist that are capable of detecting ASR and determining the key material properties needed to evaluate the degree and severity of ASR damage. American Concrete Institute (ACI) Standard 349.3R, “Evaluation of Existing Nuclear Safety-Related Concrete Structures,” for instance, has been endorsed by the NRC (ADAMS Accession No. ML112241029) as an acceptable method of protecting against excessive ASR concrete degradation, but is not a regulatory requirement. The petitioner requests that the NRC amend

its regulations to require that all licensees comply with industry codes and standards that have “already been endorsed by the agency,” and identified two standards for which the NRC’s regulations should require compliance: 1) ACI Standard 349.3R; and 2) American Society for Testing & Materials (ASTM) C856-11, “Standard Practice for Petrographic Examination of Hardened Concrete.”

Dated at Rockville, Maryland, this 5th day of January, 2015.

For the Nuclear Regulatory Commission.

/RA/

Annette L. Vietti-Cook,
Secretary of the Commission.