



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
475 ALLENDALE ROAD  
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

January 19, 2012

Ms. Sandra Gavutis  
Executive Director  
C-10 Research and Education Foundation  
44 Merrimac Street  
Newburyport, MA 01950

Dear Ms. Gavutis:

I am responding to your letter of December 22, 2011. In your letter, you detailed your organization's concerns regarding the concrete degradation noted at the Seabrook Station due to an Alkali-Silica Reaction (ASR), and asked a range of questions regarding how this issue is being addressed by the NRC. You also requested prompt public access to licensee and NRC documents related to the technical review of this matter.

Your organization's interest in this matter is shared by other stakeholders as well. For example, we recently received a letter from Congressman Edward Markey on this issue. I attached our agency's response to him for your information. We intend to keep the public fully informed of our inspection efforts and any related findings in this matter in the future.

In your letter, you requested answers to several questions. Our response to those questions is attached. If we can be of more assistance, please contact Richard S. Barkley of my staff at 610-337-5065.

Sincerely,

William M. Dean  
Regional Administrator

Enclosures:

1. Response to Questions Raised by C-10 on  
ASR Concrete Degradation at Seabrook Station
2. Letter to Congressman Edward Markey dated December 22, 2011

## **Enclosure 1**

### **Response to Questions Posed by C-10 on Concrete Degradation by ASR**

#### **Question 1:**

Would the concrete degradation have been identified if the sampling conducted in support of the license renewal application not been done? (Additional questions were posed depending on the answer to this question. The second paragraph below provides information related to those additional questions.)

#### **Response:**

It is our understanding that NextEra was in the process of upgrading their monitoring program for structures to the latest American Concrete Institute (ACI) standard. While this standard does give guidance on detecting ASR, it would be speculation on our part as to how soon this problem would have been identified absent the sampling performed in August 2010 in support of license renewal. At this point, the problem has been identified, NextEra has expanded its evaluation of the issue, and engineering reviews to date have indicated that the safety-related concrete structures impacted by the ASR degradation remain capable of performing their safety function.

As stated in Information Notice 2011-20, the NRC staff is reviewing the license renewal application for Seabrook Station. Work on that renewal has been delayed pending the submittal of an aging management plan for safety-related concrete structures impacted by ASR. The aging management program will include additional measures and actions to manage the effects of aging from ASR-induced degradation during the period of extended operation. These measures will also ensure that ASR-degradation does not impact the operability of any safety-related concrete structure during the remaining term of the facility's current operating license. Seabrook Station is one of the newest nuclear stations in the US, yet it was the first plant to identify and pursue addressing ASR-induced concrete degradation as part of license renewal. Thus the NRC will be evaluating the need for any changes to its inspection program going forward contingent on our findings in this matter at Seabrook Station.

#### **Question 2:**

(This question is related to a Request for Technical Assistance between Region I and the NRC Office of Nuclear Reactor Regulation, dated September 11, 2011, which contained five questions related to the ASR issue.) Have these five questions been answered? If yes, will the NRC make the answers publicly available? If no, what is the expected time-frame for the NRC to answer these questions?

#### **Response:**

The response to this request for technical assistance, also called a Task Interface Agreement, has not yet been finalized. Region I anticipates that these questions will be answered in the near future. When the response to this request for technical assistance is finalized, the answers will be made publicly available. We'll see to it that C-10 gets a copy of the response upon issuance.

**Question 3:**

Is the public being denied access to materials that would otherwise be available because Seabrook's owner has enabled NRC headquarters staff to access materials remotely?

**Response:**

No. All ASR-related information submitted by NextEra on the NRC docket is readily available to the public. As indicated in previous discussions with C-10 staff, the licensee is required by our regulations to provide the NRC access to licensee documentation onsite as necessary to carry out our licensing and inspection functions. Thus there is a body of information that the NRC has had access to which has not been formally provided to the NRC as part of a licensing action or request. These documents are not under the possession and control of the NRC, but remain in the licensee's records system. Electronic access to these records provides NRC staff offsite ready access to a large number of licensee documents in a more efficient manner. These documents still remain in the possession and control of the licensee, not the NRC.

December 22, 2011

The Honorable Edward J. Markey  
United States House of Representatives  
Washington, D.C. 20515

Dear Congressman Markey:

On behalf of the U. S. Nuclear Regulatory Commission (NRC), I am responding to your letter of November 30, 2011, regarding NRC requirements for addressing potential concrete degradation at nuclear power plants.

The NRC has in place a regulatory and oversight program addressing this potential problem. Specifically, Title 10 of the *Code of Federal Regulations* (10 CFR) 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants" (commonly referred to as the Maintenance Rule), requires that licensees monitor the performance and condition of structures against established goals in a manner that provides reasonable assurance that the structures remain capable of performing their intended functions. For concrete structures, this usually translates into periodic visual inspections. The Maintenance Rule further states that "[w]hen the performance or condition of a structure, system, or component does not meet established goals, appropriate corrective action shall be taken." Regulatory Guide (RG) 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," explains that an acceptable structural monitoring program should evaluate the results of periodic assessments to determine the extent and rate of any degradation of the structure. It further notes that such a program should correct deficiencies in a timely manner, commensurate with their safety significance. In addition, the quality assurance criteria in 10 CFR 50, Appendix B, require licensees to implement a corrective action program to assure that conditions adverse to quality in nuclear power plant structures, systems, and components are promptly identified and corrected. As a part of its routine inspection of all nuclear power plants, the NRC verifies that licensees are properly implementing the requirements of these regulations.

In the case of Seabrook Station, NRC inspectors identified a regulatory violation as a result of the licensee's failure to adequately monitor the condition of a structure under the Maintenance Rule (i.e., the extent and rate of degradation of the Control Building). The NRC determined the issue was of very low safety significance (Green) because the finding was not a design or qualification deficiency, did not result in an actual loss of safety function, and was not risk significant. The licensee is engaged in further technical investigations and evaluations to address and manage the concrete degradation issue. At this time, we have no immediate safety concern because engineering reviews to date have indicated that the Control Building continues to be able to carry out its safety function.

I would like to clarify that information notices (IN), such as IN 2011-20, "Concrete Degradation by Alkali-Silica Reaction," referenced in your letter, are a form of NRC generic communication issued to licensees for the purpose of providing significant recently

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identified information about safety, safeguards, or environmental issues, and are not intended to evoke specific regulatory responses. When Information Notices are issued, licensees are expected to review the information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems.

Thank you for your interest in this matter. Please contact me or Rebecca Schmidt, Director of the Office of Congressional Affairs, at (301) 415-1776 if you have questions or would like to discuss this further.

Sincerely,

*/RA/*

Gregory B. Jaczko

Identical letter sent to:

The Honorable Edward J. Markey  
United States House of Representatives  
Washington, D.C. 20515

The Honorable John F. Tierney  
United States House of Representatives  
Washington, D.C. 20515