

# United States Senate

December 10, 2021

The Honorable Christopher T. Hanson  
Chairman  
U.S. Nuclear Regulatory Commission  
Mail Stop O-16 B33  
Washington, DC 20555-0001

Dear Chairman Hanson,

We write to express our concern about the troubling findings in the Nuclear Regulatory Commission's (NRC) Second Quarter Integration Inspection Report for the Seabrook Nuclear Power Plant (Seabrook).<sup>1</sup> This inspection report outlined concerning details regarding the monitoring and progression of alkali-silica reaction (ASR) at Seabrook, including a finding of safety and security significance. However, we are encouraged that the Advisory Committee on Reactor Safeguards (ACRS), an independent panel of experts that reports to the NRC commissioners, has expressed an interest in reviewing the problem of degrading concrete at Seabrook.<sup>2</sup> Because this is a relatively new problem for the NRC, as Seabrook is the first plant in the nation known to suffer from ASR, we ask the Commission to ensure that the ACRS conduct a review that is of sufficient breadth and depth to develop an ongoing solution for ASR monitoring and management.

While we appreciate the NRC's thorough inspection of the issues posed by ASR at Seabrook, the report included several deeply concerning findings. First, it is alarming that NextEra Energy (NextEra), which owns and operates the Seabrook plant, has not been correctly assessing the rate of past growth or anticipating future growth of ASR.<sup>3</sup> It is imperative that NextEra correctly track and predict the expansion of ASR because, as the NRC indicated in its report, these data are needed to "ensure the structures would remain capable of performing their safety functions to the next scheduled inspection."<sup>4</sup>

Additionally, NextEra's failure to properly track ASR progression is heightened by the fact that, in certain locations, ASR is progressing at a faster rate than expected. According to the report, "For several locations...the inspectors noted the expansion trend showed a relatively linear rate of increase, which correlates to an additional ASR-related load."<sup>5</sup> A faster rate of ASR progression, coupled with operator failure to collect this data, is a dangerous combination.

Lastly, the report indicates that structures at Seabrook do not meet current requirements and may require physical modifications in order for the NRC to deem them safe. Specifically, the report states

---

<sup>1</sup> Letter from Brice A. Bickett, Chief, NRC Reactor Branch 3, to Robert Coffey, V.P., Florida Power & Light Co. (Aug. 11, 2021), <https://irp.cdn-website.com/1cc0687d/files/uploaded/SB%202021002FINAL.pdf>.

<sup>2</sup> Email from Jenny Weil, Senior Cong. Affairs Officer, NRC, to Cong. Staff (Oct. 6, 2021 1:06 PM EDT) (on file with author).

<sup>3</sup> Letter from Brice A. Bickett, Chief, NRC Reactor Branch 3, to Robert Coffey, V.P., Florida Power & Light Co. (Aug. 11, 2021), <https://irp.cdn-website.com/1cc0687d/files/uploaded/SB%202021002FINAL.pdf> at 9.

<sup>4</sup> *Id.*

<sup>5</sup> *Id.*

The Honorable Christopher T. Hanson

December 10, 2021

Page 2

that, “seven Seabrook structures...would require physical modification or additional analysis to comply with their current licensing and design basis requirements.”<sup>6</sup> It is troubling that Seabrook is not fully compliant with these requirements, and the finding raises questions about how and when NextEra plans to ensure that these structures perform as designed.

These findings warrant a thorough investigation of the problems of degrading concrete at Seabrook, beyond the regular inspections of the plants. We appreciate that ACRS has expressed an interest in working with NRC staff to review the issue of ASR, as its experts have previously prepared reports about nuclear plants experiencing technical issues that posed safety implications. While ASR is a slow-moving phenomenon that NextEra and the NRC have been tracking for more than a decade, the NRC's second quarter integrated inspection report makes clear that the condition has progressed to a point where the licensee and regulators will soon be facing significant decisions that could have far-reaching implications for Seabrook. Therefore, it is critical that ACRS's review and analysis of Seabrook's concrete degradation be resolved expeditiously. A report of findings and any recommendations must be timely in order to be of value to the licensee, which is now facing decisions about when and whether to undertake costly and extensive engineering projects to bring the plant's structures into compliance with their operating license.

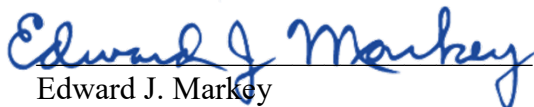
As part of this effort, the ACRS should assess whether the existing NRC regulations for material aging concerns, such as ASR, are sufficient for addressing this emerging issue, as well as whether any regulatory enhancements should be made to ensure that nuclear power structures are properly monitored and managed as they age.

A science-based, predictive approach to understand the progression of ASR, conducted by ACRS, would help protect the public and improve our nuclear regulatory system. We encourage the ACRS to include subject-matter experts with particular knowledge of concrete and alkali-aggregate conditions, such as ASR, in its independent review.

We are pleased that ACRS members have already requested that NRC staff participate in the review process. We urge the NRC to continue to monitor and redress the concerns raised in the Seabrook Second Quarter Integration Inspection Report, and we encourage the ACRS to engage in a robust, science-based review to provide recommendations on this critical issue in an expeditious manner.

Thank you for your consideration of this request.

Sincerely,



Edward J. Markey  
United States Senator



Elizabeth Warren  
United States Senator

---

<sup>6</sup> *Id.* at 14.