June 12, 2014

The Honorable Edward J. Markey
United States Senate
Washington, DC 20510

Dear Senator Markey:

On behalf of the U.S. Nuclear Regulatory Commission (NRC), I am responding to your letter of April 18, 2014, in which you expressed concerns about the seismic hazard reevaluation report submittals for Pilgrim Nuclear Power Station and Seabrook Station. As you are aware, in late March we received the seismic hazard reevaluation reports for plants in the Central and Eastern United States in response to our request for information dated March 12, 2012. The licensees for Pilgrim and Seabrook reported that their reevaluated seismic hazards are higher than the safe shutdown earthquake previously evaluated as part of the licensing of the plants.

The submittals help the NRC determine what additional evaluations and possible safety improvements are warranted. The NRC staff is in the process of reviewing the licensees' assessments and proposed actions. It is important to note that the seismic reevaluation reports for Pilgrim and Seabrook represent only the hazard, which is the amount of ground shaking, and not the plant's capacity to withstand that shaking. The risk posed to the public from a nuclear power plant due to a seismic event is a function of not only the ground motion, but also the plant design and construction, which has been shown to include considerable margin to survive strong earthquakes. For plants whose hazards were higher than their safe shutdown earthquake, such as Pilgrim and Seabrook, the NRC requested either interim actions or an interim evaluation to justify their continued operation while they performed additional evaluations. The NRC reviewed an initial industry assessment of the safety implications of the increased seismic hazard and individual licensees' interim evaluations and concluded that no immediate changes to plant structures, systems, or components were needed for the operating plants in the United States.

The NRC staff recently completed its screening and prioritization of all the plant submittals to determine which plants need to do a seismic "probabilistic risk assessment" or a seismic "margin analysis" to evaluate in detail how the existing plant structures and systems would respond to shaking from a range of earthquakes that could affect the plant. This assessment is extensive and will require at least three years to complete. Once they are complete, the NRC will decide if additional regulatory actions or upgrades to plant systems and structures are required. In the meantime, these plants must also complete shorter-term work to see if they should enhance key safety equipment. The shorter-term review, or the "Expedited Approach," will evaluate key systems and components that could be used to safely shut down the plant if an earthquake were to occur at the higher seismic ground motion. The Expedited Approach will either confirm that a plant has sufficient margin to continue with a longer-term risk evaluation without any modifications, or confirm the need to enhance the plant's seismic capacity to address the risks associated with the reevaluated hazard. These results of the shorter-term evaluations are due December 31, 2014.

The results of the NRC staff's screening and prioritization were documented in a letter to all U.S. nuclear power plants on May 9, 2014. The results for Pilgrim and Seabrook are as follows:

- Pilgrim is a Group 1 plant. Group 1 plants are generally those that have the highest reevaluated hazard relative to the original plant seismic design basis. As a Group 1 plant, Pilgrim's full seismic risk analysis is due in June 2017. The NRC has completed its review of Pilgrim's interim evaluation, which was part of its March 2014 submittal, and concluded that Pilgrim can continue to operate safely while it completes further evaluations. As a near-term step, Pilgrim must complete the Expedited Approach.

- Seabrook is a Group 3 plant. Group 3 plants are those that have a small increase in seismic hazard compared to that assumed in previous analyses. As a Group 3 plant, Seabrook's seismic risk analysis, if necessary, is due in December 2020. The NRC has completed its review of Seabrook's interim evaluation, which was part of its March 2014 submittal, and concluded that Seabrook can continue to operate safely while it completes any further evaluations. As a near-term step, Seabrook must complete the Expedited Approach.

The NRC staff continues to have confidence that plants can operate safely while more analyses are done. This confidence is based on our understanding of external hazards, reactor design and construction, and the results from previous inspections and assessments. Nuclear power plants have the capacity to withstand earthquakes larger than those assumed in the confirmatory analyses done as part of the licensing process. This additional capacity results from nuclear power plants being designed, with safety margins, to withstand the forces of a variety of internal and external events. Many of these events create larger forces and challenges to plant structures, systems, and components than would be caused by an earthquake at the specific plant locations. The NRC staff has concluded that plants can continue operation without introducing undue risk to public health and safety pending the additional analyses and possible enhancements that might result from those short- and long-term evaluations.

I understand your concerns and assure you that the NRC is taking all prudent and necessary actions to protect public health and safety. We will continuously assess the need for plants to take further actions to mitigate the increased seismic hazard, as the seismic risk evaluation process continues. If you need any additional information, please contact me or Amy Powell, Acting Director of the Office of Congressional Affairs, at (301) 415-1776.

Sincerely,

/RA/

Allison M. Macfarlane

Identical letter sent to:

The Honorable Edward J. Markey
United States Senate
Washington, DC 20510

The Honorable Elizabeth Warren
United States Senate
Washington, DC 20510