

August 27, 2012

The Honorable Therese Murray  
President of the Massachusetts Senate  
Boston, Massachusetts 02133

Dear Ms. Murray:

On behalf of the U.S. Nuclear Regulatory Commission (NRC), I am responding to your letter dated May 4, 2012, regarding the renewal of the operating license for the Pilgrim Nuclear Power Station in light of recommendations related to lessons learned from the accident at the Fukushima Dai-ichi nuclear plant in Japan. Let me first apologize for the delay in this response. As you may be aware, requests similar to those in your letter were submitted to the NRC in petitions for adjudication associated with the license renewal application for Pilgrim, and in other power reactor licensing cases in response to those petitions, the Commission made clear that information learned from the Fukushima Dai-ichi accident will be used to impose any new requirements deemed necessary, regardless of whether a plant has applied for or obtained a renewed operating license. After making the required safety and environmental findings, the NRC issued the renewed operating license for Pilgrim on May 29, 2012. However, as outlined below, the NRC is addressing the concerns about Pilgrim identified in your letter using other, equally effective regulatory processes.

Your letter refers to specific recommendations of the NRC's Near Term-Task Force related to improving the capabilities for plants to deal with extended losses of electrical power; installing additional instrumentation to measure water level in spent fuel pools; moving spent fuel from the pool to dry cask storage; and improving reliable hardened venting systems to help maintain the integrity of primary containment structures. Following the issuance of the Task Force's report, the Commission directed the NRC staff to review the report and develop plans for addressing the recommendations from the Task Force and other lessons learned from the Fukushima accident.

The NRC categorized the actions to address the recommendations as follows:

- Tier 1: those actions that should be implemented without unnecessary delay;
- Tier 2: those actions that need further technical assessment or critical skill sets to implement; and
- Tier 3: longer-term actions that depend on the completion of a shorter-term action or need additional study to support a regulatory action.

Actions taken to address the Tier 1 items have included the issuance of orders, direction to licensees to perform inspections and evaluations, and advance notices of proposed rulemakings. The NRC staff recently provided the Commission with a policy paper, SECY-12-0095, "Tier 3 Program Plans and 6-Month Status Update in Response to Lessons Learned from Japan's March 11, 2011, Great Tohoku Earthquake and Subsequent Tsunami," which provides a summary of the agency's actions to address Fukushima-related recommendations. The paper is available on the NRC's public website.

Regarding the specific recommendations referred to in your letter:

- To improve plant capabilities to respond to extended station blackout events, on March 12, 2012, the NRC issued immediately effective orders to licensees for all nuclear power plants, including Pilgrim, requiring them to develop and implement enhanced mitigation strategies to mitigate the consequences of beyond-design-basis external events. Similar to the recommendations in the Task Force report, the NRC has defined mitigation capabilities for different phases of accident response and recovery. The order requires a three-phase approach: (1) the initial phase requires using installed equipment and resources to maintain or restore core cooling, containment, and spent fuel pool cooling; (2) the transition phase requires providing sufficient, portable, onsite equipment and consumables to maintain or restore these functions until they can be accomplished with resources brought from offsite; and (3) the final phase requires obtaining sufficient offsite resources to sustain those functions indefinitely. The NRC staff issued draft guidance for complying with the order and is preparing to issue the final guidance document. Interim Staff Guidance JLD-ISG-2012-01, "Compliance with Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Hazards." In addition to issuing the order, the NRC has also issued an advance notice of proposed rulemaking regarding possible changes to its existing regulations on plant capabilities to respond to loss of all alternating current power (i.e., the station blackout rule).
- On March 12, 2012, the NRC issued another immediately effective order, EA-12-051, "To Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation." This order requires Pilgrim and all other nuclear power plants in the United States to make enhancements to spent fuel pool instrumentation. During the events at Fukushima, responders were without reliable instrumentation to monitor the water level in the spent fuel pools and there was uncertainty over whether or not the water level was being maintained. This caused confusion and diverted resources from other efforts. The Commission determined that all U.S. plants must have a reliable means of remotely monitoring spent fuel pool water level to support prioritization of mitigation and recovery actions in the event of a beyond-design-basis accident. The NRC staff issued draft guidance for complying with the order and is preparing to issue the final guidance document, Interim Staff Guidance JLD-ISG-2012-03, "Compliance with Order EA-12-051, Reliable Spent Fuel Pool Instrumentation."
- The NRC issued a third immediately effective order to Pilgrim and other boiling water reactors with either Mark I or Mark II containment designs. This order, EA-12-050, "Order Modifying Licenses with Regard to Reliable Hardened Containment Vents," requires licensees of boiling water reactor facilities with Mark I or Mark II containment designs to have a reliable and dependable containment venting system support strategies designed to prevent core damage. At Fukushima, a variety of challenges prevented responders from successfully operating the containment venting system. The inability to reduce containment pressure inhibited efforts to cool the reactor cores. The Commission determined that all boiling-water reactors facilities with Mark I or

Mark II containment designs must have a reliable and dependable containment venting system. The staff is preparing guidance, JLD-ISG-2012-02, "Compliance with Order EA-12-050, Reliable Hardened Containment Vents," for licensees to use in modifying plant equipment and procedures to satisfy the order.

- The NRC staff has solicited public comment on the guidance documents mentioned above and plans to issue the completed guidance by August 31, 2012. Interactions with stakeholders will continue as the NRC addresses other issues related to the accident at Fukushima Dai-ichi and evaluates information provided by the Japanese and developed from inspections and evaluations of domestic plants. We will continue to post new information and invitations for public participation on the agency's public website.
- The issues mentioned in your letter related to the transfer of spent fuel to dry storage casks and providing additional makeup capabilities for spent fuel pools are being evaluated within the Tier 2 and Tier 3 activities described in SECY-12-0095. The program plans described in SECY-12-0095 will involve numerous opportunities for interested stakeholders to provide input into the assessment and resolution of those issues.

The NRC is also continuing its inspections and other programs to verify the continued safe operation of Pilgrim and other nuclear power plants. Results of inspections and assessments of plant performance are available on the agency's public website at [www.nrc.gov](http://www.nrc.gov).

I appreciate this opportunity to respond to your questions and trust that I have satisfied your concerns.

Sincerely,

**/RA/**

Allison M. Macfarlane

Identical letter sent to:

The Honorable Therese Murray  
President of the Massachusetts Senate  
Boston, Massachusetts 02133

The Honorable Vinny deMacedo  
Massachusetts House of Representatives  
Boston, Massachusetts 02133

The Honorable Thomas J. Calter  
Massachusetts House of Representatives  
Boston, Massachusetts 02133