

August 26, 2011

Mr. Steve Dwyer
Geologic Consultant
E-Mail: smdresearch@hotmail.com

Dear Mr. Dwyer:

On behalf of the U.S. Nuclear Regulatory Commission (NRC), I am responding to your e-mail of June 30, 2011, regarding your concern related to seismic ground motion at San Onofre Nuclear Generating Station (SONGS). You expressed that the recent events in Japan have increased your concerns about seismic risks at SONGS.

All U.S. nuclear power plants, including SONGS, are built to withstand external hazards, including earthquakes, flooding, and tsunamis, as appropriate. Even those plants that are located in areas with low and moderate seismic activity are designed for safety in the event of such a natural disaster. Each plant is designed to a ground-shaking level that is appropriate for its location, given the possible earthquake sources that may affect the site and its tectonic environment. Ground shaking is a function of both the magnitude of the earthquake and the distance from the fault plane to the specific site. The seismic responses of the structures, systems, and components associated with these facilities are site specific. Some plants are analyzed for certain identified faults and tectonic capabilities in the area, while others are analyzed for seismic zones. It is important not to extrapolate earthquake and tsunami data from one location of the world to another when evaluating these natural hazards. These catastrophic natural events are location specific, based on the locations of tectonic and geological fault lines. The March 2011 Japan earthquake occurred on a subduction zone, which is a very different type of tectonic environment than the region around SONGS, which is predominantly strike slip. A magnitude 9 earthquake can only occur on a subduction zone and cannot occur in the region around SONGS.

The NRC continues to believe that U.S. nuclear plants are safe. Even before the events in Japan, the NRC began reassessing hazard and risk levels at existing plants. Currently, the NRC is in the process of conducting a review referred to as Generic Issue (GI)-199, "Implications of Updated Probabilistic Seismic Estimates in Central and Eastern United States on Existing Plants," to again assess the resistance of U.S. nuclear plants to earthquakes. From its work on GSI-199, so far the staff has determined that seismic designs of operating reactors in the U.S. have adequate safety margins for withstanding earthquakes. In addition, the NRC has been reviewing new seismic information regarding the plants in California, including SONGS, for many years.

The NRC established a senior level task force to conduct both short- and long-term analyses of the lessons that can be learned from the situation in Japan. The task force completed its near-term analysis of the events and their impact on U.S. plants ("Recommendations for Enhancing Reactor Safety in the 21st Century: The Near-Term Task Force Review of Insights from the Fukushima Daiichi Accident," dated July 12, 2011). The Near-Term Task Force has concluded that a sequence of events like the Fukushima accident is unlikely to occur in the United States, and that continued operation and continued licensing activities do not pose an imminent risk to public health and safety. The NRC is planning a longer term review and will review any new

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specific information regarding the disaster at the Fukushima Daiichi plant and its applicability to U.S. reactors, identify lessons-learned, and determine if any changes to its regulatory requirements are necessary to continue to ensure the health and safety of the public and the environment.

You also expressed concern about the safety of spent fuel in pools at reactor sites. The agency continues to believe that spent fuel pools provide adequate protection of public health and safety. Over the course of many years, the NRC has taken advantage of the lessons-learned from operating experience to implement a program of continuous improvement in the regulation of U.S. commercial nuclear reactors. This has included regular examination of topics related to spent fuel storage, as well as the implementation of changes that have improved the safety of spent fuel pools. In addition, following the terrorist attacks of September 11, 2001, the NRC undertook an extensive reexamination of spent fuel pool safety and security. As a result of this reexamination, the Commission issued orders requiring licensees to implement additional strategies to maintain cooling of spent fuel stored in pools in the event of a large explosion or fire at the plant. NRC regulations have since incorporated these requirements. The task force assigned to study the lessons-learned from the events in Japan has recommended to the Commission that it consider additional enhancements to spent fuel pool makeup capability and instrumentation. As directed by the Commission, the staff will implement any changes found to be appropriate to maintain the safety of spent fuel storage systems.

Finally, the NRC is continuing to follow and review the events in Japan in real time. The NRC has established a link on its public internet Web site (<http://www.nrc.gov/japan/japan-info.html>) that provides information about and links to the report, NRC actions, and other sources of information related to the nuclear accident in Japan.

Thank you for your interest in these matters.

Sincerely,

/RA/ (Timothy J. McGinty for)

Eric J. Leeds, Director
Office of Nuclear Reactor Regulation

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Eric J. Leeds, Director
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