June 3, 2011

Thomas Gurdziel
9 Twin Orchard Drive
Oswego, NY 13126

Dear Mr. Gurdziel:

I am writing in response to your letter to the Executive Director for Operations, R. William Borchardt dated March 19, 2011, that requested the classification of spent fuel storage and handling facilities as safety related and the ongoing inspection of those facilities. Specifically, you asked the U.S. Nuclear Regulatory Commission (NRC) staff to prepare the necessary regulations, procedures, and guidance to immediately classify all spent fuel and associated storage and handling facilities as safety related. You also asked the agency to subject these facilities to immediate and continuing NRC inspection.

As you are aware, the Commission directed the NRC staff to conduct a methodical and systematic review of NRC processes and regulations in light of the events in Japan to determine whether the agency should make additional improvements to its regulatory system and make recommendations to the Commission for its policy direction. Spent fuel storage safety is explicitly included in this review. However, the agency already has a comprehensive set of regulations and guidance related to spent fuel storage and handling operations and facilities.

Before discussing these regulations and guidance, I would like to first explain safety classifications. Safety related structures and equipment are those structures and equipment relied on to protect public health and safety from significant consequences. The NRC issues regulations (i.e., Title 10 of the *Code of Federal Regulations* (10 CFR) 50.54(a) and Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities") that requires reactor operating license holders to apply specific quality assurance measures to structures and equipment classified as safety related. Similarly, 10 CFR Part 72, "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel and High-Level Radioactive Waste, and Reactor-Related Greater Than Class C Waste," requires independent spent fuel storage installation (ISFSI) license holders to apply similar quality assurance measures to structures and equipment classified as important to safety. In addition, the facility safety analysis reports associated with operating reactor licenses designate certain equipment important to safety as subject to many or all of the quality assurance measures applied to safety-related equipment. These measures help to ensure that the structures and equipment classified as safety related or important to safety would perform as intended during and following design-basis events. These measures are the principal elements that distinguish safety-related structures and equipment and those important to safety from other facility structures and equipment.

With regard to spent fuel storage and handling, structures and equipment have safety classifications that reflect their importance to safety. Operating reactor structures and equipment essential to keeping spent fuel covered with cooling water and maintaining a substantial margin to criticality are classified as safety related. These structures and equipment include the spent fuel pool structure, the spent fuel storage racks, the neutron-absorbing panels

in the racks, and the spent fuel itself. Some fuel handling equipment, such as the equipment used to refuel boiling-water reactors, is safety related. However, because the consequences of fuel handling accidents and loss of spent fuel forced cooling events have been evaluated and found to be acceptably small, other spent fuel storage and handling equipment may not be classified as safety related. Nevertheless, much of this equipment, including the spent fuel cask handling crane, is considered important to safety and, therefore, subject to enhanced quality measures. Since 1975, NRC guidelines for enhanced safety cranes have specified the implementation of select quality assurance measures in the design, construction, installation, maintenance, and testing of these cranes. The spent fuel storage casks and essential supporting equipment are classified as important to safety and subject to the quality assurance requirements of 10 CFR Part 72.

Spent fuel storage and handling activities have been, and continue to be, subject to regular inspection. The baseline inspection procedure (IP) for refueling, NRC IP 71111.20, “Refueling and Other Outage Activities,” dated November 9, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML092090694), includes several elements for the evaluation of fuel storage and handling safety. In addition, NRC IP 60854, “Preoperational Testing of an ISFSI,” dated January 16, 2008 (ADAMS Accession No. ML073100468), and IP 60855, “Operation of an ISFSI,” January 16, 2008 (ADAMS Accession No. ML073100489), provide guidance for the inspection of spent fuel handling and storage cask loading and transfer operations.

The NRC’s inspection of Vermont Yankee Nuclear Power Station ISFSI preoperational activities and the initial loading of spent fuel into the ISFSI facility encompassed the load handling event you described in your letter. The inspectors documented their findings in NRC Inspection Report 05000271/2008006 and 07200059/2008001, dated September 26, 2008 (ADAMS Accession No. ML082740170). Section 6, “Crane Operation and Maintenance,” of this inspection report described how the crane slowly lowered a loaded cask to the floor instead of stopping the load as commanded by the crane operator. The inspectors identified a performance deficiency related to crane maintenance that was not a violation of a regulatory requirement. Nevertheless, the licensee entered the deficiency in its corrective action program. This action is comparable to the action specified for a violation of a regulatory requirement under the NRC Enforcement Policy, dated April 25, 2011 (ADAMS Accession No. ML093480037). Consistent with Section 2.2.3 of the NRC Enforcement Policy, violations identified through the NRC Operating Reactor Assessment Program are not normally subject to civil penalties.

The NRC continues to believe that U.S. nuclear power plants, including their spent fuel storage facilities, are safe and continue to operate safely. However, based on the safety-significance of the structures and equipment involved in fuel storage and handling, the NRC staff considers the existing classification and quality assurance measures applied to the structures and equipment provide an appropriate level of safety. Nevertheless, the NRC staff will consider lessons learned from the events in Japan to enhance our existing regulatory processes. The NRC values your feedback regarding the spent nuclear fuel storage and handling issues.

Sincerely,

/RA William Ruland for/

Eric J. Leeds, Director
Office of Nuclear Reactor Regulation

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