June 8, 2012

The Honorable Thomas R. Carper
Chairman, Subcommittee on Clean Air
and Nuclear Safety
Committee on Environment and Public Works
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

On behalf of the Commission, I am pleased to submit the U.S. Nuclear Regulatory Commission's (NRC) semiannual report on the status of our licensing and other regulatory activities. As I have done in my letters accompanying the last two report submissions, I would like to begin with an update on the NRC's response arising from the devastating 9.0-magnatude earthquake and subsequent tsunami that struck Japan in March 2011.

At the time of the last report, the Commission was reviewing the staff's 45-day paper proposing a prioritization of the Near-Term Task Force's recommendations. In December 2011, the Commission approved the staff's prioritization plan without significant schedule modification.

The NRC staff has been conducting regular public meetings with stakeholders, including the public, industry representatives, and the Advisory Committee on Reactor Safeguards. Input from these meetings, as well as feedback from members of Congress and language accompanying our Fiscal Year 2012 appropriations, was considered in the development of three orders and a "request for information" that implement a number of the recommendations the NRC believes should be undertaken without delay.

The orders, which were issued on March 12, 2012, contain several requirements. One of the orders requires boiling water reactors (BWRs) with Mark I and Mark II containments to have a reliable hardened vent to remove decay heat and maintain control of containment pressure following beyond-design-basis events that result in the loss of active containment heat removal capability or prolonged station blackout (SBO). In the longer term, the agency plans to explore whether such a requirement would be appropriate for other containment designs as well. The remaining two orders were issued to all reactor licensees, including holders of construction permits and holders of combined licenses. The first requires a three-phase approach to the development of strategies to maintain or restore core cooling, containment, and spent fuel pool (SFP) cooling capabilities following a beyond-design-basis external event. The second requires installation of enhanced SFP instrumentation. These enhancements are intended to address a broad range of beyond-design-basis external events that are more severe than those natural events expected to occur over the life of a nuclear power plant.

The agency anticipates issuing implementation guidance for the orders by August 31, 2012. Each licensee will be required to achieve full compliance within two refueling cycles after the issuance of the guidance, or by December 31, 2016, whichever comes first.

The "request for information" letters, also issued on March 12, 2012, require that each reactor licensee reevaluate the seismic and flooding hazards at their sites using present-day methods and information, conduct walkdowns of their facilities to ensure protection against the hazards in their current design basis, and reevaluate their emergency communications systems and staffing levels. The NRC expects that most reactors will complete the walkdowns and emergency communications and staffing assessments within the next year. The majority of reactors, including those with the greatest potential seismic and flooding risks, are expected to complete the seismic and flooding reevaluations within the 5-year goal established by the Commission. Once responses are received to the letters, the staff will assess whether any additional safety requirements are warranted.

The remaining highest-priority, or "Tier 1," recommendations are two rulemakings addressing SBO and integration of emergency procedures at nuclear power plants. On March 20, 2012, the NRC staff issued an advanced notice of proposed rulemaking (ANPR) to solicit public input on the SBO rulemaking. This step moves the NRC closer to issuing a final rule within the 24 to 30 month schedule directed by the Commission. The NRC has requested public comments on the ANPR by May 4, 2012. On April 18, 2012, the NRC staff issued another ANPR to solicit public input on the integration of emergency procedures at nuclear power plants. The NRC has requested public comments on the ANPR by June 18, 2012.

The NRC staff anticipates being able to begin work on the next set, or "Tier 2," recommendations after collecting information from the Tier 1 activities, and as soon as resources currently devoted to those activities become available. In July 2012, the NRC staff will provide the Commission with a plan for undertaking the remaining, longer-term activities, designated as "Tier 3."

The enclosed report covers activities conducted by the NRC during the period October 2011 through March 2012. During this time, no additional reactor license renewals were issued, however 11 license renewal applications covering 15 units are under active review. The agency also conducted a mandatory hearing for the combined license applications to build and operate two new reactor units at the V. C. Summer site near Jenkinsville, South Carolina, and issued the first licenses authorizing construction of new reactors in over 30 years for two units each at the Vogtle site in Georgia, and the V. C. Summer site. The staff is continuing active reviews for 10 combined license applications for an additional 16 new reactor units.

On October 12, 2011, the NRC issued a license to AREVA Enrichment Services LLC (AES) to construct and operate a gas centrifuge uranium enrichment plant in Bonneville County, Idaho. The license for the Eagle Rock Enrichment Facility authorizes AES to enrich uranium up to 5 percent by weight in the fissile isotope U-235 for use in the manufacture of nuclear fuel for commercial nuclear power reactors. AES currently plans to begin construction in 2013.

In early November 2011, NRC's Office of Nuclear Material Safety and Safeguards held the Spent Fuel Storage and Transportation Technical Exchange and Regulatory Conference. The purpose of this event was to foster dialogue and stakeholder suggestions to improve the licensing and certification processes for spent fuel transportation and storage, and radioactive material transportation.

Also in November, the agency issued its *Performance and Accountability Report (PAR) for Fiscal Year 2011*, demonstrating the agency's effectiveness and efficiency in achieving its mission to protect public health and safety and the environment. The NRC successfully met its two strategic safety and security goals and met all of its safety performance measure targets and all but one of its security performance measure targets for regulating the nuclear industry. For the unmet security target, there was one unrecovered loss or theft of a risk-significant radioactive source (a stolen radiography camera), which exceeded the target of zero.

In a similar vein, in February, the NRC issued its report entitled *NRC Summary of Performance and Financial Information, Fiscal Year 2011*, also called the Citizen's Report. The report summarizes the agency's performance in carrying out its mission through the regulation of nuclear power and use of nuclear material. It provides key financial and performance information for Congress and the American people to assess how well the agency has carried out its mission.

In December, the NRC enhanced its online database, the Agencywide Documents Access and Management System (ADAMS), by adding a more powerful and versatile search engine and other new functionality. Among the changes is the ability for users to see up to 500 search results (documents and packages) in the folder contents panel, and to save and execute a search and its associated search criteria as a web link for streamlined access to frequently used documents.

On December 7, the NRC published the annual update of the implementation plan for the *Radiation Source Protection and Security Task Force Report.* This plan highlights interagency efforts in the area of radiation source protection and security, including updates on progress toward a comprehensive approach to improve the security of cesium-137 chloride sources, which are used for research and for industrial and medical purposes.

During the period covered by this report, the agency completed its work on the State-of-the-Art Reactor Consequence Analyses (SOARCA) project. Using computer models and simulation tools, the NRC has developed a set of realistic consequence estimates of very unlikely accidents at a set of two U.S. reactors representative of different reactor and containment designs used in the United States. SOARCA's main findings fall into three basic areas: how a reactor accident progresses, how existing systems and emergency measures can affect an accident's outcome, and how an accident would affect the public's health. The project's preliminary findings include:

- Existing resources and procedures can stop an accident, slow it down, or reduce its impact before it can affect public health;
- Event if accidents proceed uncontrolled, they take much longer to happen and release much less radioactive material than earlier analyses suggested; and

- The analyzed accidents would cause essentially zero immediate deaths and only a very, very small increase in the risk of long-term cancer deaths.

On January 31, 2012, the Electric Power Research Institute, the U.S. Department of Energy, and the NRC released a new seismic study that will help U.S. nuclear facilities in the central and eastern United States reassess seismic hazards. The *Central and Eastern United States Seismic Source Characterization for Nuclear Facilities* model and report is the culmination of a 4-year effort among the participating organizations and replaces previous seismic source models used by industry and government since the late 1980s. The NRC is requesting U.S. nuclear power plants to re-evaluate seismic hazards using this information as well as other guidance. This work is part of the agency's implementation of lessons learned from March 2011 events at the Fukushima Dai-ichi nuclear power plant in Japan.

Over the course of the past six months, the agency has sought public comment on a number of ongoing or proposed activities through the use of *Federal Register* notices. These notices included, among others, a request for public comment on proposed changes to the agency's policy statement on consumer products containing radioactive material; a biennial request seeking feedback from the public on implementation of our existing reactor oversight process to help the agency continue to improve our regulatory approach; and a request for public comment on a report updating preliminary assumptions for an environmental impact statement the agency will develop to analyze the effects of storing spent nuclear fuel from the nation's commercial power reactors for as much as 200 years, which will be part of the agency's effort to update its Waste Confidence Decision and Rule last updated in 2010. In late March, the agency also sought public comments on the proposed changes to its regulations for the licensing, inspection, and annual fees it charges applicants and licensees for fiscal year 2012.

In early March, the agency issued annual assessment letters for 2011 to the nation's operating commercial nuclear power reactors. The NRC's safety performance assessments concluded that 99 of the 104 nuclear reactors were performing at a high level. Four reactors are receiving an increased level of NRC regulatory oversight, including more inspections, senior management attention, and oversight focused on the causes of the degraded performance. The Fort Calhoun plant in Nebraska is in an extended shutdown with significant performance issues and is currently under a special NRC oversight program. The NRC hosted, or will host in the near future, a public meeting or other event in the vicinity of each plant to discuss the details of the annual assessment results.

The NRC's 24th annual Regulatory Information Conference (RIC) was held March 13 – 15, 2012. The RIC annually brings together participants from the United States and nations around the world. It provides a unique forum for government, the nuclear industry, international agencies, and other stakeholders to meet and discuss nuclear safety topics and significant regulatory activities. Over 3,000 individuals from more than 30 countries registered for this year's event.

On March 16, the NRC announced that it was amending its regulations to codify and expand upon recent security measures the agency has imposed for certain sensitive radioactive materials. Specifically, the new regulation, which takes effect in one year, establishes security requirements for the most risk-significant materials (those in Category 1 and Category 2 of the International Atomic Energy Agency's rankings of radiation sources), as well as for shipments of small amounts of irradiated reactor fuel. The new regulation incorporates the NRC's lessons learned in implementing post-September 11 security measures, as well as stakeholder input on the proposed rule.

During this period, the NRC submitted 6 events to the International Atomic Energy Agency for inclusion into the International Nuclear and Radiological Event Scale (INES). The INES is a worldwide tool for communicating to the public in a consistent way the safety and significance of nuclear and radiological events. All the events reported during this period involve some degree of safety-significance related to overexposures of radiation workers.

From October 2011 through March 2012, the agency's Public Meeting Schedule noticed 442 public meetings addressing a full range of NRC issues that were scheduled to be held in the Washington, D.C. area and around the country. The meetings included Commission, Advisory Committee, Licensing Board, and staff-sponsored events. Also during this time, the NRC received 193 Freedom of Information Act (FOIA) requests and closed 158 FOIA requests.

Of particular note, since March 11, 2011, the NRC has received 41 FOIA requests regarding the Fukushima Dai-ichi accident in Japan, several of which requested any and all documents relating to the accident. As of the end of March 2012, the NRC has released over 60,000 pages of records to the public. These released records include the first 10 days of the Executive Team transcribed conversations from the NRC's Emergency Operations Center (over 3100 pages). These conversations provide a look inside the workings of the NRC's operations center as the NRC staff worked 24/7 to find ways to help Americans in Japan, the Japanese government, and the firm that owns the Fukushima reactors. Also included in the released records are NRC Emergency Operations Center status updates, NRC briefing sheets, radiological monitoring results, and meteorological information.

Please contact me for any additional information you may need.

Sincerely,

/RA/

Gregory B. Jaczko

Enclosure:
As stated

cc: Senator John Barrasso

Identical letter sent to:

The Honorable Thomas R. Carper
Chairman, Subcommittee on Clean Air
and Nuclear Safety
Committee on Environment and Public Works
United States Senate
Washington, D.C. 20510
cc: Senator John Barrasso

The Honorable Barbara Boxer
Chairman, Committee on Environment
and Public Works
United States Senate
Washington, D.C. 20510
cc: Senator James M. Inhofe

The Honorable Fred Upton
Chairman, Committee on Energy and Commerce
United States House of Representatives
Washington, D.C. 20515
cc: Representative Henry Waxman

The Honorable Ed Whitfield
Chairman, Subcommittee on Energy and Power
Committee on Energy and Commerce
United States House of Representatives
Washington, D.C. 20515
cc: Representative Bobby L. Rush

The Honorable John Shimkus
Chairman, Subcommittee on Environment
and the Economy
Committee on Energy and Commerce
United States House of Representatives
Washington, D.C. 20515
cc: Representative Gene Green

The Honorable Rodney Frelinghuysen
Chairman, Subcommittee on Energy
and Water Development
Committee on Appropriations
United States House of Representatives
Washington, D.C. 20515
cc: Representative Peter J. Visclosky

The Honorable Dianne Feinstein
Chairman, Subcommittee on Energy
and Water Development
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United States Senate
Washington, D.C. 20510
cc: Senator Lamar Alexander