

May 31, 2013

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's) semiannual report on the status of our licensing and other regulatory activities. The enclosed report covers activities conducted by the NRC during the period from October 2012 through March 2013.

The fiscal year (FY) 2013 full-year continuing resolution appropriation was enacted on March 26, holding NRC funding to the FY 2012 level. Included in this appropriation is a requirement that the NRC fund an unbudgeted \$15 million Integrated University Program. Further, a 5 percent sequestration went into effect March 1, and a subsequent 0.2 percent rescission was allocated to the NRC's budget as part of a larger Federal budget rescission necessary to meet the requirements of the sequestration. The combined effects of these actions result in an \$83 million dollar reduction to the programs budgeted in the NRC's FY 2013 request. Impacts will include elimination of grants to universities (separate from those required above) and the Minority Serving Institutions program, delays to new reactor licensing reviews, reductions in several long-term research activities, delays in infrastructure upgrades and staff training, and delays to fuel cycle and uranium recovery environmental reviews. However, the NRC will be able to continue its safety and security mission for existing licensees, including new reactor and fuel cycle facility construction activities. In addition, we do not plan any employee furlough actions because of the sequestration.

The NRC response to the lessons learned from the Fukushima accident in Japan continues. The NRC's most significant efforts to implement lessons learned from Fukushima have continued to focus on the high priority Tier 1 activities, but work on the Tier 2 and Tier 3 activities also is progressing in line with our established schedules. At the time of the last report, the staff had just issued guidance for implementation of three NRC orders. Since then, the NRC also has issued several guidance documents for acceptable ways to conduct the seismic and flooding hazard reevaluations that were requested in a March 2012, letter. Now that guidance has been issued for all of the Tier 1 orders and request for information items, the NRC has provided licensees with clear expectations for implementation, and licensees are currently in the process of carrying out the NRC's requirements. In March 2013, the Commission instructed the staff to expand the existing NRC Order on reliable hardened containment vents to ensure the vents will be capable of working under conditions of a severe accident (i.e., reactor core damage). The staff plans to update implementation guidance by September 2013 to reflect the expansion of this Order. The Commission further instructed the

staff to undertake rulemaking to evaluate filtering strategies that would help limit potential releases of radioactive material to the environment in the event of a severe accident, which goes beyond the layers of protection already in place.

The progress made to date on Post-Fukushima lessons learned efforts is already yielding safety enhancements at nuclear power plants. For example, licensees have begun procuring equipment (e.g., portable pumps, generators, hoses, etc.) that, in accordance with the NRC Order on “mitigating strategies,” can be used to mitigate a prolonged loss of electrical power at a nuclear power plant, which was the primary challenge to workers at Fukushima. While this equipment must still be integrated into site procedures, it is nonetheless increasingly present at reactor sites and reflects significant progress toward enhancing safety. As another example, last year, all plants completed plant walkdown inspections of structures, systems, and components that are designed for protection against seismic and flooding hazards. Reports from these inspections are currently under detailed review by NRC staff, and issues identified during the inspections by licensees and by NRC resident inspectors are being addressed through licensee corrective action programs. Resolution of these issues is being monitored by the NRC’s resident inspectors through the agency’s Reactor Oversight Process.

In February 2013, the NRC received “integrated plans” from each licensee providing the detailed, site-specific plans for fully implementing each of the NRC Orders. The NRC staff is reviewing these plans in detail and will issue a written safety evaluation for each plant. In March 2013, the NRC received the first set of flooding hazard reevaluations from approximately one-third of the plants. The other two thirds are due within the next two years based on an NRC prioritization. The staff is reviewing these hazard analyses in detail to determine if further action is needed to improve safety. The first set of seismic hazard reevaluations are due to the NRC in March 2014.

With regard to activities prioritized as Tier 2 and Tier 3, many depend upon completion of Tier 1 activities or require further evaluation before the need for regulatory action can be determined. Nevertheless, the NRC is making progress where practical. For example, all of the Tier 2 items related to supplying makeup water to spent fuel pools have been consolidated into near-term actions for implementing the mitigating strategies. Therefore, these items are now being addressed.

For all of the Tier 1, 2, and 3 activities, the NRC continues to place a high level of importance on public and stakeholder interaction. In FY 2012, the NRC held 82 public meetings related to Fukushima lessons learned, and these open collaborations have improved the quality and thoroughness of the NRC’s actions. The agency’s interactions continue at similar levels this year. Finally, the agency continues to balance the importance of implementing lessons learned from Fukushima with the need to ensure that our efforts do not displace ongoing work of greater safety benefit, work that is necessary to maintain safety, or other high-priority work.

The agency continues to make progress in addressing the issues raised in the June 8 ruling by the U.S. Court of Appeals for the District of Columbia Circuit that struck down the agency’s 2012 update to the waste confidence decision and temporary storage rule. The Commission directed the NRC staff to prepare an environmental impact statement to support an updated waste confidence rule. The NRC conducted an environmental scoping process and solicited comments on the scope of the waste confidence generic environmental impact

statement (GEIS) from October 25, 2012, to January 2, 2013. The scoping process, which included four public meetings, was the first step in the development of a GEIS to support the proposed waste confidence rulemaking, and it helped inform the scope of the NRC's environmental review. The staff conducted three additional public meetings to continue the dialogue and maintain transparency. On March 5, 2013, the NRC staff completed and published the waste confidence GEIS scoping process summary report. The NRC is on schedule to issue the draft environmental impact statement and proposed waste confidence rule for public comment by September 2013.

During the period of October 2012 through March 2013, nine license renewal applications covering 14 reactors were under active review. The staff is reviewing 10 new reactor combined license applications for 16 proposed new reactor units. On March 1, the NRC issued the final license amendments necessary to authorize changes to the design details of shear reinforcement of the nuclear island basemat to allow pouring of the first nuclear concrete by South Carolina Electric & Gas Company and Southern Nuclear Operating Company at the V.C. Summer and Vogtle new AP1000 plant sites, respectively. Both of those concrete pours have since taken place.

On February 20, 2013, Florida Power Corporation provided written certification to the NRC of the permanent cessation of power operations at Crystal River, Unit 3, near Crystal River, FL. It also stated in writing that all fuel assemblies have been permanently removed from the reactor. On February 25, 2013, Dominion Energy Kewaunee certified that permanent cessation of power operations for the Kewaunee Power Station near Green Bay, WI, was scheduled to occur on May 7, 2013, with permanent defueling of the reactor vessel anticipated to be completed before the end of May. Once fuel has been removed, Kewaunee will join Crystal River in transitioning into decommissioning.

San Onofre Nuclear Generating Station (SONGS), Units 2 and 3, remain shut down to investigate the causes of unusual steam generator tube wear on the replacement steam generators. On October 3, 2012, Southern California Edison (SCE) submitted its response to the NRC's March 27, 2012, confirmatory action letter. Subsequently, the NRC staff issued requests for additional information to SCE on December 26, 2012, and February 1, 2013. In addition, during the period covered by this report, the NRC met with SCE in multiple public meetings to discuss SCE's proposal to restart Unit 2. Since the close of this reporting period, SCE has filed a license amendment request to restrict operation of Unit 2 to 70% of rated thermal power. The NRC continues its independent and detailed review of the issues at SONGS, and it has made no decision to authorize restart.

As of December 13, 2011, Fort Calhoun Station, near Omaha, NE, has been under the oversight of Inspection Manual Chapter 0350, "Oversight of Reactor Facilities in a Shutdown Condition Due to Significant Performance and/or Operational Concerns." This situation is the result of numerous problems at the site, including significant regulatory findings, a significant operational event (fire in electrical breakers) and Missouri River floodwaters affecting the site from May to September 2011. The NRC has established a special oversight panel to coordinate the agency's regulatory activities associated with assessing the performance issues at Fort Calhoun. In September 2011, the NRC issued a confirmatory action letter with a list of approximately 450 action items that must be addressed before startup. On February 26, 2013, the NRC issued an updated confirmatory action letter outlining three additional actions that

Omaha Public Power District officials have agreed to take before restarting the Fort Calhoun nuclear plant.

In preparation for Hurricane Sandy in October 2012, the agency sent additional inspectors to the nuclear power plants that the storm could potentially affect. The inspectors independently verified that plant operators were making proper preparations, following relevant procedures, and taking appropriate actions to ensure plant safety before, during, and after the storm. The NRC also monitored the storm from the Incident Response Center at the Region I office in Pennsylvania and the Emergency Operations Center at NRC headquarters. Three reactors experienced shutdowns during the storm (two automatic and one manual), and one nuclear power plant declared an alert due to high intake water levels. An alert is the NRC's second lowest level of four emergency levels. The safety systems for all impacted plants performed as expected. The NRC coordinated with other Federal and State agencies before restart of the affected plants.

On November 16, 2012, the NRC issued its Performance and Accountability Report for Fiscal Year 2012. This report describes the agency's program and financial performance, reflects the agency's achievement of both its safety and security strategic goals and all of its performance measures. A congressionally mandated report that summarizes much of this same information, also called the Citizen's Report, was issued in February 2013, to provide key financial and performance information for Congress and the public to assess how well the agency has carried out its mission.

Also in November 2012, the NRC issued its final State-of-the-Art Reactor Consequence Analyses Report. This effort used computer models and simulation tools to estimate realistic public health consequences of very unlikely accidents at two U.S. reactor sites representative of different reactor and containment designs. The results of the analyses indicate that accident scenarios progress more slowly and release much less radioactive material than previously calculated, and that the calculated risks of public health consequences from the modeled severe accidents are very small.

The NRC convened an International Regulators Conference on Nuclear Security in December 2012 that served as a first-ever event to promote discussion on a wide range of activities relevant to enhancing regulatory approaches for security at civilian facilities. It also offered an excellent opportunity to build relationships with counterpart regulatory entities with responsibility for nuclear and radioactive materials security.

In January 2013, the NRC hosted a multi-agency Federal workshop on improving extreme flood event hazard assessment. Participants included the U.S. Department of Energy, the Federal Energy Regulatory Commission, the Army Corps of Engineers, the Bureau of Reclamation, and the U.S. Geological Survey. The workshop was part of a research effort to incorporate event probabilities into a risk-informed approach for external hazards, such as flooding. The workshop was separate from ongoing NRC requirements for U.S. nuclear power plants to re-examine flooding hazards following the accident at Fukushima.

In March 2013, the NRC issued its annual assessment letters to the Nation's operating commercial nuclear power plants. As noted earlier, the Fort Calhoun Station in Nebraska is being monitored under a process for plants in an extended shutdown with significant performance issues; therefore, the licensee did not receive an annual assessment letter. Of the

99 highest-performing reactors, 81 met all safety and security performance objectives. Eighteen reactors were assessed as needing to resolve one or two items of low safety significance and will receive additional NRC inspection and attention to followup on corrective actions. Three nuclear reactors were in the third performance category, with a degraded level of performance and will receive additional NRC inspections, senior management attention, and oversight focused on the cause of the degraded performance. One reactor, Brown's Ferry Unit 1, in Alabama, is in the fourth performance category and requires increased oversight because of a safety finding of high significance. Over the course of the coming spring and summer, the NRC will host public meetings or other events in the vicinity of each plant to discuss the details of the annual assessment results.

The NRC's 25th annual Regulatory Information Conference was held March 12–14, 2013. The conference brings together participants from the United States and nations around the world and includes numerous technical presentations, as well as technical posters and tabletop presentations. It provides a unique forum for government, the nuclear industry, international agencies, and the public 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.

During this reporting period, the NRC submitted two events to the International Atomic Energy Agency for inclusion in the International Nuclear and Radiological Event Scale. The International Nuclear and Radiological Event Scale is a worldwide tool for member nations to communicate to the public, in a consistent way, the safety and significance of nuclear and radiological events. One event involved an overexposure of members of the public in Phillipsburg, New Jersey, in October 2011. In this case, a shutter of a gauge fell off, allowing non-radiation workers to access an area without a source being shielded. Four non-radiation workers received a dose greater than 1 rem, which is 10 times greater than the public dose limit of 100 millirem. The facility has taken actions to prevent recurrence. The other event involved the overexposure of a radiation worker in Tulsa, Oklahoma, in January 2013. In this case, the worker's annual dose of 5.9 rem exceeded the 5 rem occupational dose limit. The facility is investigating the cause of this incident. Both of these events were rated as 2 on the International Nuclear and Radiological Event Scale of 1 to 7.

Over the past six months, the agency has sought public comment on ongoing or proposed regulatory activities and has issued new final regulations through the use of *Federal Register* notices. These notices included requests for public comment on possible changes to the spent nuclear fuel storage and transportation regulatory framework and the FY 2013 Proposed Fee Rule. They also included publication of amended regulations regarding distribution of uranium and thorium and security regulations for risk-significant radioactive materials. In addition, in December 2012, the Decommissioning Planning Rule became effective, which is intended to improve decommissioning funding financial assurance and identification of contamination for future decommissioning. On March 12, 2013, the Commission approved actions to implement process enhancements to the rulemaking process to address the cumulative effects of regulation and requested the staff to consider the overall impacts of multiple rules. Orders, generic communications, advisories, and other regulatory actions on licensees and their ability to focus effectively on items of greatest safety importance.

From October 2012 through March 2013, the agency conducted approximately 500 public meetings, in the Washington, D.C. area and around the country, addressing a full range

of NRC issues. The meetings included Commission, Advisory Committee, Licensing Board, and staff-sponsored events. Also during this time, the NRC received 219 Freedom of Information Act (FOIA) requests and closed 174 FOIA requests. Of particular note, the agency has continued to process FOIA requests regarding the Fukushima Dai-ichi accident, several of which requested any and all documents relating to the accident. Since March 11, 2011, the NRC has received 47 such FOIA requests and released 117,217 pages of records to the public, including more than 20,000 pages released during the period covered by this report.

Finally, I am pleased to report that the NRC continued to post top scores in four key measures of organizational success in the Office of Personnel Management's annual Federal Employee Viewpoint Survey. The agency ranked first among the 37 largest Federal agencies in the categories of talent management and leadership and knowledge management, second in job satisfaction, and third in results-oriented performance culture. The NRC also ranked third among 22 mid-sized agencies in the "Best Place to Work" listing developed by the nonprofit Partnership for Public Service.

Please contact me for any additional information you may need.

Sincerely,

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Allison M. Macfarlane

Enclosure:  
As stated

cc: Senator Jeff Sessions

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 Jeff Sessions

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

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  
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cc: Representative Bobby L. Rush

The Honorable John Shimkus  
Chairman, Subcommittee on Environment  
and the Economy  
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United States House of Representatives  
Washington, D.C. 20515  
cc: Representative Paul Tonko

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 Marcy Kaptur

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