

May 19, 2014

The Honorable Sheldon Whitehouse  
Chairman, Subcommittee on Clean Air  
and Nuclear Safety  
Committee on Environment and Public Works  
United States Senate  
Washington, DC 20510

Dear Mr. Chairman:

On behalf of the U.S. Nuclear Regulatory Commission (NRC), I am pleased to submit the 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 2013 through March 2014.

The NRC's response to the lessons learned from the Fukushima accident in Japan continued during the period and has focused on the highest priority (Tier 1) activities, but work on the other activities (Tiers 2 and 3) also progressed in line with the agency's established schedules. Additionally, some Tier 2 actions have been integrated into activities related to Tier 1 actions. The agency continued to balance the importance of implementing lessons learned from Fukushima with the need to ensure that its efforts do not displace ongoing work of greater safety benefit, work that is necessary to maintain safety, or other higher-priority work.

The NRC is reviewing the licensees' plans to achieve compliance with the Mitigation Strategies Order and the Spent Fuel Pool Instrumentation Order. The NRC has issued interim staff evaluations, and the next step is to perform audits of the licensees' implementation of these safety improvements. The NRC is also currently reviewing the licensees' final reports on the seismic and flooding hazard walkdowns performed at each nuclear power plant and has begun to issue safety assessments related to those reports. The NRC requested licensees for nuclear power plants to re-evaluate potential seismic and flooding hazards. The NRC staff is reviewing the flooding hazard reevaluations for the first and second set of plants required to provide reports. Remaining plants will submit their flooding hazard re-evaluation reports by March 2015. The NRC staff has begun to review the seismic hazard submittals that were received from plants in the central and eastern United States by March 31, 2014. Seismic hazard submittals from Western plants will be submitted by March 2015. In November 2013, the NRC staff issued interim staff guidance for compliance with the revised Severe Accident Capable Hardened Vents Order, and expects to receive the licensees' integrated plans in June 2014.

Various rulemaking activities related to the requirements of the orders and other recommendations are also proceeding as scheduled. The NRC staff is seeking Commission approval to consolidate certain Fukushima lessons-learned related rulemakings into a single rulemaking activity. Specifically, the staff is seeking to consolidate the station blackout mitigation strategies rulemaking with the onsite emergency response capabilities rulemaking, as

well as portions of the emergency planning recommendations. The consolidation should enable NRC staff and management to use resources in a more efficient manner to produce an integrated and more coherent set of requirements for addressing beyond-design-basis accidents. The staff is also currently developing the regulatory basis for the filtering strategies rulemaking that will be provided as an information paper to the Commission.

The agency is continuing to address the recommendation from the Fukushima-related lessons learned to improve the regulatory framework by establishing a more logical, systematic, and coherent approach for addressing beyond-design-basis events that appropriately balances defense-in-depth and risk considerations. The staff submitted three potential regulatory improvement activities to the Commission in December 2013. The possible improvements include (1) establishing a new design-basis extension category of events and requirements and associated internal NRC guidance, policies, and procedures, (2) establishing Commission expectations for defense-in-depth through the development of a policy statement and associated implementing guidance, and (3) clarifying the role of voluntary industry initiatives in the NRC's regulatory process. This matter is currently being evaluated by the Commission.

The NRC staff also submitted a paper to the Commission concerning the expedited transfer of spent fuel from the spent fuel pool to dry cask storage. The staff concluded that the expedited transfer of spent fuel to dry cask storage would provide only a minor or limited safety benefit (i.e., less than safety goal screening criteria), and that its expected implementation costs would not be justified. The staff recommended to the Commission that additional studies and further regulatory analyses of this issue not be pursued, and that this Tier 3 Fukushima lessons learned activity be closed. This matter is currently being evaluated by the Commission.

For all of the activities stemming from the Fukushima lessons learned, the NRC continues to place a high level of importance on public and stakeholder interaction. Thus far in fiscal year (FY) 2014, the NRC has held more than 20 public meetings related to Fukushima lessons learned, and these open collaborations have improved the quality and thoroughness of the NRC's actions.

Due to the higher than anticipated resources required for post-Fukushima activities in FY 2014, the staff has not completed as many licensing actions as planned during this period. The staff has reallocated resources from the New Reactors business line to support this activity and is considering additional measures to mitigate schedule impacts.

The NRC currently has three power uprate applications under review. In December 2013, the NRC staff conducted its most recent survey of nuclear power plant licensee's plans to submit power uprate applications over the next five years. This latest information indicates that licensees plan to request power uprates for three nuclear power plants during the next five years.

The agency continues to make progress in addressing the issues raised in the June 8, 2012, ruling by the U.S. Court of Appeals for the District of Columbia Circuit that struck down the agency's 2010 update to the waste confidence decision and temporary storage rule. The NRC sought public comment on the waste confidence draft generic environmental impact statement (GEIS) and proposed rule from September 13, 2013, through December 20, 2013. During the comment period the NRC conducted 13 public meetings on the draft GEIS and proposed rule around the country. Approximately 1,400 individuals attended at least one of the

public meetings, and nearly 500 individuals provided oral statements. The staff received more than 33,000 pieces of comment correspondence and recorded more than 1,600 pages of transcribed comments on the proposed rule and draft GEIS. The staff will develop responses to all timely public comments and make any necessary changes to the GEIS and rule over the rest of the fiscal year. The staff is scheduled to publish the final waste confidence GEIS and rule in the fall of 2014.

During the period October 2013 through March 2014, 10 license renewal applications covering 18 reactor units were under active review. The staff is reviewing 8 new reactor combined license applications for 12 proposed new reactor units, however, renewed licenses and combined licenses will not be issued pending resolution of the waste confidence issue discussed above.

In October 2013, the NRC published the United States' Sixth National Report for the Convention on Nuclear Safety (CNS). The Convention entered into force in 1996 and was ratified by the U.S. Senate in 1999. The CNS is an international legal instrument, agreed to by 77 Contracting Parties, the main objective of which is to achieve and maintain a high level of nuclear safety worldwide at nuclear power plants. The sixth National Report addresses challenges and issues that have arisen since the issuance of the fifth report in 2010, including the implementation of Fukushima lessons learned. NRC Chairman Macfarlane, and the Executive Director for Operations, Mark Satorius participated in presenting the U.S. National Report during a review meeting, which took place in Vienna, Austria, from March 24 through April 4, 2014. The presentation was well-received. The Contracting Parties identified 11 challenges, four planned measures, four good practices, and no suggestions for the NRC and the industry.

In response to an August 2013 decision by the U.S. Court of Appeals for the District of Columbia Circuit that ordered the agency to continue its review of the Yucca Mountain application at least until existing funds appropriated for the review are expended, on November 18, 2013, the Commission directed agency staff to complete work on the safety evaluation report on the U.S. Department of Energy's (DOE's) construction authorization application for the proposed Yucca Mountain nuclear waste repository. The Commission also requested that DOE prepare a supplemental environmental impact statement (EIS) required by the staff in order to complete its environmental review of the application. On February 28, 2014, the DOE informed the NRC that it would not complete the supplement to its EIS but would provide an update to a 2009 technical report that can be used to support development of the supplement. The NRC staff is assessing the path forward for completion of the EIS supplement. The NRC provides a monthly status report to Congress on Yucca Mountain activities and Nuclear Waste Fund expenditures.

On December 17, 2013, the NRC issued its Performance and Accountability Report for FY 2013, which describes the agency's program and financial performance. The report concluded that nuclear reactor and materials licensees maintained their excellent safety record during FY 2013, and reflected the agency's achievement of both its safety and security strategic goals and all of its performance measures. The report also points out that for the 10<sup>th</sup> consecutive year, an independent auditor found no material weaknesses or significant deficiencies in the agency's financial statements.

Also on December 17, the NRC determined that Fort Calhoun Station near Omaha, Nebraska, was ready to restart after being shut down for nearly 3 years to address a number of significant performance deficiencies. The NRC restart readiness assessment was based on the agency having thoroughly reviewed and verified all of the actions the licensee committed to take prior to restarting the plant. The plant remains under increased NRC oversight until the agency determines that the licensee's performance warrants returning it to the normal level of oversight.

On March 6, 2014, the NRC published in the *Federal Register* for public comment its draft Strategic Plan covering FY 2014 to FY 2018. The draft provides a blueprint for the agency to plan, implement, and monitor work needed to achieve the NRC's mission for the next four years. The draft retains the two strategic goals fundamentally unchanged from the current plan: (1) to ensure the safe use of radioactive materials, and (2) to ensure the secure use of radioactive materials. It also includes a new vision statement, new strategic objectives, and contributing activities.

Also in early March, the agency issued annual assessment letters to the 100 operating commercial nuclear power plants that we regulate regarding their performance in 2013 and concluded that all plants continue to operate safely. Eighty facilities fully met all safety and security performance objectives and will continue to receive baseline NRC inspections. Nine reactors were assessed as needing to resolve one or two items of low to moderate safety significance and thus will receive supplemental inspection and attention to follow up on corrective actions. Nine reactors in the third performance category with a degraded level of safety performance will receive additional NRC inspection, 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 which requires increased NRC oversight because of a finding of high safety significance, which will include additional inspections and increased NRC senior management attention to confirm the plant's performance issues are being addressed. As discussed previously, Fort Calhoun Station remains under increased NRC oversight distinct from the normal reactor oversight process; therefore, it did not receive an annual assessment letter. As we do each year, the NRC is hosting a public meeting or open house in the vicinity of each plant to discuss the details of the annual assessment results.

From March 11-13, 2014, the NRC held its 26<sup>th</sup> annual Regulatory Information Conference, with more than 3,000 participants, including representatives from more than 30 foreign countries. This conference provides a valuable forum for exchanging information and ideas with licensees, the public, international counterparts, nongovernmental groups, and others. The program consisted of several plenary sessions and multiple technical break-out sessions addressing a broad range of topics of high interest. In addition, technical poster and tabletop exhibits were on display, with subject-matter experts available to answer questions and engage in discussion.

March 19, 2014, was the date for NRC licensee compliance with the requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 37, "Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material," which was published in the *Federal Register* on March 19, 2013. Agreement States will have until March 19, 2016, to issue compatible requirements for their licensees. The new regulations established security requirements for the use and transport of the most risk-significant quantities of radioactive materials, as well as for shipments of small amounts of irradiated reactor fuel. The

10 CFR Part 37 regulations codify the NRC's enhanced security measures, are risk-informed and performance-based, incorporate important lessons learned from the implementation of previous orders<sup>1</sup>, and provide a framework that requires the licensee to develop a security program with measures tailored to its specific facility.

Between October 2013 and March 2014, the NRC submitted four events to the International Atomic Energy Agency for inclusion in the International Nuclear and Radiological Event Scale (INES). The INES 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. All events when reported were provisionally ranked as level 2, the second lowest level on the INES scale. One event was later revised to a level 1, which is not required to be reported (events are not withdrawn once posted).

Also during this reporting period, the NRC received its results from the Office of Personnel Management's annual Federal Employee Viewpoint Survey. The agency continues to receive quite good marks overall. Notable high scores in the survey include 96 percent of NRC employees willing to "put in the extra effort to get the job done" and 90 percent giving their own work unit high marks for quality. The NRC survey results did reflect a decrease in satisfaction in the areas of pay, promotions, and training. Feedback from the annual survey is a critical component of the NRC's continuous improvement efforts and an integral part of the organizational culture.

I am pleased to report that recently the NRC was recognized by *U.S. Black Engineer & Information Technology* magazine as one of the government agencies considered most supportive of the engineering departments of Historically Black Colleges and Universities (HBCUs). This was the seventh consecutive year that the NRC has received this recognition based on a poll among deans of the accredited HBCU engineering programs and the corporate-academic alliance known as Advancing Minorities' Interest in Engineering.

Over the past 6 months, the NRC has sought public comments on ongoing or proposed regulatory activities and has issued new final regulations through the use of *Federal Register* notices. These included several notices associated with the agency's proposed waste confidence rule to reschedule public meetings and extend the public comment period. These changes resulted from the lapse in Federal funding and the subsequent shutdown of the NRC, and requests from members of the public to extend the comment period. Other *Federal Register* notices published for public comment included a proposal to update, clarify, and strengthen the requirements for material control and accounting of special nuclear material; preliminary proposed rule language that would strengthen and integrate onsite emergency response capabilities; and an NRC draft regulatory basis document for a proposed rulemaking that would revise the security requirements for storing spent nuclear fuel in an independent spent fuel storage installation, and for storing spent nuclear fuel or high-level radioactive waste in a monitored retrievable storage installation.

On March 12, 2013, the Commission approved actions to implement enhancements to the rulemaking process to address the cumulative effects of regulation (CER) and requested the staff to consider the overall impacts of multiple rules, Orders, generic communications,

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<sup>1</sup> Post-September 11, 2011, security orders contained requirements for licensees to implement interim compensatory measures beyond that which was required by NRC regulations.

advisories, and other regulatory actions on licensees and their ability to focus effectively on items of greatest safety importance. The staff is currently implementing a number of tasks in response to Commission direction on CER. For example, the staff held meetings in September 2013 and January 2014 to discuss ongoing CER activities and to discuss industry case studies of the NRC's regulatory analyses to investigate the accuracy of cost and schedule estimates.

In addition, the staff has made significant progress on another Commission initiative to improve nuclear safety and regulatory efficiency by applying probabilistic risk assessment to determine the risk significance of current and emerging reactor issues in an integrated manner and on a plant-specific basis. The staff refers to this initiative as the risk prioritization initiative (RPI) and has worked with industry and external stakeholders since April 2013 to develop a process to implement RPI. After holding public meetings in May 2013, November 2013 and December 2013 a process was developed. In February and March 2013, tabletop exercises were held with three different nuclear plants, which yielded beneficial results. The staff has recently asked the Commission to merge the RPI and CER initiative to realize further efficiencies.

From October 2013 through March 2014, the agency conducted approximately 450 public meetings—in the Washington, DC 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 209 Freedom of Information Act (FOIA) requests and closed 199 FOIA requests. Of particular note, the agency has continued to process FOIA requests regarding the Fukushima Dai-ichi accident in Japan, several of which requested any and all documents relating to the accident. Since March 11, 2011, the NRC has received 51 such FOIA requests and released 237,387 pages of records to the public, including more than 71,344 pages released during the period covered by this report.

Please contact me for any additional information you may need.

Sincerely,

**/RA/**

Allison M. Macfarlane

Enclosure:  
As stated

cc: Senator Jeff Sessions

Identical letter sent to:

The Honorable Sheldon Whitehouse  
Chairman, Subcommittee on Clean Air  
and Nuclear Safety  
Committee on Environment and Public Works  
United States Senate  
Washington, DC 20510  
cc: Senator Jeff Sessions

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

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

The Honorable Ed Whitfield  
Chairman, Subcommittee on Energy and Power  
Committee on Energy and Commerce  
United States House of Representatives  
Washington, DC 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, DC 20515  
cc: Representative Paul Tonko

The Honorable Mike Simpson  
Chairman, Subcommittee on Energy  
and Water Development  
Committee on Appropriations  
United States House of Representatives  
Washington, DC 20515  
cc: Representative Marcy Kaptur

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