

November 26, 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 April through September 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 intermediate activities (Tier 2) have been integrated into activities related to the highest priority actions. The agency continued to assign resources to address these activities and ensure a balance between implementing lessons learned from Fukushima and the need to ensure that those efforts do not displace ongoing work of greater safety benefit, work that is necessary to maintain safety, or other higher-priority work. In particular, the agency is mindful of complexities in completing many licensing activities due to some non-Fukushima-related and Fukushima-related work competing for the same critical skill sets.

The NRC continues to review the licensees' plans to achieve compliance with the Mitigation Strategies Order and the Spent Fuel Pool Instrumentation Order, which were issued in March 2012. Immediately after the current reporting period ended, on October 4, 2014, the first licensee informed NRC staff that a nuclear plant was fully compliant with both Orders. The NRC has issued interim staff evaluations and is in the process of auditing the licensees' implementation of these safety improvements. In June 2014, the NRC staff received the licensees' integrated plans for compliance with the revised Severe Accident Capable Hardened Vents Order, which was issued in June 2013, and is now reviewing these plans.

The NRC has also reviewed the licensees' final reports on the seismic and flooding hazard walkdowns performed at each nuclear power plant and has issued safety assessments related to those reports. The NRC requested that nuclear power plant licensees reevaluate potential seismic and flooding hazards. For the flooding hazard reevaluations, plants were divided into three groups based on the complexity of the analysis and other factors. The NRC staff is reviewing the flooding hazard reevaluations for the first and second set of plants asked to provide reports. Licensees for plants in the third group will submit their flooding hazard reevaluation reports by March 2015. Several licensees whose plant report was originally scheduled to be submitted by March 2014 have been granted extensions to allow for the U.S. Army Corps of Engineers to provide necessary input to complete the analyses. These licensees are expected to submit their reports before February 2016.

By March 31, 2014, licensees of nuclear plants in the Central and Eastern United States (CEUS) submitted reports on the reevaluated seismic hazard for their sites. NRC staff reviewed the CEUS reports in accordance with the NRC-endorsed guidance. By letter dated May 9, 2014, the NRC issued a screening review and prioritization letter to the 61 CEUS sites regarding whether they needed to complete future seismic risk evaluations. The letter placed 44 CEUS sites into 3 priority groups for completion of seismic risk evaluations. Ten of those plants were conditionally screened in as potentially having to do further seismic risk evaluations pending further information from licensees or analysis from the NRC staff. Since that time, most of the sites that were conditionally screened in have screened out because licensees have provided additional information. The 17 sites that were not placed into one of the three priority groups either are required to respond only to limited-scope evaluations (i.e., high-frequency evaluation, low-frequency evaluation, or spent fuel pool evaluation) or have been screened-out of all further evaluations. Of the plants that screened in for further evaluations, Group 1 plant seismic risk submittals are due by June 2017, and Group 2 plant submittals are due by December 2019. Group 3 plants are sites with reevaluated hazards that exceeded ground motions for the current design basis by a relatively small amount, and the NRC staff is evaluating whether those plants will need to perform a full seismic risk evaluation in order for the NRC to determine whether additional regulatory action is warranted.

The NRC staff is preparing to review Expedited Approach reports required for those sites that screened-in for further seismic evaluations. The Expedited Approach submittals, due in December 2014, serve as an engineering review of interim evaluations done to support continued operation while further seismic risk studies are conducted. The evaluations look at the systems and components that can be used to safely shut down a plant under certain accident conditions. The Expedited Approach will either confirm that a plant has sufficient margin to continue with a longer-term evaluation without any modifications or identify the need to enhance the seismic capacity of the plant. Seismic hazard re-evaluations from licensees of western plants will be submitted by March 2015.

Various rulemaking activities related to the requirements of the orders and other Japan Near-Term Task Force recommendations are also proceeding as scheduled. The Commission approved consolidating the station blackout mitigation strategies rulemaking with the onsite emergency response capabilities rulemaking, as well as including portions of the emergency planning recommendations. The consolidation enables the NRC to use resources in a more efficient manner to produce an integrated and coherent set of requirements for addressing beyond-design-basis accidents. The staff is also currently developing the regulatory basis for the Containment Protection and Release Reduction (formerly called "filtering strategies") rulemaking.

The agency completed its consideration of the Near-Term Task Force recommendation to establish a logical, systematic, and coherent regulatory framework for addressing beyond-design-basis events that appropriately balances defense-in-depth and risk considerations (also known as Recommendation 1). The staff proposed a limited set of regulatory improvement activities to the Commission in December 2013. In May 2014, the Commission largely disapproved the staff recommendations and instead directed that the objectives of the activities be reevaluated in the context of the ongoing work on the Risk Management Regulatory Framework (RMRF). This work stems from a June 2012 tasking memorandum from the former NRC Chairman to the former Executive Director for Operations directing the NRC staff to consider recommendations from NUREG-2150, "A Proposed Risk Management Framework," developed by NRC's Risk Management Task Force led by former

Commissioner George Apostolakis. Work on the RMRF is progressing and will be treated outside the scope of NRC's post-Fukushima actions.

In November 2013, the NRC staff submitted a paper to the Commission concerning the expedited transfer of spent fuel from the spent fuel pool to dry cask storage. In May 2014, the Commission concluded that expedited transfer of spent fuel was not necessary, but directed the staff to take some additional actions associated with the spent fuel loading patterns and seismic reevaluations of spent fuel pools. These activities are now in progress.

For all of the activities stemming from the Fukushima lessons learned, the NRC continues to place a high level of importance on public interaction. In fiscal year (FY) 2014, the NRC has held more than 50 public meetings related to Fukushima lessons learned, and these opportunities for collaboration with the public, industry, and other stakeholders have improved the effectiveness and efficiency of the NRC's actions.

Shortly after the close of this reporting period, and after extensive public involvement, the agency published its final rule and generic environmental impact statement (GEIS) on continued storage of spent nuclear fuel (previously referred to as "waste confidence"). This action was in response to a remand by the D.C. Circuit Court of Appeals of the NRC's 2010 waste confidence rule, which the Court found did not satisfy agency obligations under the National Environmental Policy Act. The new continued storage rule adopts the findings of the GEIS regarding the environmental impacts of storing spent fuel at any reactor site after the reactor's licensed period of operations ends. As a result, those generic impacts do not need to be reanalyzed in the environmental reviews for individual licenses. In a related matter, the Commission issued an order lifting its suspension of final licensing actions impacted by the Court's decision when the continued storage final rule became effective on October 20, 2014.

During the reporting period, the NRC was actively reviewing 11 license renewal applications covering 19 reactor units. The staff also continued reviewing eight new reactor combined license applications for 12 proposed new reactor units.

In April, the NRC issued new uranium recovery facility operating licenses to Powertech USA for the Dewey Burdock facility in Fall River and Custer Counties, SD, and to Strata Energy, Inc. for the Ross facility in Crook County, WY. These licenses are the fourth and fifth issued by the NRC for new uranium-recovery facilities in recent years.

On May 30, the agency released its annual report on abnormal occurrences for FY 2013, citing 10 events involving radioactive materials. An accident or event is considered an abnormal occurrence if it involves a major reduction in the degree of protection of public health and safety. Of the 10 events reported, two involved exposure of an embryo or fetus and eight were associated with the use of radioactive material during diagnostic or therapeutic medical procedures, and all occurred in Agreement States (i.e., States that regulate industrial and medical uses of radioactive materials under an agreement with the NRC). No events at NRC-licensed facilities, including nuclear power plants, were significant enough to be reported as abnormal occurrences.

On June 10 and 11, the NRC held its 9th annual Fuel Cycle Information Exchange, during which several hundred licensees, interested stakeholders, and NRC staff discussed regulatory issues related to uranium enrichment and conversion, nuclear fuel fabrication, and the deconversion of depleted uranium tails. The conference included discussions and

presentations on nuclear safety standards, guidance development and rulemaking, operating experience, security and safeguards, and emergency planning.

In July, the agency received the final report from the International Atomic Energy Agency's International Regulatory Review Service (IRRS) February 2014 follow-up mission to its initial October 2010 mission. The purpose of the IRRS effort was for an international team of experts to review the regulatory framework for the safety of operating nuclear power plants in the U.S. and evaluate the effectiveness of regulatory functions implemented by the NRC. The final report concluded that the recommendations and suggestions from the 2010 IRRS mission had been taken into account systematically, that significant progress had been made in many areas, and that many improvements were carried out. The IRRS team also observed that the NRC has acted promptly and effectively after the Fukushima Dai-ichi accident in the interest of public health and safety in the U.S.

Also in July, the NRC, the Department of Energy (DOE), the Department of State, and the Environmental Protection Agency jointly completed the fifth report updating the U.S. National Report prepared under the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management. The Joint Convention establishes an international peer review process among Contracting Parties and provides incentives for nations to take appropriate steps to bring their nuclear activities into compliance with international safety standards and practices. The report was provided to the other Contracting Parties for review. The DOE has the lead for the working group that prepared the national report.

On August 1, the NRC received an "A" from the U.S. Small Business Administration for its FY 2013 efforts to meet the Federal contracting goal for small businesses. This marks the third consecutive year the NRC has earned this recognition. In FY 2013, the NRC had \$254.56 million in eligible contracting dollars. Of that amount, approximately 33 percent went to small businesses, exceeding the agency goal of 29 percent.

Also in August, the agency announced the award of \$15 million in FY 2014 grants to academic institutions through the Nuclear Education Program. The grants are used for scholarships, fellowships, trade school and community college scholarships, and faculty development with the objective of helping to maintain a work force of highly qualified nuclear professionals. This fiscal year, the NRC awarded 49 grants to 37 higher education institutions, including Minority-Serving Institutions, located in 23 States and in Puerto Rico. Since the program began in 2007, the NRC has awarded nearly \$122 million in grants.

In early September, the NRC issued mid-cycle assessment letters to the Nation's operating commercial nuclear power plants regarding their performance through the first half of 2014. The mid-cycle assessment period concluded June 30, with 90 plants in the two highest performance categories. Of the 100 operating plants, 78 facilities fully met all safety and security performance objectives and will continue to receive baseline inspections. Twelve reactors were assessed as needing to resolve one or two items of low to moderate safety significance and thus will receive supplemental inspection attention from the agency to follow up on corrective actions. Eight nuclear reactors were in the third performance category with a degraded level of safety performance. For this category, regulatory oversight will include additional NRC inspections, senior management attention, and oversight focused on the causes of the degraded performance. One reactor, Browns Ferry Unit 1 in Alabama, was in the fourth performance category through the end of the assessment period and required significantly more oversight because of a pre-existing safety finding of high significance. However, since then, Browns Ferry 1 transitioned to the second-highest-performing level after resolving its significant

performance issues and, on October 20, 2014, after the reporting period ended, all three units at Browns Ferry were returned to the normal levels of inspection and oversight for the first time in more than four years.

The Fort Calhoun plant remains under an increased NRC oversight program, distinct from the normal reactor oversight process, because of an earlier extended shutdown associated with significant performance issues. Therefore, the licensee did not receive a mid-cycle assessment letter. The plant will remain under increased NRC oversight until the agency determines that the licensee's performance warrants returning it to the normal oversight process based on overall licensee performance.

Also in early September, the agency issued a new strategic plan covering FY 2014 through FY 2018, which provides a blueprint for the agency to plan, implement, and monitor the work needed to achieve the NRC's mission for the next four years. In the plan, the NRC established two strategic goals: (1) to ensure the safe use of radioactive materials, and (2) to ensure the secure use of radioactive materials. The plan also includes a new vision statement: "A trusted, independent, transparent, and effective nuclear regulator." In addition, it sets strategic objectives that describe what is needed to achieve the agency's goals and describes strategies that reflect how the agency will respond to new challenges affecting nuclear regulations. The NRC staff also initiated Project Aim 2020 to improve the agency's planning, agility, and performance. We have worked with internal and external parties to forecast the future workload and operating environment in 2020. The intent of the project is to position the agency to be more proactive rather than reactive to circumstances that may be outside NRC control.

In September, the NRC sent the third quadrennial report of the Radiation Source Protection and Security Task Force to President Obama and to Congress, outlining the Federal government's efforts over the past four years to enhance the security of radioactive sources. The task force was established by the Energy Policy Act of 2005, with the NRC as its chair, to evaluate the security of radioactive sources in the U.S. and provide recommendations on guarding them from potential criminal or terrorist threats. The 2014 report presents the status of open recommendations, including actions taken on the remaining recommendations from the 2006 and 2010 reports, as well as three new recommendations addressing cybersecurity, financial planning or other mechanisms to address costs for disposal/disposition of radioactive sources, and transition to effective alternative technologies that could replace all or some current technologies that use radioactive sources of concern.

The NRC submitted one event to the IAEA 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. The event, involving overexposure to a radiographer, was rated as level 2, the second-lowest level on the INES scale.

In addition to the recently published continued storage rule discussed earlier, the NRC has sought public comments on ongoing or proposed regulatory activities and has issued other new final regulations through the use of *Federal Register* notices. These included proposed revisions to requirements for medical uses of radioactive materials, potential changes to radiation protection regulations, proposed generic procedures the agency would use to conduct hearings on whether a new reactor has been built according to its license, and a final rule that outlined the licensing, inspection, and annual fees the NRC will charge its applicants and licensees for FY 2014.

The agency conducted over 500 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 335 Freedom of Information Act (FOIA) requests and closed 335 FOIA requests. Of particular note, the agency has completed processing 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 54 such FOIA requests and released 258,796 pages of records to the public, including more than 21,409 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