

May 15, 2015

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

Dear Madam 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 2014 through March 2015.

The NRC's response to the lessons learned from the Fukushima accident in Japan during the period has focused on the highest-priority (Tier 1) activities, and 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 while ensuring a balance between putting lessons learned from Fukushima into place 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 the complexities in completing many licensing activities because of some non-Fukushima-related and Fukushima-related work competing for the same critical skill sets.

The NRC continues to review nuclear power plant licensees' plans to achieve compliance with the mitigation strategies order and the spent fuel pool instrumentation order, which were issued in March 2012. The NRC has issued interim staff evaluations and is in the process of auditing the licensees' implementation of these safety improvements. On October 4, 2014, the first licensee informed NRC staff that a nuclear plant was fully compliant with both orders, and as of February 24, 2015, an additional four units are now in compliance with the mitigating strategies order, and an additional 16 units are now in compliance with the spent fuel pool instrumentation order. By the end of calendar year (CY) 2015, approximately 50 units are expected to be in compliance with the mitigation strategies order, and approximately 75 are expected to be in compliance with the spent fuel pool instrumentation order.

In June 2014, NRC staff received the licensees' integrated plans for compliance with Phase 1 of the revised severe accident capable hardened vents order, which was issued in June 2013. The staff has begun to issue interim staff evaluations of those plans. Licensees are required to submit their plans for Phase 2 of the revised severe accident capable hardened vents order by December 31, 2015, and to complete full implementation by June 2019.

The NRC requested that nuclear power plant licensees reevaluate potential seismic and flooding hazards. If these newly reevaluated hazards are not bound by the current design basis, the licensee will determine whether interim protection measures are needed while a longer term evaluation is completed. For the flooding hazard reevaluations, plants were divided into three groups based on the complexity of the analysis and other factors. Each group, with the exception of those plants that were granted extensions, has now submitted these reevaluations. NRC staff is reviewing the flooding hazard reevaluations and has begun to issue evaluations for the reports that were submitted in the first group. 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 supply necessary input to complete the analyses. These licensees are expected to submit their reports before February 2016.

On May 9, 2014, the NRC issued a screening review and prioritization letter to the 58 Central and Eastern U.S. (CEUS) sites currently operating, documenting the need to complete future seismic risk evaluations. During the NRC screening and prioritization review, NRC staff identified 14 sites for which a determination could not be made during the 30-day review period and interactions with licensees were needed to resolve technical issues. Licensees completed these reviews in December 2014, and the NRC staff has now completed the screening and prioritization reviews for all CEUS sites. Overall, 31 CEUS sites screened into three priority groups for completion of seismic risk evaluations. The NRC requires 22 of the remaining 27 sites to perform limited-scope evaluations (i.e., high-frequency evaluation, low-frequency evaluation, or spent fuel pool evaluation). Five sites have screened-out of any further evaluations.

Sites that screened-in for a seismic risk evaluation submitted interim actions or evaluations in December 2014 as part of the Expedited Seismic Evaluation Process (ESEP). The ESEP submittals serve as an engineering review of interim evaluations. The evaluations look at the systems and components that can be used to safely shut down a plant under certain accident conditions. The ESEP 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. NRC staff is reviewing the ESEP submittals that were required for those sites that screened-in for further seismic evaluations.

By March 12, 2015, the three licensees in the Western United States submitted their seismic hazard reevaluation reports. The staff plans to complete a screening review similar to the CEUS site screening and prioritization.

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 Commission received the proposed rule in April 2015. The staff also is developing the draft regulatory basis for the containment protection and release reduction (formerly called "filtering strategies") rulemaking.

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 2015, the NRC

has held more than 15 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.

The Fukushima activities described in the paragraphs above demonstrate consistent progress on behalf of the NRC and industry in completing safety enhancements at U.S. facilities in response to lessons learned. The NRC expects that most licensees will complete implementation of the majority of the most safety-significant enhancements by or before December 31, 2016.

Between October 2014 and January 2015, the agency released the final four volumes of the Yucca Mountain safety evaluation report, completing the technical safety review of the U.S. Department of Energy's (DOE's) application. Volume 2 covers repository safety before permanent closure, Volume 3 covers the period after a repository at Yucca Mountain would be permanently closed, Volume 4 covers administrative and programmatic requirements for the repository, and Volume 5 covers proposed conditions on the construction authorization, probable subjects of license specifications, and the staff's overall conclusions.

As documented in the safety evaluation report, the staff concluded that it could not recommend authorization of construction at this time because DOE has not met certain land and water rights requirements and it has not yet completed a supplement to its environmental impact statement (EIS). A final licensing decision, should funds beyond those available be appropriated, could come only after completion of a supplemental EIS, hearings on contentions in the adjudication, and Commission review. On March 12, 2015, the NRC announced that it will use a portion of its remaining funds to prepare a supplement to DOE's EIS that will address repository-related effects on ground water and surface discharges of ground water. The agency expects to issue the draft supplement for public comment in late summer.

Effective October 5, 2014, the NRC reorganized its materials and waste programs by merging the Office of Federal and State Materials and Environmental Management Programs and the Office of Nuclear Material Safety and Safeguards. The new office retained the name of the Office of Nuclear Material Safety and Safeguards (or NMSS), an office established by Congress when it created the NRC in 1974. The merger reflects changes in the NRC's materials and waste management workload and an effort to integrate regulatory activities of the front and back ends of the nuclear fuel cycle, as well as to reduce costs and improve efficiency.

Also in early October, senior leaders from independent and executive branch regulatory agencies launched the interagency Cybersecurity Forum. Led by the NRC Chairman, the forum's objectives are to enhance communication, share lessons learned, and develop a common understanding of cybersecurity activities through the sharing of best practices and exploring approaches to enhance cybersecurity protections. The officials established areas of initial discussion that included lessons learned with regulation-based and voluntary approaches to cybersecurity, proactive cyber risk assessment, and management and information sharing.

In mid-November, the agency issued the Nuclear Regulatory Commission Performance and Accountability Report for Fiscal Year 2014. The report details the agency's program and financial performance and reflects the agency's achievement of its safety and security strategic goals and objectives and their related performance indicators. The report also points out the agency's sound financial position and full compliance with laws governing Federal spending.

For the 11<sup>th</sup> consecutive year, an independent auditor found no material weaknesses or significant deficiencies in the agency's financial statements.

In late January 2015, NRC staff sent to the Commission its Project Aim 2020 report detailing staff recommendations designed to improve the agency's agility, effectiveness, and efficiency while ensuring its ability to protect the public health and safety. The Project Aim report recommended a number of strategies under the themes of people, planning, and process to prepare the NRC for the future. The staff's report proposed that the NRC could function more efficiently by performing the following:

- Right-sizing the agency to retain appropriate skill sets needed to accomplish its mission.
- Streamlining agency processes to use resources more wisely.
- Improving timeliness in regulatory decision-making and responding quickly to changing conditions.
- Promoting unity of purpose with clearer agencywide priorities.

The Commission is currently deliberating on the recommendations. Implementation of the approved strategies will support the agency's continuing effectiveness in accomplishing its essential mission.

On February 27, 2015, the Governor of Wyoming sent a letter to the NRC Chairman indicating the State's intent to become an Agreement State, pursuant to Section 274b of the Atomic Energy Act of 1954, as amended. If approved by the Commission, Wyoming would assume regulatory authority over byproduct material (as defined in Section 11e.(2) of the Atomic Energy Act), including the uranium recovery facilities that generate this material. As required by the Act, NRC staff will review the application and conduct an assessment of the compatibility of the Wyoming program with the NRC's program and the adequacy of Wyoming's program to protect public health and safety. If the Commission approves the proposed agreement, the NRC will publish the text and a summary of its assessment in the *Federal Register* for public comment.

From March 10–12, 2015, the NRC held its 27<sup>th</sup> annual Regulatory Information Conference, hosted by the Offices of Nuclear Reactor Regulation and Nuclear Regulatory Research. The approximately 3,000 attendees included industry executives, representatives from State governments, nongovernmental organizations, individual community members, and representatives from dozens of foreign countries. The conference is an opportunity for attendees to discuss issues related to the safety and security of commercial nuclear facilities and current regulatory activities.

Also in early March, the NRC issued annual assessment letters to the nation's operating commercial nuclear power plants regarding their performance during 2014. The NRC subsequently updated its public website to reflect performance for the first quarter of calendar year 2015. As of the end of March 2015, 96 reactors were in the two highest performance categories. Of the 99 operating reactors, 80 facilities fully met all safety and security performance objectives and will continue to receive baseline inspections. The NRC assessed 16 reactors as needing to resolve one or two items of low- to moderate-safety significance and, thus, those licensees will receive supplemental inspection attention from the agency to follow up on corrective actions. One nuclear reactor was 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. Two reactors—Arkansas Nuclear One, Units 1 and 2—were in the fourth performance category at the end of the assessment period, requiring significantly more oversight because of two safety findings of substantial significance. This oversight will include several additional inspections and frequent NRC management involvement to confirm the reactors are addressing the performance issues.

At the time the agency issued its annual assessment letters in December 2014, the Fort Calhoun plant remained 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 an annual assessment letter. Subsequently, on March 30, 2015, the NRC announced that the Fort Calhoun plant was returning to the agency's normal reactor oversight program because it had operated safely since the plant's restart in December 2013, was making progress on the required improvement areas identified in the NRC's post-restart confirmatory action letter (CAL), and currently has no significant safety or security issues. NRC staff will continue to perform follow-up inspections to verify that all CAL commitments continue to be met.

During the reporting period, the NRC was actively reviewing 10 license renewal applications covering 18 reactor units. The staff also continued reviewing six new reactor combined license applications for 10 proposed new reactor units.

In January 2015, Entergy Nuclear Operations, Inc., provided written certification to the NRC of permanent cessation of power operations and permanent removal of fuel from the reactor vessel at the Vermont Yankee Nuclear Power Station, near Brattleboro, Vermont. Submittal of both certifications means that the licensee is no longer authorized to operate the reactor. In the post-shutdown decommissioning activities report submitted by Entergy, the licensee indicated that the site will be placed in long-term storage (SAFSTOR). During the reporting period, the NRC continued to oversee the transition of Crystal River Unit 3, Kewaunee Power Station, and San Onofre Nuclear Generating Station Units 2 and 3, to decommissioning.

On March 31, 2015, the NRC released its annual report summarizing the results of the agency's enforcement program. During CY 2014, the NRC issued 83 escalated enforcement actions (including 13 enforcement orders), 58 escalated notice of violations without a proposed civil penalty, and 12 actions involving civil penalties totaling \$135,100 to reactor and nuclear material licensees. Over the past five years, the number of escalated enforcement actions issued by the agency has shown an overall declining trend; however, in CY 2014, the total number of escalated enforcement actions increased by nine percent when compared with CY 2013, largely as a result of an increase in the number of escalated actions issued to nuclear materials user licensees.

During the first half of the fiscal year, the NRC submitted two events to the International Atomic Energy Agency for inclusion in the International Nuclear and Radiological Event Scale (INES). 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 events involved over exposure to radiographers and were rated as Level 2 on INES, although the most recent event is a provisional rating pending the results of the investigation into the actual doses to some of the impacted workers who were not wearing dosimetry at the time.

From October 2014 through March 2015, the agency conducted over 400 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 225 Freedom of Information Act (FOIA) requests and closed 278 FOIA requests.

Finally, I am pleased to report that the NRC remains a top place to work in the Federal Government, according to the Federal Employee Viewpoint Survey (released in late October 2014), exceeding Governmentwide results in a number of key areas. In each of the major indices used and measured by the U.S. Office of Personnel Management, the NRC ranked either second, third, or fourth among all Federal agencies. Subsequently, based on its evaluation of selected Federal Employee Viewpoint Survey results, the nonprofit Partnership for Public Service released its annual ranking. The NRC, which has made the top 10 for as long as the rankings have been issued, came in 6<sup>th</sup> out of 25 mid-sized agencies.

Please contact me for any additional information you may need.

Sincerely,

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Stephen G. Burns

Enclosure:  
As stated

cc: Senator Thomas R. Carper

Identical letter sent to:

The Honorable Shelley Moore Capito  
Chairman, Subcommittee on Clean Air  
and Nuclear Safety  
Committee on Environment and Public Works  
United States Senate  
Washington, DC 20510  
cc: Senator Thomas R. Carper

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

The Honorable Fred Upton  
Chairman, Committee on Energy  
and Commerce  
United States House of Representatives  
Washington, DC 20515  
cc: Representative Frank Pallone, Jr.

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  
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and the Economy  
Committee on Energy and Commerce  
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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 Lamar Alexander  
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and Water Development  
Committee on Appropriations  
United States Senate  
Washington, DC 20510  
cc: Senator Dianne Feinstein