



JUNE 4, 2014

NRC'S IMPLEMENTATION OF THE FUKUSHIMA NEAR-TERM TASK FORCE RECOMMENDATIONS AND OTHER ACTIONS TO ENHANCE AND MAINTAIN NUCLEAR SAFETY

U.S. SENATE, COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

ONE HUNDRED THIRTEENTH CONGRESS, SECOND SESSION

HEARING CONTENTS:

OPENING STATEMENT:

Senator Barbara Boxer [\[view PDF\]](#)

Chairman, Senate Committee on Environment and Public Works

WITNESSES:

The Honorable Allison M. Macfarlane [\[view PDF\]](#)

Chairman, Nuclear Regulatory Commission

The Honorable Kristine L. Svinicki [statement unavailable]

Commissioner, Nuclear Regulatory Commission

The Honorable George Apostolakis [statement unavailable]

Commissioner, Nuclear Regulatory Commission

The Honorable D. Magwood, IV [statement unavailable]

Commissioner, Nuclear Regulatory Commission

The Honorable William C. Ostendorff [statement unavailable]

Commissioner, Nuclear Regulatory Commission

AVAILABLE WEBCAST(S):*

Link to full hearing webcast (duration 02:05:36):

- http://www.epw.senate.gov/public/index.cfm?FuseAction=Hearings.LiveStream&Hearing_id=a3e6c0c8-e443-7540-8820-0d43fbc55022

COMPILED FROM:

- http://www.epw.senate.gov/public/index.cfm?FuseAction=Hearings.Hearing&Hearing_ID=a3e6c0c8-e443-7540-8820-0d43fbc55022

** Please note: Any external links included in this compilation were functional at its creation but are not maintained thereafter.*

Statement of Barbara Boxer

Hearing: UPDATED TIME: Full Committee Hearing entitled, "NRC's Implementation of the Fukushima Near-Term Task Force Recommendations and other Actions to Enhance and Maintain Nuclear Safety"

Wednesday, June 4, 2014

Statement of Senator Barbara Boxer

Oversight Hearing: "NRC's Implementation of the Fukushima Near-Term Task Force Recommendations and other Actions to Enhance and Maintain Nuclear Safety"

June 4, 2014

(Remarks as prepared for delivery)

Today, the Environment and Public Works Committee is holding its ninth oversight hearing with the Nuclear Regulatory Commission (NRC) since the earthquake, tsunami, and nuclear meltdowns in Japan.

It has been more than three years since the Fukushima disaster, and Japan is still struggling to clean up the site.

The massive underground ice wall intended to prevent radioactive water from flowing into the sea will take a year to finish and cost more than \$300 million.

We must learn from the tragic events in Fukushima and take all necessary steps to ensure the safety of nuclear facilities in the United States. Today I am continuing to focus on whether the NRC has done that.

It is vitally important that the NRC remain committed to its mission, which is "to ensure the safe use of radioactive materials for beneficial civilian purposes while protecting people and the environment."

Based on a review of the progress made since the Fukushima disaster and on what additional steps need to be taken by NRC to ensure the safety of the people and the environment, I am afraid that you may have lost sight of that mission.

The Fukushima Near-Term Task Force, made up of NRC senior staff, recommended 12 measures to upgrade safety in the wake of the Fukushima meltdowns.

In August 2011, the former NRC Chairman testified before our Committee that the NRC should be able to act on those recommendations within 90 days and that they could be implemented within 5 years.

As of today, the NRC has failed to require reactor operators to complete implementation of a single one of these post-Fukushima safety measures. Some reactor operators are still not in compliance with the safety requirements that were in place BEFORE Fukushima. And the NRC has only completed its own action on 4 of the 12 Task Force recommendations.

This is an unacceptable delay that puts the safety of the American people at risk.

I also have serious concerns about the safety of spent nuclear fuel. NRC's own studies show that the consequences of a fire at a spent nuclear fuel pool can be as serious as a severe accident at an operating reactor.

Not only does NRC allow that fuel to be stored in the spent fuel pools indefinitely, NRC is

considering requests from decommissioning reactor operators for exemptions from emergency response measures designed to protect nearby communities. While the Nuclear Energy Institute claimed in a letter sent to me yesterday that these exemptions are granted only when “special circumstances” exist at a facility, the truth is that NRC has never once denied one. It rubber-stamps them every single time a reactor shuts down. I have introduced three bills with Senators Markey and Sanders to increase the safety of spent nuclear fuel and improve the decommissioning process.

These are not theoretical concerns. On the same day that this Committee held a hearing on this topic last month, an out-of-control wildfire was burning a half a mile away from the San Onofre nuclear plant.

My concern about NRC’s commitment to identify and remedy safety problems is also highlighted by my investigation into the installation of defective equipment at San Onofre. For example, I learned that NRC staff was preparing to allow the re-start of one of the reactors before it had received a single answer to any of the technical safety questions it asked Southern California Edison to submit. This oversight investigation is important, not only to get to the bottom of the problems at San Onofre, but also to avoid disastrous problems like this in the future. I am also concerned that whistleblowers at NRC feel they have no recourse but to contact Congress to report safety problems, because NRC’s internal procedures for addressing these concerns are broken.

Remarkably, NRC is continuing to obstruct my investigation by withholding documents that the Committee has a right to receive. Let me be clear -- the NRC has no legal right whatsoever to refuse to provide the Committee with these documents, and today I will make available a comprehensive analysis of this conclusion.

In order for the nuclear industry to maintain the confidence of the American people at a time when it is increasingly challenged by safety and economic concerns, the agency charged with regulating the nuclear industry must always make public safety its number one priority. NRC’s recent track record does not inspire confidence.

I look forward to discussing these issues with you at today’s hearing.

###

WRITTEN STATEMENT
BY ALLISON M. MACFARLANE, CHAIRMAN
UNITED STATES NUCLEAR REGULATORY COMMISSION
TO THE
SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
JUNE 4, 2014

Chairman Boxer, Ranking Member Vitter, Chairman Whitehouse, Ranking Member Sessions, and Members of the Committee, my colleagues and I appreciate the opportunity to appear before you today on behalf of the U.S. Nuclear Regulatory Commission (NRC).

Today, I'd like to highlight the NRC's ongoing post-Fukushima accomplishments, provide additional detail on our decommissioning activities, and address the agency's efforts to ensure it is operating efficiently and effectively.

FUKUSHIMA

First, let me reiterate that the NRC continues to conduct inspections at each U.S. nuclear power plant and the Commission remains confident that the fleet continues to operate safely. The NRC continues making good progress in addressing lessons learned from the Fukushima Dai-ichi accident. The majority of the Tier 1 activities are on track to be completed before the end of 2016, and we continue to address Tier 2 and Tier 3 issues. The NRC continues to monitor the implementation of the required safety enhancements. We are seeing the reactors with upcoming fall outages preparing to make modifications to safety systems to provide additional supplies of electrical power and multiple ways to inject cooling water into the reactors and spent fuel pools. They are also positioning additional portable equipment that is arriving at the sites. I just returned from travel to Arizona, where I visited the Palo Verde Nuclear Generating Station in Wintersburg and toured the industry's new Regional Response

Center in Phoenix. To comply with the orders that the NRC issued to all operating nuclear power plants to be prepared to employ mitigation strategies in response to a severe accident, licensees have purchased portable equipment such as pumps and generators and placed them at locations that ensure their availability during such events. I was able to see this first-hand at Palo Verde. At the Regional Response Center, the industry has set up a facility containing additional portable safety equipment, radiation protection equipment, electrical generators, pumps, and other emergency response equipment that can be delivered to an affected reactor site within 24 hours to ensure that plants can restore and maintain plant cooling indefinitely. A second Regional Response Center in Memphis, Tennessee is expected to open later this month.

Following the Fukushima Dai-ichi accident, the NRC moved swiftly to require reactor licensees to confirm their capability to protect against the hazards within the plant's current design basis. Additionally, plants were required to assess their ability to mitigate if a beyond design basis event were to occur. Plants are making progress in complying with the NRC's Mitigating Strategies Order. Additionally, plants have now begun installing additional reliable instrumentation to monitor water levels in the spent fuel pools following a beyond-design-basis event. Overall, licensees are making significant progress in implementing our Fukushima-related requirements.

Enhanced Capabilities to Mitigate Beyond-Design-Basis Accidents

In addition to assessing the site specific hazards at each site, the NRC issued orders to licensees to ensure that sites are better prepared to respond to beyond-design-basis accidents. The NRC has required licensees, through our Mitigating Strategies Order, to provide additional capabilities to maintain or restore core cooling, containment integrity, and spent fuel pool cooling for all units at a site following an beyond design basis event. In February 2013, the licensees submitted their integrated safety plans for NRC approval and the NRC staff has

issued interim staff assessments approving the plans. Licensees are now in the process of implementing these requirements.

Nuclear power plant licensees are making plant modifications and are procuring the equipment for their sites to support full implementation by the dates established in the orders and their related integrated safety plans. Many sites are scheduled to achieve full implementation by the end of 2015, with the remaining sites to be completed by 2016. The one exception to this is that some boiling water reactors are requesting schedule extensions for those parts of the mitigating strategies affected by the NRC's revision to the order on containment venting, which I will discuss further in a moment. During and after implementation, the NRC will conduct inspections to verify that nuclear power plants have put appropriate strategies in place to mitigate beyond design-basis accidents.

This additional capability to address beyond design basis events such as large earthquakes or floods provides the most significant safety improvements that the NRC has required as a result of the lessons learned from Fukushima.

Consistent with our regulatory practices, the NRC is conducting a rulemaking that will codify the requirements already imposed in the March 2012 Order. The rule will update requirements to mitigate a prolonged station blackout condition. This rulemaking will incorporate feedback and lessons-learned from implementation of the previously imposed Order to enhance capabilities to mitigate beyond-design-basis accidents at the sites. This rulemaking remains on schedule to be completed by 2016.

Seismic and Flooding Reevaluations

The NRC directed licensees to reevaluate existing design bases for plants in the area of seismic and flooding hazards. As a result of the lessons learned from the earthquake and tsunami at Fukushima and because Earth science understanding of these hazards has advanced, the NRC required all nuclear power plants to re-evaluate their hazards. To ensure appropriate protection against natural hazards, the NRC is requiring each plant to use current

methodologies and updated regulatory guidance to reevaluate seismic and flooding hazards and then ensure an adequate plant response to those hazards. The licensees for plants east of the Rocky Mountains have completed and submitted the reevaluation of potential seismic hazards for their sites. Approximately two-thirds of these plants, or about 40 sites, have determined that their new seismic hazard estimates exceed the previously evaluated hazard, which would necessitate the need for further seismic risk analysis. The NRC has assigned each of these plants to one of three priority categories that dictate their deadlines to complete additional evaluations. The NRC will use the results of these assessments to determine whether additional site-specific safety enhancements are warranted. Approximately 20 of the 40 sites have a sufficiently low hazard increase that a detailed risk analysis may not be necessary.

Because the U.S. Geological Survey recently updated seismic hazards for the central and eastern United States, plants in those areas could incorporate this new data directly. The three plants in the Western United States cannot rely on a single seismic hazard model and therefore must conduct significant additional evaluation in order to submit their seismic hazard reassessments. For this reason, licensees whose plants are located in the Western United States have longer to conduct assessments and are scheduled to submit their seismic hazard reevaluations by March 2015.

It is important to note that these requested reevaluations of seismic hazards and the related staff assessments represent only the *hazard*, which is the amount of ground shaking, and not the plant's *capacity* to withstand that shaking. The risk posed to the public from a nuclear power plant due to a seismic event is a function of not only the ground motion, but also the plant design and construction, which has been shown to include considerable margin to survive strong earthquakes. Additional evaluations performed by licensees and the NRC staff support the findings of the Near Term Task Force, and other determinations, that continued operation of nuclear plants in the U.S. poses no undue risk to the public health and safety. The

NRC staff and industry continue to assess seismic issues and identify possible safety enhancements to address those cases in which seismic risks are determined to be higher than previously estimated.

As an interim step to implement safety enhancements, the NRC and industry have developed a revised approach to upgrade certain safety systems at the facilities for which additional analysis is required. Licensees will now use their updated seismic hazard assessments to identify and implement seismic upgrades to certain safety-significant equipment. Previously, the planned approach was to have licensees complete comprehensive plant risk analyses before determining what upgrades may be necessary. The revised approach will result in seismic-related safety enhancements being identified and implemented at the sites sooner than originally planned, with many plants completing safety enhancements by 2016. The NRC will still require most of those licensees who complete this interim step to do seismic probabilistic risk assessments to determine if any further safety enhancements are warranted.

For flooding hazard reevaluations, the NRC categorized the plants based on factors such as the complexity of the analyses required, co-location with a site considering a new reactor application, and the potential for requiring an integrated assessment of the re-evaluated hazard. Thirty-two sites have provided the results of their reevaluated flood hazard, and the remaining 30 sites are scheduled to complete and submit their reevaluations by March 2015.

Sites with reevaluated hazard results that are bounded by their current design basis do not need to take further action. The NRC requested that licensees whose flooding hazard reevaluation results are not bounded by their current design basis describe any interim actions, taken or planned, to address the reevaluated flooding hazard. Interim actions may include pre-staging protective equipment like temporary flood barriers, modifying flood procedures, provision of additional pumping capacity, and installation of permanent flooding barriers. In addition, these sites must complete an assessment of the site's flood protection and mitigation

capability within two years of submitting the hazard reevaluation results to determine whether permanent safety enhancements are necessary.

At present, the NRC is reviewing the interim actions for flooding that were proposed by individual sites and is performing on-site inspections to ensure that the interim actions are protective of public health and safety. Concurrently, the NRC is reviewing the flood hazard reevaluation results submitted by the licensees to ensure they correctly utilized current methodologies.

Emergency Preparedness Communication and Staffing

To ensure that nuclear power plant sites have adequate staffing and sufficient communication capacity in place to cope with prolonged accident conditions, particularly involving multiple units, the NRC requested that licensees reassess their emergency response capabilities. This includes examining staffing plans, conducting periodic training for staff on multi-unit accident scenarios, and ensuring that communication equipment can function during a prolonged loss of power at the site. Licensees are performing these activities and are expected to complete them by 2016. Portions of these activities related to staffing and communications have already been completed and submitted to the NRC, and the NRC staff has issued safety assessments to operating licensees. The staff will follow up with licensees to confirm that the enhancements to the sites' communication systems are completed.

The NRC is also conducting a rulemaking to integrate emergency operating procedures, severe accident management guidelines, and extensive damage mitigation guidelines. This rulemaking, will require these safety procedures to be effectively implemented in a coordinated manner during a nuclear accident. The new requirements will better equip licensees to address accidents outside of a plant's current design basis, and promote proper training to address these scenarios. The NRC will then ensure that the licensees take the actions specified in the final rule, which remains on schedule for completion by 2016.

Spent Fuel Pool Instrumentation

Although inspections of the Fukushima Dai-ichi facility determined that spent fuel pool integrity had been maintained and the spent fuel had been adequately cooled during the accident, there were questions about the water level in the spent fuel pools that diverted operator attention away from other response priorities. To ensure the capability to continuously monitor spent fuel pool water levels and conditions during an extreme event, the NRC has ordered the installation of enhanced instrumentation at all U.S. nuclear plants. This additional equipment expands upon the capabilities of currently-installed instrumentation and will indicate the full range of water level above the spent fuel assemblies. To ensure coordinated implementation of all high-priority enhancements, the NRC is requiring that licensees complete installation of this instrumentation, along with the installation of the enhanced spent fuel pool cooling capabilities required under the Mitigating Strategies Order, with full implementation at all sites by 2016. Licensees submitted their integrated safety plans to implement this requirement in February 2013. The NRC reviewed those safety plans and issued all of its interim staff evaluations by the end of 2013. The NRC will ultimately issue final safety evaluations and inspect each site to verify that the licensees have appropriately implemented this requirement.

Reliable Hardened Vents

To protect containment integrity and support continued core cooling in the 31 boiling water reactors with Mark I and II containments, similar in design to those at Fukushima Dai-ichi, the NRC issued an Order requiring installation of reliable hardened vents capable of relieving high pressure in the reactor containment. In response, in February 2013, licensees submitted their plans for implementing this requirement. These requirements were initially on the same schedule as those I just described, with full implementation expected in 2016. The Commission subsequently directed the staff to expand those requirements to ensure that the vents can be operated during severe accidents. The NRC issued new requirements for the operation of vents in June 2013, including a revised schedule requiring licensees to submit implementation plans

in June 2014, and have in place severe accident capable venting systems by June 2018. The differences between the schedules for this order and the Mitigating Strategies Order led some licensees to request, and the NRC to grant, extensions to that part of the Mitigating Strategies Order related to venting containment. There have also been requests for extensions related to the Containment Venting Order for those plants, such as Vermont Yankee, that plan to cease operation in the relatively near future. The NRC is reviewing each extension request to ensure it is consistent with the intent of our Orders for timely implementation of safety enhancements. The NRC is ensuring that licensees will have all necessary plant safety enhancements in place, except those that rely on the enhanced vents, before the end of 2016.

The Commission also directed the NRC staff to undertake a rulemaking to consider additional requirements for these reactors to retain and filter radioactive material during an accident and enhance the capability to maintain containment integrity and cool core debris. The NRC staff is exploring the requirements associated with such measures. In keeping with NRC rulemaking practices, there will be multiple opportunities for public participation in this process.

Spent Fuel Pool Study and Expedited Transfer Issues

The events at Fukushima also led the NRC staff to question whether the NRC should require expedited transfer of spent fuel to dry cask storage at U.S. nuclear power plants.

In the summer of 2011, the NRC staff initiated a research project entitled, "Consequence Study of a Beyond-Design-Basis Earthquake Affecting the Spent Fuel Pool for a U.S. Mark I Boiling Water Reactor." The final report was completed and made available to the public in October 2013. The staff also undertook a generic regulatory analysis to determine if the potential safety benefits of reducing the amount of spent fuel stored in storage pools would: (i) meet the NRC's criteria for a substantial safety improvement at existing nuclear power plants; and (ii) meet criteria for a cost-justified safety improvement for future nuclear power plants. This assessment was provided to the Commission in late 2013. The Commission held a public briefing on spent fuel pool safety and consideration of expedited transfer of spent fuel to dry

casks, which gave both the NRC staff and selected stakeholders the opportunity to present their views.

The Commission approved the staff's recommendation that no further generic assessments be pursued related to possible regulatory actions to require the expedited transfer of spent fuel to dry cask storage. The Commission also directed that the staff: (1) further evaluate an alternate loading configuration of spent fuel in pools in its regulatory analysis; (2) provide the Commission with information on the treatment of limited-term operational vulnerabilities associated with the discharge of spent fuel into pools, as well as on spent fuel rack designs used in other countries; and (3) remain cognizant of ongoing efforts by the Department of Energy to develop accident tolerant fuels and engage with them as appropriate to facilitate potential future use of these technologies in U.S. commercial nuclear power plants. The Commission further directed the staff to evaluate whether spent fuel pools can be eliminated from further review in the seismic hazard reevaluation efforts described earlier.

National Academy of Sciences Study

As directed by Congress, the NRC issued a grant to the National Academy of Sciences (NAS) to provide an assessment of lessons learned from the Fukushima nuclear accident for improving the safety and security of nuclear plants in the United States. This assessment will address the following issues: (1) causes of the Fukushima nuclear accident; (2) re-evaluation of the conclusions from previous NAS studies; (3) lessons to improve plant safety and security systems and operations; and (4) lessons to improve plant safety and security regulations, including processes for identifying and applying design basis events for accidents and terrorist attacks to existing nuclear plants. The NRC staff is providing the assistance needed to support NAS's completion of the report, with the first part of the report on Fukushima lessons learned expected to be issued in the near future. The Commission has also directed the staff to report on the study's findings.

Longer-Term Actions Associated with Fukushima Lessons Learned

We have focused on the highest-priority, most safety-significant enhancements first. The agency will complete the most safety-significant enhancements on or ahead of the five-year goal.

Over the coming months and years, as we gain insights from implementation of the highest priority actions, and the decommissioning activities at the Fukushima Dai-ichi site, and as staff with critical skills are freed up from higher priority Fukushima work we will focus our efforts on the remaining lessons learned activities, the remaining recommendations from the Near Term Task Force will be dispositioned.

The NRC continues to interact with our licensees and interested members of the public as we move forward to implement these Fukushima safety enhancements. We have held more than 150 public meetings over the past three years to keep the public apprised of our activities. The NRC is mindful that we must take a careful and deliberate approach to this work to prevent these regulatory actions from distracting us or the industry from day-to-day nuclear safety priorities, and to avoid unintended safety or security consequences. As with the NRC's response to previous events, such as the September 11, 2001 terrorist attacks, we remain cognizant that a change in one system has the potential to adversely affect another system if not considered holistically.

The NRC continues to receive regular reports on the efforts to remediate the Fukushima site and makes use of this information to help identify potential lessons learned for U.S. reactors. The NRC is also maintaining an awareness of the activities of other federal and state agencies in monitoring and sharing information with the public about the low levels of radioactive materials expected to reach the western U.S. The concentrations of radioactive elements in the Pacific Ocean off the coast of Japan from Fukushima remain very low – well below the U.S. regulatory limits for drinking water.

DECOMMISSIONING

In testimony before this Committee on May 14, 2014, Mr. Michael F. Weber, NRC Deputy Executive Director for Materials, Waste, Research, State, Tribal, and Compliance Programs, described in detail the NRC's decommissioning regulations and the requirement that decommissioning be completed within 60 years. Under the current decommissioning regulations, first implemented in 1997, seven power reactors have safely completed decommissioning and their operating licenses were terminated for unrestricted use of the sites. The available decommissioning funds were adequate to complete those complex projects. With four reactors recently shut down and an additional shutdown planned by the end of 2014, the NRC has sharpened its focus on the transition process for plants moving from operating to decommissioning. The Commission plans to hold a meeting on the subject next month.

It is important to emphasize that when a reactor shuts down, the NRC ensures that safety and security continue. Once the licensee notifies the NRC that it has permanently ceased operations and has removed fuel from the reactor, it is no longer authorized to operate. Risks to the public are reduced, but not eliminated, when the reactor permanently shuts down and is defueled. After defueling, our primary safety focus is on the spent fuel pool. The NRC ensures that operational safety controls, security, and emergency preparedness remain sufficient to protect the public health and safety.

The licensee is required to submit a Post-Shutdown Decommissioning Activities Report (PSDAR) within two years of the notification that it has permanently ceased operations and has removed fuel from the reactor. During the intervening period, the licensee is not permitted to perform any major decommissioning activities. The NRC continues its oversight of the licensee during this interim period, typically maintaining a resident inspector on site during the initial phase of decommissioning until he or she is no longer needed on a daily basis. After the resident inspector leaves, NRC inspections continue, using inspection staff from the Regional Offices and Headquarters. Throughout this period, the licensee must still comply with the terms

of its operating license and NRC statutes and regulations. When the PSDAR is submitted, the NRC carefully reviews the report to determine whether it complies with all regulatory requirements and conducts a public meeting in the vicinity of the plant. The NRC reviews the licensee's description of the planned decommissioning activities together with a site-specific decommissioning cost estimate and projected costs of managing irradiated fuel. Ninety days after the PSDAR is submitted, the licensee can begin significant decommissioning activities and draw on decommissioning trust funds to fund those activities.

The NRC oversees facility transition to ensure the decommissioning is carried out safely, while keeping the public informed of the process. We likewise encourage our licensees to inform and engage members of the public and state and local elected officials with an interest in their decommissioning sites. Some licensees are choosing to form community advisory boards to inform and engage members of the public and state and local elected officials with an interest in the sites being decommissioned.

NEW CONSTRUCTION

Construction at the new reactor units at Plant Vogtle in Georgia and V.C. Summer in South Carolina continues to progress under NRC oversight. A major milestone was recently reached at both Summer Unit 2 and Vogtle Unit 3 when the auxiliary building module, each weighing more than 1,100 tons, which will house various plant components, including the used fuel storage area, were placed into the nuclear island at both sites. Additionally, major sections of the containment vessels at Summer Unit 2 and Vogtle Unit 3 are scheduled to be set in place in the coming weeks. The NRC staff continues to provide close oversight of module fabrication and other construction activities at the sites to ensure that all identified quality issues are corrected and that the plants are being constructed in accordance with the approved design. Overall, the NRC is satisfied with the safety of construction work being conducted at the two sites.

The NRC also continues to provide construction oversight at Watts Bar Unit 2. The NRC staff's review of the Tennessee Valley Authority's (TVA) Operating License Application for Watts Bar Nuclear Plant Unit 2, while mostly complete, is still in progress. The NRC staff continues to document its findings in supplements to the safety evaluation report, and construction inspection reports to ensure that TVA has met the applicable regulatory requirements. Currently, the staff is working toward issuing a decision on an operating license in early 2015.

The agency has certified four new reactor designs: ABWR, System 80+, AP 600 and AP 1000. In early May, the agency issued a supplement to the proposed rule to certify the Economic Simplified Boiling Water Reactor (ESBWR) design. The NRC is currently reviewing two Combined License Applications referencing this design. The NRC also continues to review design certification, combined license, and early site permit applications. We also anticipate the submission of the first design certification applications for small modular reactors in the coming years.

PROPOSED RULE TO ESTABLISH THE FY 2014 OPERATING REACTOR ANNUAL FEES

The Omnibus Budget Reconciliation Act of 1990 (OBRA 90) requires the NRC to collect approximately 90% of its budget authority *in the year appropriated* through fees from its licensees. Annual fees (10 CFR Part 171) are billed to the classes of NRC licensees to collect the NRC's recoverable budget authority not collected from fees for services (10 CFR Part 170). The changing financial environment for the NRC Reactor Safety Program resulted in a low annual fee in FY 2013 (\$4.159 million) and a high proposed annual fee in FY 2014 (\$5.104 million).

On April 14, 2014, the NRC published its FY 2014 Proposed Fee Rule in the *Federal Register* for public comment. The Proposed Rule calls for an increase of \$945,000 per reactor compared to the FY 2013 annual fee. The NRC has received significant comments on the

proposed rule and is working to address them for the final FY 2014 Fee Rule. The FY 2014 Operating Reactor Annual Fees increased from the FY 2013 amount for three principal reasons.

First, the agency entered FY 2014 with a government shutdown and funding uncertainty, prepared for a potential sequester, which would have significantly reduced anticipated NRC available resources, similar to the FY 2013 sequester-level funding. Fortunately, however, the sequester was not imposed and resources were appropriated to the NRC at essentially the requested level. Receiving this additional funding late in the year resulted in the NRC Reactor Safety Program realizing a recoverable budget increase of \$64.6 million, which equates to a proposed increase of approximately \$650,000 in annual fees per operating reactor from the FY 2013 level. These additional funds are not expected to be expended and billed in FY 2014 through fees-for-service work (10 CFR Part 170) and therefore must, by law, be recovered through annual fees *in the year appropriated*.

Second, in FY 2013, there was a one-time, prior-period collection resulting in an increase of \$20.9 million in collections of fees for services (10 CFR170). This additional collection caused a reduction in the FY 2013 annual fees, which will not recur during FY 2014. The lack of this one-time increase in fees-for-services collections caused approximately 21% of the increase in the FY 2014 Proposed Annual Fees per reactor above the FY 2013 level.

Finally, in FY 2014, there are 100 operating reactors being billed annual fees, a decrease of two reactors from FY 2013 due to the permanent shutdown of San Onofre Nuclear Generating Station Units 2 and 3. This reduced reactor population from which to collect fees caused approximately 11% of the increase in the FY 2014 Proposed Annual Fees per reactor. An additional 3% of the increase is attributable to the margin for uncertainty.

ENSURING EFFICIENT USE OF RESOURCES

The NRC faces a different future from what we expected just a few years ago when substantial new reactor construction was projected, and no licensees had recently announced

intentions to permanently cease operations. Anticipating a significant increase in demand for licensing services following the Energy Policy Act of 2005, and based on information provided by the industry, the NRC responded with an aggressive effort to build staff capability and the infrastructure to support a projected workload increase in new reactor licensing. While the workload for new licensing has not materialized as anticipated, decommissioning requires resources. As the number of operating plants has decreased slightly, the need for NRC engagement has grown in other unanticipated areas. Implementing Fukushima lessons learned to further protect against an accident, addressing the court decision vacating the Waste Confidence Rulemaking, developing the Safety Evaluation Report for the Yucca Mountain repository to comply with another court decision, and decommissioning of nuclear power reactors are examples of recently changing and high-priority demands to which the agency has had to respond. We have therefore been adjusting NRC staffing in the nearer term to respond to these changing priorities

We have addressed these challenges by directing available resources to the highest-priority safety and security mission work. As the NRC moves toward a new environment, we are reviewing our human capital requirements. Additionally, the NRC has adjusted its human capital strategies to ensure that the agency is focused on maintaining personnel with essential critical skills as well as fine-tuning the skills of our employees to meet current and future mission needs. We also are continuing to ensure that knowledge critical to the agency's mission is preserved.

We have an obligation to protect the public, respond to Congress and the courts, license and regulate the use of nuclear materials, and to do so in the most effective and efficient manner. Efficiency is one of the agency's long-standing principles of good regulation, along with openness, independence, clarity, and reliability. In light of the reality that our agency is on the cusp of a different future than we expected just a few years ago, it is appropriate that for the longer term, we examine the projected work and the size and organizational structure of our

workforce. Accordingly, the Executive Director for Operations has initiated a fresh and realistic look at each of the business lines and where the agency will be in five years. The Commission will be working with the NRC staff to adjust, refine, and redirect programs, plans, budgets, and human capital strategies as appropriate.

The staff has been assembling a “best estimate scenario” of the NRC in 2019 that, among other things, will include a thorough understanding of where we will be in the new large light water reactor application and review process, a realistic view of which advanced reactors will have applications under review or be in construction, a best estimate of the size of the operating fleet, a vision for our other key program areas, and an assessment of our various corporate support functions. This information can facilitate the development and execution of the strategies necessary to achieve our mission, while we continue to monitor the internal and external environments, and work to enhance our agility and organizational capacity. We understand the need to be proactive about our future, addressing challenges as they arise, and maintaining a focus on the mission.

Finally, and very importantly, we have been actively streamlining the agency’s support functions and overhead costs. Over the past five years, for example, we have taken steps to reduce overhead by centralizing the delivery of corporate support services. Because of these efforts our FY 2015 budget request reflects a reduction of \$7 million in overhead from FY 2014 alone. Overall, our efforts to control agency costs since FY 2011 have resulted in a net reduction of 215 FTE in support personnel, which equates to a 14% decrease. Additionally, we are in the process of consolidating our personnel from satellite buildings into a contiguous three-building campus. This effort has enabled some efficiencies and we continue to adjust the placement of functions in our ongoing effort to achieve out-year savings.

UNDERSTANDING THE CUMULATIVE EFFECTS OF REGULATION

The Atomic Energy Act requires the NRC to protect public health and safety and promote the common defense and security, and the requirements the NRC imposes are intended to meet this mandate. We recognize that important safety and security enhancements will be most effective if necessary, regulatory measures are prioritized appropriately so that licensees can maintain focus on the most safety-significant issues and activities. The NRC has had enhancements to the rulemaking process in place since 2011 to better address the cumulative effects of agency decision-making.

In particular, we are interacting closely with various groups, including industry, government, and members of the public, to ensure that we understand and manage the impacts on licensees of regulatory initiatives and activities that are being implemented concurrently. We are reviewing implementation timelines for new or revised regulations, the priority associated with each action, and the availability of critical skills to complete implementation.

The NRC has also engaged the operating reactor industry to perform “case studies” reviewing regulatory cost and schedule estimates. In addition, we are working with other parts of the regulated community and with our Agreement State regulatory partners to assess and control cumulative effects. The NRC has received feedback from industry indicating that estimating costs is difficult and that the industry is challenged to provide feedback on NRC’s costs estimates during the development of a proposed regulatory requirement that is still in formulation. Nevertheless, industry acknowledges that it needs to provide better cost estimates to NRC at the appropriate points in the regulatory process.

Consistent with Commission direction, the NRC staff is also currently exploring a new, modernized regulatory approach that would permit licensees to propose plant-specific adjustments to priorities and schedules based on risk significance.

A LOOK AHEAD

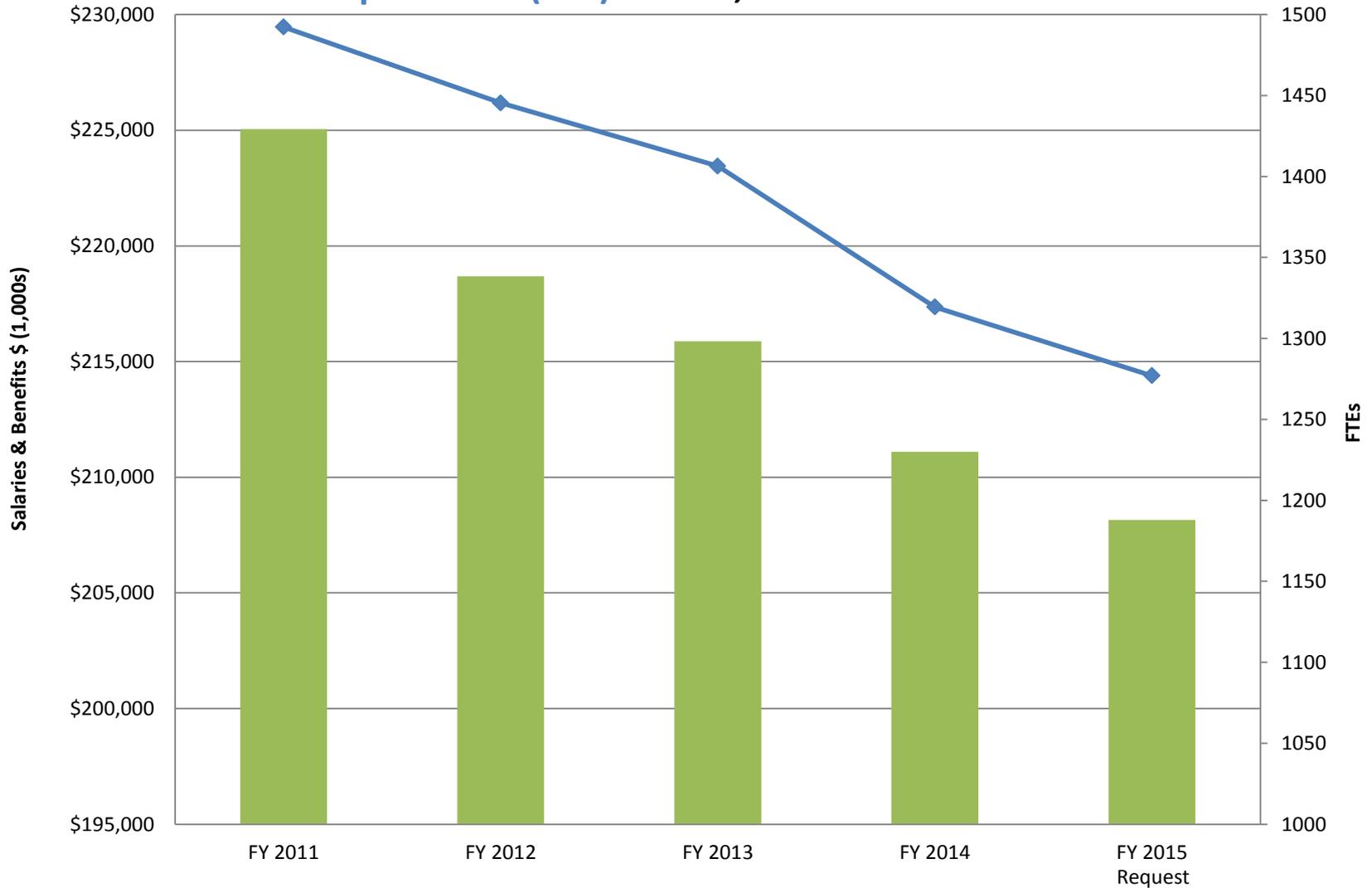
While we have accomplished a great deal, many challenges lie ahead for the NRC. In the coming months, in addition to maintaining focus on ensuring continued safe operations, the Commission's activities will include the following:

- Implementing safety-significant lessons learned from the Fukushima accident in accordance with established agency processes and procedures;
- Continuing work on the Yucca Mountain licensing process in an efficient and effective manner;
- Completing the agency's Waste Confidence activities;
- Overseeing decommissioning activities at SONGS, Kewaunee and Crystal River 3;
- Continuing to conduct oversight of construction activities at the new Plant Vogtle, V.C. Summer, and Watts Bar 2 reactors;
- Overseeing the implementation of radioactive source security enhancements, including ensuring that Agreement States have implemented compatible regulations and updating our own procedures and guidance documents;
- Enhancing cyber security for nuclear power plants, fuel cycle facilities, research and test reactors, and materials licensees; and
- Strengthening our close cooperation with international partners.

Chairman Boxer, Ranking Member Vitter, Chairman Whitehouse, Ranking Member Sessions, thank you for the opportunity to appear before you today; I would be pleased to answer your questions.

NRC Overhead Staffing Streamlining

Full Time Equivalents (FTE) in Blue, Salaries and Benefits in Green



- Overhead consists of staffing for Acquisitions, Administrative Services, Financial Management, Information Technology, Information Management, Human Capital, Supervisory and Administrative Support Functions and Training Development