

**STATEMENT OF STEPHEN G. BURNS, CHAIRMAN  
U.S. NUCLEAR REGULATORY COMMISSION**

**BEFORE THE  
SENATE ENVIRONMENT AND PUBLIC WORKS COMMITTEE**

**Oct. 7, 2015**

Chairman Inhofe, Ranking Member Boxer, Chairwoman Capito, Ranking Member Carper, and distinguished Members of the Committee, my colleagues and I appreciate the opportunity to testify this morning to provide an update on the U.S. Nuclear Regulatory Commission's (NRC) licensing and regulatory activities. I will be providing a brief update on the status of our "rebaselining efforts," as well as the progress in achieving post-Fukushima safety enhancements and improvements in our rulemaking process. I will also provide updates on advanced reactor, decommissioning and spent nuclear fuel storage activities.

As you know, the nuclear industry has been in a period of change since the early 2000s. At that time, in response to the industry's plans to construct a new fleet of reactors, the NRC aggressively recruited staff and restructured the agency's licensing organization for reactors. The intent was to ensure the continued safety and security of the operating units even as the agency reviewed new plant designs and reactor license applications that we expected would exceed 20 for more than 30 new reactors.

It is a different picture today. Only six applications remain active out of the 18 combined license applications that were filed. Five units have been issued combined licenses authorizing their construction and operation, with but a handful still under review. The agency has two early site permit requests under review – not the expected four – and two standardized plant design certifications – not the anticipated four. Two design certification renewal applications remain under review.

The focus of the NRC's work also shifted in other areas. Interest in advanced reactors is growing, and by late 2016, the agency expects to receive a small modular reactor design certification application and an application for an early site permit for a small modular reactor. The agency also is now reviewing two construction permit applications for facilities that would produce medical isotopes and expects to make a licensing decision on one of the applications by early next year; the nation currently has no such facility and is dependent on imports.

The agency also put a greater focus on security, safeguards, and emergency preparedness since the terror attacks of September 11, 2001. Work on license renewals, power uprates, and the Yucca Mountain high-level waste repository application required resources, as did implementing the safety enhancements precipitated by the March 2011, accident at the Fukushima Dai-ichi nuclear power station in Japan. Work also came from the unexpected decommissioning of several reactors before the end of their licensing term, and the shift in nuclear materials work, propelled by an increase in licensing activities related to uranium recovery facilities.

Despite these workload challenges, the agency has remained a competent and respected regulator. The NRC has responded decisively to the new challenges before us and adjusted the trajectory of the agency to institute organizational and budget realignments to better position ourselves for our present and future workload.

Our Project Aim 2020 initiative leveraged the talents of a team of senior officials who worked with staff throughout the agency, and consulted with external experts, to draft recommendations to streamline processes, reduce the size of the workforce, and improve the effectiveness and timeliness of regulatory decision-making. The Commission directed the staff to reassess the agency's workload and to prioritize activities that could be reduced or eliminated. The staff submitted several papers to the Commission in late August regarding its efforts, and a public Commission meeting was held last month to discuss these efforts. We've received more than 400 comments; fewer than 100 came from external stakeholders with the remaining ones from NRC employees on how to achieve Project Aim objectives.

A central element of the Project Aim effort is the rebaselining process. In our direction to staff, my colleagues and I made clear that the focus should be on identifying what work is most important to the safety and security mission of the agency, and what activities can be shed, de-prioritized, or performed with a less intense resource commitment.

While Project Aim will build an organizational structure that improves the NRC's ability to respond to change, plan, and execute our mission, we must be careful to maintain the expertise needed to do our job. The NRC currently has approximately 3,628 full-time equivalents (FTE).

This is down from a peak of about 3,960 FTE in fiscal year 2010. Under Project Aim, our staffing target is 3,600 FTE by the end of fiscal 2016. These numbers do not include the NRC Office of the Inspector General, which has a separate staffing allocation.

While reaching that goal, we must retain key personnel. The NRC has acquired expertise in mission-critical areas such as nuclear, chemical, structural, and fire protection engineering; health physics and physical science; earth sciences including hydrology, meteorology, seismology, and geology; economics; information technology systems; and computer and physical security, among others. As we monitor our attrition and recruit with care, we must remain vigilant to retain appropriate expertise.

While this effort is ongoing, the Commission must continue to emphasize both the importance of our mission and the excellence with which we achieve it. Our success is largely due to the dedicated, highly trained, and knowledgeable NRC staff. It is the staff's professionalism and commitment to maintaining the safe and secure use of nuclear materials and facilities that has established NRC's worldwide reputation as a strong, independent, and competent regulator.

### **Fukushima-Related Safety Activities**

Even as we rebaseline, we remain committed to ensuring the most safety significant of the enhancements that stemmed from the Japanese nuclear accident at Fukushima Dai-ichi remain a priority. Most licensees will complete the majority of the highest priority enhancements by the end of 2016. This will be a significant achievement.

You may recall just two weeks after the accident at Fukushima Dai-ichi, the Commission directed a task force of senior NRC staff members to make recommendations for strengthening safety at U.S. nuclear power plants. This Near-Term Task Force provided a preliminary, first-cut set of 12 recommendations after a 90-day review. Those recommendations became the starting point for a more in-depth assessment that considered input from the public, stakeholders, additional NRC staff members, and the Commission. The result of the more detailed assessment was prioritization of the most significant work, which was implemented through a series of NRC orders, requests for information, and rulemaking.

The highest-priority work focused on: strategies for mitigating impacts of events that are beyond those the plant was originally designed to withstand; improved instruments for measuring the water level in spent fuel pools; seismic and flooding walk downs (visual inspections); updated reevaluations of flooding and earthquake hazards at each site; severe-accident capable vents for BWR reactors with Mark I and II containments (similar types of containments to those at the Fukushima station); and enhancements to emergency preparedness communications and staffing.

These safety enhancements will substantially improve the already robust prevention, mitigation, and emergency response capabilities of U.S. nuclear power plants and provide further assurance that these plants can effectively cope with extreme natural hazards or other events.

Some Task Force recommendations were merged into ongoing or completed work, and other recommendations, upon reevaluation, were assessed as not providing sufficient, substantial safety enhancements that would merit further regulatory actions. The NRC technical staff is

currently reevaluating the plans for the remaining longer-term or lower-priority recommendations and will provide a paper to the Commission later this year.

### **Rulemaking Process and Other Regulatory Improvements**

As we streamline the organization as a whole, the Commission is also working to improve the effectiveness and efficiency of our regulatory processes. The Commission recently directed the staff to submit a proposal for increasing the Commission's involvement in the rulemaking process. The goal is for the Commission to be more involved during early stages of the rulemaking process -- before significant agency resources are expended. We are mindful of Congress's interest in this goal as well. The staff's proposal, due in just a few weeks, will include a recommendation on whether to reintroduce Commission approval of the "Rulemaking Activity Plan," as was the practice in the late 1990s and early 2000s.

Separately, the agency has been examining ways over the past several years to mitigate the cumulative effects of regulations and to improve the assessment of benefits, costs, and timing associated with implementing new regulations. The NRC staff has increased public input through all phases of the rulemaking process. There would also be an opportunity for the regulated community to provide feedback about potential adverse impacts from the implementation of proposed new requirements. In addition, the agency has engaged with the industry to develop more accurate cost estimates of new requirements, since these estimates inform the agency's decision about whether and how to pursue new requirements.

The agency's use of quantitative and qualitative factors in its regulatory decision-making has been of high interest to stakeholders in recent years. The Commission recently approved the staff's plans for updating guidance regarding the use of qualitative factors to improve the clarity, transparency, and consistency of the agency's regulatory and backfit analyses.

Specifically, the updated guidance should support regulatory analyses that clearly present the analyst's consideration of qualitative factors in a transparent way that decision-makers, stakeholders, and the public can understand. This approval does not authorize an expansion of the consideration of qualitative factors in regulatory analyses and backfit analyses.

The Commission specifically directed that the revised guidance encourage quantifying costs to the extent possible and use of qualitative factors to inform decision-making, in limited cases, when quantitative analyses are not possible or practical (i.e., due to lack of methodologies or data). As stated in the Commission's direction to the staff, the appropriate weighting of qualitative factors in regulatory decision-making ultimately lies with the Commission. As this work is ongoing, the Commission will continue to pay close attention to this element of our work.

It is important to note the agency has a statutory mandate to provide reasonable assurance of adequate protection of public health and safety, and when establishing that level of adequacy, the Commission does not consider costs, although the Commission may consider costs in selecting between alternative methods of achieving adequate protection. Most of the NRC's regulatory framework today has been established on the basis of adequate protection. That said, the Commission has recognized that it must be deliberate, judicious, and predictable

when it comes to establishing new regulatory requirements on the basis of adequate protection.

Another initiative instituted last year focused on decreasing the agency's backlog of power reactor licensing activities, with the ultimate goal to eliminate it. Already, in less than a year, we've seen improvement in this area, as we have reallocated resources from lower priority work and expanded the use of contractor support.

### **Advanced Reactors**

Being prepared to evaluate potential applications for light water-based small modular reactors and non-light water reactor technologies presents some challenges for the NRC, but the NRC is prepared to receive and review any such applications under its existing framework. To this end, the NRC has been proactive within the framework of its largely fee-based approach to regulatory reviews. Within the constraints of our budget, the agency is working on advanced reactor activities with the Department of Energy, industry standard-setting organizations, and with the Generation IV International Forum. The NRC expects to begin reviewing one small modular reactor design application in late 2016. The NRC is also preparing for potential advanced, non-light-water reactor power applications in the future.

However, because the NRC's current reactor licensing regulations and guidance documents were developed based primarily on light-water reactor technologies, the agency recognizes the potential knowledge gaps for both the staff and prospective applicants. In addition, if the NRC were to receive an advanced reactor application within the next five years, there may be

challenges related to research and modeling work in both the technical issues and code development for non-light-water reactor designs, as well as some critical skill gaps.

### **Decommissioning**

Over the past few years, five reactors permanently ceased operation earlier than anticipated and began the process of decommissioning. These reactors joined 14 other units in some stage of decommissioning under NRC oversight. In addition, Oyster Creek announced it plans to close in 2019, and there are indications other plants may shut down before the expiration of their operating licenses due to economic conditions. The NRC has traditionally used operating reactor regulations for plants undergoing decommissioning, thereby requiring the plants to seek exemptions when the regulations for operating reactors are no longer relevant or appropriate. While this approach is sound from a safety standpoint, the Commission has directed the NRC staff to initiate a process for developing a reactor decommissioning rulemaking, with a final rule to be issued by early 2019. We expect this rulemaking will improve the effectiveness and transparency of the decommissioning process.

### **High-Level Waste, Spent Nuclear Fuel**

Finally, I'd like to touch on the important topic of high-level waste. The NRC has been responsive to judicial direction to review the construction authorization application for the spent fuel repository at Yucca Mountain with the carryover resources the NRC has available. On August 13, 2015, the NRC issued a draft to the Department of Energy's supplemental Environmental Impact Statement on potential groundwater impacts. To date, the agency has

held three public meetings to solicit input. The comment period will end on November 20, 2015, and a final supplement is anticipated to be issued in early 2016.

Regarding interim storage facilities, in the past several months, the NRC has received two letters from potential applicants indicating their intent to submit a filing for a consolidated interim storage facility. One facility would potentially be located in Andrews County, Texas, and the other in southeastern New Mexico. The NRC does not have resources budgeted for either review in fiscal year 2016, but could reprioritize work if applications are submitted. The NRC has previously issued a license that would authorize an independent spent fuel storage facility – Private Fuel Storage in Skull Valley, Utah – using its current regulatory structure, although construction of that facility did not ultimately go forward.

### **Conclusion**

As I have noted numerous times since becoming Chairman, I am extremely proud to be a part of this organization. The NRC has a long, prestigious history and is viewed world-wide as a premier regulator. I dedicated the majority of my career to this agency and its mission, and am repeatedly reminded of the NRC's importance and the excellence with which it pursues its work. We must not lose sight of our critical mission, and the high esteem with which we are held by our counterparts in the United States and around the world.

We are on a sustainable path toward reshaping the agency to meet our changing environment while retaining the right skill sets to fulfill our safety and security mission.

Thank you, and I would be pleased to answer your questions.