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SUBCOMMITTEE ON ENERGY
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Good morning, Chairman Upton, Ranking Member Rush, and distinguished members of the Subcommittee. I appear before you today representing the staff of the Nuclear Regulatory Commission (NRC). I am pleased to have this opportunity to meet with you to discuss the steps that we have taken to ensure the NRC's readiness to fulfill our mission in light of advancements in nuclear technologies that are being contemplated by the nuclear industry. I assure you that the NRC is actively working with stakeholders, including the Department of Energy (DOE), to establish shared expectations and develop strategies to prepare for future reviews. NRC is also enhancing its processes so that we can execute our safety and security mission in a manner that reflects our Principles of Good Regulation (Independence, Clarity, Openness, Reliability, and Efficiency). The NRC has developed, and continues to develop, improvements in our regulatory approach that promote efficiency, effectiveness, and agility, and which will benefit our interactions with licensees, applicants, and interested members of the public. Today I will highlight several of our efforts in that regard.

New Reactors

The NRC's new reactors program leads our efforts to establish the appropriate policy framework and regulatory approach for the siting, licensing, and construction oversight of new nuclear power reactors, including small modular reactors (SMR) and non-light water reactors (non-

LWR). In March of last year, the NRC docketed the first application for a SMR design certification submitted by NuScale Power. The staff's strategy for completing this review within the projected 42 months includes the use of technical audits early in the review schedule, alignment of the request for additional information process with the required regulatory findings, and resolution of challenging technical and regulatory issues as soon as they are identified. To date, the staff has identified nearly two dozen technical issues that are unique to the NuScale SMR design and the staff has developed a review plan for each of these issues. At this time, the overall regulatory review is progressing on the established schedule.

In May of 2016, the NRC received an application from the Tennessee Valley Authority (TVA) for an early site permit, which if approved, would find the site suitable for potential new SMRs at the Clinch River Nuclear Site in Tennessee. The staff's environmental and technical review is progressing on schedule. We have been notified that we may receive additional applications from TVA and Utah Associated Municipal Power Systems for combined licenses in the next few years.

With respect to future advanced reactor designs being contemplated, the NRC staff has developed a multi-part strategy to prepare for the review of non-LWR technologies. In December of 2016, the NRC staff issued this strategy, entitled, "NRC Vision and Strategy: Safely Achieving Effective and Efficient Non-Light Water Reactor Mission Readiness." Our strategy has three objectives: enhancing technical readiness; optimizing regulatory readiness; and optimizing communication. To achieve these objectives, we have identified specific activities in the near-term (within five years), mid-term (five to 10 years), and long-term (beyond 10 years) timeframes. We have made significant progress in activities related to all of the near-term strategies. As an independent safety regulator, the NRC cannot participate in DOE's policy-setting and promotional activities but the NRC and DOE have worked cooperatively within

the bounds of our respective mandates for decades to prepare for the licensing of non-LWR technologies. We have also made progress to prepare for potential near-term applications. Based on stakeholder feedback, the NRC will use risk-informed and performance-based approaches to resolve key policy issues to the extent possible.

A total of five non-LWR developers have expressed their intent to begin regulatory interactions with the NRC. In fact, we began formal pre-application interactions with Oklo, Inc. in November 2016 regarding its compact fast reactor design. We are implementing a flexible and staged regulatory review process to engage with Oklo to align the NRC's activities with the developer's pace of activity. In addition, the agency is implementing a "small core team" review approach to support a more cost-effective evaluation of non-LWR design applications. The core review team concept provides stability and consistency to the developer while ensuring efficient use of available NRC resources. We anticipate starting additional pre-application reviews in fiscal year 2018 and 2019, and beginning one or more advanced reactor application reviews in the next two to four years. The NRC is committed to setting clear expectations for applicants regarding the content and quality of applications. As a part of this effort, we enhanced our "request for additional information" (RAI) process to ensure clarity of regulatory requirements and informational needs and to ensure that both technical and project management staff review and approve an RAI before it is issued to the applicant or licensee.

Effectiveness, Efficiency, and Agility Initiatives

In June 2014, the NRC established Project Aim to enhance the agency's ability to plan and execute its mission in a more effective, efficient, and agile manner. During 2017, Project Aim achieved a significant milestone by completing the major deliverables for each of the 19 discrete Project Aim tasks. These efforts addressed the NRC's need to improve efficiency and flexibility

to right-size the agency, while retaining employees with the appropriate skills to accomplish its mission and streamline processes. Notably, this effort enabled us to realize approximately $48 million in reductions, including 185 FTE in resource savings in FY 2017 and FY 2018.

The NRC continues to institutionalize the actions related to Project Aim, which will continue to improve our effectiveness, efficiency, and agility going forward. The NRC also is pursuing additional activities such as standardizing and centralizing support staff functions of NRC headquarters and regional offices and institutionalizing a common prioritization process to prepare the agency to evaluate emerging work more readily. We are also implementing an enhanced strategic workforce planning process to improve workforce management. Although these activities were not originally part of Project Aim, they demonstrate the NRC's continuing commitment to effectiveness, efficiency, and agility. Finally, the NRC staff recently started an initiative to transform our regulatory approach to better handle potential new and novel technologies, such as accident tolerant fuel and advanced non-LWRs.

Strategic Workforce Planning

The NRC developed a Strategic Workforce Plan that is focused on having the right people, with the right skills and competencies, at the right time and place to achieve the agency's safety and security mission. We are continuing to refine this plan to ensure that the NRC's workforce planning efforts are timely and responsive to changes in workload, while the agency retains and develops the skills needed to support our mission. This year the NRC is piloting a new strategic workforce planning process in three offices. The new process requires us to set agency-wide human capital goals -- including goals related to overall workforce size and skills composition -- which extend beyond the two-year budget cycle. It represents a structured,

repeatable, and comprehensive approach that can be built upon each year and allows us to leverage and align with other existing NRC processes, such as budget formulation, performance management, human resource management, and strategic planning. After this year's pilot, we expect to use the results of the new process to expand strategic workforce planning agency-wide.

Fees

The NRC understands the importance of a predictable and transparent fee structure, including the need for it to be clear and understandable. To this end, the NRC is overhauling its fee billing to offer greater transparency. We are also testing methods, such as flat fees, to make fees more predictable and transparent.

The NRC has analyzed its fee-setting process to improve the transparency, equitability, and timeliness of communications with our licensees and stakeholders. We recently developed a comprehensive list of essential improvements to the agency's fee website and invoicing. Last year, we also included a specific reference in our FY18 Congressional Budget Justification to more clearly explain the NRC's budget and fees, describe our international activities in more detail, and present a more streamlined schedule for the development of fees. We also posted cost estimates for licensing and inspection actions on the NRC's public website.

To further improve fee transparency, the NRC has and continues to engage stakeholders to better understand their interests associated with how information is presented on invoices and reports. Based on these engagements, the NRC initiated several projects to revise how billable work is tracked and reported. Starting next month, invoices will show each unique activity charge and the name of a staff member or contractor who performed the work. The NRC

continues to work with stakeholders to identify and implement improvements to ensure transparency and accuracy of charges for the billable work.

Other Domestic and International Activities

In cooperation with the Department of Energy, the nuclear industry is researching advanced fuel designs that are expected to exhibit improved safety margins under both normal and postulated accident conditions, when compared to the fuel types that are in use today. Several vendors are exploring candidate designs, which are collectively referred to as accident tolerant fuel, or ATF.

In response, the NRC has developed a comprehensive plan to ensure that we are prepared to effectively and efficiently review ATF designs. The plan addresses ATF-related issues from "cradle-to-grave," including the design, testing, fabrication, shipping, operation, and storage of ATF. To support this work, we have identified infrastructure needs, including staff training and enhancements of computer codes. The draft plan is scheduled to be available to the public later this month for comment. The staff intends to finalize the plan by April 2018.

The NRC staff has had extensive engagement with DOE, as well as industry groups, in preparing the ATF project plan. The interaction with DOE allows NRC to explore opportunities to leverage experimental and computational work already conducted by DOE. We have also engaged international organizations. For example, the NRC staff recently met with representatives from the Organisation for Economic Cooperation and Development's Nuclear Energy Agency (OECD/NEA) to discuss how the international community can help advance innovation in the nuclear industry with concepts such as ATF.

The NRC is committed to maintaining robust partnerships with regulatory counterparts worldwide. In addition to OECD/NEA, the NRC works with other multinational organizations, such as the International Atomic Energy Agency. The NRC also works bilaterally with regulators in other countries through cooperation and research agreements. These interactions allow the NRC to share best practices on safety- and security-related regulatory matters with representatives from a large number of countries; shape the content and scope of international technical publications; participate in international peer reviews of foreign regulatory programs; and ensure that international standards, recommendations, and guidance are consistent with applicable U.S. laws and regulations. In addition, joint research projects give the NRC access to research facilities not available in the United States. These efforts are critically important as the world becomes more interconnected and interest grows in the use of nuclear technologies. In addition, by statutory mandate, Congress made the NRC the licensing authority for proposed exports and imports of commercial nuclear equipment and materials; the NRC's export- and import-licensing regulations are found in 10 CFR Part 110. Thus, the NRC has a range of responsibilities involving international activities, including both cooperative and licensing responsibilities.

Closing

In closing, the NRC continues to focus on efforts to be a more transparent, effective, and efficient regulator while achieving our important safety and security mission. Chairman Upton, Ranking Member Rush, and distinguished Members of the Subcommittee, this concludes my written testimony. I thank you for the opportunity to appear before you. Thank you also for your support of the vital mission of the NRC. I would be pleased to respond to your questions. Thank you.