

WRITTEN STATEMENT
BY KRISTINE L. SVINICKI, CHAIRMAN
UNITED STATES NUCLEAR REGULATORY COMMISSION
TO THE
SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
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Good morning Chairman Barrasso, Ranking Member Carper, and distinguished members of the Committee. My colleagues and I appreciate the opportunity to testify this morning on the U.S. Nuclear Regulatory Commission's (NRC) fiscal year (FY) 2021 budget request.

The NRC is an independent Federal agency established to license and regulate commercial nuclear power plants; research, test, and training reactors; nuclear fuel cycle facilities; and radioactive materials used in medicine, in academia, and for industrial purposes. The agency also regulates the transport, storage, and disposal of radioactive materials and waste and the export and import of radioactive material.

The agency's statutory mission is to license and regulate the Nation's civilian use of radioactive materials, to provide reasonable assurance of adequate protection of public health and safety, and to promote the common defense and security. The funding we are requesting for FY 2021 will enable the NRC to continue to uphold our important safety and security mission while improving the agency's efficiency and effectiveness.

The NRC's proposed FY 2021 budget request, including resources for the NRC's Office of the Inspector General (OIG), is \$863.4 million, including 2,868 full-time equivalents (FTE). This represents an increase of \$7.8 million, including 102 fewer FTE, when compared with the FY 2020 enacted budget. When compared to the NRC's FY 2020 total budget authority, which included the use of \$40 million in prior-year carryover, this request represents a decrease of

\$32.2 million or approximately 3.6 percent. The FY 2021 budget request also reflects changes directed by Public Law 115-439, the “Nuclear Energy Innovation and Modernization Act” (NEIMA) regarding fee recovery and limitations on corporate support costs to the maximum extent practicable.

Before I discuss specifics of the NRC’s FY 2021 budget request, please allow me to provide an update on the NRC’s ongoing regulatory activities and our continuing efforts to transform into a more modern, risk-informed regulator, including implementation of the requirements in NEIMA. These efforts are vital in light of the spectrum of applications for advanced reactors and other novel technologies the agency anticipates receiving in the coming years.

This renewed focus on risk-informed regulation has contributed to the agency’s success over the past year in reviewing applications within established schedules for new technologies or that raise novel technical issues while maintaining the NRC’s strong commitment to ensuring public health and safety. In December, the Commission approved the first Early Site Permit for a Small Modular Reactor (SMR) at the Tennessee Valley Authority’s Clinch River Site. At that time, the Commission also published a proposed rule regarding “Emergency Preparedness for Small Modular Reactors and Other New Technologies” for public comment in the Federal Register. Additionally, the NRC staff is on target to complete its safety review of NuScale’s Design Certification for a SMR Design and issued a Safety Evaluation Report with no open items in December of last year. Also, in December, the technical staff issued the first subsequent license renewal for an operating plant, for which the staff resolved a number of first-of-a-kind technical issues in the course of its safety review.

NRC'S RESPONSE TO A CHANGING REGULATORY ENVIRONMENT

Nuclear Energy Innovation and Modernization Act (NEIMA)

The NRC has made significant progress over the past year implementing licensing strategies required by NEIMA.

In January, the NRC's Executive Director for Operations and Deputy Chief Financial Officer appeared before this Committee and provided an update on the agency's activities and progress on implementing various sections of NEIMA. Last month, the Commission responded to a December 19, 2019, letter from Committee members and provided an update on the agency's completion of various reports and activities required by NEIMA. To date, the agency has sent **9** reports to Congress on topics ranging from accident-tolerant fuel to lessons learned from emergency evacuations to guidance on baffle-former bolt examinations. The agency has developed a rulemaking plan for advanced reactor licensing and reviewed the feasibility of establishing a flat fee structure for licensing actions from uranium recovery facilities. Additionally, the NRC has begun work on NEIMA's requirement that the NRC develop a technology-neutral framework for licensing advanced reactors. The NRC also continues to implement the changes to the agency's budget process directed by NEIMA.

Transformation

Recognizing that the agency needs to enhance its use of risk-informed, innovative approaches in response to external technology-driven changes and embrace new and diverse ideas, we are modernizing our decision-making processes to address novel issues raised by applicants and licensees. We are implementing innovative actions to transform the NRC's organizational culture to become a more effective and efficient safety regulator.

Communication and employee engagement are key to our transformation effort. Last June, we held our Futures Jam. A “Jam” is a multi-day collaborative online discussion. This concept has been successfully and effectively adopted in organizational settings—including at IBM, the European Union, and the North Atlantic Treaty Organization—as a collaborative crowd-sourcing of ideas. Over 70 percent of the NRC’s workforce participated in the Jam and submitted over 4,000 posts during the three-day session. Incorporating this input, the NRC staff has identified seven initiatives that focus on culture, career enhancement, risk, process simplification, technology, and signposts and markers to incorporate external awareness in the NRC’s planning processes.

This past October, the Commission held its third public meeting on NRC transformation activities where we heard from agency staff on the status of the initiatives supporting the focus on improving the effectiveness of its mission as a “modern, risk-informed regulator.” Areas highlighted during this meeting included recruiting, developing, and retaining a strong workforce; improving decision-making through accepting appropriate risk; using technology more efficiently; and establishing a culture of innovation. Also, in October, the agency held a Transformation Expo, where the staff presented interactive displays and showcased new approaches in support of transformation efforts that are under way across the agency. The Commission has scheduled additional transformation meetings to maintain awareness of ongoing staff activities and provide direction to the staff, as appropriate.

Strategic Workforce Planning

Effective human capital management is critical to retaining and attracting talent so that the NRC has the necessary skill balance available as the future unfolds. Strategic Workforce Planning is an essential tool used by the NRC in identifying the knowledge, skills, and abilities necessary to perform our mission now and in the future. One key outcome of these efforts was the

identification of a need to develop a pipeline of future talent to fill anticipated vacant positions due to the increased attrition expected over the next five years. In recent years, the agency's evolving workload and declining budget environment significantly limited entry-level hiring. This created challenges to our long-term human capital management strategy. The lack of entry-level hiring to achieve a demographically balanced workforce could negatively affect the agency's continuing ability to accomplish its mission.

The NRC revitalized its Temporary Summer Student Program to increase the pipeline of entry-level individuals for critical skill positions. In 2019, we successfully transitioned 35 percent of our summer student hires into our Cooperative Education Program (Co-Op); we anticipate that nine of these Co-Op students will graduate by June 2020 and fill entry-level positions within the agency. In FY 2020, the NRC anticipates hiring approximately 25 entry-level engineers and scientists through a new entry-level training program. Strategic Workforce Planning has become part of the agency's normal operating procedure and will be addressed annually each September.

Moreover, in keeping with our goals to become a more effective and efficient regulator, the agency completed the merger of two of its largest offices, the Office of Nuclear Reactor Regulation and the Office of New Reactors. This merger reflected changes in the agency's workload, specifically the decline of applications for new large light water reactors. The FY 2021 budget reflects the efficiencies gained from this merger.

Enhancing the Reactor Oversight Process (ROP)

The NRC developed the ROP as a risk-informed, performance-based oversight program. The staff has provided recommendations to the Commission that would enhance the ROP including the following: closing greater-than-Green inspection findings and performance indicators after

follow-up inspection objectives are met; reducing baseline inspection redundancy to better enable inspectors to focus on safety significant issues; and improving the use of risk insights in emergency preparedness planning standards. The recommendations resulted from NRC's transformation efforts, stakeholder correspondence, feedback from ROP public meetings, and the staff's annual ROP self-assessment program. Those recommendations are among those currently being considered by the Commission.

FY 2021 BUDGET REQUEST

The NRC's FY 2021 budget request focuses on the agency's priority of adapting to today's regulatory environment and evolving as the industry's business needs change. The following information highlights specific elements of the NRC's FY 2021 budget request.

Nuclear Reactor Safety

The NRC's Nuclear Reactor Safety Program encompasses licensing and overseeing civilian nuclear power reactors, research and test reactors, and other nonpower production and utilization facilities, such as medical radioisotope facilities, in a manner that provides adequate protection of public health and safety. This program also provides reasonable assurance of the security of facilities including their protection against radiological sabotage. This program contributes to the NRC's safety and security strategic goals through the activities of the Operating Reactors and New Reactors Business Lines.

Overall resources requested in the FY 2021 budget for the Nuclear Reactor Safety Program are \$452.8 million, including 1,755 FTE. This funding level represents an increase of \$26.2 million, yet includes 60 fewer FTE, when compared to the FY 2020 enacted budget. This increased funding includes \$17.7 million for continuing the development of a regulatory infrastructure for

advanced nuclear reactor technologies. The staffing reductions in the Nuclear Reactor Safety Program are generally the result of efficiency gains from the aforementioned merger of the Office of Nuclear Reactor Regulation and the Office of New Reactors.

Operating Reactors

The Operating Reactors Business line portion of the Nuclear Reactor Safety Program encompasses the regulation of 95 operating nuclear power reactors and 31 research and test reactors. The NRC is requesting \$372.8 million for operating reactors, including 1,470 FTE, which represents an increase of \$30.3 million and 13 fewer FTE when compared to the FY 2020 enacted budget. Funding increased primarily to support: three new subsequent license renewals applications for North Anna Power Station and two additional unspecified plants; the anticipated influx of accident tolerant fuel (ATF) topical reports; the development of licensing infrastructure for ATF, high-burnup and higher enrichment in both ATF and current fuel designs; and work related to the licensing of medical radioisotope irradiation and processing facilities.

New Reactors

The New Reactors Business Line portion of the Nuclear Reactor Safety Program is responsible for licensing and overseeing the design, siting, and construction of new nuclear power reactors, including SMRs and advanced reactors. The new reactor activities ensure that new civilian nuclear power reactor facilities are developed in a manner that protects the health, safety, and security of the public in an efficient manner.

The FY 2021 budget request for new reactors is \$80 million, including 285 FTE, a funding decrease of \$4.1 million and 47 fewer FTE when compared to the FY 2020 enacted budget. The decreases are primarily due to the completion of reviews for a design certification and early site

permit application. The NRC is preparing for the anticipated transition of the Vogtle Electric Generating Plant, Unit 3 in Georgia from construction to operations later this calendar year.

The NRC also expects to begin the review of one advanced non-light-water reactor combined license application for OKLO and to complete the review of a design certification application for an SMR for NuScale. In addition, the NRC anticipates engaging in preapplication activities with several small modular and advanced reactor applicants, as well as undertaking several rulemakings associated with new reactor activities.

The NRC continues to focus on activities related to the development of regulatory infrastructure to support reviews of advanced reactor technologies. Regarding future new reactors, the NRC continues to interact with vendors about prospective SMR and advanced reactor applications. Additionally, we will continue to refine our regulatory processes as we prepare to review these potential applications.

In support of this, in December, the agency published for public comment a proposed rule to amend its regulations to create an alternative emergency preparedness (EP) framework for SMRs and other new technologies by adopting a risk-informed, performance-based, and technology-inclusive approach. This proposed rule recognizes technological, engineering, and design advances by crediting the safety enhancements in evolutionary and passive cooling systems, which would minimize the need for human intervention in accident scenarios and would slow the progression to a potential release of fission products to the environment. This approach is consistent with the NRC's history of licensing facilities with requirements commensurate with their risk. For example, the NRC prescribes fewer requirements at research and test reactors under its EP regulations because of the lower risk present for those facilities. Similarly, the NRC has historically scaled its requirements at certain power reactors, such as Fort Saint Vrain, that presented a lower hazard profile than typical large-light-water reactors,

including reduced emergency planning zones with a range of 5 miles rather than the typical 10 miles.

Nuclear Materials and Waste Safety

The FY 2021 budget request for the Nuclear Materials and Waste Safety Program is \$125.6 million, including 462 FTE. These funding levels represent an increase of \$5.4 million and a decrease of 19 FTE when compared to the FY 2020 enacted budget. This program encompasses the NRC's licensing and oversight of nuclear materials. The budget request does not include funding for licensing activities related to the proposed Yucca Mountain geologic repository for disposal of spent fuel and other high-level radioactive waste.

The agency's work in this area provides assurance of the physical security and protection against radiological sabotage, theft, or diversion of nuclear materials. Through this program, the NRC regulates uranium processing and fuel facilities; research and pilot facilities; and other nuclear material uses such as medical, industrial, research, and academic. Additionally, through this program, the NRC regulates: spent fuel storage; transportation and packaging of spent fuel and other nuclear material; decontamination and decommissioning of facilities; and low-level and high-level radioactive waste.

Spent Fuel Storage and Transportation

The Spent Fuel Storage and Transportation Business Line portion of the Nuclear Materials and Waste Safety Program supports the safe and secure storage of spent fuel and the safe and secure transport of radioactive materials. The FY 2021 budget request for spent fuel and transportation is \$28.1 million, including 102 FTE. These funding levels represent an increase of \$5.2 million when compared to the FY 2020 enacted budget. Resources increase to support the development of the technical bases, or underlying rationale, for reviewing transportation

packages for ATF and the development of guidance and regulatory infrastructure to conduct safety reviews for high-burnup and enrichment extension fuel designs that may be submitted in future license applications. During FY 2021, the NRC expects to continue to perform safety, security and environmental reviews for several license applications for storage and transportation packages and to conduct safety inspections of construction, loading, and operations of Independent Spent Fuel Storage Installations.

Nuclear Materials Users

The Nuclear Materials Users Business Line portion of the Nuclear Materials and Waste Safety Program supports the licensing and oversight necessary to ensure the safe and secure processing and handling of radioactive materials in medical, industrial, and academic applications. The FY 2021 budget request for nuclear materials activities is \$55.5 million, including 201 FTE, a funding decrease of \$0.7 million and a decrease of 4 FTE when compared to the FY 2020 enacted budget. The requested funding supports the completion of reviews of approximately 2,000 licensing actions, including new applications; requests from nuclear materials users for amendments, renewals, and terminations; and funding for about 900 routine health, safety, and security inspections. In addition, resources would be used to coordinate homeland security regulatory initiatives, track imports and exports, and support international activities to develop or enhance global controls over radioactive sources.

Decommissioning and Low-Level Waste (LLW)

The Decommissioning and Low-Level Waste (LLW) Business Line portion of the Nuclear Materials and Waste Safety Program supports licensing and oversight associated with the safe and secure operation of uranium recovery facilities, decommissioning of nuclear facilities, and disposition of LLW from all civilian sources. The FY 2021 budget request for decommissioning and LLW is \$22.8 million, including 86 FTE, a funding increase of \$1 million and a 7 FTE

decrease when compared to the FY 2020 enacted budget. Funding increases primarily to support the transition of oversight of Duane Arnold Energy in Iowa into the decommissioning program. The FY 2021 budget request also includes funding for decommissioning oversight of 20 reactors, five research and test reactors, 10 complex materials sites, and five private uranium mill sites. The agency also plans to conduct oversight of groundwater restoration activities at one licensed and two not-yet-constructed uranium recovery facilities.

Fuel Facilities

The Fuel Facilities Business Line portion of the Nuclear Materials and Waste Safety Program is responsible for ensuring that commercial nuclear fuel cycle facilities are licensed and operated in a manner that adequately protects public health and safety and promotes the common defense and security. The FY 2021 budget request for fuel facilities is \$19.3 million, including 73 FTE, which represents a decrease of 8 FTE when compared to the FY 2020 enacted budget. These decreases are partly due to an anticipated decrease in resources needed for hearings and legal support related to new facility submittals and to efficiencies gained through organizational restructuring within the NRC's Office of Nuclear Material Safety and Safeguards.

Corporate Support

The NRC's corporate support involves centrally managed activities that are necessary for agency programs to operate and achieve goals more efficiently and effectively and includes acquisitions, administrative services, financial management, human resource management, information technology and information management, training, outreach, and policy support. The FY 2021 budget request for corporate support comprises 31 percent of the agency's total budget authority, is \$271.4 million and reflects a decrease of \$8 million and 23 FTE when compared to the FY 2020 enacted budget. The budget request supports continuing efforts to modernize information technology to increase productivity and security, to leverage data as a

strategic asset, to develop the agency workforce, and to improve the customer experience with Federal services.

Office of the Inspector General

The NRC's Office of the Inspector General (OIG) is a statutory entity whose mission is to independently and objectively audit and investigate programs and operations to promote effectiveness and efficiency and to prevent and detect fraud, waste, and abuse. The FY 2021 budget request for the NRC OIG is \$13.5 million, which includes \$11.6 million in salaries and benefits to support 63 FTE and \$1.9 million in program support. These resources will support OIG auditing and investigation functions for both the NRC (\$12.3 million) and the Defense Nuclear Facilities Safety Board (\$1.2 million).

CLOSING

In closing, the NRC's FY 2021 budget request reflects the resources necessary to perform our vital safety and security mission. The NRC also will continue taking steps to improve our regulatory processes and to position the agency to meet the future challenges.

Chairman Barrasso, Ranking Member Carper, and distinguished members of the Committee, this concludes my written testimony. On behalf of the Commission, thank you for the opportunity to appear before you and for your support of the vital mission of the NRC. We are pleased to respond to your questions. Thank you.