

Statement of Admiral James F. Caldwell
Deputy Administrator for Naval Reactors
National Nuclear Security Administration
U.S. Department of Energy
on the
Fiscal Year 2018 President's Budget Request
Before the
Senate Committee on Appropriations
Subcommittee on Energy and Water Development

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Since USS NAUTILUS (SSN 571) first signaled "*Underway on nuclear power*" in 1955, our nuclear powered ships have made extraordinary contributions to our national defense. From the start of the Cold War to today's multi-threat environment, our nuclear navy ensures continued dominance of American seapower. Over 45 percent of the Navy's major combatants are nuclear powered (10 aircraft carriers, 14 ballistic missile submarines, 57 attack submarines, and 4 guided missile submarines) capitalizing on the mobility, flexibility, and endurance of nuclear power that enables the Navy to meet its global mission.

Over the past year, the Navy, with Naval Reactors support, deployed 33 submarines and conducted 32 strategic deterrent patrols. In addition, at any given time, there were always at least 56 of 75 submarines deployed or ready to deploy within a few days. Our carriers, USS JOHN C. STENNIS (CVN 74), USS HARRY S. TRUMAN (CVN 75), and USS DWIGHT D. EISENHOWER (CVN 79), completed successful deployments, and the USS RONALD REAGAN (CVN 76) stood ready as the forward-deployed carrier in Japan. We also saw the christening of the attack submarines PCU COLORADO (SSN 788) and PCU INDIANA (SSN 789), our fifteenth and sixteenth VIRGINIA class submarines. We have also added another attack submarine to our force by commissioning USS ILLINOIS (SSN 786), and the Navy's newest submarine USS WASHINGTON (SSN 787) was delivered. And last, as a testament to the ability of our design and technical base, USS HELENA (SSN 725) made submarine history by being the first submarine to travel 1 million nautical miles on a single reactor core.

Recently, I participated in sea-trials on the first FORD Class Aircraft Carrier, the GERALD R. FORD (CVN 78) which was delivered on May 31. This ship has the first new design aircraft carrier propulsion plant in 40 years, and I'm happy to report that in terms of propulsion capability, FORD met the high speed of our NIMITZ-Class ships and delivered major increases in electrical power and core energy with half the manning in the reactor department. While we have worked through several challenges testing and operating the first-of-class propulsion and electrical generation and distribution system on the ship, the fact that these problems were safely and efficiently resolved is a testament to the technical skills and hard work of the nuclear shipbuilding design and industrial base, as well as the skilled Sailors operating this equipment. This historic milestone represents the culmination of almost 20 years of dedicated and sustained effort by Naval Reactors and its field activities, our Department of Energy laboratories, nuclear industrial base suppliers, the Navy design team, and the nuclear shipbuilders.

In addition to supporting these nuclear powered combatants, Naval Reactors has safely maintained and operated two nuclear powered land-based prototypes – both over 39 years old – to conduct research, development, and training, as well as two Moored Training Ships – both over 53 years old – the oldest operating pressurized water reactors in the world. These operational reactors provide highly qualified operators to the nuclear fleet, and today our nuclear fleet is fully manned.

The strong support of this subcommittee last year enabled safe operation of the fleet, Naval Reactors mandatory oversight, and continued progress on key projects. Naval Reactors' budget request for Fiscal Year (FY) 2018 is \$1.48 billion, an increase of 60 million dollars, or 4 percent, over the FY 2017 enacted funding level. In addition to supporting today's operational fleet, the requested funding will enable Naval Reactors to deliver tomorrow's fleet by continuing funding for three national priority projects and recruiting and retaining a unique, highly skilled work force committed to the Navy and the nation. The projects are:

- Continuing to design the new propulsion plant for the COLUMBIA-class ballistic missile submarine, which will feature a life-of-ship core and electric drive;
- Refueling a research and training reactor in New York, to facilitate COLUMBIA-class reactor development efforts and provide 20 more years of live reactor based training for the fleet operators; and
- Building a new Spent Fuel Handling Facility in Idaho that will facilitate long term, reliable processing and packaging of spent nuclear fuel from aircraft carriers and submarines.

We are at our peak in design efforts supporting the new propulsion plant for the COLUMBIA-class SSBN - the Navy's number one acquisition priority. Providing unparalleled stealth, endurance, and mobility, our ballistic missile submarine force has delivered more than 60 years of continuous at-sea deterrence, and it continues to be the most survivable leg of the nuclear triad. COLUMBIA-class SSBN activity this year includes reactor plant design and component development to support procurement of long lead reactor plant components in FY 2019. The funding requested ensures we maintain progress with this plan and alignment with the Navy as the program moves toward construction start in FY 2021.

Supporting both the COLUMBIA-class effort and the Program's training needs, the FY 2018 budget request supports the land-based prototype refueling overhaul at the Kesselring Site in upstate New York. In FY 2018, Naval Reactors continues the core manufacturing work needed for the refueling overhaul, which retires manufacturing risk for the life-of-ship core for COLUMBIA-class. Further, plant service-life engineering design will be largely completed in FY 2018 to ensure that the land-based prototype overhaul, performed concurrently with refueling, supports 20 additional years of Naval Reactors' commitment to research, development, and training in upstate New York.

The Naval Reactors FY 2018 Budget Request also contains funds to continue the Spent Fuel Handling Recapitalization Project. Congressional support in FY 2016 and FY 2017 for this much needed project has enabled progress on site preparations, long lead material procurements

starting this fiscal year, and approval of the National Environmental Policy Act Environmental Impact Statement Record of Decision. In addition to starting site preparation and long lead material procurements, we are using the \$100 million received in FY 2017 to finalize key facility and equipment requirements and advance facility design to support establishing the Performance Baseline and authorizing the start of construction in FY 2018. Continued Congressional support will ensure that the facility in Idaho is ready to receive spent nuclear fuel from aircraft carriers in FY 2024 and be fully operational by 2025.

In addition to our three main priority projects, Naval Reactors also maintains a high-performing technical base to execute nuclear reactor technology research and development that guarantees our Navy remains technologically ahead of adversaries, as well as the necessary equipment, construction, maintenance, and modernization of critical infrastructure and facilities. By employing an efficient and effective technical base, the teams of talented and dedicated people at our four Program sites – the Bettis Atomic Power Laboratory in Pittsburgh, the Knolls Atomic Power Laboratory and Kesselring Site in greater Albany, and the Naval Reactors Facility in Idaho – can perform the research and development, analysis, engineering, and testing needed to support today’s fleet at sea and develop more capable nuclear-powered warships. Our labs perform the technical evaluations that enable Naval Reactors to thoroughly assess approximately 4,000 emergent issues annually and deliver timely responses that ensure nuclear safety and maximize operational flexibility. This technical base supports more than 17,500 nuclear-trained Navy sailors, who safely maintain and operate the 101 nuclear propulsion plants in the fleet 24 hours per day, 365 days per year around the globe.

At the requested funding level, Naval Reactors can safely maintain and oversee the nuclear-powered fleet. Naval Reactors is committed to executing our projects on time and on budget, and continuing the drive for the safest and most cost effective way to support the nuclear fleet. I respectfully urge your support for aligning funding allocations with the FY 2018 Budget Request.