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THE SENATE ARMED SERVICES COMMITTEE
STRATEGIC FORCES SUBCOMMITTEE

STATEMENT
OF
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BEFORE THE
SUBCOMMITTEE ON STRATEGIC FORCES
OF THE
SENATE ARMED SERVICES COMMITTEE
ON
FY 2024 BUDGET REQUEST FOR NUCLEAR FORCES AND
ATOMIC ENERGY DEFENSE ACTIVITIES

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Introduction

Chairman King, Ranking Member Fischer, and distinguished Members of the subcommittee, thank you for this opportunity to discuss the sustainment and recapitalization of the sea-based leg of the nuclear triad. It is an honor to represent the Navy's Strategic Systems Programs (SSP) and the contributions the Navy provides to our national and global security through Sea Based Strategic Deterrence (SBSD).

I should start by noting that the priorities and lines of effort that I am here to describe today are all in service of the 2022 National Defense Strategy (NDS), which – as the Secretary often says – is our north star.

The Mission Priorities of SSP, in support of the NDS, are to:

1. Sustain the TRIDENT II D5 (D5) and TRIDENT II Life Extension (D5LE) Strategic Weapons System (SWS) and ensure Nuclear Weapons Surety on the OHIO Class SSBN and in supporting shore facilities through 2042 while providing Naval Nuclear Weapons Program Technical Authority for Nuclear Weapon (NW) systems and Regulatory Oversight of the Navy Nuclear Deterrence Mission (NNDM). SSP will re-host and sustain the D5LE SWS onto the initial COLUMBIA and United Kingdom (UK) DREADNOUGHT SSBNs.
2. Develop the COLUMBIA and UK DREADNOUGHT SWS and advanced weapon capabilities in the TRIDENT II D5LE2 missile and W93/Mk7 warhead and reentry body assembly. Simultaneously, SSP will develop and deliver the U.S. Navy's non-nuclear, Conventional Prompt Strike hypersonic missile capability to fill a critical gap in our full spectrum of deterrence. The two nations are working separate but parallel warhead programs with collaboration between the two.
3. Safeguard the special relationship between the U.S. and UK through the Polaris Sales Agreement (PSA), as amended, and Mutual Defense Agreement (MDA), as amended, benefitting both nations and supporting the UK's Continuous At Sea Deterrence (CASD).

SSP's core mission comprises two fundamental lines of effort: the safety and security of our Nation's strategic assets entrusted to the Navy; and the design, development, production, and

sustainment of the Navy's SWS. We strive to maintain a culture of excellence, underpinned by rigorous self-assessment, to achieve the highest standards of performance and integrity for personnel supporting the strategic deterrent mission. We focus unremittably on our tremendous responsibility for the custody and accountability of our Nation's nuclear assets. The men and women of SSP, our Sailors, our Marines, our Navy Masters at Arms, our Coast Guardsmen, and our industry partners remain dedicated to supporting the strategic deterrence mission; ready to respond to the emerging needs of our warfighter, and to protect and safeguard our Nation's assets with which we are entrusted. We certainly could not do this without the support from this Committee.

State of the Program

The Nation's nuclear triad consists of intercontinental ballistic missiles, heavy bombers, and ballistic missile submarines (SSBNs) equipped with submarine-launched ballistic missiles (SLBM). These platforms and their associated weapons systems are essential to the very foundation of our Nation's security and survival. The Administration's recently released National Defense Strategy priorities deterring strategic attacks against the United States, our allies, and our partners, and the Nuclear Posture Review (NPR) affirms the following roles for nuclear weapons: deter strategic attacks, assure allies and partners, and achieve U.S. objectives if deterrence fails. While the U.S. nuclear arsenal remains safe, secure and effective, most U.S. nuclear deterrent systems – including the SSBN fleet – are operating beyond their original design life. Replacement programs are ongoing, but there is little or no margin between the end of useful life of existing programs and the fielding of their replacements. As noted by the 2022 NPR, we need to fully fund the COLUMBIA class SSBN program to deliver a minimum of 12 boats on time, as the OHIO Class SSBNs begin to retire. We also need to continue to prioritize near term investments in the submarine industrial base, OHIO-class sustainment and the second life extension of the TRIDENT II D5 SWS.

The U.S. Navy provides the most survivable leg of the nuclear triad with the interdependent OHIO-Class SSBNs and the TRIDENT II D5 SWS. The SSBN fleet is responsible for more than

70 percent of the Nation's deployed nuclear warheads accountable as defined by the New START Treaty. As the Navy carefully manages the approach to end of life of OHIO-Class SSBNs, addressing the viability of the SWS throughout the life of the COLUMBIA-Class SSBNs remains a top priority. COLUMBIA-Class SSBNs will ensure the effectiveness and availability of the Nation's Sea Based Strategic Deterrent through the 2080s. The currently deployed TRIDENT II D5LE missiles will support initial load-outs on COLUMBIA, but modernization of the D5LE SWS, via D5LE2, is required to support later COLUMBIA-Class missile inventory and seamlessly sustain USSTRATCOM requirements. D5LE2 will ensure the SWS will be flexible and adaptable in order to maintain demonstrated performance and survivability despite the dynamic threat environment.

As the fourteenth Director, it is my highest honor to serve as the program manager, technical authority, safety and security lead, regulatory lead, and U.S. Project Officer under the Polaris Sales Agreement (PSA), as amended, for the Naval Nuclear Weapons Program. Most importantly, I am honored to represent the men and women of SSP, comprising approximately 1,500 Sailors, 1,000 Marines, 300 Coast Guardsmen, 1,400 civilians, and thousands of contractor personnel. It is my most critical goal to ensure they are poised to execute the mission with the same level of success, passion, and rigor both today *and* tomorrow as they have since our program's inception in 1955.

SWS Sustainment on OHIO Class SSBN and Procurement for COLUMBIA Class SSBN

The OHIO Class SSBN began a new phase of Sea Based Strategic Deterrence (SBSD) when it started relieving the 41 for Freedom SSBNs in the 1980s, initially employing the TRIDENT I C4 Submarine Launched Ballistic Missile and leveraging the nuclear warheads and missile production infrastructure of the original Fleet Ballistic Missile Program. As the U.S. sought to increase the range, accuracy, reliability, and lethality of its Submarine Launched Ballistic Missile program, in 1988, USS TENNESSEE (SSBN734) dawned a new age of SBSD as she ushered in the advanced TRIDENT II D5 Strategic Weapons System in the newly built Kings Bay Naval Submarine Base, specifically designed to support this new weapon system. Over the following

decade, as new OHIO Class SSBNs were brought online (SSBN 735 through SSBN 743) with the D5 missile system, the early OHIO Class SSBNs were also converted from a C4 system to align with the rest of the D5 fleet. Originally composed of 18 OHIO class SSBNs, the SSBN fleet settled on a 14-ship class carrying the TRIDENT II D5 missile system executing SBSB, while the first four OHIO Class SSBNs were converted to conventional guided missile and special operations forces submarines (SSGN 726 through SSGN 729). The 14 ship OHIO Class SSBN fleet remains the backbone of U.S. strategic deterrence, carrying approximately 70 percent of the United States' treaty-accountable deployed nuclear warheads in the form of the W76 and W88 families of warheads. Originally designed for a 30-year service life, the OHIO Class submarines were called upon to extend this service to 42 years, supporting a delay in investment in the next generation of SSBNs. To account for this extension in service life, SSP embarked on a life extension program for the D5 missiles to update critical but aging missile electronics systems. SSP introduced the TRIDENT II D5 Life Extension (D5LE) program to the fleet in 2017 and will continue through approximately 2025 to convert D5 missiles to D5LE when they are pulled off the SSBNs during normal missile maintenance times.

The final OHIO Class SSBN, USS LOUISIANA (SSBN 743), which recently completed her mid-life Engineered Refueling Overhaul (ERO) will support the sea-based strategic deterrent until her scheduled retirement in 2042. SSP must ensure the "no fail" SBSB mission is supported on the OHIO class through 2042, providing a reliable TRIDENT II D5/D5LE weapons systems with W76/W88 warheads until this final ship of the class is decommissioned. In parallel, SSP's program efforts and collaboration with the UK through the Polaris Sales Agreement and Mutual Defense Agreement will support the UK's Continuous At Sea Deterrence through VANGUARD Class life and the transition to a DREADNOUGHT Class SSBN fleet.

To meet these critical program responsibilities, SSP will execute Naval Nuclear Weapons Program Technical Authority for Nuclear Weapon (NW) systems and Regulatory Oversight of the NNDM. Through programmatic excellence in shipboard sustainment and modernization programs across the SWS subsystems and in NW surety, and through diligent oversight of the logistical supply chains, SSP not only will maintain a credible and reliable weapons system, but will also continue unlocking new capabilities the warfighter can leverage to enhance strategic deterrence and act decisively should deterrence fail.

TRIDENT II D5 Life Extension and Life Extension 2

The TRIDENT II D5 SWS capability has been deployed on the OHIO-Class ballistic missile submarines for more than three decades and is planned to be deployed more than 55 years. This demand to maintain demonstrated high performance while extending the service life past initial design requirements required a missile life extension effort, D5LE. The current TRIDENT D5 Life Extension (D5LE) remains an effective and credible Strategic Weapon System on both the OHIO Class and COLUMBIA Class SSBNs into the 2040s, supporting the OHIO Class submarine through end of service life and serving as the initial Strategic Weapon System for the COLUMBIA Class SSBNs.

As the Navy carefully manages the approach to end of life of our OHIO Class SSBNs, we must address the viability of the SWS throughout the life of the COLUMBIA Class SSBNs. A minimum of twelve COLUMBIA Class SSBNs will replace today's 14 OHIO SSBNs and beginning in FY30, D5LE missiles will support initial load-outs on COLUMBIA (Hulls 1-8). Production of additional D5LE missiles is not practical due to obsolete parts and the lack of a robust industrial base. In order to meet inventory requirements and maintain a credible strategic deterrent in the face of evolving threats, a second life extension of the TRIDENT II Strategic Weapons System (D5LE2) is required to be designed, engineered, produced and deployed by COLUMBIA Hull #9's strategic outload. It will be incorporated on all follow on Hulls as well as Hulls 1-8 during their Extended Refit Period from FY39-49 to continue to meet USSTRATCOM requirements. D5LE2's architecture will ensure the weapon system maintains demonstrated performance and remains survivable while facing a dynamic threat environment driven by two near peer competitors until COLUMBIA end of life.

D5LE2 is a hybrid of pull-through cost-effective technology (e.g., solid rocket motors, ignitors) and redesigned and updated components (e.g., avionics, guidance, system architecture). D5LE2 is structured to maintain today's unmatched reliability and demonstrated performance, while

unlocking untapped system potential to efficiently respond to emerging needs and to maintain a credible Sea Based Strategic Deterrent.

As directed in the 2018 Nuclear Posture review, SSP executed system architecture studies in FY20-22 to evaluate solutions to problems associated with emerging threats, supportability, and adaptability required to address challenges in a dynamic threat environment. Additionally, activities focused on missile and guidance technology to determine the effective composition of redesign, remanufacture, and pull-through of highly reliable components. FY24 activities continue the refinement of systems studies and critical Missile and Guidance Technology work while building up the focused work on subsystem redesign and industrial base development activities for the D5LE2 program.

Unlike SLBM programs of the past, D5LE2 does not have the benefit of a healthy defense industrial base that comes from maintaining production and continuous development. The 2022 NPR reiterated the need for D5LE2 and stated that the United States will prioritize near-term investments to “ensure that D5LE2 is effective in the expected threat environment and delivers on time.” In short, full support of D5LE2 today is vital to achieving 2039 Initial Fleet Introduction and to embarking on a path that maintains an SLBM deterrent capability through the service life of the COLUMBIA Class SSBN.

The Navy must also recapitalize our Strategic Weapons Facilities and test locations to support the development and production of D5LE2 and to continue to support and sustain SSBN operations and weapons activities that enable our continuous at-sea presence.

Warhead and Reentry Body Activities

The Navy is also working in partnership with the Department of Energy’s National Nuclear Security Administration (NNSA) to refurbish our existing reentry systems and develop new reentry systems in response to USSTRATCOM requirements. As the threat environment the nuclear enterprise faces continues to evolve, it is critical that the Navy designs, develops, and deploys programs that meet the needs of the Warfighter. The TRIDENT II D5 missile is capable

of carrying two types of warhead families today, the W76 and the W88. The W93/Mk7 warhead and reentry body system will be designed for use on both the D5LE and D5LE2 missiles and, the PSA and MDA, as amended, will support the United Kingdom's sovereign Replacement Warhead program. In 2019, NNSA completed the W76-1 Life Extension Program (W76-1/Mk4A), marking the U.S. stockpile's first full-scale warhead refurbishment program. The Navy continues to work on modernizing integrated aeroshells that house these warheads through the Mk4B program with the inclusion of a Shape Stable Nose Tip, which reduces reentry variability and improves performance margins.

The W88/Mk5 warhead continues to undergo its refurbishment program (ALT370) on a revised timeline based on capacitor component issues that did not meet reliability requirements, a technical issue which has since been resolved. The Navy and NNSA coordinated on tightly coupled schedules for the fleet, the nuclear weapons complex, and production of affected non-nuclear components to execute an 19-month delay to the original schedule that was endorsed by the Nuclear Weapons Council (NWC). This program reached the First Production Unit milestone on schedule in 2021 and achieved Initial Operational Capability in January 2022. I am confident that our teams will continue to work together to manage and deliver this program, as we have historically addressed refurbishment challenges with a mission-focused attitude and rigor. The Navy will continue to prioritize meeting our Warfighters' requirements and minimizing disruption to the operational fleet to ensure that the sea-based leg of the triad continues to fulfill its deterrence mission. However, the setback this program faced is indicative of the pervasive and overwhelming risk carried within the nuclear enterprise as refurbishment programs face capacity, historic funding and schedule challenges.

W93/Mk7 will provide flexibility and adaptability to meet future warfighter needs. With the near simultaneous age out of the deployed stockpile in the 2040s, the W93/Mk7 will help address production concerns in the weapons complex and ensure an uninterrupted at-sea deterrent for the sea-based leg of the nuclear triad. In 2021, the Navy entered Phase 1 of the joint DoD-DOE Nuclear Weapons Lifecycle Process with NNSA for the W93. This effort will address evolving ballistic missile warhead modernization requirements; improve operational effectiveness for USSTRATCOM; and mitigate technical, operational, and programmatic risk in the sea-based leg of the nuclear triad while simultaneously reinvigorating the atrophied industrial base and

modernizing a Cold War era stockpile. In FY22, the W93 program received NWC authorization to proceed into Phase 2, Feasibility Study and Design Options, which will further refine and mature the design of the W93/Mk7 program in a manner that provides an affordable, credible, safe, and secure weapon to the Warfighter. Even with the addition of the W93/Mk7 to the stockpile, we will not increase the deployed stockpile. The Navy will work in close coordination with the Department of Defense, NNSA, the NWC, and the Congress as this effort matures, but we cannot continue to life extend our leftover Cold War era weapons and systems and successfully carry out our National Defense Strategy.

Industrial Base and Infrastructure

The nation requires a fully modernized nuclear force and supporting infrastructure to execute our National Defense Strategy. Our modernization needs cannot succeed without investing in the research and development (R&D), critical skills, and facilities needed to produce, sustain, and certify our nuclear systems. Ensuring robust defense and aerospace industrial base capabilities—such as radiation-hardened electronics, strategic inertial instrumentation, and solid rocket motors—remains an important priority in conjunction with R&D investment. SSP has placed particular emphasis on the solid rocket motor industry and its sub-tier suppliers and appreciates the support of the Congress to allow for the continuous production of these vital components. Essential to the nuclear deterrent is a national aeroshell production capability. The Navy has not delivered an integrated aeroshell since the 1980s and needs to reinvigorate a production capability that only resides in a small cadre of highly skilled experts in an exceptionally niche industry. Aeroshell investment supports the Navy but will also be cost-effectively leveraged by our colleagues in the Air Force – and also our strategic partners in the United Kingdom as they pursue their independent warhead program endeavors. Finally, R&D investment is critical to today’s nuclear modernization needs to ensure that we advance necessary technology ahead of design needs and to train our workforce during the early years of development. If the Nation does not continue to address these concerns, no amount of money will be able to adequately mitigate the risks associated with key stockpile and infrastructure losses.

Regarding the program’s infrastructure, existing facilities are reaching their 30-year recapitalization windows as we enter into a once-in-a-generation transition of both the weapons

system and platform. The Navy relies on a limited footprint to process missiles and outfit the SSBNs. Maintaining and sustaining facilities is critical to meeting USSTRATCOM and Fleet mission requirements. We will make smart investments to address capability gaps, through-put constraints, and build in surge capacity to address requirements presented by new and emerging threats. The Administration has shown its commitment to investment in our strategic infrastructure with the funding of multiple MILCON projects in FY24 that are required for the on-time delivery of the D5LE2 SWS. We are re-establishing pad launch capabilities on Florida's Space Coast over four decades after the final TRIDENT II D5 X-Flight in January 1989, as well as modernizing and sustaining our Strategic Weapons Facilities that will produce and deliver D5LE2 missiles to the Fleet. Our Nation and the Navy will continue to prioritize and resource the sustainment and modernization of its nuclear infrastructure enterprise to provide an effective and flexible deterrent now and into the future.

As the Navy executes the modernization and replacement of the SSBN and associated SLBM leg of the nuclear triad, DoD and NNSA's infrastructure must be prepared to respond in tandem to the evolving needs of the Nation. Of utmost importance, we must have an effective, resilient, and responsive plutonium pit production capability. This capability can address age-related risks, support planned refurbishments, as well as prepare for future uncertainty. Additionally, NNSA's tritium, lithium, uranium, and high explosives and energetics, among other strategic materials, are vital to ensuring the Navy can continue to meet its strategic deterrent requirements. Efforts to sustain and modernize deterrent forces must continue. Our strategic forces underpin every military operation around the world, and we cannot afford to delay given the increasing threats facing our Nation.

Workforce

History reminds us that the swift, successful creation and execution of the Fleet Ballistic Missile program in the 1950s was truly a result of national commitment, congressional support, and a cadre of hand-selected scientists, engineers, and inspirational leaders. Though process will always underpin our efforts, our dedicated predecessors—civilians, military, and industry

partners alike—responded to the national need with focused determination and drove this program with a vision. People are as fundamental to our nuclear deterrent as the SWS itself. Today, SSP and its industry partners are focused on inspiring, growing, and retaining a generation of workforce that did not live through the darkest days of the Cold War. Connecting a new workforce to this fundamental global security mission remains an important task shared among the entire nuclear enterprise. A capable, credible, and affordable strategic deterrent for our Nation for the next 60 years requires not only technical, policy, management, and financial acumen—it requires passion and a commitment to making this our life’s work.

SSP has made significant strides in recent years to honor our past, innovate our present, and ensure our future workforce is connected to the fundamental global security mission. In order to create the ideal workforce and workplace, SSP developed the SSP Human Capital Operating Plan (HCOP) in FY19. The HCOP is a five-year plan aligning human capital initiatives to SSP’s strategic goals. SSP is now in the fifth year of the HCOP execution and is realizing valuable change from these efforts. The five goals and associated successes are outlined below.

Goal 1 – Recruitment and Retention: create and implement effective strategies to recruit and retain highly qualified candidates and employees, internal and external, sufficient to ensure that SSP fulfills its mission requirements. Accomplishments toward this end include: developing a comprehensive Talent Pipeline strategy to integrate Science, Technology, Engineering and Mathematics community engagement, recruitment outreach, student internships, and entry-level developmental programs; implementing the Compass Program to better acclimate new employees to SSP’s mission and culture; standardizing SSP-enterprise Exit and Stay Interview processes; and integrating data analytics across Human Resource (HR) functions;

Goal 2 – Talent Development and Sustainment: support, develop, and strengthen the workforce to continually evolve and successfully execute the mission. Accomplishments toward this end include: developing Science & Technology Subject Matter Expert (S&T SME) career tracks; conducting a staffing study to assess current and future competencies and capacities; implementing robust mentorship programs; establishing the Career Development Counseling Program; and deploying the SSP Academy and the Waypoints learning management system;

Goal 3 – Leadership Development: strengthen enterprise leadership at all levels through robust leadership development programs and clear assignment and execution of authority, accountability, and responsibility. Accomplishments toward this end include: Implementing robust coaching programs for leaders and developmental employees; delivering a Human Resources Management for Supervisors training; and continuously promoting internal and external leadership development programs.

Goal 4 – Culture: clearly define and communicate SSP culture and values. Reinforce and assess the organizational culture as necessary for continuous improvement at every level.

Accomplishments toward this end include: expanding and improving employee recognition programs; delivering on-going health and wellness activities; establishing a ‘We Hear You’ campaign to communicate SSP’s responses to feedback; defining SSP Culture and Values (Director’s Intent); developing SSP Culture Videos; and creating a Supervisory Corner, a centralized web-based hub to equip supervisors with the resources, information, and tools necessary to be an effective supervisor;

Goal 5 – Diversity and Inclusion: create and implement effective strategies to cultivate a diverse and inclusive work environment that promotes employee engagement and the exchange of different ideas, philosophies, and perspectives. Accomplishments toward this end include: conducting barrier analysis; establishing Diversity and Inclusion Council; increasing use of Individuals with Disabilities Recruitment Program; and connecting a Leadership Learning Series with Special Emphasis Programs.

Over the next several months, SSP will be preparing to release HCOP FY24-FY28 with refined goals, measures of effectiveness, and other programmatic enhancements.

Polaris Sales Agreement: Support to the UK

Fundamental to U.S. strategic and extended deterrence policies is the special relationship between the U.S. and the UK through the 1963 Polaris Sales Agreement (PSA), as amended, and the 1958 Mutual Defense Agreement (MDA), as amended. Under the PSA, the U.S. sells the

TRIDENT II SWS to the UK along with associated defense services. Under the MDA, the U.S. cooperates with the UK on the exchange of information and the transfer of nuclear material and equipment for mutual defense purposes. The two agreements are complementary, and together enable the U.S. Navy to sell SWS delivery system and reentry body equipment to the UK, as well as to exchange classified information, including Restricted Data (RD) and Formerly Restricted Data (FRD), with the UK. This framework has ensured the United States' ability to support the UK with capabilities to ensure a robust nuclear deterrent. The Common Missile Compartment (CMC) represents the most recent example of the PSA partnership, in which the two nations are designing, developing, and producing common shipboard infrastructure which improves the ease of comingling the D5 missile inventory and sets the stage to improve maintenance system consistency across the two fleets. SSP will support PEO SSBN throughout the 2020s as they oversee U.S. industry delivery of CMC components to both navies for installation into their new SSBNs. As with COLUMBIA, the DREADNOUGHT Class SSBNs will initially carry the D5LE missile. The development of the Mk7 reentry system to support the U.S. W93 warhead program is also critical to the development of a next generation nuclear warhead and reentry system for the UK. The two nations are working separate but parallel warhead programs with collaboration between the two.

Next month will mark sixty years since our two governments signed the PSA. With sixty years behind us, SSP will continue to nurture and safeguard this special relationship with the UK to sustain the SBSB and support UK Continuous At Sea Deterrence (CASD) of today while modernizing and building flexibility, adaptability, and resiliency into SBSB 2084 and the UK's future CASD.

Conclusion

Our Nation's sea-based strategic deterrent has been a critical component of our national security since the 1950s and must continue to assure our allies and partners and to deter potential adversaries well into the future. SSP ensures a safe, secure, effective, flexible, and tailorable strategic deterrent, with a steadfast focus on the proper stewardship, custody, and accountability of the nuclear assets entrusted to the Navy. Sustaining and modernizing the sea-based strategic deterrent capability is a vital national security requirement. I am privileged to represent this

unique organization as we work to serve the best interests of our great Nation. I thank the committee for the opportunity to speak with you about the sea-based leg of the nuclear triad and the vital role it plays in our national and global security.