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STATEMENT OF

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NUCLEAR, CHEMICAL, AND BIOLOGICAL DEFENSE PROGRAMS

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## **INTRODUCTION**

Chairman Lamborn, Ranking Member Moulton, and distinguished Members of the Subcommittee, thank you for the opportunity to testify before you today regarding the Fiscal Year (FY) 2024 request for nuclear forces. It is a pleasure to join my colleagues to discuss matters relating to the U.S. nuclear deterrent, which undergirds all of our national defense priorities. As the 2022 National Defense Strategy (NDS) directs, the Department of Defense (DoD) will advance our priorities through integrated deterrence—backstopped by a safe, secure, and effective nuclear deterrent; and a strong and credible extended deterrence. These capabilities are critical to the continued safety and security of the American people and our Allies and partners, both now and into the future. The President’s FY 2024 budget request reinforces the importance of these efforts by fully funding nuclear sustainment and modernization efforts.

It is no secret that we are navigating a decisive decade, marked by significant changes in the geopolitical environment that pose serious challenges to U.S. national security interests. The decisions that we make as a Nation today will have profound effects on our nuclear deterrent for decades to come. The Office of the Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs (ASD(NCB)) is at the forefront of DoD’s efforts to sustain and modernize the U.S. nuclear deterrent. As the ASD(NCB), I serve as a senior advisor and technical expert to the Secretary and Deputy Secretary of Defense for chemical and biological defense and a broad range of issues associated with the nuclear deterrent; and serve as the Staff Director for the Nuclear Weapons Council (NWC). Over the last year, the NWC has made strides to evolve our thinking and prepare a strategy to address the various challenges facing our Nation and our enterprise.

## **PACING CHALLENGES**

Nested within the NDS is the 2022 Nuclear Posture Review (NPR), which recognizes that the global security environment has continued to deteriorate, resulting in the sobering conclusion that, for the first time in history, we will need to deter two major nuclear-armed adversaries, both of whom are growing and diversifying their arsenals.

China’s nuclear modernization efforts and expansion presents new complications in an already-challenging region and globally. DoD’s recent unclassified assessment paints an increasingly stark picture of China’s intentions. China is becoming more assertive and is

engaging in broad military modernization that tests the United States and our Allies in new ways. China is working to develop, test, and field new generations of land-based ballistic missiles and increase the range of their submarine-launched ballistic missiles; and is also pursuing a new strategic bomber. Additionally, China is now expending significant resources on expanding its nuclear stockpile and fielding advanced and diverse nuclear-capable systems, including the development of hypersonic vehicles. DoD assesses that if China continues on its current trajectory, it will reach approximately 1,500 warheads in the mid-2030s, supported by a progressively capable nuclear triad that will include a range of advanced capabilities. Those weapons will backstop an increasingly aggressive regional posture that understandably alarms our Allies.

Simultaneously, we are facing an acute threat posed by Russia, exemplified by its brutal and unprovoked invasion of Ukraine that began over a year ago. Russia has been modernizing its nuclear deterrent for years, including the development of novel and potentially destabilizing new capabilities. Augmenting its strategic arsenal is a large stockpile of nonstrategic nuclear and dual-capable weapons. As we learned this past year, those weapons underwrite a clear willingness in Moscow to use threats of nuclear use for coercive benefit and revisionist ends. While the United States did not see reason to change its nuclear alert levels as a result of Russia's coercive rhetoric, this is a stark reminder of the reality of nuclear threats in contemporary conflict. President Biden described this moment as having the greatest risk of nuclear escalation in 60 years. Russia's recent claimed suspension of the New START Treaty further reinforces this point and demonstrates Russia's current unwillingness to engage as a constructive partner on nuclear arms control. These combined developments are resulting in challenges that require the United States to focus and maintain long-term attention and resources on ensuring we have a modern and credible nuclear deterrent.

However, our adversaries do not represent our only challenge. Today, we are faced with an unprecedented set of cross-cutting risks that affect multiple organizations tasked with sustaining the current nuclear stockpile and simultaneously modernizing the future nuclear triad. These risks reside in the nuclear industrial base, with our future workforce, in supply chain security, and in cybersecurity threats that require action in the near term to make lasting impacts across the deterrent over the next 15 years.

## **NUCLEAR MODERNIZATION**

While the current U.S. arsenal remains safe, secure, and effective, nearly all nuclear deterrent systems are operating beyond their original design life. Replacement programs are seriously challenged, and margin is disappearing between the end of the effective life of existing systems and the fielding of their replacements. Additionally, we face a current nuclear enterprise that was not designed to manage the geopolitical realities that we must address. Following the end of the Cold War, we as a Nation deemphasized nuclear weapons, and, as a result, our attention to and demand signal for nuclear weapons development decreased. This led to an enterprise that lost much of its production base, with a capacity sized only for occasional life extension programs and refurbishments. We now face rising nuclear risks, and a strategy of partial refurbishment is no longer adequate, as the NPR recognizes.

We have made significant progress in our transition from an enterprise in sustain and repair status to one with the capabilities and capacities necessary to support broad modernization. Fifteen years ago, the complex was working on a single warhead life-extension program. Today, we are working on various stages of four major nuclear delivery modernization programs and five highly complex warhead modernization programs simultaneously. Unfortunately, our production capabilities and capacities have yet to fully catch up to this ambitious but necessary modernization program. The NPR is clear that, to provide the capabilities necessary to strengthen deterrence and extended deterrence, we must develop and field a balanced, flexible stockpile capable of pacing threats, responding to uncertainty, and maintaining effectiveness—all of which can be achieved only with a resilient and adaptive production enterprise underpinned by a world-class workforce. Plutonium pit production is a key example of the atrophy we have experienced. Additionally, both DoD and the Department of Energy's (DOE) National Nuclear Security Administration (DOE/NNSA) production enterprises face significant difficulties for the many capabilities needed to maintain our status as a nuclear power, which extends deterrence to our entire alliance structure. Beyond the production base, we also lack the ability to execute these programs in a timely way. Our recent experience has shown that even a relatively straightforward life-extension program takes well over a decade.

Despite these challenges, we have made progress in our weapons modernization programs:

- The NWC authorized the W88 ALT 370 and B61-12 programs' entry into Phase 6.6, *Full-Scale Production*.
  - The W88 ALT 370 extends the life of the W88 without increasing the warhead's military capability, and NNSA continues to meet system production requirements and make on time deliveries to the Services.
  - The B61-12 further assures Allies of our extended deterrence commitment.
- The W93 entered Phase 2, *Feasibility Study and Design Options*, and is focusing on trade space and design options to meet requirements.
  - This program will ensure that the U.S. submarine-based deterrent force remains balanced and flexible for the long-term and further supports the United Kingdom (UK) through its separate but parallel replacement warhead program.

The NWC is actively engaged on all warhead programs and is carefully managing milestone delays and increased schedule risk, including in the W80-4 and W87-1 warhead programs:

- The W87-1 Program entered into Phase 6.3, *Development Engineering*, last fall.
  - This program is driving modernization of the full production enterprise and the reinvigoration of key capabilities.
- The NWC also endorsed a First Production Unit shift for the W80-4 warhead due to both Coronavirus Disease 2019 impacts and technical challenges. It is scheduled to shift into Phase 6.4, *Production Engineering*, this spring.
  - The W80-4 will be mated to the modernized long-range standoff (LRSO) weapon; although it has sacrificed schedule margin, its milestones are closely aligned with LRSO's schedule to deliver Initial Operational Capability to the warfighter.

DoD's once-in-a-generation modernization of the Nation's nuclear triad is making steady progress. For the sea-leg, the COLUMBIA-class Ballistic Missile Submarine Program is on track to deliver the first hull in time for its first strategic patrol in FY 2031, meeting United States Strategic Command (USSTRATCOM) requirements. The COLUMBIA-class will eventually be equipped with the modernized Trident II D5 Life-Extension 2 (D5LE2) strategic weapon system, which will ensure the effectiveness of the sea-based leg of the triad through the 2080s.

The Sentinel Program will modernize the ground-leg of the triad through 2075, replacing the aging Minuteman III intercontinental ballistic missiles (ICBM). The program is executing an aggressive schedule, and the Air Force is actively working to mitigate risks in delivering this capability to meet USSTRATCOM requirements. Sentinel will ensure that the land-leg of the triad remains safe, secure, and effective through the 2070s, closing current ICBM capability gaps and providing increased accuracy, enhanced security, improved reliability, and lower lifecycle costs.

We are also modernizing the air-leg of the triad. The B-21 Raider, rolled out late last year, is both conventional and nuclear-capable, allowing it to eventually replace the B-2 and conventional-only B-1 bombers. The B-21 will be a visible and flexible deterrent capability and provide operational flexibility across a wide range of military objectives. The nuclear-armed AGM-86B Air Launched Cruise Missile will be replaced by the LRSO weapon. LRSO is a joint effort involving DoD and DOE/NNSA, with the Air Force responsible for cruise missile development and integration and DOE/NNSA responsible for the W80-4 warhead. With the ability to penetrate and survive advanced integrated air defense systems, the LRSO Program will maintain the viability of the B-52H fleet for the nuclear mission and ensure the United States continues to field a visible, flexible, tailorable, and credible nuclear deterrent through the airborne leg of the triad. The F-35 Dual Capable Aircraft (DCA) Program remains on schedule and is an important aspect of our support and modernization to the North Atlantic Treaty Organization's (NATO) nuclear deterrent. The F-35A DCA ensures the continued capability and mission effectiveness of U.S. and Allied forces. The fundamental purpose of NATO's nuclear capability is to preserve peace, prevent coercion, and deter aggression. To that end, and through my role as the Vice Chair of the NATO High Level Group, I will continue to work with NATO to ensure the credibility, effectiveness, safety, and security of the nuclear deterrent mission. Underpinning the strategic triad is the Nation's nuclear command, control, and communications system (NC3). DoD has embarked on a sweeping and long overdue modernization of NC3 to improve the efficiency, security, and alignment of the 200+ individual systems that compose the overall NC3 architecture. This modernization is essential to continue to provide assured and resilient command and control to the President, at all times and under all circumstances, including during and following a nuclear or non-nuclear attack by any adversary.

Ensuring U.S. nuclear forces remain safe, secure, and effective requires collaboration within the nuclear enterprise and deepening relationships with the intelligence community to ensure an agile response to evolving threats. We have assembled a cadre of intelligence analysts from across the U.S. Government (USG) and deeply embedded them into our nuclear security mission. A joint DoD-DOE Nuclear Security Threat Capability Assessment is being updated to reflect evolving adversary cyber, asymmetric, and conventional capabilities against our nuclear infrastructure. We continue to execute a robust DoD Force-On-Force Exercise Program that evaluates the effectiveness of current security policies and system standards against threats assessed by the intelligence community. If and when gaps are identified, we explore, test, and implement innovative material and policy mitigations. These solutions are then shared to identify efficiencies and promote collaboration across the USG. To that end, a collaborative approach across USG and the intelligence community has also been leveraged to support reviews such as the 2022 Failsafe and Risk Reduction Review (FARR). The FARR serves as an historic opportunity to conduct an enterprise-wide review that re-baselines nuclear surety against the full spectrum of evolving threats to include cyber, supply chain, and emerging technologies. The final report will outline actionable recommendations to strengthen safeguards against unauthorized or inadvertent use, as well as ensuring the authorized use of nuclear weapons.

## **NUCLEAR WEAPONS COUNCIL**

As NWC Staff Director, I am happy to report that the NWC is actively making decisions to enable a modern, flexible, and balanced stockpile underpinned by a resilient and responsive production enterprise. Congress entrusted this body with additional authority to manage issues across the deterrent more broadly, and we are doing just that. In addition to executing our statutory responsibilities, the NWC embarked on an endeavor this past year to think broadly about the necessary capabilities and capacities needed for the future and to understand how new requirements may conflict with current plans and schedules. The NWC also recognizes that the security environment is rapidly changing. The Program of Record, as we know it today, is necessary to create an appropriate demand signal for all of the capabilities and capacities necessary to address the challenges identified in the NPR. However, the NPR also recognized that we may need to reevaluate our programs and requirements as the security environment evolves. As a result, for the first time in decades, DoD and the NWC are grappling with the need

for new requirements to address potential gaps identified in response to the projected threat environment.

I am proud of the momentum that the NWC has gained over the last year to make strategic and risk-informed choices, informed by difficult conversations, while also ensuring that all aspects of the challenges we face are appropriately considered, and that risks and trade-offs are well understood. The NWC's actions have been deliberate through its process, and we recognize that that we can no longer make individual decisions related to specific warhead programs. Rather, the NWC is focused on understanding suites of decisions that reflect its priorities and enable the Council to trade and balance risk across the deterrent and both DoD and DOE.

One aspect that the United States must keep at the forefront of these decisions is our partnership with the UK. As described in the NPR, we remain committed to supporting the UK's nuclear deterrent and nuclear modernization efforts, including development of our W93/Mk7 warhead/reentry body in parallel with the UK's Replacement Warhead. This partnership is a priority for DoD since we know that the decisions we make for our nuclear enterprise will have a direct impact on the UK's Continuous-At-Sea-Deterrent. This partnership with the UK also supports our overall NATO defense strategy and our commitments to our Allies in Europe. I want to thank my colleagues for their partnership executing this difficult and time-consuming process. Building the enterprise we need is only possible with a more integrated approach, and we are acting toward that end every day.

## **CONCLUSION**

In conclusion, we find ourselves at an urgent inflection point resulting from the realities of the geopolitical landscape and guidance from the NDS and NPR. Previously, we have focused solely on the dual task of sustaining and modernizing the nuclear deterrent. While modernization and sustainment remain critical, we recognize that we have a third imperative task before us: to look over the next 20 years to identify the capabilities that we believe we will need, based on the threat picture, and start expending the necessary resources now to pace those threats. As long as our adversaries continue to make nuclear weapons a centerpiece of their strategy, we will need to adapt our mindset and process to the needs of the future and reset the enterprise baseline accordingly.



On behalf of my organization, I would like to thank this Committee for its longstanding, bipartisan support for our nuclear deterrent mission and for the dedicated professionals across the nuclear enterprise. Thank you for your time today, I look forward to your questions.