Not for Public Release until Approved by the

Senate Armed Services Committee

Testimony

Before the

Strategic Forces Subcommittee

Committee on Armed Services

United States Senate

Fiscal Year 2019 Budget Request for Nuclear Forces

Witness Statement of Hon. Guy B. Roberts,

Assistant Secretary of Defense for

Nuclear, Chemical, and Biological Defense Programs

April 11, 2018

Chairman Fischer, Ranking Member Donnelly, and distinguished members of the Subcommittee, thank you for the opportunity to testify before you today on the Fiscal Year (FY) 2019 budget request for nuclear forces. I am pleased to join Gen Robin Rand, VADM Terry Benedict, and Dr. Robert Soofer to discuss one of the Department of Defense's (DoD) highest priorities: ensuring that the Nation has a flexible, adaptable, and resilient nuclear deterrent in an increasingly complex and demanding security environment.

As the Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs and the Staff Director of the Nuclear Weapons Council (NWC), I work directly for the Under Secretary of Defense for Acquisition and Sustainment (A&S), and advise the Department's senior leadership on nuclear matters. The Under Secretary leads the Department's efforts to acquire nuclear weapons delivery, and command and control systems required to meet the operational needs of our Armed Forces. The Under Secretary also chairs the NWC, a DoD and Department of Energy (DOE)/National Nuclear Security Administration (NNSA) governance body established to facilitate cooperation and coordination, reach consensus, and establish agreed-upon priorities as the Departments fulfill their shared responsibilities for United States nuclear weapons stockpile management. The NWC is deeply involved in balancing the need to maintain our existing nuclear weapons stockpile while modernizing that stockpile to ensure the long-term credibility and effectiveness of the nuclear deterrent, updating aging infrastructure, and preserving the human capital that underpins our capability to be a nuclear weapons state.

Global threat conditions have worsened markedly since the 2010 Nuclear Posture Review (NPR), and the United States and our allies now face an unprecedented range of threats, requiring a diverse set of nuclear capabilities to maintain a credible deterrent. The 2018 NPR

tasks DoD and DOE/NNSA with ensuring the Nation is prepared to support a tailored and flexible nuclear deterrent to face modern challenges and to hedge against an uncertain future.

Our budget request demonstrates the Department's commitment to strengthening and modernizing the nuclear Triad and revitalizing the aging infrastructure that supports the nuclear security enterprise. Today, I will summarize the DoD perspectives on, and priorities for, warhead life extension, nuclear weapon delivery systems modernization and replacement, nuclear enterprise infrastructure modernization, stockpile sustainment, nuclear command and control, and communications (NC3), allied engagements specifically with NATO and in the Asia-Pacific region, as well as the challenges we face today and tomorrow to address emerging threats and ensuring a credible nuclear deterrent. While estimates of the cost to sustain and replace United States nuclear capabilities vary, according to our analysis, nuclear spending will reach a peak of approximately 6.4 percent of the overall DoD budget by the late 2020s, which compares favorably to the 10.6 percent of the DoD budget required during the 1980s and 17.1 percent in the 1960s. To ensure the continued credibility and reliability of our nuclear deterrent in an increasingly complicated and challenging world, it is essential that Congress support the President's FY 2019 budget request for nuclear deterrence activities.

Nuclear Enterprise Challenges

Since the height of the Cold War, the United States has reduced the nuclear stockpile by over 85 percent and deployed no new nuclear capabilities. Meanwhile, Russia has modernized its non-strategic and strategic systems and developed new capabilities to bolster its nuclear Triad while instituting a military doctrine predicated on an "escalate to de-escalate" strategy. China has pursued new capabilities by modernizing and expanding its nuclear forces, developing and deploying new ground-based and sea-based nuclear delivery vehicles, all while displaying a lack

of transparency in its nuclear force posture. Finally, North Korea's rapid progress with its nuclear weapons and missile programs also poses a significant security challenge.

With the return of Great Power competition and emerging nuclear threats, it is important, now more than ever, to ensure our nation's nuclear stockpile, and infrastructure are prepared to provide a credible, flexible, ready, and technologically advanced deterrent for United States, allies, and partner security. To this end, the NWC regularly convenes to ensure synchronization between the Departments of Defense and Energy on the vision, strategy, and execution of nuclear programs. Specifically, the Council focuses its attention on nuclear enterprise challenges in four vital areas. First, the DoD must address the challenges of sustaining and modernizing all parts of our nuclear force structure, ensuring that the Nation's nuclear weapons sustainment and delivery system modernization programs are funded and aligned. Second, we must remain steadfast in our commitment to sustain and modernize our aging infrastructure, which provides materials, components, and testing facilities essential to our nuclear deterrent. Third, we must maintain and strengthen our ability to extend the lives of aging warheads, as the majority of today's nuclear weapons and delivery systems have surpassed their initial design life. This is accomplished through a robust program of science-based stockpile stewardship, as well as comprehensive component reuse, refurbishment, and replacement, while we ensure alignment with existing and future delivery systems. And fourth, we must continuously improve the rigorous science and engineering tools required to assess the safety and effectiveness of our aging nuclear weapons stockpile.

One of our significant internal challenges has been our lack of development of new capabilities to address the changing threat. We must be capable of developing and deploying new capabilities, when necessary, to deter adversaries, assure allies, achieve United States objectives

if deterrence fails, and to hedge against uncertainty. Our future stockpile must be flexible, adaptable, and resilient to technological and geopolitical change.

DoD Stockpile Requirements

"The United States will sustain a nuclear force structure that meets our current needs and addresses unanticipated risks. The United States does not need to match the nuclear arsenals of other powers, but we must sustain a stockpile that can deter adversaries, assure allies and partners, and achieve U.S. objectives if deterrence fails."

– (National Security Strategy, page 30)

Our nuclear deterrent is based on the capability to maintain and modernize our nuclear stockpile. To support this and remain consistent with past efforts, reflective of the priorities identified in the 2018 NPR, the NWC aligns warhead plans and infrastructure needs with delivery system modernization and replacement efforts.

We must sustain our current stockpile in order to avoid gaps in fulfilling military requirements, while developing the expanded capabilities identified in the 2018 NPR. NNSA's science-based Stockpile Stewardship Program has ensured confidence in the reliability of the current nuclear stockpile without nuclear explosive testing. The Stockpile Stewardship Program, composed of research, development, test, and evaluation (RDT&E) facilities and personnel, enables the surveillance and assessment of the stockpile's condition by identifying anomalies, evaluating impacts of anomalies on warhead performance, and implementing solutions.

To address supplemental capabilities, the NWC will coordinate the near-term plans to modify a small number of existing submarine-launched ballistic missile (SLBM) warheads to provide a prompt low-yield option, and in the longer term, to pursue a modern nuclear-armed sea-launched cruise missile (SLCM). The low-yield SLBM warhead and SLCM will provide additional diversity in platforms, range, and survivability, as well as a valuable hedge against

future nuclear “break out” scenarios, without impacting our obligations under bilateral nuclear arms control agreements, such as the Intermediate-range Nuclear Forces (INF) and New START treaties.

Revitalizing the Nuclear Infrastructure

"Our nuclear deterrent is nearing a crossroads. To date, we have preserved this deterrent by extending the lifespan of legacy nuclear forces and infrastructure-in many cases for decades beyond what was originally intended. But these systems will not remain viable indefinitely. In fact, we are now at a point where we must concurrently modernize the entire nuclear triad and the infrastructure that enables its effectiveness."

- Vice Chairman, Joint Chiefs of Staff, General Paul Selva, 2017

The current global threat environment and an uncertain future now necessitate a national commitment to maintain modern and effective nuclear forces, as well as the infrastructure needed to support them. Over the past several decades, our nuclear weapons infrastructure has suffered the ravages of time and a lack of comprehensive investment. Our nuclear enterprise infrastructure challenges are two-fold: 1) working to achieve an infrastructure more responsive to nuclear deterrent requirements, and 2) addressing aged, end-of-life facilities maintenance, recapitalization, and replacement. Many of the specialized capabilities required for stockpile work have atrophied or become obsolete. As a result, the dedicated personnel at our national security laboratories and production facilities have not been able to process or manufacture many of the required strategic materials and critical components in quantities necessary to sustain our stockpile.

Our effort to re-establish our production capabilities at sufficient rates must be a national priority. The NWC is focused specifically on plutonium, uranium, lithium, and tritium capabilities, as well as radiation-hardened microelectronics manufacturing capabilities needed to

support the current and future nuclear weapons stockpile. The Department of Defense reinforces NNSA's commitment to develop a responsive and productive strategic materials plan to meet stockpile needs and establish a path forward to manufacturing critical materials to meet future deterrent requirements.

Through the Stockpile Responsiveness Program (SRP), established by Congress with bipartisan support, NNSA sustains the nuclear weapons design and development skills needed by its workforce to address evolving threats and the potential for technological surprise. The SRP expands opportunities for scientists and engineers to advance such skills, which have not been fully developed or exercised in the current programs of warhead assessment, maintenance, and life extension. Maintaining these skills is an important element of the U.S. hedging strategy in order to provide timely availability of capabilities, if needed to meet changes in the security environment.

A key element in establishing a robust production capability is attracting top talent. Talent is being lost to non-defense industries due to unacceptable, extended delays in the security clearance process. Personnel shortages are contributing to national security risks as positions go unfilled and mission performance is comprised. Unfilled positions in the nuclear enterprise due to security clearance process delays will have an impact on our ability to meet our goals. This is a serious national security issue with strategic implications. .

An assured, reliable, and resilient NC3 system that operates across the full spectrum of conflict is essential in today's complex security environment. As we modernize our nuclear forces, we must also modernize our NC3 systems to enhance deterrence. An effective NC3 architecture must support a tailored deterrence strategy for each potential adversary, allowing for flexible response options to various provocations, and enabling adjustments to our deterrent posture over time to face emerging threats. Robust NC3 ensures the United States receives

indications and warning in a timely manner, and provides decision-makers with the necessary time to make informed decisions and employ our forces in extreme circumstances.

DoD Delivery System Requirements

The ability to effectively deter threats to our nation's security relies on maintaining a nuclear force with a diverse, flexible range of yield and delivery modes that are ready, capable, and credible. While the delivery systems underlying our nuclear triad remain effective today, the Department is entering a period when all legs of the triad, to include delivery platforms, will require significant modernization or replacement to sustain these capabilities. Since most of the Nation's nuclear deterrence delivery systems were built in the 1980s or earlier, they will begin to age out or face decreasing effectiveness by the mid-2020s. As the 2018 NPR reaffirms, we must recapitalize our legacy nuclear deterrence forces now and continue the modernization program initiated during the previous Administration.

To this end, the FY 2019 budget request funds all critical DoD nuclear modernization requirements, ensuring that modern replacements will be available before the our legacy systems reach the end of their sustainability. DoD continues to pursue a robust plan for recapitalizing ballistic missile submarines (SSBNs), submarine-launched ballistic missiles (SLBMs), intercontinental ballistic missiles (ICBMs), air-launched cruise missiles, and nuclear-capable heavy bombers and their associated gravity bombs that comprise our strategic nuclear deterrent. Our budget request is consistent with our plans to ensure that current nuclear delivery systems will be sustained, and the weapons and delivery platforms modernization and replacement programs are integrated, executable and on-schedule to avoid capability gaps.

Modernization and replacement programs will require increased investment over current levels for next 15 years or more. We are taking steps to control the costs of these efforts, such as ensuring weapon system component commonality to a practical extent and close alignment

between DoD delivery systems and NNSA warhead programs. We will continue to monitor the progress of both the weapons and platform programs to ensure the long-term viability of the nuclear deterrent.

Ally Engagements and Extended Deterrence

Effective deterrence is the foundation for effective assurance. Our ability to continue assuring allies depends on the credibility of our nuclear capability and extended deterrence. As such, we must develop the necessary infrastructure, capabilities, and political agreements, to address nuclear threats or nuclear use now and in the future.

In addition to our deterrence and assurance posture in Europe, our nuclear forces provide a worldwide deterrent posture. The United States will maintain a spectrum of capabilities to ensure that no adversary perceives an advantage in nuclear escalation. These capabilities run the full spectrum of options to assure our allies in both Europe and the Pacific.

The United States must and will continue to maintain a credible forward deployed nuclear deterrent capability. Together with our allies in Europe and the Pacific, maintaining a strong, cohesive alliance is the most effective way of deterring aggression from potential adversaries and promoting peace throughout the world. This posture demonstrated that aggression of any kind is not a rational option. Essential to these objectives is ensuring that upgrades and replacements for our legacy forward-deployed dual capable aircraft (DCA) and associated B61 gravity bombs remain capable of convincing our adversaries that prospective benefits of aggression are outweighed by the consequences.

As we prepare for the modernization of nuclear weapons that will later be deployed within the European theater, we have partnered with our allies and with United States European Command to conduct an exercise that will ensure both the United States and the host nation can respond to high consequence/low probability scenarios. This exercise, to be conducted later this

year, will guarantee our readiness as a joint and interagency emergency response force and will set the stage for future "whole of government" events.

From a modernization perspective, with the B61-12 life extension program on schedule, we are working with our allies in planning the upcoming deployment of this enhanced capability. We continue to monitor the Air Force's progress on nuclear certification of the F-35 and look forward to what this 5th generation fighter will do to solidify our DCA capabilities for the United States and NATO.

At the NATO High Level Group, for which I serve as the Vice Chairman for Safety, Security, and Survivability, we've had the opportunity to interact with our European counterparts and have informed them of the various advancements being made within the nuclear security arena. We continue to move with alacrity on our planned Weapons Storage and Security System life extension program, which furthers our ability to secure our nuclear assets well into the future. Although moving cautiously to ensure proper technology maturation, we continue to make progress on fielding additional security technologies and capabilities with the assistance of NATO, which will allow both United States and host nation security forces to keep pace with emerging and asymmetric threats. Since 2000, NATO has invested over $271M dollars in security upgrades and another security capability package was approved in December 2017.

Nuclear Security and Safety

In additional to modernizing our nuclear deterrence and providing assurance to our allies and partners, we continue efforts to create a more cooperative and collaborative physical security environment for our nuclear facilities at home and overseas. We continuously review our policies ensuring our nuclear deterrent remains safe, secure, and effective in a changing security environment, while allowing for flexibility in the implementation by the Services and DoD components. Part of our responsibility is to oversee the MIGHTY GUARDIAN series of

physical security exercises designed to test DoD policy against evolving threats. These threats can be both foreign and domestic and include evaluating new and emerging technologies, such as unmanned systems. We recently concluded an exercise overseas and are in the final planning phases of executing another exercise here within the United States. To date, we have executed 18 exercises, all of which have resulted in enhancing our security posture through the years.

Further, we invest approximately $40M per year in both nuclear and conventional physical security efforts through the Physical Security Enterprise and Analysis Group. Our office works with the Military Departments and the interagency to identify and eliminate gaps in our ability to detect, delay, deny, defeat, and ultimately deter threats to our vital assets.

Nuclear Survivability

While our nuclear triad forms the core of our deterrent, it is further strengthened by denying any potential adversary the perceived benefits of nuclear use. By ensuring that United States forces and infrastructure are able to survive and operate through nuclear attack, we remove the incentive an adversary may have to launch such an attack in the first place. To that end, we are working to improve the survivability of United States nuclear and conventional systems to nuclear effects, including high-altitude electromagnetic pulse (EMP). In particular, we are working with Joint Staff to improve how we address nuclear survivability beginning early in the acquisition process, for example the hardening of the Marine Corps' new Presidential helicopter. We are beginning to recapitalize our test and evaluation capabilities as hardened systems are developed and fielded. In addition, we will support the efforts of the EMP Commission established by Congress last year to assess the threat of EMP attacks on the United States, and I look forward to its findings and recommendations.

Countering Nuclear Threats

While maintaining a credible national and extended deterrent is our top priority, we should be mindful not to ignore the importance of countering potential threats from non-state actors. Combatting weapons of mass destruction (WMD) requires a strategy that leverages a wide range of activities and capabilities integrated through a multilayered approach. The United States strives to prevent malicious actors from obtaining nuclear weapons or weapons-usable materials, technology, and expertise; counter non-state actor's efforts to acquire, transfer, or employ these assets; and respond to nuclear incidents, by locating and disabling a nuclear device or managing the consequences of a nuclear detonation both on the battlefield and in a civil setting.

The FY 2019 budget request for Countering Nuclear Threats (CNT) continues to focus on interoperability and survivability, with programs to provide the Services with radiation-hardened, common equipment, including capabilities for rapid post-detonation deployment. These systems support a variety of missions, including recovery of material after a nuclear weapons accident, contamination avoidance on the nuclear battlefield, decontamination verification both on the nuclear battlefield and in support of consequence management missions, as well as verification that platforms and materiel meet radiological release criteria.

In addition, the Department of Defense is working with its interagency partners (NNSA, FBI, and DHS) and the national security laboratories on technical nuclear forensics (TNF) to rapidly collect and analyze samples for attribution in a nuclear event. This contributes to our deterrent strategy and has application beyond responding to a nuclear detonation, as it is invaluable to efforts such as treaty monitoring and understanding baseline environmental conditions.

As part of our efforts to deter future nuclear use, the United States remains deeply committed to nuclear nonproliferation efforts. Early warning of nuclear proliferation is a critical

first step in our overall strategy. To facilitate this, we support partner nation capability building to improve responsiveness in theater and return flexibility to United States forces in order to safeguard our weapons systems, delivery platforms, and personnel overseas.

Conclusion

As articulated in the 2018 NPR and National Defense Strategy, the United States now faces a more diverse and complex nuclear threat environment than ever before. In order to build a more lethal, resilient, ready, and rapidly innovating force in response to these emergent threats, we must continue to field a strong nuclear deterrent supported by an agile and responsive infrastructure, including a well-trained and sufficiently exercised nuclear enterprise workforce, undiminished by security clearance delays.

The President's FY 2019 Budget Request supports our nuclear force strategy as our program of record evolves. It includes funding for sustaining and modernizing our nuclear forces, and addressing military requirements in a complex and changing security environment to deter potential adversaries and threats, assure allies, and hedges against an uncertain future. The Department of Defense remains committed to maintaining its close and vital partnerships with DOE/NNSA and Congress in meeting the Nation's fundamental security needs. In closing, we respectfully ask that you support the President's FY 2019 nuclear forces' budget request.