



February 9, 2016

# Department of Defense Nuclear Acquisition Programs and the Nuclear Doctrine

Subcommittee on Strategic Forces, Committee on Armed Services, United  
States Senate, One Hundred Fourteenth Congress, Second Session

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Senate Armed Services Committee

STATEMENT OF  
ROBERT SCHER  
ASSISTANT SECRETARY OF DEFENSE  
FOR STRATEGY, PLANS, AND CAPABILITIES

BEFORE THE SENATE  
ARMED SERVICES  
SUBCOMMITTEE ON STRATEGIC FORCES

February 9, 2016

Chairman Sessions, Ranking Member Donnelly, and distinguished Members of the Subcommittee, thank you for the opportunity to testify on U.S. nuclear policy and strategy, and to frame the President's Fiscal Year (FY) 2017 budget request within the context of today's dynamic security environment. Your support for the nuclear sustainment and modernization plan it funds is essential to ensuring the effectiveness of our nuclear deterrent forces.

### **Security environment**

Last week Secretary Carter identified five evolving security challenges that have driven the focus of the Defense Department's planning and budgeting this year. Each has a nuclear dimension that our policy and strategy must address.

Two of these challenges reflect a return to great power competition, in regions where we face nuclear-armed potential adversaries that can pose an existential threat to the United States and our allies. Russia has undertaken aggressive actions in Crimea and elsewhere in Ukraine, and adopted a pattern of reckless nuclear posturing and coercive threats. Russia remains in violation of the Intermediate Nuclear Forces (INF) Treaty and remains unwilling to join us in discussing further reductions in strategic nuclear weapons below the limits of the New START Treaty.

China continues its rise in the Asia-Pacific, where we continue our rebalance to maintain regional stability. China continues to introduce qualitative advances into its nuclear capabilities. North Korea—a threat to both us and our allies—just conducted its fourth nuclear test and conducted a space launch . As we work to counter Iran's malign influence against our friends and allies in the Middle East, we must also prevent Iran from reversing course on its commitments under the nuclear deal. Finally, denying terrorists access to nuclear weapons and weapon-usable materials is an absolute imperative in the ongoing fight to defeat terrorism.

### **Effective deterrence**

While his ultimate goal is a world without nuclear weapons, the President has been consistent and clear in his commitment to maintain a safe, secure, and effective nuclear arsenal for as long

as nuclear weapons exist. The Department of Defense and the National Nuclear Security Administration (NNSA) work closely together to maintain the safety and security of our nuclear forces at the lowest levels possible while still retaining a full set of options to respond to and address the potential threats we face. I will focus today on the third of these elements – ensuring the effectiveness of our nuclear deterrent.

Effective deterrence means convincing any potential adversary that attacking the United States or its allies would bring risk that far outweighs any expected benefits of aggression. This requires that our nuclear capabilities and posture provide the ability to implement U.S. deterrence strategy, preserve the strategy's credibility, and reinforce strategic stability. Maintaining the ability to achieve the President's objectives if deterrence fails strengthens the credibility of our strategy.

Our approach to meeting the range of challenges we now face or might face in the future is to maintain a deterrent that is robust and stable, rather than one that is necessarily reactive to every action of potential adversaries. This remains best served by sustaining a full nuclear Triad and Dual-Capable Aircraft (DCA) with a diverse range of nuclear explosive yields and delivery modes. The Triad and DCA provide the credibility, flexibility, and survivability to meet and adapt to the challenges of a dynamic 21<sup>st</sup> century security environment, without the need to mirror every potential adversary, system-for-system and yield-for-yield. Further, we believe we can meet current military requirements without developing new nuclear warheads or new military capabilities and we continue to manage our nuclear modernization consistent with those policy directives.

### **Deterring nuclear use in regional conflicts**

Deterring nuclear use in regional conflicts will remain one of those challenges for the foreseeable future. We must be able to deter not only large-scale nuclear attack, but also limited nuclear attack and deliberate nuclear escalation arising out of conventional regional conflict. I would like to touch on four important elements of a regional deterrence strategy aimed at minimizing the likelihood that an adversary will choose nuclear escalation. Together, these elements help convey that we won't let an adversary escalate its way to victory, split our alliances, achieve a favorable military situation, or coerce us out of protecting our vital interests.

First, we extend nuclear deterrence to certain allies. These formal security arrangements are both a representation of our commitment and, by explicitly putting U.S. credibility on the line, they are a means of strengthening that commitment in the minds of allies and potential adversaries.

Second, we are working to ensure an appropriate level of integration between nuclear and conventional planning and operations. This type of integration does not mean lowering the threshold for U.S. nuclear use, turning to nuclear weapons to further a conventional campaign, or increasing our reliance on nuclear weapons. Rather, integration means conventional operations must be planned and executed with deliberate thought as to how they shape the risk that the adversary will choose nuclear escalation. Similarly, nuclear planning needs to account for the possibility of ongoing U.S. and allied conventional operations. Integration also means strengthening the resiliency of conventional operations to nuclear attack. Conventional resiliency preserves Presidential flexibility in the face of limited nuclear use by providing the option of continuing the conventional fight even after the adversary chooses to escalate. We should not be in the position of forcing the President to choose between a nuclear-only response and a conventional-only response, allowing the adversary, not us, to dictate the means of the conflict. Finally, integration means being prepared to restore deterrence following adversary nuclear use, so that failure to deter first use does not translate into failure to deter subsequent nuclear use.

Third, effective regional deterrence requires a balanced approach to escalation risk that deters escalation but also prepares for the possibility that deterrence might fail. We accept and convey the reality that no one can count on controlling escalation. Russia's purported doctrine of nuclear escalation to deescalate a conventional conflict amounts to reckless gamble for which the odds are incalculable and the outcome could prove catastrophic. Any resort to nuclear weapons would be the ultimate form of escalation. However, we have to be prepared if Russia creates a conflict and drives it across the nuclear threshold; we do not want to simply assume that once the nuclear threshold has been crossed that escalation cannot be limited. We are tasked with providing the President with credible options for responding to nuclear threats and nuclear aggression, including responding to limited nuclear use as noted, with nuclear and/or conventional means. Both aspects of this balanced approach are mutually reinforcing. Possessing a range of options for responding to limited use makes credible our message that escalating to deescalate is dangerous and will ultimately be unsuccessful.

Fourth, sustaining a diverse set of U.S. nuclear capabilities is essential for the role they play in regional deterrence and assurance. A strategy of relying on large-scale nuclear response is credible and effective for deterring large-scale nuclear attack, particularly against one's homeland, but it is far less credible in the context of limited adversary use, particularly against an ally or U.S. forces operating abroad. Retaining more diverse nuclear options gives us the ability to minimize collateral damage in the event the President determines that a nuclear response is required. This, however, does not mean a lower nuclear threshold or higher likelihood of U.S. nuclear use. Indeed, the United States has long maintained a high threshold for nuclear use together with a diverse range of nuclear forces and response options.

### **Sustainment and modernization program**

The Administration's nuclear sustainment and modernization plan is necessary for sustaining effective deterrence, and it is affordable if prioritized appropriately by the Department, the Congress, and the Nation. It is essential that Congress support the President's FY 2017 budget request and Future Years Defense Program (FYDP) for nuclear weapon-related activities. Further delays to the program would put the safety, security, and effectiveness of our nuclear forces at significant and unacceptable risk.

To be clear, our choice is not between keeping or modernizing the current forces. Rather, the choice is between modernizing those forces or watching a slow and unacceptable degradation in our ability to deter.

Our systems have already been in use decades past their intended service lives. Delaying modernization and warhead life-extension would diminish the size and degrade the capabilities of our nuclear forces until they age out of service entirely. National security decisions and arms control agreements, rather than a failure to sustain and modernize, should determine the size and shape of our deterrent capabilities.

The FY 2017 budget request funds warhead life extension and sustainment and recapitalization within the strategic submarine (SSBN) force, the intercontinental ballistic missile (ICBM) force, the strategic bomber force, and our DCA. This includes the B61-12 bomb Life-Extension Program (LEP), and development of a Long-Range Standoff missile (LRSO) to replace the aging

Air-Launched Cruise Missile (ALCM). The B61-12 and LRSO are necessary to sustain existing military capabilities, not to provide new ones.

The President's approach to nuclear sustainment and modernization is consistent with his nonproliferation and disarmament objectives. The FY 2017 budget request and FYDP support a program that sustains a safe, secure, and effective nuclear deterrent; reduces the numbers and types of weapons; retains leverage for future arms control agreements; and assures allies they don't need their own nuclear arsenals. The current nuclear stockpile is a dramatic departure from the Cold War, in terms of both numbers and types of weapons. The B61-12 LEP will go further by consolidating four existing bomb variants and allowing eventual retirement of the B83 strategic bomb, the last megaton-class weapon in the stockpile. We are retaining only those capabilities we need to sustain stable and effective deterrence.

We look forward to your continuing support in our collective efforts to ensure the United States is able to meet the security challenges we face today, and those ahead. Thank you again for the opportunity to testify. I look forward to your questions.

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Senate Armed Services Committee

Testimony

Before the  
Strategic Forces Subcommittee  
Committee on Armed Services  
U.S. Senate

Fiscal Year 2017 Budget Request for Nuclear Forces

Witness Statement of Dr. Arthur T. Hopkins,  
Principal Deputy Assistant Secretary of Defense for  
Nuclear, Chemical, and Biological Defense Programs

February 9, 2016

Chairman Sessions, Ranking Member Donnelly, and distinguished members of the Subcommittee, thank you for the opportunity to testify before you today on the Fiscal Year (FY) 2017 budget request for nuclear forces. I am pleased to join Assistant Secretary Scher, Vice Admiral Benedict, and General Rand to discuss the Department of Defense's (DoD) number one mission: maintaining a safe, secure, and effective nuclear deterrent for as long as nuclear weapons exist.

As the Principal Deputy Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs and the Nuclear Weapons Council (NWC) Staff Director, I work directly for the Under Secretary of Defense for Acquisition, Technology and Logistics (AT&L), and advise the Department's senior leadership on nuclear matters. The Under Secretary has a dual role in overseeing systems acquisition in the nuclear enterprise: leading the Department's efforts to acquire the strategic nuclear weapons delivery and command and control systems required to meet the operational needs of our Armed Forces, and leading the NWC to address life extension programs (LEPs) related to nuclear warhead sustainment and the aging nuclear infrastructure required for component and material production. The NWC is a joint DoD and Department of Energy (DOE)/National Nuclear Security Administration (NNSA) council established to facilitate cooperation and coordination, reach consensus, and institute priorities between the two departments as they fulfill their responsibilities for U.S. nuclear weapons stockpile management.

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 2017 budget request for nuclear weapons-related activities. This budget request demonstrates the Department's commitment to strengthening and modernizing the nuclear Triad. Today, I will summarize the DoD and NWC perspectives on, and priorities for, warhead life

extension, nuclear weapon delivery systems modernization and replacement, nuclear enterprise infrastructure modernization, stockpile sustainment, and the challenges we face today and tomorrow to ensure a safe, secure, effective, and reliable nuclear stockpile.

### Nuclear Enterprise Challenges

The NWC convenes to ensure synchronization of the Departments’ vision, strategies, and schedules of the nuclear enterprise programs. Specifically, the Council focuses its attention on nuclear enterprise challenges in four vital areas. First, 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 comprehensive component reuse, refurbishment, and replacement, while we ensure alignment with existing and future delivery systems (Table 1 summarizes the current and future nuclear weapons stockpile). Second,

*Table 1. The Current and Future Triad Composition*

	ICBM	SLBM	Air-Leg
<b>Current</b>			
<i>Weapon System</i>	W87 Warhead W78 Warhead	W76 Warhead W88 Warhead	B61 Bomb B83 Bomb W80-1 Warhead
<i>Delivery System</i>	Minuteman III	Trident II D5	B-2A B-52H F15/F16 ALCM <sup>1</sup>
<b>Future</b>			
<i>Weapon System</i>	IW-1 <sup>2</sup> IW-2 IW-3	IW-1 IW-2 IW-3	B61-12 Bomb W80-4 Warhead
<i>Delivery System</i>	GBSD <sup>3</sup>	D5 Follow-on	B-2A B-52H F-35 LRSB <sup>4</sup> LRSO <sup>5</sup>

we must safeguard our ability to provide the rigorous science and engineering expertise required to assess the aging nuclear weapons stockpile, and certify the safety and effectiveness of that stockpile without underground nuclear testing. Third, we must remain steadfast in our commitment to sustain and modernize our aging infrastructure that provides materials, components, and testing facilities essential to our nuclear deterrent enterprise. And fourth, the

<sup>1</sup> Air-Launched Cruise Missile

<sup>2</sup> Interoperable Warhead

<sup>3</sup> Ground-Based Strategic Deterrent

<sup>4</sup> Long Range Strike Bomber

<sup>5</sup> Long Range Standoff

DoD must address the challenges of sustaining and modernizing all parts of our nuclear force structure, and we must ensure that the Nation's nuclear weapons sustainment programs and delivery system modernization programs are funded and aligned.

### **DoD Stockpile Requirements**

The Administration envisions a future stockpile that is flexible and adaptable to technical and geopolitical changes, and to achieve this end has endorsed the 3+2 stockpile strategy. This strategy includes three interoperable nuclear explosive packages for ballistic missiles and two air-delivered warheads. Interoperability will reduce the number of different nuclear weapons systems that must be maintained and serviced, while providing sufficient diversity among deployed systems to guard against potential technical issues in the stockpile. The 3+2 strategy simultaneously addresses stockpile obsolescence and meets policy objectives of sustaining deterrence through a smaller stockpile with fewer weapon types, and a modernized, responsive nuclear infrastructure capable of addressing technological and geopolitical surprise.

To support the 3+2 strategy and revitalize the enterprise, in 2012 the NWC baselined a 25-year integrated schedule for the nuclear weapons stockpile – known as the NWC Strategic Plan. It aligns warhead life extension plans and infrastructure needs with delivery system modernization and replacement efforts. The NWC Strategic Plan integrates NNSA nuclear security enterprise requirements and plans with military requirements.

Budget realities have forced changes to the Strategic Plan since 2012. Specifically, the NWC endorsed deferrals to key warhead LEPs and infrastructure modernization milestones, delaying overall implementation of the 3+2 strategy. The Council delayed the Interoperable Warhead 1 (IW1) and initially the Long Range Standoff (LRSO) warhead schedules. For the B83-1 bomb, it adjusted the deployment requirement. For the B61-12 bomb LEP, the NWC accepted a schedule delay due to the sequestration-related cuts in the FY 2014 budget.

Plutonium pit production schedules and supporting plutonium infrastructure investments experienced significant delays due to shortfalls in the FY 2013 and FY 2015 congressional appropriations. The current Strategic Plan includes these and other adjustments. Changes include adding high explosive material replacement in the W88 submarine-launched ballistic missile (SLBM) warhead Alteration (ALT) 370; aligning the W80-4 LRSO missile warhead development schedule with the requirement for a FY 2025 First Production Unit (FPU); and adding tritium production capability to the NWC Strategic Plan. The Council remains fully committed to ensuring the viability of each of the three legs of the nuclear Triad and revitalizing the nuclear enterprise.

DoD and NNSA are moving forward with several weapon systems LEPs to support the Nation's long-term deterrent capabilities. The SLBM-based W76-1 warhead and the B61-12 bomb for the air-delivery systems are the most urgent warhead life-extension needs in our stockpile, and the FY 2017 President's budget request fully funds these LEPs. The W76-1 LEP is beyond the halfway mark and is on-schedule to complete production in FY 2019. The B61-12 LEP, which includes the Air Force-provided Tailkit Assembly, is undergoing development engineering and remains on schedule and within budget to meet its March 2020 FPU. The Air Force has funded the tailkit development and production to synchronize with NNSA bomb assembly work. The B61-12 LEP consolidates four variants of the B61 bomb and improves the safety and security of the oldest nuclear weapon system in the U.S. arsenal. The B61-12 LEP will: 1) result in a nearly 50 percent reduction in the number of nuclear gravity bombs in the stockpile, 2) facilitate the removal from the stockpile of the last megaton-class weapon—the B83-1, 3) achieve an 80 percent reduction in the amount of special nuclear material in these bombs, and 4) implement the first step of the 3+2 strategy. These missions support both our deterrent and nonproliferation objectives as outlined in the 2010 Nuclear Posture Review.

The FY 2017 budget also funds expanded work on sustaining our SLBM-based W88 warhead, which is undergoing development engineering to replace the aging arming, fuzing, and firing system, and refresh the conventional high explosive. That program is on schedule to achieve a December 2019 FPU. The IW1 will be the first of three ballistic missile warheads under the 3+2 strategy. A full feasibility study is planned for completion in the early 2020s.

The NWC also evaluated and selected the existing W80-1 warhead as the basis for the follow-on warhead for the Air-Launched Cruise Missile (ALCM) replacement, the LRSO cruise missile. The warhead LEP, designated as the W80-4, is now in the feasibility study and design options development phase. To synchronize the warhead and delivery system schedules, the W80-4 LEP and LRSO cruise missile acquisition communities continue to collaborate and align their concurrent development efforts. To that end, the W80-4 FPU is planned for 2025 with the first LRSO cruise missile to be delivered in 2026.

The greatest challenge for the NWC is to achieve and maintain the necessary resources for three critical areas. To allow continued certification and ensure our nuclear weapons remain safe, secure, and effective, we must be vigilant in sustaining and life-extending our stockpile and delivery systems; sustaining and modernizing our aging nuclear enterprise infrastructure; and preserving stockpile science and engineering. It is imperative that Congress support the full nuclear-related budget requests to ensure national security requirements continue to be met.

### **Revitalizing the Nuclear Infrastructure**

The 2010 Nuclear Posture Review stressed the importance of an NNSA infrastructure that can respond to technical challenges or geopolitical surprises and enable the consideration of stockpile reductions. The NWC focuses specifically on the plutonium, uranium, and tritium capabilities needed to support the current and future nuclear weapons stockpile as documented in the NWC's Strategic Plan. Our nuclear enterprise infrastructure challenges are two-fold:

addressing aged, end-of-life facilities maintenance, recapitalization, and replacement, and working to achieve a more responsive infrastructure. The Department reinforces NNSA's need to develop responsive and productive plutonium and uranium capabilities, as well as the ability to produce tritium to meet planned stockpile needs.

### **Stockpile Stewardship**

Science is paramount to the ability to sustain a safe, secure, reliable, and effective deterrent. The Stockpile Stewardship Program has ensured confidence in the reliability and effectiveness of the nuclear stockpile without nuclear weapons testing. NNSA's Stockpile Stewardship Program, composed of research, development, testing, and evaluation (RDT&E) facilities and personnel, enables the surveillance and assessment of the stockpile condition by identifying anomalies, evaluating impacts of anomalies on warhead performance, and implementing solutions to anomalies. In general, RDT&E supports broader national security objectives by providing capabilities to avoid technological surprise and to have confidence in system performance. The NWC Strategic Plan relies on continued investments in research, development, design, and production capabilities.

### **DoD Delivery System Requirements**

In accordance with the Nuclear Posture Review's guidance to maintain a Triad within the central limits of the New START Treaty with the Russian Federation, DoD has a robust plan for recapitalizing the ballistic missile submarines, intercontinental ballistic missiles (ICBMs), SLBMs, air-launched cruise missiles, and nuclear-capable heavy bombers 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 that the modernization and replacement programs are executable and on schedule to avoid capability gaps. The FY 2017 Request continues to fund: the OHIO class Replacement submarine and Trident II (D5) missile life extension; a

follow-on capability to the Minuteman III ICBM—the Ground-Based Strategic Deterrent (GBSD); upgrades to the B-2A and B-52H heavy bombers as well as development of a new long range, penetrating bomber; and development of an LRSO cruise missile to replace the current ALCM.

The OHIO Replacement Program requires adequate resources and a stable, predictable funding profile to ensure on-time construction starts in FY 2021 in order to meet the patrol need date of FY 2031. There is no margin left in the OHIO Replacement schedule. Delays would put at risk the most survivable leg of the Nation’s nuclear Triad. The OHIO Replacement Program submarines will have a service life that enables patrols into the 2080s.

The Air Force has completed a GBSD Analysis of Alternatives to study the full range of options to recapitalize the land-based leg of the Triad beyond the extended service life of the Minuteman III ICBM. The FY 2017 budget funds initial development work for the GBSD. The Air Force’s FY 2017 budget request also includes funding to continue the development of an affordable, long range, penetrating aircraft that incorporates proven technologies—the Long Range Strike Bomber. Additionally, the FY 2017 budget contains funding for Block 4 of the F-35 program, which provides funds for follow-on capabilities for the F-35, including integration of a nuclear delivery capability for the F-35A. The F-35A Dual Capable Aircraft (DCA) will maintain a critical capability that is needed for non-strategic nuclear missions in support of the Nation’s extended deterrence and assurance commitments.

The Department’s budget request is consistent with plans to ensure that current nuclear delivery systems can be sustained and that the modernization and replacement programs are executable and on schedule to avoid capability gaps. The modernization and replacement programs will require increased investment over current levels for much of the next 15 years. The Department is taking steps to control the costs of these efforts. However, even with success

in this regard, we face budget decisions entering the 2020s to fund the necessary OHIO-Class Replacement and the Air Force strategic deterrent recapitalization programs. The FY 2014 Secretary of Defense-directed Nuclear Enterprise and Strategic Portfolio Reviews and the Department's FY 2017 budget formulation focused significant attention on recapitalization, sustainment, and modernization of our nuclear deterrent systems and infrastructure. The nuclear enterprise remains the Defense Department's highest priority, and the President's budget request for FY 2017 reflects the Administration's emphasis on the nuclear enterprise.

In the near-term, we are making focused and sustained investments in modernization and manning across the nuclear enterprise. These investments are critical to ensure the continued safety, security, and effectiveness of our nuclear deterrent, as well as the long-term health of the force that supports our nuclear Triad. To help fund improvements across the nuclear enterprise, the DoD has requested an increase of approximately \$200 million in FY 2017 from FY 2016 and approximately \$10 billion more in the FY 2017 Future Years Defense Program (FYDP) relative to the President's Budget in 2016 to ensure the continued health of this essential enterprise.

## **Conclusion**

Budget constraints have forced the DoD to annually adjust its stockpile maintenance and infrastructure plans to fit within appropriated resources, and have caused the NWC to reevaluate priorities. These adjustments cause delays, reduce work scope, and extend development and production periods. We have reached a point where we have removed all flexibility from the nuclear weapons life extension and delivery system modernization programs. We must continue to field a strong nuclear deterrent that is supported by an agile and responsive infrastructure and valued workforce. The President's FY 2017 Budget Request supports our nuclear posture strategy. It includes funding for sustaining and modernizing our nuclear forces to ensure a safe, secure, and effective deterrent for as long as nuclear weapons exist. The Department of Defense

remains committed to maintaining its close and vital partnership with DOE and Congress in meeting the Nation's most fundamental security needs. In closing, I respectfully ask that you support the President's FY 2017 nuclear forces' budget request.

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STATEMENT  
OF  
VICE ADMIRAL TERRY BENEDICT, USN  
DIRECTOR, STRATEGIC SYSTEMS PROGRAMS  
BEFORE THE  
SUBCOMMITTEE ON STRATEGIC FORCES  
OF THE  
SENATE ARMED SERVICES COMMITTEE  
ON  
NUCLEAR FORCES  
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## **Introduction**

Chairman Sessions, Ranking Member Donnelly, distinguished Members of the subcommittee, thank you for this opportunity to discuss the Navy's strategic programs. It is an honor to testify before you this afternoon representing the Navy's Strategic Systems Programs (SSP).

SSP's mission is to design, develop, produce, support, and ensure the safety of our Navy's sea-based strategic deterrent, the Trident II (D5) Strategic Weapons System (SWS). The men and women of SSP and our industry partners remain dedicated to supporting the mission of our Sailors on strategic deterrent patrol and our Marines, Sailors, and Coast Guardsmen who stand watch, ensuring the security of the weapons we are entrusted with by this nation.

The Navy provides the most survivable leg of the U.S. nuclear triad with our ballistic missile submarines (SSBNs) and the Trident II (D5) SWS. The 2010 Nuclear Posture Review reinforced the importance of SSBNs and the Submarine Launched Ballistic Missiles (SLBMs). Critically, SLBMs will comprise a significant majority of the nation's operationally deployed nuclear warheads. The Chief of Naval Operations (CNO) and Vice Chief of Naval Operations continue to reiterate the Navy's number one priority is to maintain a credible, modern, and survivable sea-based strategic deterrent. Maintaining our Nation's capability in this key mission area includes the proper funding of the OHIO Replacement Program – along with the propulsion and the SWS – as the “The Navy's #1 acquisitions programs.”

Ensuring sustainment of the sea-based strategic deterrent capability is a vital national requirement today and into the foreseeable future. Our PB-17 budget request provides required funding to support the program of record in fiscal year (FY) 2017 for the Trident II (D5) SWS. To sustain this capability, I am focusing on my top priorities: Nuclear Weapons Safety and Security; the Trident II (D5) SWS Life Extension Program; the OHIO Replacement Program; the Solid Rocket Motor (SRM) Industrial Base; the

implementation of the Nuclear Enterprise Review recommendations; the newly codified Navy Nuclear Weapons Regulatory responsibility; and collaboration with the Air Force.

### **Nuclear Weapons Safety and Security**

The first priority, and the most important, is the safety and security of the Navy's nuclear weapons. Accordingly, Navy leadership delegated and defined SSP's role as the program manager and technical authority for the Navy's nuclear weapons and nuclear weapons security.

At its most basic level, this priority is the physical security of one of our nation's most valuable assets. Our Marines and Navy Masters at Arms provide an effective and integrated elite security force at our two Strategic Weapons Facilities and Waterfront Restricted Areas in Kings Bay, Georgia and Bangor, Washington. U.S. Coast Guard Maritime Force Protection Units have been commissioned at both facilities to protect our submarines as they transit to and from their dive points. These Coast Guardsmen and the vessels they man provide a security umbrella for our OHIO Class submarines. Together, the Navy, Marine Corps, and Coast Guard team form the foundation of our Nuclear Weapons Security Program while headquarters staff ensures that nuclear weapons capable activities continuously meet or exceed security, safety, and compliance standards.

SSP's efforts to sustain the safety and improve the security of national assets continue at all levels of the organization. The Navy's nuclear weapons enterprise maintains a culture of self-assessment in order to sustain safety and security. This is accomplished through biannual assessments by SSP headquarters staff, periodic technical evaluations, formal inspections, and continuous on-site monitoring and reporting at the Strategic Weapons Facilities. Technical evaluations, formal inspections, and on-site monitoring at the Strategic Weapons Facilities provide periodic and day-to-day assessment and oversight. Biannual assessments evaluate the ability of the organization to self-assess the execution of the assigned strategic weapons mission and compliance requirements. The results of these biannual assessments are critically and independently

reviewed through the Navy Nuclear Weapons Assessment and provided to the Secretary of the Navy and the CNO.

We also strive to maintain a culture of excellence to achieve the highest standards of performance and integrity for personnel supporting the strategic deterrent mission. We continue to focus on the custody and accountability of the nuclear assets entrusted to the Navy. SSP's number one priority is to maintain a safe, secure, and effective strategic deterrent.

### **D5 Life Extension Program**

The next priority is SSP's life extension effort to ensure the Trident II (D5) SWS remains an effective and reliable sea-based deterrent. The Trident II (D5) SWS continues to demonstrate itself as a credible deterrent and exceeds operational system requirements established over 30 years ago. The submarine leg of the U.S. strategic deterrent is ready, credible, and effective, thereby assuring our allies and partners and deterring potential adversaries. However, we must remain vigilant about age-related issues to ensure a continued high level of reliability.

The Trident II (D5) SWS has been deployed on our OHIO Class ballistic missile submarines for 25 years and is planned for a service life of 50 years. This is well beyond its original design life of 25 years and more than double the historical service life of any previous sea-based strategic deterrent system. As a result, effort will be required to sustain a credible SWS from now until the end of the current OHIO Class SSBN in the 2040s; as well as the end of the service life of the OHIO Replacement SSBN in the 2080s.

The Navy is proactively taking steps to address aging and technology obsolescence. SSP is extending the life of the Trident II (D5) SWS to match the OHIO Class submarine service life and to serve as the initial baseline mission payload for the OHIO Replacement submarine platform. This is being accomplished through an update to all the Trident II (D5) SWS subsystems: launcher, navigation, fire control, guidance, missile, and reentry. Our flight hardware - missile and guidance - life extension efforts are

designed to meet the same form, fit, and function of the original system to keep the deployed system as one homogeneous population, control costs, and sustain the demonstrated performance of the system. We will remain in continuous production of large energetic components such as solid rocket motors and Post Boost Control System Gas Generators, while continuing an age management replacement effort for missile small ordnance and control components. We also started initial planning for when a follow-on missile to Trident II (D5) will be needed. These efforts will provide the Navy with the missiles and guidance systems we need to meet operational requirements through the introduction and deployment of the OHIO Replacement SSBNs through the 2080s.

While budgetary pressures and impacts of sequestration resulted in some deferred or delayed efforts, strategic deterrence remains the Navy's highest priority. As such, the Navy is committed to minimizing, to the maximum extent possible, impacts to this program in order to meet strategic requirements.

One impacted effort is the change to our flight test program in FY 2016. In accordance with Strategic Command (STRATCOM) requirements, the Navy is required to flight test a minimum of four Trident II (D5) missiles per year in a tactically-representative environment. The purpose of flight testing is to detect any change in reliability or accuracy. The enacted FY 2016 budget reflects a reduction of one planned flight test for affordability. The Navy coordinated with STRATCOM to determine that this temporary reduction is manageable in the short-term, contingent upon our plan to ramp back up to four flight tests per year later in the Future Years Defense Program (FYDP). A prolonged reduction beyond what is planned in FY 2016 would impact our ability to detect changes in reliability and accuracy of an aging system with the required degree of statistical confidence to meet STRATCOM requirements. The FY 2017 budget request reflects the return to four flight tests per year.

Despite budgetary pressures, the Navy's D5 life extension program remains on track. In November 2015, the USS KENTUCKY (SSBN 737) successfully conducted her Demonstration and Shakedown Operation (DASO 26) by launching two missiles.

These missiles successfully integrated the D5 Life Extension (D5 LE) Flight Controls Electronics Assembly and Interlocks Suite with the D5 LE Guidance System. The D5 LE missiles will be available for initial fleet introduction in FY 2017.

Another major step to ensure the continued sustainment of our SWS is the SSP Shipboard Integration (SSI) Programs, which address obsolescence management and modernization of SWS shipboard systems through the use of open architecture design and commercial off-the-shelf hardware and software. The first increment of this update was installed on the final U.S. SSBN in April 2014. This completed installation on all fourteen U.S. SSBNs, all four UK SSBNs and all U.S. and UK land-based facilities. Installation of subsequent increments began last summer, with four installations completed to date. The SSI Program includes refreshes of shipboard electronics hardware and software upgrades, which will extend service life, enable more efficient and affordable future maintenance of the SWS and ensure we continue to provide the highest level of nuclear weapons safety and security for our deployed SSBNs while meeting STRATCOM requirements.

To sustain the Trident II (D5) SWS, SSP is extending the life of the W76 reentry system through a refurbishment program known as the W76-1. The W76-1 refurbishment maintains the military capability of the original W76 for an additional 30 years. This program, which is being executed in partnership with the Department of Energy, National Nuclear Security Administration (NNSA), has completed over 60 percent of the planned warhead production. The Navy will continue to work with NNSA to closely monitor production and deliveries to ensure there are no operational impacts.

In addition, the Navy continues the design work to refurbish the aging electronics in the W88 reentry system. The Navy is collaborating with the Air Force to reduce costs through shared subsystems suitable for the W88/Mk5 and the W87/Mk21. Additionally, the Nuclear Weapons Council (NWC) directed the replacement of the conventional high explosive, which will support deployment of the W88/Mk5 for an additional 25 years. As directed by the NWC, we have submitted funding requests to support the initial feasibility and cost studies (Phase 6.2/6.2A) for an Interoperable Warhead (IW) to begin

in 2020. The Navy believes that the NWC continues to effectively balance near-term nuclear weapons sustainment and refurbishment priorities and the long-term stockpile strategy.

### **OHIO Replacement Program**

The Navy's highest priority acquisition program is the OHIO Replacement Program, which replaces the existing OHIO Class submarines. The continued assurance of our sea-based strategic deterrent requires a credible SWS, as well as the development of the next class of ballistic missile submarines. The Navy is taking the necessary steps to ensure the OHIO Replacement SSBN is designed, built, delivered, and tested on time with the right capabilities at an affordable cost.

To lower development costs and leverage the proven reliability of the Trident II (D5) SWS, the OHIO Replacement SSBN will enter service with the Trident II (D5) SWS and D5 LE missiles onboard. These D5 LE missiles will be shared with the OHIO Class submarines until their retirement. Maintaining one SWS during the transition to the OHIO Class Replacement is beneficial from a cost, performance, and risk reduction standpoint. A program to support long-term SWS requirements is planned for the future to support the OHIO Class Replacement SSBN through its entire service life.

The Navy continues to leverage the VIRGINIA Class program to implement lessons-learned and ensure the OHIO Replacement Program pursues affordability initiatives across design, construction, and life cycle operations and support. The SSBN design team recently achieved several critical decisions and milestones. In December 2015, the Navy released the Request for Proposals for the final detailed design contract. Maintaining the pace of design and submarine industrial capability is critical to the continued success of our sea-based strategic deterrent now and well into the 2080s.

A critical component of the OHIO Replacement Program is the development of a Common Missile Compartment (CMC) that will support Trident II (D5) deployment on both the OHIO Class Replacement and the successor to the UK VANGUARD Class. In 2015 the Program began construction of missile tubes to support building the U.S.

prototype Quad-pack module, the Strategic Weapons System – Ashore (SWS Ashore) test site, and the UK’s first SSBN. The joint CMC effort is shifting from design to construction, supporting production in both U.S. and UK build yards. Any delay to the common missile compartment effort has the potential to impact the UK’s ability to maintain a continuous at sea deterrent posture.

To manage and mitigate technical risk to both the U.S. and UK programs, SSP is leading the development of SWS Ashore integration test site at Cape Canaveral, Florida. This is a joint effort with the Navy and the State of Florida investing in the re-development of a POLARIS site to conduct integration testing and verification for OHIO Replacement and UK Successor programs. Refurbishment of the POLARIS site and construction of the infrastructure is proceeding at a rapid pace, including installation of test bay 1 missile tubes and superstructure and several major support systems. Trident II (D5), OHIO Class, and OHIO Replacement new design hardware will be co-located and integrated to prove the successful re-host and redeployment of the Trident II (D5) SWS on the new submarines. To mitigate the risk in the restart of launch system production, SSP constructed a surface launch facility at the Naval Air Station, China Lake, California. This facility will prove that the launcher industrial base can replicate the performance of the OHIO Class Trident II (D5) launch system. We will be launching the refurbished Trident II (D5) test shapes used in the 1980s starting in FY 2017. Launch performance is a critical factor we must understand at the systems level to ensure we maintain high reliability as we transition the weapon system to the next class of SSBNs.

The U.S. and the UK have maintained a shared commitment to nuclear deterrence through the Polaris Sales Agreement since April 1963. As the Director of SSP, I am the U.S. Project Officer for the Polaris Sales Agreement. Our programs are tightly coupled both programmatically and technically to ensure we are providing the most cost effective, technically capable nuclear strategic deterrent for both nations. Last year marked the 52<sup>nd</sup> anniversary of this agreement, and I am pleased to report that our longstanding partnership with the UK remains strong. The U.S. will continue to maintain its strong strategic relationship with the UK as we execute our Trident II (D5) LE Program and develop the common missile compartment. Our continued stewardship of the Trident II

(D5) SWS is necessary to ensure a credible and reliable SWS is deployed today on our OHIO Class submarines, the UK VANGUARD Class, as well as in the future on respective follow-on platforms. This is of particular importance given the proportion of our nuclear forces that will be deployed on the sea-based leg of the Triad under the New START Treaty. The OHIO Replacement will be a strategic, national asset whose endurance and stealth will enable the Navy to provide continuous, uninterrupted strategic deterrence well into the 2080s.

### **Solid Rocket Motor (SRM) Industrial Base**

The defense and aerospace industrial base – in particular the solid rocket motor industry – is another important priority. I remain concerned with the decline in demand for solid rocket motors. While the Navy is maintaining a continuous production capability at a minimum sustaining rate of twelve rocket motor sets per year, the demand from both NASA and Air Force has precipitously declined. Not only did this decline result in higher costs for the Navy, as practically a sole customer, it also put an entire specialized industry at risk of extinction. To allow this puts our national security at risk. The Navy cannot afford to singularly carry this cost, nor can our nation afford to lose this capability. While the efforts of our industry partners and others have created short-term cost relief, the long-term support of the solid rocket motor industry and maintenance of critical skills remains an issue that must be addressed at the National level. At SSP, we will continue to work with our industry partners, DoD, senior NASA leadership, Air Force, and Congress to do everything we can to ensure this vital national security industry asset is preserved.

### **Nuclear Enterprise Review**

The Navy remains committed to addressing and implementing recommendations of the 2014 Nuclear Enterprise Review (NER). The Program and Budget Review for the FY 2017 budget formulation preserves all current enhancements to the Nuclear Enterprise, focusing significantly on the recapitalization, sustainment, and modernization of our nuclear deterrence systems and infrastructure. The NER provided the Navy a

thorough and unbiased look at our nuclear forces. Overall, the report found that the nuclear enterprise is safe, secure, and effective today but it also found evidence of systemic problems that, if not addressed, could undermine the safety, security, and effectiveness of elements of the force in the future. Fortunately, the Navy's internal Nuclear Weapons Assessment and the SSP Comprehensive Self-Assessment identified most of the issues underscored during the NER. In fact, the report validated numerous efforts already underway.

The Navy continues to address the more than 68 recommendations with Navy equity contained in the report. Significant action has been taken to implement each recommendation, focusing on the following areas: oversight, investment, and personnel and training improvements. With respect to oversight, the Navy is clarifying the nuclear deterrent enterprise leadership structure and reducing administrative burdens imposed on the forces. The Nuclear Deterrent Enterprise Review Group (NDERG), formed and led by the Secretary of Defense will continue to provide regular oversight of the nuclear enterprise. The Navy Nuclear Deterrent Mission Oversight Council is the Navy's mechanism to ensure the NDERG recommendations and guidance are properly implemented and that investments achieve the intended effect.

Regarding training and personnel, the Navy is planning a significant investment to build a margin in the deterrence force and clear the SSBN maintenance backlog. The Navy is matching the right responsibilities with the right leaders in order to address the recommendations involving long-term cultural and organizational challenges. There will be an emphasis on the importance of the deterrence mission through updated vision statements, revised campaign plans, and methods to eliminate obstacles to enhance moral conduct and relieve the pressures on Sailors, training, and work-life balance.

The Navy is developing a 20 year investment plan to ensure the continued reliability of critical infrastructure at these facilities to support nuclear weapons movement and operations. While the Navy makes significant progress through actions taken to date, we recognize much work remains to be accomplished. The Navy is

confident we have the right emphasis, oversight and processes in place to maintain a credible, modern, and safe sea-based deterrent.

### **Navy Nuclear Weapons Regulatory Responsibility**

As a result of the Nuclear Enterprise Review, the Navy implemented a centralized regulatory authority for nuclear force readiness. As the Director of Strategic Systems Programs (DIRSSP), I have accountability, responsibility and authority to serve as the single Flag Officer to monitor performance and conduct end-to-end assessment of the Navy Nuclear Deterrence Mission (NNDM) elements. These responsibilities are defined in SECNAVINST 8120.1B and OPNAVINSTs 8120.1 and 8120.2. Nine Echelon 2 level commands directly contribute to the NNDM: US Fleet Forces Command (USFLTFORCOM), US Pacific Fleet (PACFLT), Fleet Cyber Command (USFLTCYBERCOM), Navy Supply Systems Command (NAVSUPSYSCOM), Naval Sea Systems Command (NAVSEASYSYSCOM), Chief of Naval Personnel (CNP), Bureau of Medicine and Surgery (BUMED), Commander, Navy Installations Command (CNIC), and SSP.

In my role as DIRSSP, I am the the Navy Nuclear Deterrence Mission (NNDM) regulatory authority responsible for assessing and reporting issues to the Navy Nuclear Deterrence Mission Council and the CNO. SSP is tasked with developing, coordinating, and implementing policies approved by the CNO; conducting end-to-end assessments of the Navy's nuclear weapons and nuclear weapons systems and personnel, including Nuclear Command, Control, and Communications (NC3), for safe, reliable, and effective execution of the NNDM.

SSP is engaged with the Echelon 2 commands defined above to understand current reporting and assessment processes and to define the NNDM regulatory assessment policy. The next in-progress review with CNO, in February 2016, will provide an update on the significant progress made to date by the participating commands, to include: reporting and engagement strategies with the NNDM component commands, development of archival and analytical tools to assist in performing end-to-

end assessments, and presenting the initial component self-assessments and an independent assessment of the Echelon 2 reporting. Further, the upcoming 2016 Biennial Navy Nuclear Weapons Assessment will review the implementation and execution of the NNDM Regulator processes to date to ensure we are providing the necessary rigor and discipline to this endeavor.

### **Collaboration with the Air Force**

The final priority is strategic collaboration between the Services. The Navy and the Air Force are both addressing the challenges of sustaining aging strategic weapon systems and are collaboratively working to ensure these capabilities are retained in the long-term to meet mission requirements. In accordance with a July 2015 tasking letter from the Air Force and Navy Service Acquisition Executives (SAEs), and the Commander, US Strategic Command, the Navy and Air Force conducted an assessment of the options for commonality for the two ballistic missile legs of the Triad. The direction to SSP and PEO/SS was to determine whether increasing the commonality between the Ground Based Strategic Deterrent (GBSD) and Trident II life extension (D5LE) could improve affordability while ensuring a safe, secure, effective, and credible nuclear deterrent. The assessment is considering commonality across a wide spectrum, from full system level commonality to technology sharing for independent programs.

Although initial results of the assessment ruled out the possible use of a standard common weapons system by both the Air Force and Navy, a number of common components and technologies remain. The use of these candidates offer significant potential benefits in terms of reducing costs and technical and schedule risks to the GBSD and SLBM programs. Commonality will provide the Navy and Air Force opportunities to eliminate redundant efforts, leverage economies of scale, and sustain shared critical skills and capabilities needed by securing the industrial base.

Each leg of the Triad provides unique attributes. Furthermore, a sustained and ready Triad provides an effective hedge, allowing the nation to shift to another leg, if necessary, due to unforeseen technical problems or vulnerabilities. For this reason, the

Department is focused on cooperative efforts that maintain affordability and reduces risk to both services while retaining essential diversity where needed to ensure a credible and reliable deterrent. Many of the industries and required engineering skills sets are unique to strategic systems. Key to SSP's historical success has been our technical applications programs, which in the past provided a research and development foundation. We will need to resume these critical efforts as we evaluate maintaining this strategic capability until the 2080s to match the full service life of the OHIO Replacement submarine.

## **Conclusion**

SSP continues to maintain a safe, secure, and effective strategic deterrent and focus on the custody and accountability of the nuclear assets entrusted to the Navy. Our PB-17 budget request ensures that we will sustain this capability in FY 2017. However, we must remain vigilant about unforeseen age-related issues to ensure the high reliability required of our SWS. SSP must maintain the engineering support and critical skills of our industry and government team to address any future challenges with the current system as well as prepare for the future of the program. Our nation's sea-based deterrent has been a critical component of our national security since the 1950s and must continue to assure our allies and deter potential adversaries well into the future. I am privileged to represent this unique organization as we work to serve the best interests of our great Nation.

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SENATE ARMED SERVICES COMMITTEE  
STRATEGIC FORCES SUBCOMMITTEE  
UNITED STATES SENATE

DEPARTMENT OF THE AIR FORCE

PRESENTATION TO THE SENATE ARMED SERVICES COMMITTEE  
STRATEGIC FORCES SUBCOMMITTEE  
UNITED STATES SENATE

SUBJECT: Status of Air Force Nuclear and Global Strike Systems

STATEMENT OF: General Robin Rand, Commander  
Air Force Global Strike Command

February 9, 2016

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UNITED STATES SENATE

## **Introduction**

Chairman Sessions, Ranking Member Donnelly, and distinguished Members of the Committee; thank you for allowing me to represent the over 31,000 Air Force Global Strike Command (AFGSC) Airmen. This is my first opportunity to appear before this committee and I look forward to updating you on what the Command has accomplished and where we are going.

## **Air Force Global Strike Command Mission**

As you know, the Command was created to provide a focus on the stewardship and operation of two legs of our nation's nuclear triad while also accomplishing the conventional global strike mission. We live in a world that continues to rapidly change and until we have the peace and security of a world without nuclear weapons we must never forget the stabilizing influence the triad has on our allies, partners, and adversaries. The nuclear mission remains our top priority, however we must not discount the important work our Airmen do conventionally. In fact, this past year AFGSC assumed command of the B-1B mission, bringing all Air Force bombers under one command. In order for us to be effective across the spectrum of conflict from day-to-day deterrence and assurance operations to nuclear engagement, our Airmen must be ready and equipped with the right tools to do the job. Continuing in the proud heritage of Strategic Air Command, yet tailored for today's evolving world, AFGSC's mission is: "Airmen providing strategic deterrence, global strike and combat support...anytime, anywhere!"

The Command's top priority is to ensure our nuclear arsenal is safe, secure, and effective. This priority underlies every nuclear-related activity in AFGSC whether it is the maintainer turning wrenches or our planners working on future weapon systems. We must never fail in the special trust and confidence the American people have bestowed on our nuclear warriors. It means that leaders must continue to support and advocate for the sustainment and modernization of these weapon systems.

Our conventional bomber forces defend our national interests by deterring or, should deterrence fail, defeating an adversary; they also assure our allies and partners around the globe. Two capabilities are fundamental to the success of our bomber forces: our ability to hold heavily defended targets at risk and our ability to apply persistent combat power across the spectrum of conflict anywhere on the globe at any time. The United States' fleet of heavy bombers provides the nation a visible global warfighting capability that is essential to the credibility of America's

national security strategy. These bombers carry our latest high-tech munitions in quantities to ensure the Air Force can meet our nation's global responsibilities, and therefore are in high-demand by the regional Combatant Commanders.

## **Air Force Global Strike Command Forces**

### ***Intercontinental Ballistic Missile Forces***

Twentieth Air Force (20 AF), one of two Numbered Air Forces in AFGSC, is responsible for the Minuteman III (MM III) Intercontinental Ballistic Missile (ICBM) and UH-1N helicopter forces. The 450 dispersed and hardened missile silos maintain strategic stability by presenting potential adversaries a near insurmountable obstacle should they consider a disarming attack on the United States. Currently, no potential adversary can hope to destroy this force without depleting its own arsenal. Every day Airmen deploy to our three missile fields, executing strategic deterrence and assurance operations, while standing ready to execute if called upon. They accomplish this mission in a challenging environment and on a massive scale; our missile crews, maintenance teams, security forces personnel, and others who support this mission traveled over 17.9 million miles last year alone. This is a unique and critical mission area that deserves our attention. As part of the Air Force's efforts to improve the nuclear enterprise, 20 AF assumed stewardship of the 377th Air Base Wing at Kirtland AFB. As part of that transfer, the Kirtland Underground Munitions Maintenance and Storage Complex now falls under 20 AF and AFGSC thereby bringing a critical mission set under a nuclear focused command.

### ***Minuteman III***

We continue to sustain and modernize the Minuteman III ICBM. This includes upgrading the command, control, and communications systems and support equipment. We continue moving forward on the Transporter Erector (TE) Replacement Program (TERP) and the Payload Transporter (PT) Replacement (PTR) to modernize our existing fleet of large maintenance vehicles utilized to transport missile components to and from the field. We currently expect TERP to reach initial operational capability (IOC) in FY18 and PTR to begin production in FY17.

We are also equipping ICBM launch control centers (LCC) with modernized communications systems that will upgrade or replace aging and obsolete systems. The LCC Block Upgrade, expected to begin deployment in 2020, is an overall modification effort that

replaces multiple LCC components to include a modern data storage replacement for floppy disks and new Voice Control Panels to provide higher fidelity voice communications. We continue to push forward on improving Remote Visual Assessment at our remote LFs, a significant security upgrade, to improve situational awareness and security. We expect this program to be IOC in FY19. Another very important program, ICBM Cryptographic Upgrade II, is scheduled to begin production in FY17 and will improve our cryptographic security while dramatically streamlining code change operations.

We conducted four successful MM III flight tests in Fiscal Year 2015 that, along with one Simulated Electronic Launch Minuteman test in the operational environment, demonstrate the operational credibility of the nuclear deterrent force and the AF's commitment to sustaining that capability. Operational flight testing is currently funded and planned for four operational test launches in FY16 to satisfy requirements outlined by United States Strategic Command (USSTRATCOM) and the National Nuclear Security Administration (NNSA). In fact, we have already launched one of those and expect to launch the next two this month.

#### ***Ground Based Strategic Deterrent***

The Minuteman flight system, currently on its third model, has been on continuous alert since the early 1960s and has proven its value in deterring our adversaries and assuring our allies well beyond the platform's initial 10-year lifespan. ICBM capability gaps were identified and validated by the Joint Requirements Oversight Council, and subsequently approved in August 2012 by the Air Force Chief of Staff, resulting in an Analysis of Alternatives (AoA). The AoA was completed in 2014 and concluded that an integrated replacement to the MM III weapon system was the most cost-effective approach to filling capability gaps. Office of the Secretary of Defense (OSD) Cost Assessment and Program Evaluation (CAPE) reviewed the AoA report and validated it as "sufficient to support a Milestone A decision and initiate a program of record." SAF/AQ approved the Ground Based Strategic Deterrent (GBSD) Acquisition Strategy in December of last year and directed the program to proceed to the Milestone A Defense Acquisition Board. Additionally, we are engaged with our Navy partners to further investigate areas for intelligent commonality between potential GBSD systems and future Navy weapons. We hope to find areas of overlap with the objective of reducing design, development, manufacturing, logistics support, production, and testing costs for the nation's strategic systems while still acknowledging that the different weapon systems will have some requirements that

necessitate unique solutions due to their differing missions. We are also collaborating with the NNSA to develop a life extension program for our aging W78 nuclear warhead, which will operate on both MMIII and GBSD.

Due to system age-out, the first priority is to replace the missile itself. However, command and control (C2) and infrastructure recapitalization is necessary to continue safe, secure, and effective operations. It is no small task to upgrade the command and control systems along with the underlying infrastructure that supports the weapon system. For example, at our largest missile field operated by the 341st Missile Wing, we must connect and support hardened systems across almost 14,000 square miles, an area the size of Maryland. This vital nuclear command and control is currently serviced by buried copper wire and equipment installed in the 1960s. AFGSC is defining approaches to upgrade C2 and modernize necessary facilities. GBSD cannot be viewed as just another life extension to our existing MMIII; it is time to field a replacement ground-based capability that will continue to assure our allies and deter potential adversaries well into the future. Thank you for your continued support of GBSD ensuring it will lead to a viable replacement for the MM III ICBM.

### ***UH-1N***

AFGSC is the lead command for the Air Force's fleet of 62 UH-1N helicopters. The majority of these aircraft support two critical national missions: nuclear security in support of the ICBM force and the Continuity of Operations and transport missions in the National Capital Region. They also actively participate in the Defense Support of Civil Authorities program often being called to help with search and rescue activities.

The UH-1N does not meet the missile field needs for range, speed, and capacity as outlined by DOD and USSTRATCOM requirements. We will continue to work to mitigate some of these requirement gaps through various measures such as arming the UH-1N and providing refueling stations throughout the missile complex. However, there are certain requirements we are unable to mitigate and I am happy to discuss that further in a classified environment.

### ***UH-1N Follow On***

While we can, to some extent, mitigate the UH-1N's deficiencies in range, speed, and payload, no amount of modification to this 1960s platform will close these critical capability gaps entirely. Recognizing that we cannot modify our UH-1Ns to resolve the capability gaps, we are dedicated to replacing the aircraft with a medium lift helicopter capable of meeting mission

requirements. The UH-1N Replacement Program was funded in FY 2016 and we are now moving out to deliver this capability and closing this critical gap. This past January, the Air Force conducted a High Power Team which confirmed our most critical capability requirements. Our counterparts in SAF/AQ and Air Force Materiel Command (AFMC) are evaluating acquisition approaches that focus on expediting the fielding of replacement helicopters for the nuclear convoy escort and missile field support missions. While we work to deliver the aircraft, we must also work through support challenges such as infrastructure, maintenance, and aircrew training. I can assure you that Secretary James, our Chief, General Welsh and I are completely dedicated to delivering the replacement helicopters as soon as possible.

### ***Bomber Forces***

Eighth Air Force is responsible for the B-52H Stratofortress (B-52), the B-2A Spirit (B-2), and most recently the B-1B Lancer (B-1) bombers. This includes maintaining the operational readiness of the dual-capable bombers' nuclear and conventional missions. The B-52 is an extremely versatile weapon system providing precision, large payload, and timely global strike capabilities both conventional and nuclear. Complementing the B-52, the B-2 can penetrate an adversary's most advanced Integrated Air Defense Systems to strike heavily defended and hardened targets. Our flexible dual-capable bomber fleet is the most visible leg of the nuclear triad. They provide decision makers the ability to demonstrate resolve through generation, dispersal, or deployment. And our ability to rapidly place bomber sorties on alert ensures their continued survival in support of the President and to meet combatant command requirements. The B-1 is an incredibly potent weapon system that has been in high demand by combatant commanders due to its wartime capabilities and mission flexibility as steadily demonstrated in conflicts since 2001.

### ***Global Assurance and Deterrence***

Continuous Bomber Presence (CBP), initiated in 2003, increases regional stability and assures our allies and partners in the United States Pacific Command (USPACOM) area of responsibility (AOR). We have taken steps to increase continuity of operations and maintenance by establishing a detachment at Andersen Air Force Base, Guam. While CBP is seen as a strong signal to our allies of our commitment to the region, it impacts AFGSC personnel and resources. Sustaining a long-term presence in USPACOM introduces stress in other areas as our bomber

force is requested by other combatant commanders. Complementary to CBP, our bombers exercise with every combatant command and every joint partner annually through the Bomber Assurance and Deterrence program. These visible exercises take place all over the globe are a continuous reminder to allies and potential adversaries of our nation's global reach.

### ***B-1***

The B-1 is a highly versatile, multi-mission weapon system that carries the largest payload of both guided and unguided weapons in the Air Force inventory. It can rapidly deliver large quantities of precision and non-precision weapons in support of combatant commanders around the globe.

The B-1's synthetic aperture radar is capable of finding, tracking, and targeting moving vehicles as well as having terrain-following modes and air-to-air situational awareness. The SNIPER-SE pod provides additional capability to engage fixed or moving targets. In addition, an extremely accurate Global Positioning System-aided Inertial Navigation System enables aircrews to navigate without the aid of ground-based navigation aids as well as strike targets with a high level of precision. The Digital Communications Initiative (DCI) modification to the radios provides a secure beyond line of sight satellite connection into the Line of Sight Link-16 network. In a time sensitive targeting environment, the aircrew can use targeting data over DCI, then strike emerging targets rapidly and efficiently. This capability was effectively demonstrated during operations Enduring Freedom, Iraqi Freedom, and Inherent Resolve.

The B-1 will be in demand for many more years and avionics and weapon upgrades are critical for it to remain a viable Combatant Commander tool. The Integrated Battle Station (IBS)/Software Block-16 (SB-16) upgrade, the largest ever B-1 modification, includes an upgraded Central Integrated Test System (CITS), Fully Integrated Data Link (FIDL), Vertical Situation Display Upgrade (VSDU), and a simulator upgrade. This marks a fantastic capability upgrade and the associated cockpit upgrades providing the crew with a much more flexible, integrated cockpit. In fact, the first 15 IBS-modified aircraft have been delivered, fully equipping an entire bomb squadron with these upgraded capabilities.

Our B-1 aircrews have been heavily engaged in combat operations; since September 11, 2001, they have flown well over 14,000 combat missions. As you may have heard already, the B-1s have begun departing the United States Central Command (USCENTCOM) AOR to help facilitate needed upgrades. This is a much needed respite to ensure the aircrews and aircraft are

ready to support combatant commanders. However, AFGSC stands ready to support any combatant commander with our other capable platforms to ensure no gap in combatant command requirements. For instance, the B-52 can very capably step back into a role it has filled in the past in the USCENTCOM AOR; its large payload of precision weapons will meet combatant commander needs in theater, and our crews constantly train to ensure they are combat ready should they get the call. In the event of a bomber-capable “Request for Forces” by USCENTCOM, I’ve directed our two B-52 wings to be ready and prepared to backfill the B-1s later this spring.

### ***B-52***

The B-52 may be the most universally recognized symbol of American airpower...its contributions to our national security through the Cold War, Vietnam, Desert Storm, Allied Force, Iraqi Freedom and Enduring Freedom are well documented. Our Airmen have worked tirelessly to keep the venerable B-52 mission capable. The B-52 is able to deliver the widest variety of nuclear and conventional weapons. This past year, we maintained complete coverage of our Nuclear Deterrence Operations requirements while supporting our overseas CBP for Pacific Command.

I anticipate the B-52 will remain a key element of our bomber force beyond 2040; it is paramount that we invest resources into this aircraft now to keep it viable in both conventional and nuclear mission areas for the next 30 years. Our B-52s are still using 1960s radar technology with the last major radar upgrade done in the early 1980s. Currently, the mean time between failure rate on the B-52 radar is 46 hours. The current radar on the B-52 will be even less effective in the future threat environment, and without an improved radar system on the B-52, there will be increased degradation in mission effectiveness. In order to remedy this, the B-52 Radar Modernization Program is approaching the conclusion of a Cost Capability Analysis Study and will be working toward an AoA sufficiency review in early Spring this year. Additionally, we are always looking at cost-effective ways to improve efficiency and performance of this important bomber.

Finally, I want to point out that we are still in work to convert 30 operational B-52 aircraft and 12 in storage to conventional-only configurations. We are on track to meet our New START Treaty requirements.

## ***B-2***

For over 25 years, our 20 B-2s have provided the nation with an assured penetrating bomber capability. In each of our nation's last four conflicts, the B-2 has led the way. This is a direct result of the outstanding Airmen who work to operate, maintain, and secure the aircraft. The B-2 is able to penetrate enemy defenses and deliver a wide variety of nuclear and conventional weapons due to its long-range and stealth capability.

We will preserve and improve the B-2's capability to penetrate hostile airspace and hold any target at risk without subjecting the crew and aircraft to threats. We are striving to maintain the proper balance of fleet sustainment efforts, testing, aircrew training, and combat readiness. The dynamics of a small fleet continue to challenge our sustainment efforts primarily due to vanishing vendors and diminishing sources of supply. AFMC is working to ensure timely parts availability; however, many manufacturers do not see a strong business case in supplying parts for a small aircraft fleet. Problems with a single part can have a significant readiness impact on a small fleet that lacks the flexibility of a large force to absorb parts shortages and logistics delays.

## ***Long Range Strike Bomber***

The combat edge of our B-2 is being challenged by next generation air defenses and the proliferation of these advanced systems. The Long Range Strike Bomber (LRS-B) program will extend American air dominance against next generation capabilities and advanced air defense environments. We continue to work closely with partners throughout the Air Force to develop the LRS-B and field a fleet of new dual-capable bombers; scheduled to become operational in the mid-2020s. Make no mistake – the LRS-B will be a nuclear bomber. However, the platform will not be delayed for use in a conventional capacity while it undergoes final nuclear certification. The LRS-B is being designed with an open architecture which will allow us to integrate new technology and respond to future threats for many years into the future. Thank you for your continued support for this critical program as it moves forward.

## ***Air Launched Cruise Missile***

The AGM-86B Air Launched Cruise Missile (ALCM) is an air-to-ground, winged, subsonic nuclear missile delivered by the B-52. It was fielded in the 1980s and is well beyond its originally designed 10-year service life. To ensure the USAF maintains its credible stand-off nuclear capability, the ALCM requires Service Life Extension Programs (SLEP). These SLEPs

require ongoing support and attention to ensure the ALCM will remain viable through 2030. Despite its age, last year we successfully conducted eight flight test evaluations and have 7 planned during FY16. Additionally, AFGSC continues to maintain the conventional variant (CALCM) to ensure it continues to provide conventional stand-off strike capability.

### ***Long Range Stand-Off Missile***

The LRSO is the replacement for the aging ALCM. The ALCM has significant capability gaps that will only worsen through the next decade. The LRSO will be a reliable, flexible, long-ranging, and survivable weapon system to complement the nuclear Triad. The LRSO missile will ensure the bomber force (B-52, B-2 and LRS-B) can continue to hold high value targets at risk in an evolving threat environment, to include targets within an area denial environment. I cannot overemphasize this point: LRS-B without LRSO greatly reduces our ability to hold adversaries at risk and to execute the mission. The LRSO will be compatible with the B-52, B-2, and the LRS-B platforms and we currently expect it to reach Milestone A this fiscal year. Additionally, we are synchronizing our efforts with NNSA to develop the W80-4 warhead to be fully integrated with LRSO.

### ***B61***

The B61-12 Life Extension Program (LEP) will result in a smaller stockpile, reduced special nuclear material in the inventory, and improved B61 surety. AFGSC is the lead command for the B61-12 Tail Kit Assembly program, which is needed to meet USSTRATCOM requirements on the B-2. The B61-12 Tail Kit Assembly program is in the Engineering and Manufacturing Development Phase 1 and is synchronized with NNSA efforts. The design and production processes are on schedule and within budget to meet the planned Fiscal Year 2020 First Production Unit date for the B61-12 Tail Kit Assembly, and support the lead time required for the March 2020 B61-12 all-up round. This joint Department of Defense and Department of Energy endeavor allows for continued attainment of our strategic requirements and regional commitments.

### ***GBU-57***

AFGSC assumed responsibility as the lead MAJCOM for the GBU-57 Massive Ordnance Penetrator (MOP) in the Summer of 2015. The MOP is a 30,000-pound guided conventional bomb designed to defeat hardened and deeply buried targets and is exclusively employed from the B-2. The MOP was initially designed as a Quick Reaction Capability following a

USCENTCOM Urgent Operational Need. Since then it has received several upgrades and enhancements based on warfighter requirements. AFGSC, USCENTCOM, and AFLCMC (MOP Program Office) are currently conducting two more enhancements to increase weapon effectiveness.

## **Security**

Nuclear security is a key function of the Command's mission. A major AFGSC initiative to ensure security continues to be the new Weapon Storage Facilities (WSF) which will consolidate nuclear maintenance, inspection, and storage. We have put forward a \$1.3 billion program (\$521 million across the FYDP) to replace all deficient buildings across our aging 1960's-era Weapon Storage Areas with a single modern and secure facility at each of our bases. This initiative eliminates security, design, and safety deficiencies and improves our maintenance processes. We included \$95 million in funding for the WSF at F. E. Warren AFB, WY, in the last year's budget and the MILCON for the remaining facilities in future years. These facilities are needed to meet requirements for a safe, secure, and effective nuclear arsenal.

## **Nuclear Command, Control, and Communications**

The ability to receive Presidential orders and convert those orders into action for the required weapon system is both critical to performing the nuclear mission and foundational to an effective credible strategic deterrent. The Air Force took an important step this year by declaring Nuclear Command, Control, and Communications (NC3) a weapon system which recognizes the absolute importance of these systems that ensure proper nuclear command and control. Declaring NC3 a weapon system is no small matter; it begins a process to manage this new weapon system's training, resources, and sustainment just like all other weapons systems in the AF. AFGSC is the lead command for National Leadership Command Control (NLCC)/NC3 which establishes one focal point for the weapon system. Since these systems are spread across the government, there are multiple working groups at all levels to ensure open communications. In fact, I chair the Air Force NLCC/NC3 Council where we bring together MAJCOM commanders to prioritize resources and resolve any outstanding issues. I think it is also important to highlight the hard work Air Force Nuclear Weapons Center (AFNWC) and AFMC have put into this effort to support not only the systems but AFGSC as a whole. As I will discuss

later, we are codifying these relationships to establish clear lines of authority and responsibility which will only improve NC3 sustainment and modernization.

AFGSC has made tremendous gains in efforts to modernize our communications and cyberspace infrastructure by leveraging technology to make our forces more capable and effective. In our ICBM missile fields, the copper cabling that transport voice and data between the main base and the Missile Alert Facilities (MAFs) in some cases dates back to 1960s technology and equipment. We have undertaken a major modernization initiative to replace old cabling with modern technology that will realize over a 15-fold increase in data capability and improve missile field command and control with unclassified and classified networking, wireless networking, and secure digital voice to the MAFs. These are important upgrades but they still do not replace the buried copper nuclear command and control lines. We are also addressing mission assurance for our main bases and have begun to look at issues of bandwidth allocation and the routing of long-haul telecommunications circuits into our installations to best guarantee continuity of service.

Ultimately, we have taken seriously our charge with sustaining and modernizing the NC3 weapon system. In fact, through the Nuclear Enterprise Review process we identified multiple areas that have atrophied through decades of low prioritization. To remedy that, we have advocated for funds such as \$16 million to improve long-haul communications, \$8 million in telephony upgrades, and \$2 million in radio upgrades. These are just examples of the things we have been able to accomplish with the support of those inside and outside the DOD. Thank you very much for your continued interest and support in NC3; we are in agreement on what needs to be done in the future and I look forward to continuing our efforts.

### **Nuclear Enterprise Review**

As this committee is well aware, the Air Force and this command have undertaken momentous shifts to support our number one priority. Our Airmen are beginning to see resourcing balanced against mission requirements. They see mid-career leaders mentoring those below them, educating them on the importance of their missions. And they see their most senior leaders in the Administration, in the Department, and here in Congress acting on their behalf.

I will lay out a number of accomplishments that have been possible thanks to the support of leadership in all branches of government, the DOD, and the Air Force. But first I would like

to recognize the hard work and leadership of my predecessor, Lieutenant General Stephen Wilson; he embraced the challenge and AFGSC is better for it. I sit before you today as the first 4-star commander of AFGSC and the AF now has a 3-star as the Deputy Chief of Staff for Strategic Deterrence and Nuclear Integration. This recognizes the importance of the nuclear enterprise within the Air Force and elevates our advocacy. Additionally, as part of the Nuclear Enterprise Review (NER) we found we needed to link all the disparate nuclear activities within the AF into a more synchronized and focused structure to provide direction and support for our nuclear forces. The Secretary of the Air Force and Chief of Staff directed the AFGSC Commander be the single face for the AF for "all things nuclear". We are currently in the process of implementing that guidance which will culminate with AFGSC as the lead command for the nuclear deterrent operations mission and the AFNWC restructuring to provide "direct support" to AFGSC for all material elements of the nuclear enterprise.

We are shifting our security forces members from PRP to the Arming and Use of Force (AUoF) standards. This maintains the high standards required in our business while reducing the administrative workload driven by maintaining two overlapping reliability programs. This ensures our security forces members across the Air Force are held to the same standard and improves mobility between bases. Additionally, we have improved the equipment and uniforms of our missile field defenders through our Model Defender program.

Across the maintenance, operations, and security forces career fields we have implemented the Assignment Incentive Pay (AIP) which reflects the incredible responsibility placed on our nuclear Airmen's shoulders. For our enlisted members in critical career fields we have implemented the Special Duty Assignment Pay (SDAP). AIP and SDAP are but a small way we recognize the hard work our Airmen accomplish in this demanding and ever-important field.

For our ICBM operations, we have implemented a number of changes. Among them is re-imagining the crew construct altogether. We have revamped training to remove the blurring of lines between training and evaluating; implementing reforms to increase the proficiency of our missile crews. We have also changed how the crew tour works. Previously, most crew members would spend four years at their missile base, progress through the different leadership positions, and then move on to another assignment. Instead we are moving to a "3+3" concept where a crewmember will spend the first three years as a deputy and commander becoming an expert on

the weapon system. Most of the crew force will then move to another ICBM base where they will fill instructor, evaluator, and flight commander roles; for those who do not move, they will fill those same roles at their current duty station.

We have been implementing changes for our bomber forces, as well. For instance, we have completely overhauled B-52 initial and mission qualification training and are advancing B-52 simulator upgrade timelines to better support nuclear mission training. Additionally, we have developed up our Striker Vista program to advance integration between bomber platforms through the transfer of personnel between wings. This is not a new concept to the AF but it is something new to our bomber forces.

These are just some of the fundamental changes we have implemented in conjunction with the Nuclear Enterprise Review findings. I could list literally hundreds of individual initiatives, most of which have been completed, that cut across the nuclear mission from standing up an independent helicopter group, to significant manpower plus-ups, to new vehicles and equipment, to organizational changes to address long-standing needs. However, more importantly you should know that we are not done. I truly believe we can never return to the previous way of doing things; instead we must always look to the future and always have open minds. Since the NER reports, we have accomplished bottom-up reviews of our bomber forces, airborne launch operations, and the headquarters itself. Most recently, I tasked a team to conduct a review of our convoy operations to ensure we are accomplishing this absolutely critical mission area the best way possible. We are building a culture that embraces innovation and change.

### **2016 Priorities**

In FY15, AFGSC took a deliberate approach with planning and executing its mission. Through the successful execution of new initiatives, AFGSC was able to earn an additional \$214 million from initial distribution used to fund NC3, manpower, readiness requirements, and Nuclear Force Improvement Program initiatives. But we have more work to do and we will move forward in the context of my priorities.

My priorities are relatively simple and they inform every decision I make. They are Mission, Airmen, Families all built on Heritage and Core Values. We exist to serve the nation by providing strategic deterrence and global strike. However, without our great Airmen we could never hope to be as successful as we are. In my visits to our units, I am always humbled

by the dedication of your Global Strike warriors and their unfailing drive to do their best. I truly believe that while we may recruit Airmen, we retain families. To me that means we cannot forget the loved ones who stay behind while our Airmen deploy whether it is overseas or to a missile field. It means supporting the families who back up our Airmen who work long hours ensuring our bases are secure. It means recognizing that no matter the job an Airman is doing, we must never lose sight of the family who makes it all possible.

I mentioned that Heritage and Core Values are the foundation of the priorities I just listed. I think we learn from our history but we are inspired by our Heritage. AFGSC and the Air Force as a whole have a proud heritage. Eighth Air Force has a proud history dating back to the European theater in World War II while Twentieth Air Force did great things in the Pacific theater. Our Airmen should understand and embrace this Heritage. Lastly, our Core Values of “Integrity First, Service Before Self, and Excellence in All We Do” should underpin every decision we make each and every day. Without these values we sacrifice who we are and then nothing else matters.

## **Conclusion**

Thank you for your continued support of Air Force Global Strike Command and our strategic deterrent and global strike missions. The President’s 2015 National Security Strategy is clear: “As long as nuclear weapons exist, the United States must invest the resources necessary to maintain—without testing—a safe, secure, and effective nuclear deterrent that preserves strategic stability.” Fiscal constraints, while posing planning challenges, do not alter the national security landscape or the intent of competitors and adversaries, nor do they diminish the enduring value of long range, strategic forces to our nation.

Although we account for less than one percent of the DOD budget, AFGSC forces represent two-thirds of the nation’s nuclear triad and play a critical role in ensuring U.S. national security, while also providing joint commanders rapid global combat airpower. AFGSC will continue to seek innovative, cost-saving measures to ensure our weapon systems are operating as efficiently as possible. Modernization, however, is mandatory. AFGSC is operating B-52s built in the 1960s with equipment designed in the 1950s; operating ICBMs with 1960s infrastructure; and utilizing 1960s era weapon storage areas. We cannot afford to delay modernization

initiatives across the two legs of the nation's nuclear triad and the NC3 systems which connect our capabilities to the President.

I would like to take this opportunity to thank the Congress for your ongoing support of the nuclear enterprise. Your support does not go unnoticed and is absolutely critical to ensuring AFGSC provides the nuclear and conventional capabilities this Nation deserves. It is my privilege to lead this elite team empowered with special trust and responsibility. It is truly an honor to be a Wingman to the outstanding Airmen who make up Air Force Global Strike Command.