

NOT FOR PUBLICATION UNTIL RELEASED  
BY THE HOUSE ARMED SERVICES  
COMMITTEE STRATEGIC FORCES  
SUBCOMMITTEE

STATEMENT  
OF  
LIEUTENANT GENERAL ANDREW J. GEBARA, USAF  
DEPUTY CHIEF OF STAFF FOR STRATEGIC DETERRENCE & NUCLEAR INTEGRATION  
BEFORE THE  
SUBCOMMITTEE ON STRATEGIC FORCES  
OF THE  
HOUSE ARMED SERVICES COMMITTEE  
ON  
NUCLEAR FORCES  
APRIL 30, 2024

## INTRODUCTION

I am honored to appear before you as a representative of the Department of the Air Force's (DAF) Nuclear Enterprise. Our mission, to maintain a safe, secure, and effective nuclear deterrent, is as vital today as it was at the dawn of the nuclear age. Along with my teammates across the Department of Defense, the Airmen and Guardians of the DAF work tirelessly to ensure the U.S. retains the nuclear deterrent our nation demands. Their unwavering professionalism ensures the foundation of our national security remains strong, but we must provide them the right tools and capabilities to face emerging threats. I also would like to highlight and thank our critical industry and government partners who work to seamlessly integrate monumental modernization and maintenance efforts across the U.S. nuclear enterprise.

After decades of guaranteeing global stability and security, the DAF is at an inflection point for providing a credible strategic deterrence capability in an evolving strategic environment now characterized by two near-peer competitors. The DAF's core missions of protecting Americans and American interests, assuring our Allies and partners, and deterring our adversaries have not changed in the past decade; however, the domains, technology, and threats have. Failure to adapt to a changing world is not an option. Every operational plan and capability in the DoD rests on the foundation of an effective, reliable, and credible strategic nuclear deterrence. The stakes could not be higher.

The Air and Space Forces continue to achieve many key nuclear goals, including significant milestones with the Long Range Standoff missile (LRSO), B-52J modernization, B-21 Raider, the B61-12 gravity bomb, and Nuclear Command, Control and Communications (NC3) programs. Malmstrom AFB just accepted its first MH-139 Grey Wolf, which will support missile field security, and the F-35A is now certified for the nuclear mission. In addition, heroic work is performed daily, supporting weapon systems that are not just one, but often two generations older than the Airmen and Guardians sustaining and maintaining their functionality and lethality.

The Minuteman III weapon system was fielded in 1970, with an original design life of 10 years. This weapon system is in its 54th year of fielded service, facing a threat environment it was not designed for and thus demonstrating the need to modernize the land-leg of the nuclear Triad. The Sentinel program is intended to provide the next generation Intercontinental Ballistic Missile (ICBM) that brings critical safety, security, and reliability features replacing both the aged missile and much of the supporting infrastructure. We acknowledge Sentinel is undergoing a critical Nunn-McCurdy review and we look forward to sharing the results of the review as soon as we are able. The key focus is that the ground leg of the nuclear Triad is critical to pacing the threat in our quickly changing security environment. A modernized ICBM weapon system ensures we do not just maintain pace with our competitors; rather, we have the capabilities and capacities to deter, and if necessary, fend off challenges to deterrence posed by the evolving advancements by the People's Republic of China (PRC), Russia, and the Democratic People's Republic of Korea.

The Air Force continues to make great progress with the LRSO program, completing double-digit test flights, and maintaining schedule towards a fielding expected at the end of this decade. The AGM-86 Air-launched Cruise Missile (ALCM) was fielded in 1982, also with a 10-year design life, and is now operating in its 42<sup>nd</sup> year. LRSO's capabilities remain critical to deterrence, as it will complicate the adversary's defense calculus thanks to its improved survivability and standoff range. Additionally, LRSO on the B-52 and later the B-21 will provide some capability to mitigate potential shortfalls in the ground and-or sea legs of the Triad.

Launching the LRSO requires a modern B-52. This comprises a major area of the modernization of the air leg of the Triad. With new engines, radars, and communications, the B-52 modernization and digital engineering programs will replace many aging capabilities, enabling a more reliable, modern, and integrated platform to keep the fleet flying through 2050+.

Finally, the B-21 Raider program has had a successful year, entering the flight test campaign. The Department has approved, and Northrop Grumman has begun low-rate initial production, with a plan to field a fleet of at least 100 Raider bombers. The first combat aircraft is scheduled to arrive at Ellsworth AFB, South Dakota before the end of this decade. We will retire the stalwart B-1 and B-2 bombers at a rate commensurate with delivery of B-21s, resulting in a fleet of 6th-generation B-21 Raiders serving alongside modernized B-52Js.

It remains vital that these recapitalization programs stay on schedule to prevent any degradation to the Air and Space Forces' contribution to our nation's nuclear assurance and deterrence capabilities. Time is not a recoverable asset, and we need to make the most of every moment. Deferrals and delays force our Airmen and Guardians to maintain and operate systems that are decades past their planned lifespans and were developed for a strategic environment that was vastly different than today's national defense needs. The choice is no longer between maintaining the existing platforms or replacing them; it is now a matter of replacing them promptly or facing operational shortfalls. The emerging security environment demands we modernize and strengthen U.S. deterrence, and in doing so, ensure the safety, security, and effectiveness of the nuclear arsenal, in turn protecting the security of the American people.

## **THE THREAT**

The days of uncontested military operations are over, as we now face two major nuclear-armed strategic competitors. Moreover, these competitors are coordinating and cooperating, raising the risk of near-simultaneous conflicts. The Air Force appreciates the inputs of the 2023 Strategic Posture Commission report and shares the Commission's sense of urgency regarding the increasing conventional and nuclear threat to the United States and its allies and partners.

The 2022 National Security Strategy identifies the PRC as the only competitor to the United States with the intent and increasing capacity to reshape the international order. The PRC is the primary challenge for U.S. defense and a growing factor in evaluating the U.S. nuclear deterrent. The PRC has embarked on an ambitious expansion, modernization, and diversification of its nuclear forces. As of May 2023, the DoD estimates that the PRC possessed more than 500 operational nuclear warheads, exceeding previous projections. The PRC likely intends to possess over 1,000 warheads by the end of the decade. In 2022, the PRC finished building its three new silo fields of solid-fuel ICBMs, which have at least 300 new ICBM silos, bringing the total PRC ICBM launchers to 500, currently exceeding that of the United States. This project and the growth of China's rocket forces intend to boost the peacetime readiness of its nuclear force by adopting a launch-on-warning stance. The PRC currently has a nuclear triad consisting of bombers, submarines, and land-based missiles and is increasing its capability to threaten the United States, as well as our Allies and partners with nuclear weapons. Despite the PRC's No First Strike Policy, the range of nuclear options available to the PRC leadership will expand in the years ahead, potentially allowing it to adopt a broader range of strategies to achieve its objectives, including nuclear coercion, limited nuclear first use, and provocations against U.S. and Allies and partners in the region. The DoD estimates by 2030 the PRC will likely have over double the number of operational nuclear warheads, much of which will be deployed at higher levels of readiness. Additionally, sources

indicate a “long-range” DF-27 ballistic missile is in development. Official PRC military writings indicate this range-class spans 5,000-8,000 km, which means the DF-27 could be a new Intermediate Range Ballistic Missile (IRBM) or ICBM. The PRC is likely developing advanced nuclear delivery systems such as a strategic hypersonic glide vehicle and a fractional orbital bombardment (FOB) system. In 2021, the PRC conducted a test of an ICBM-range hypersonic glide vehicle that travelled 40,000 kilometers. The test likely demonstrated the PRC’s technical ability to field a FOB system. The PRC will continue growing its force in line with its goal of ensuring People’s Liberation Army (PLA) modernization, which serves as an important milestone on the road to Xi’s goal of a “world class” military by 2049.

Russia maintains the largest and most diverse nuclear weapons stockpile and is actively expanding and modernizing its nuclear capabilities. After decades of deferment, the U.S. is only at the beginning of nuclear modernization. Whereas Russia, as of February 2024, claims to have upgraded 95% of its forces and is expanding its nuclear stockpile to include so-called novel delivery systems. Furthermore, in February 2023, in a legally invalid move, Russia purported to suspend New START. Russia’s aggression against Ukraine and use of nuclear coercion have disrupted the previously peaceful decades in Europe. Throughout its full-scale invasion of Ukraine, Russian leaders have regularly issued nuclear threats against the United States, its Allies, and partners to support its aggression. Russia is expanding and modernizing its large and diverse set of nonstrategic systems, which are capable of delivering nuclear or conventional warheads. Russia believes such systems offer options to deter adversaries, control the escalation of potential hostilities, and counter U.S. and Allied conventional forces. Our Allies and partners now confront the harsh reality that Russia is willing to expand its influence through military force, including direct and indirect threats of nuclear weapon use, as we have witnessed throughout Russia’s invasion of Ukraine.

North Korea remains a persistent threat and continues to pursue destabilizing capabilities and technologies by continuing its ballistic and hypersonic missile development and testing, threatening regional stability in the Pacific. North Korea is likely preparing to test a nuclear device to further its stated military modernization goals to facilitate “tactical nuclear operations.” North Korea emphasizes nuclear weapons in its strategy and coercive tactics, reportedly including the first use of nuclear weapons to nullify non-nuclear disadvantages.

## **STRATEGY & THE NUCLEAR TRIAD**

The 2022 National Defense Strategy and Nuclear Posture Review outlines three roles for nuclear weapons: deter strategic attack, assure Allies and partners, and achieve objectives if deterrence fails. With nuclear threats advancing at a rapid pace, U.S. nuclear forces and enabling infrastructure are more important today than ever before. The DAF remains committed to providing a safe, secure, and effective nuclear deterrent. The nuclear Triad, consisting of strategic bombers, intercontinental ballistic missiles, and submarine-launched ballistic missiles, has served as a cornerstone of the U.S. defense strategy for decades and the Nuclear Posture Review concludes it will continue to do so. When we bring together these capabilities, the Triad offers the President flexibility in the U.S. approach to assurance and deterrence.

The Triad is also a key part of our Allies’ defense strategy through U.S. extended deterrence commitments. Our Allies and partners watch what we say and do as much as our strategic competitors do. U.S. extended deterrence assures our Allies and discourages nuclear proliferation by increasing allied and partner confidence about the veracity of U.S. security commitments. The North Atlantic

Treaty Organization (NATO) has provided for the common security of our European and Canadian Allies since 1949 and U.S. Air Force and NATO dual-capable aircraft are integral to NATO's overall deterrence and defense posture. U.S. nuclear capabilities also play a vital role in maintaining peace, stability, and non-proliferation in the Indo-Pacific for countries such as Australia, Japan and the Republic of Korea.

Each element of U.S. nuclear forces provides unique and complementary attributes. The Triad's diversity creates a more flexible and resilient deterrent, providing multiple options for the President. These capabilities of the U.S. nuclear arsenal are enabled by the NC3 architecture, which ensures critical communication and decisions are delivered and received.

Providing the forces to support strategic deterrence is a no-fail mission. Decades of deferring modernization of Cold War-era systems, while other nuclear powers quickly advance, make it imperative to modernize U.S. nuclear forces to ensure a credible strategic deterrence is maintained. This is a critical time, where aging legacy systems are quickly presenting future challenges. The DAF's nuclear modernization programs of record are intended to recapitalize our current systems and supporting infrastructure to deliver modern and credible deterrence capabilities. We are developing next generation nuclear delivery systems and adapting our NC3 architecture and capabilities to increase resilience and responsiveness. Modern and effective nuclear forces, and the investments required, send a clear message to our competitors, Allies, and partners about the credibility of U.S. deterrence.

#### **REQUIREMENTS, MODERNIZATION, AND RECAPITALIZATION**

The DAF continues to maintain a strong, mutually supportive partnership with the National Nuclear Security Administration (NNSA) to ensure our modernization and recapitalization programs remain on schedule. It is critical that each of these programs deliver without incurring capability gaps near the end of this decade and into the next. To that end, the FY25 President's Budget request supports the modernization of the Air Force's Global Strike capability by ensuring continued investment in our major recapitalization programs, while also continuing critical sustainment efforts for our current nuclear forces and support components.

We are revitalizing an industrial and intellectual base that has not been exercised for decades and providing the foundation for all future nuclear deterrence capabilities. While these programs have encountered challenges greater than initially anticipated, the Air Force, with our NNSA and industry partners, is continuing to work to bring them to a successful conclusion. A safe, secure, and effective nuclear deterrent serves as the bedrock of our national security strategy as it has for more than six decades. Critical to pacing the threat is the modernization of the nuclear Triad.

#### **GROUND LEG - INTERCONTINENTAL BALLISTIC MISSILES**

The ICBM force is the most responsive leg of the Triad, on alert in numbers 24/7/365. Owing to this impressive availability, ICBMs deter strategic attack on the homeland while greatly complicating the targeting calculus of any potential adversary. Through the combination of accuracy and rapid response, an adversary must consider our ICBM force in any decision involving their use of nuclear weapons. Additionally, the quantity and dispersion of the ICBM force make it a difficult targeting problem. Without ICBMs, an adversary could calculate a more favorable outcome for an attack against the U.S. homeland. For example, without ICBMs, a limited attack on our submarine and bomber bases would markedly degrade U.S. nuclear and strategic capabilities.

The Minuteman III remains an indispensable part of the nuclear Triad but is stressed by its age and predictable decline generated from high on-alert rates. The Minuteman III is waning in its effectiveness against challenges posed by today's and tomorrow's strategic environments. To maintain viability until it is replaced, Minuteman III requires at least twenty significant modernization and sustainment programs. And while the Air Force continues to work across multiple lines of effort to ensure the Minuteman III force remains safe, secure, and effective, doing so is challenging budgets as it is difficult to sustain this weapon system, appreciably so, in this epoch of deterring two nuclear peer arsenals and the challenges of great power competition. For the nation's safety and security, Minuteman III must remain fully serviceable and viable until fully replaced.

The Minuteman III ICBM system, including the missile, command and control network, ground equipment, and physical infrastructure, is overdue for modernization due to capability shortfalls, asset attrition, security concerns, degrading infrastructure, and the age-out of critical system components. While recent announcements regarding Sentinel's development have acknowledged challenges with budget and schedule, we should acknowledge the need for a modernized ICBM weapon system was a core conclusion of the Nuclear Posture Review. A modernized ground leg of the Triad addresses important ICBM capability gaps. The Air Force looks forward to working with Congress following the results of the Nunn-McCurdy reassessment of the Sentinel program to ensure we provide a safe, secure, and effective nuclear deterrent for the foreseeable future. Due to the strategic importance of the land-based leg of the nuclear Triad, continued, consistent, and predictable funding remains essential to ensure the timely delivery of a capable ICBM weapon system.

#### **AIR LEG – BOMBERS AND ASSOCIATED NUCLEAR WEAPONS**

Strategic bombers and dual-capable fighter aircraft provide a clear and visible signal of U.S. intent and resolve during a crisis and provide flexible and tailored response options through a variety of deployment and employment options. Bombers, with a mix of cruise missiles and bombs, alongside tankers and our command-and-control aircraft, provide an outsized contribution to assurance and deterrence activities. When called upon, they contribute a recallable and survivable force that can employ the full range of combat power across the entire spectrum of conflict, giving Combatant Commanders the flexibility and reach to strike, should deterrence fail.

The air leg is undertaking the most comprehensive modernization effort in history. Initiatives regarding the B-52, include the commercial engine replacement that support extended range and loiter capabilities. The radar modernization program will allow aircrew to employ an array of weapons, and improves the radar system for navigation, targeting, weather avoidance, and air refueling purposes. These efforts ensure the B-52 remains viable as the backbone of the U.S. heavy strategic bomber fleet well into the 2050s. These programs, combined with investments in the sixth generation B-21, B61-12, B61-13, and LRSO ensures the U.S. will maintain the capability to deter aggression, assure Allies, and project combat power across the full spectrum of conflict. The future two-bomber fleet comprised of B-21s and modernized B-52s, ensures the ability to reach any potential target, anytime, anywhere in the world with overwhelming force, remains intact.

The LRSO program, critical to maintaining the effectiveness of the air leg of the Triad, represents the first simultaneous integrated nuclear program that the DoD and NNSA have executed since the 1980s. We are pleased to report that the LRSO program remains on track to meet its planned fielding date. It is more critical than ever that the investments in the B-21 and LRSO programs, along with modernization efforts for the B-52, B61-12 and B61-13 bombs, remain fully funded and on track.

## **INFRASTRUCTURE & WEAPONS GENERATION FACILITIES**

Alongside the need to modernize the bomber and ICBM weapon systems is the need to modernize supporting infrastructure. Many of these facilities are Cold War-era construction, with the sustainment needs of this aging infrastructure impacting the ability of our Airmen and Guardians to support the Air Force's nuclear mission. One means of rectification is by recapitalizing the decades-old Weapon Storage Areas (WSAs) as Weapons Generation Facilities (WGFs). The WGF will consolidate weapon maintenance, storage, and training functions required to support the ICBM and bomber missions into a single, modernized, secure facility. WGFs support rapid generation of nuclear forces and routine maintenance operations for both the ground- and air-legs of the Triad, improving safety, security, surety, and effectiveness. While unglamorous, these facilities are the necessary backbone for the generation of Air Force assurance and deterrence power.

The Air Force has made significant progress modernizing these facilities. The first WGF under construction at F.E. Warren AFB, is nearly complete, and will be ready for occupation later this year and achieve Initial Operational Capability (IOC) status next year. The lessons learned from F.E. Warren are driving improvements and efficiencies in the construction of the Malmstrom AFB WGF, and in part, the construction of the bomber focused WGF at Barksdale AFB. Site preparation work continues at Barksdale, where the first LRSO will be secured, and construction has begun at Malmstrom, with respective IOC dates anticipated in 2028 and 2029.

## **NUCLEAR COMMAND, CONTROL, AND COMMUNICATIONS**

The DAF manages approximately seventy-five percent of all NC3 capabilities, a crucial system-of-systems that enables the President and senior leaders to detect nuclear threats, make decisions, and direct nuclear forces. While many NC3 systems have their roots in the Cold War, the DAF is committed to modernizing and safeguarding these interconnected elements against emerging threats in cyber and space domains. In FY25, the DAF plans to invest approximately \$8.7 billion in NC3 and missile warning programs. We are actively replacing aging systems with solutions, for example, the Strategic Automated Command and Control System (SACCS) is modernizing from a twisted-pair copper-cable technology to Internet Protocol (IP) solutions, and the Single Channel Anti-Jam Man Portable (SCAMP) SATCOM terminal used in our Command Centers and Command Posts is in the process of being replaced with Global Aircrew Strategic Network Terminal (GASNT) enabling us to transition from the 1980's MILSTAR satellites to Advance Extremely High Frequency (AEHF) satellites. In addition, the Family of Beyond Line-of-Sight-Terminal Force Element Terminal (FAB-T FET) will provide the B-52 with AEHF capabilities. Moreover, we ensure seamless integration with the Space Force's satellite programs, including the Space-Based Infrared System (SBIRS), Next Generation Overhead Persistent Infrared (OPIR), and Evolved Strategic Satellite Communications (ESS), which provide critical missile warning capabilities.

Furthermore, we are continuing investment in the Survivable Airborne Operations Center (SAOC) as a replacement for the aging E-4B National Airborne Operations Center (NAOC). The SAOC will serve as a highly survivable NC3 platform that guarantees national leadership can maintain command and control capabilities even if ground-based centers are compromised during national emergencies. FY24 appropriated funding supports SAOC's transition to the engineering and manufacturing development (EMD) phase, following an anticipated Milestone B decision in FY24. Our goal is to deliver these critical NC3 aircraft to recap the E-4B NAOC fleet which is approaching its end of service life in the 2030s.

Finally, we are collaborating closely across the DoD to integrate NC3 into the Joint All Domain Command and Control (JADC2) through the DAF's Advanced Battle Management System (ABMS) efforts. One example of this collaboration is exploring how Hybrid SATCOM architectures can contribute to NC3, as well as how integrating NC3 with next-generation sensors and decision support systems being pursued with ABMS will enable enhanced decision speed, and, if necessary, engage targets.

The DAF remains dedicated to providing reliable and resilient NC3 capabilities across a wide radio frequency spectrum, ranging from missile warning to force direction.

## **NUCLEAR SECURITY**

In parallel with the modernization efforts underway to improve our weapons systems and support infrastructure, it remains imperative that we make appropriate investments in safeguarding our nation's nuclear arsenal. Several recapitalization efforts are underway to sustain and improve our nuclear security forces. New Payload Transporters will enhance the security of our ICBM warheads during convoy operations. Upgraded vehicles will keep our defenders both safer on the road and better protected in the event of hostilities. In the air, the UH-1 has been serving our ICBM installations for decades, its replacement for missile field security, the MH-139A Grey Wolf Helicopter, continues to meet critical milestones and has completed developmental testing this year as Malmstrom AFB received its first operational aircraft in March.

## **CONCLUSION**

To ensure and protect the American way of life, we must honor our commitments to our Allies, while unequivocally and consistently communicating our resolve to our strategic competitors. The nuclear Triad is critical in accomplishing this commitment. The three legs of the Triad provide unique complimentary characteristics that are needed to meet U.S. deterrence and assurance goals. ICBMs ensure a quick response, bombers ensure flexibility and messaging, and submarines ensure survivability. The mere possession of a nuclear weapon provides some level of deterrence but assurance to our Allies and partners requires much more to accomplish. The actions and statements of the U.S. are closely observed by both our Allies and strategic rivals. By bolstering the trust of our Allies and partners in the U.S.'s security promises, extended deterrence serves to reassure our Allies and prevent the spread of nuclear weapons.

The nuclear Triad remains the primary military means by which the United States provides deterrence against existential threats to our way of life, our homeland, and our Allies. Failing to prioritize our modernization and recapitalization efforts for nuclear and conventional systems would result in retaining systems that are no longer capable of deterring our peer competitors and would amount to ceding power and influence to forces that could threaten the United States and its Allies, partners, and interests. We can maintain deterrence by investing, modernizing, and recapitalizing smartly and quickly. The DAF is committed to providing stable requirements for its current and future nuclear programs, and capabilities across the enterprise. However, we cannot do this alone, and we ask for the continued support of Congress to provide timely funding to both the DoD and NNSA enterprises to ensure deterrence of war on behalf of the nation, its interests, and its Allies.