



DEPARTMENT OF DEFENSE
AND
DEPARTMENT OF ENERGY
NUCLEAR WEAPONS COUNCIL
WASHINGTON, DC 20301-3050



AUG 29 2016

MEMORANDUM FOR MEMBERS OF THE NUCLEAR WEAPONS COUNCIL

SUBJECT: Nuclear Weapons Council Strategic Plan for Fiscal Years 2017-2042

The Nuclear Weapons Council (NWC) Strategic Plan for Fiscal Years (FY) 2017-2042 is attached and reflects the following changes from the NWC Strategic Plan for FY 2016-2041:

- Moving the Intercontinental Ballistic Missile fuze modernization line from the Department of Defense (DoD) delivery system and platform modernization section to the weapon refurbishment section;
- Incorporating both Initial Operational Capability and First Production Unit dates for the Ground-Based Strategic Deterrent and the Long-Range Standoff cruise missile;
- Adding the F-35 Dual-Capable Aircraft to the delivery systems;
- Including "120 per year" for secondary production; and
- Renaming the first section to "weapon refurbishment" and the second section to "DoD delivery system and platform modernization."

Over the coming months, DoD and the National Nuclear Security Administration will work together to continue to analyze cost, schedule, and other implications of this plan as means to inform future decisions regarding the nuclear weapons enterprise.

Frank Kendall
Chairman

Attachment:
As stated

cc:
Members, NWC Standing and Safety Committee

UNCLASSIFIED when separated from attachment

Nuclear Weapons Council

(U) Strategic Plan for Fiscal Years (FY) 2017–2042

(U) Background

(U) The Nuclear Weapons Council (NWC) Strategic Plan for FY 2017-2042 supports the 3+2 Strategy for the nuclear weapons stockpile. Specifically, it aligns weapon system modernization plans with delivery system and platform schedules, and it outlines investments for renovating the nuclear security enterprise infrastructure. A programmatic chart entitled "FY 2017–2042 Strategic Plan" is included at Attachment A.

(U) The 3+2 Strategy addresses ongoing challenges presented by an aging U.S. nuclear weapons stockpile. It meets policy objectives for sustained U.S. nuclear deterrence through a smaller stockpile with fewer weapon types and policy objectives for a modernized, responsive nuclear weapons infrastructure capable of responding to technological and geopolitical surprise. The 3+2 Strategy includes the following:

- (U) Three types of ballistic missile interoperable nuclear explosive packages (NEPs) with adaptable non-nuclear components. Each of the three types will be deployed on both Air Force and Navy delivery systems (the aeroshells remain Service-specific). These ballistic missile warheads will be referred to as interoperable warheads (IWs) 1, 2, and 3. Full deployment will extend beyond 2060.
- (U) Two air-delivered types of NEPs, which may be interoperable with shared common non-nuclear system characteristics and adaptable non-nuclear components, deployed in standoff (cruise missile) and direct attack (gravity bomb) weapon system configurations. Full deployment will extend beyond 2060.

(U) The NWC Strategic Plan for FY 2017-2042 is structured on the need for continuous design and production activities to ensure that a fully capable nuclear enterprise workforce is maintained.

(U) Elements of the Strategic Plan for FY 2017–2042

(U) The Strategic Plan for FY 2017-2042 reflects the FY 2017 President's Budget Request as submitted to Congress in February 2016 and supersedes the NWC Strategic Plan for FY 2016-2041, approved by the NWC in August 2015. This strategic plan is composed of three major components: 1) Weapon Refurbishment; 2) Department of Defense (DoD) Delivery System and Platform Modernization; and the 3) Nuclear Enterprise Infrastructure.

Classified by: Vahid Majidi
Derived from: Multiple Sources
Declassify on: N/A

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(U) Weapon Refurbishment

(U) Weapon refurbishment planning is a joint DoD and Department of Energy (DOE)/National Nuclear Security Administration (NNSA) process that seeks to balance military and nuclear security enterprise (NSE) objectives with fiscal constraints. Important to this process is preventing capability gaps in the Nation's nuclear deterrent posture while maintaining the safety, security, reliability, and effectiveness of the stockpile by selectively integrating new, appropriately mature, and cost-effective technologies. The weapon refurbishment component of the NWC Strategic Plan for FY 2017-2042 includes life-extension programs (LEPs), a major Alteration (ALT), and Intercontinental Ballistic Missiles (ICBM) fuze modernization schedules and remains consistent with 2010 Nuclear Posture Review (NPR) objectives by supporting a reduction in warhead types and stockpile quantities through the formulation of IW options. It also balances the number of warheads deployed with each ballistic missile system and provides an adequate hedge against technical failure and geopolitical change. Consistent with the 3-2 Strategy, the strategic plan includes the following:

(b)(1),(b)(3),42 USC §2168(a) (1)(C)-(FRD)



(b)(5)



(b)(1),(b)(3),42 USC §2168(a) (1)(C)-(FRD)



(U) Changes to the NWC Strategic Plan for FY 2016-2041 include the following:

- (U) The IW2 planned FPU date changed to FY 2035;
- (U) The capacity for NNSA to produce 120 secondaries per year by FY 2030, consistent with the "Assessment of Nuclear Weapon Secondary Requirements" report to Congress dated August 17, 2015; and

- (U) Changed security classification of the chart entitled, "NWC Strategic Plan for FY 2017-2042," from "S//FRD" to "FOUO" by removing classified aspects of the DoD delivery systems schedule.

(U) DoD Delivery Systems and Platform Modernization

(U) Although DoD nuclear weapon delivery systems modernization and replacement plans and schedules are not part of NWC scope, the NWC is responsible for coordination of programming and budget matters pertaining to nuclear weapons programs between the DoD and DOE/NNSA. It is imperative that the NWC monitors the integration of warhead LEP and ALT schedules with delivery system and platform modernization schedules.

(U) Ballistic Missile Submarines (SSBNs) and Submarine-Launched Ballistic Missiles (SLBMs)

(U) SSBNs provide an assured response capability that is vital to our national security. Coupled with the Trident II (D5) SLBM, these systems have provided a continuous at-sea presence for over thirty years and will continue in this role into the foreseeable future. SSBNs are the most survivable leg of the Nuclear Triad and will deploy approximately 70 percent of the nuclear warheads accountable under the New Strategic Arms Reduction Treaty in 2018. The Navy is conducting an LEP to sustain the Trident II Strategic Weapon System through at least 2042 in order to support the extended life of the OHIO-class submarine. This program will allow the D5 to be deployed on OHIO-class Replacement SSBNs. The D5 LEP redesigns and replaces aging missile electronics and guidance systems in existing missiles, procures additional missiles to support ship fill requirements, and supports an extended flight-test program through the life of the OHIO-class submarines. The Navy continues to procure solid rocket motors to sustain the D5 SLBM as they reach their maximum service life. Modernization plans will also eventually integrate a D5 follow-on missile to sustain the strategic weapon system's high reliability.

(U) ICBMs

(U) The ICBM force provides secure command and control, prompt response capability, and high readiness rates at relatively low operating costs. The Air Force recently completed several modernization programs that will sustain the Minuteman III (MM III) weapon system through 2020 and funded several sustainment programs that will extend the effectiveness of this system through 2030, consistent with statutory requirements. Looking beyond the MM III, the Air Force is establishing a Ground-Based Strategic Deterrent (GBSD) program to design, develop, produce, and deploy a replacement ICBM weapon system. The GBSD program fully integrates the ICBM, command and control system, and supporting infrastructure into a single weapon system architecture designed to meet future strategic deterrent requirements. It is expected to reach initial operational capability in FY 2029.

(U) Bombers and Cruise Missiles

(U) The Air Force plans to maintain bombers to provide a long-range, air-delivered conventional and nuclear strike capability (standoff and direct attack) for the indefinite future. Nuclear-capable, long-range bombers increase our deterrent capabilities by providing credible, flexible employment options across the full range of threat scenarios, and by providing the ability to respond rapidly to technical challenges in other legs of the Triad. Bombers are an important element of the Nation's extended deterrent force as they provide a visible signal of

U.S. resolve and assurance to allies and partners. Given the current plans to sustain and modernize aircraft systems supporting both nuclear and conventional missions, the B-52H and B-2A will continue to provide a credible, flexible, and adaptable deterrent force. The B-21 (previously designated as the Long-Range Strike Bomber) will be developed, fielded, and certified for nuclear use by the mid-2020s.

(b)(5)

(U) Dual Capable Aircraft (DCA)

(U) Air Force DCA fighter aircraft (F-15E and F-16C/D) are a significant part of the U.S. extended nuclear deterrence commitment to the North Atlantic Treaty Organization (NATO). These aircraft, stationed at U.S. installations in Europe, provide visible and tangible assurance to NATO Allies in support of U.S. extended deterrence and assurance commitments. To ensure continued support for this mission, the Air Force is modifying the F-15E to allow integration of the B61-12 and has completed preliminary risk reduction for integrating the B-61 on the F-35. The F-16C/D will remain certified to fly the nuclear mission until conversion to the F-35. As part of the Block 4 capability upgrade, the Air Force plans to deliver nuclear certified F-35 aircraft in FY 2025.

(U) Additionally, some NATO mission partners also provide DCA aircraft (PA-200, F-16MLU) for the nuclear deterrent mission. After F-35A nuclear certification, some NATO countries will begin using the F-35A in support of the DCA mission.

(U) Nuclear Enterprise Infrastructure

(U) The 2010 NPR stressed the importance of a nuclear enterprise infrastructure that can respond to technical challenges and geopolitical surprise. The NWC has focused its attention primarily on the plutonium, uranium, and tritium capabilities required to support the current and future stockpile as documented in this strategic plan. The challenges facing the NSE's infrastructure are two-fold: 1) address aging, end-of-life facilities maintenance, recapitalization, and replacement; and 2) work to achieve a responsive infrastructure.

(U) Plutonium

(U) In July 2014, the NWC Chairman and NNSA Administrator jointly signed and submitted a memorandum to Congress confirming the NWC plutonium strategy. The plutonium strategy encompasses the investments needed to meet pit production demand and reflects goals developed

over the past several years. The Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act (NDAA) for FY 2015 (Pub. L. No.113-291) and the NDAA for FY 2016 (Pub. L. No.114-92) revised the Atomic Energy Defense Act (50 U.S.C. §2521), clarifying the required production strategy and delivery timelines. Consistent with these requirements, the plutonium component of the NWC Strategic Plan for FY 2017-2042 includes the following elements:

- (U) Optimizing existing space to provide analytical chemistry and materials characterization capabilities, as well as enabling the cessation of programmatic operations in the aging Chemistry and Metallurgy Research facility in 2019;
- (U) Constructing at least two modular nuclear facilities to extend the life of Plutonium Facility - 4 and provide additional space to support pit production;
- (U) Investing in the procurement of equipment to increase production;
- (U) Modernizing plutonium waste processing and treatment capabilities;
- (U) Producing qualification plutonium pits in 2021; during 2024, producing not less than 10 war reserve plutonium pits; during 2025, producing not less than 20 war reserve plutonium pits; and during 2026, producing not less than 30 war reserve plutonium pits; and
- (U) Creating a modern, responsive nuclear infrastructure that includes the capability and capacity to produce, at a minimum, 50-80 pits per year (consistent with the NDAA for FY 2016).

(U) Uranium

(U) Uranium activities include production of parts for canned subassemblies (the nuclear weapon secondary and the inter-stage in a sealed metal container), providing fuel for the Navy, disposing of excess uranium materials, and conducting research and development programs on uranium. Accomplishment of these activities requires the ability to process, store, and recover uranium and to manufacture precision uranium components.

(U) On August 17, 2015, the Secretary of Defense signed and released a coordinated report to Congress entitled, "*Assessment of Nuclear Weapon Secondary Requirement*," pursuant to Section 1646 of the NDAA for 2015. It described the secondaries production requirement as it relates to stockpile modernization and responsive infrastructure. In 2014, NNSA adopted a new Uranium Mission Strategy to deliver the enriched uranium capabilities and meet policy objectives. The enriched uranium component of the NWC Strategic Plan for FY 2017-2042 remains on target for implementation of the NNSA Uranium Mission Strategy and consists of the following elements:

- (U) Ceasing enriched uranium programmatic operations in Building 9212 at Y-12 by 2025;
- (U) Maximizing the use of existing facilities by relocating some of the Building 9212 enriched uranium capabilities into Buildings 9215 and 9204-2E;

- (U) Investing in enduring facilities to ensure safe and secure operations into the future;
- (U) Sustaining and modernizing enriched uranium manufacturing capabilities;
- (U) Reducing working inventories by increasing enriched uranium material movements into the modern Highly Enriched Uranium Materials Facility;
- (U) Completing the Uranium Processing Facility line item construction project by 2025 as a series of smaller buildings, segregated by the safety and security requirements of each operation; and
- (U) Maintaining a production capacity of 120 secondaries per year beyond FY 2030.

(U) Tritium

(U) All modern nuclear weapons are equipped with gas transfer systems (GTSs) requiring tritium. An assured tritium supply must be available to sustain the stockpile. The major factors in tritium supply planning are the current tritium inventory and its projected radioactive decay, the demand created by production schedules for GTSs driven by specified limited-life component exchange (LLCE) intervals, and tritium production efficiency.

(U) Although tritium requirements for future stockpile weapons will involve using larger tritium loads than past weapons, these newer GTSs will be designed to last longer, thus requiring fewer LLCE cycles and less tritium overall. Additionally, larger tritium loads result in better performance margins for the NEP and higher confidence in the nuclear design without the need for underground nuclear tests.

(L//FOUO) The future stockpile, as defined in this strategic plan, establishes GTS production schedules and projected tritium demand. The NWC Chairman certified the active and reserve tritium stockpile requirements of 2,800 grams per 18-month irradiation cycle by 2026 in a July 6, 2015, memorandum to Congress. This future tritium demand will exceed current planned capabilities with a single reactor and will require additional tritium-producing burnable absorber rods requiring a second reactor to generate a sufficient tritium supply.

(U) Conclusion

(U) The NWC Strategic Plan for FY 2017-2042 portrays a long-term strategy that advances the objectives provided in the NPR and policy directives. This plan continues to support the Triad and provides the basis for planning budgets and the necessary life-extension activities required to maintain a safe, secure, reliable, and effective stockpile. The NWC will review this Plan annually after submission of the President's Budget Request and revise it as appropriate. The NWC will continue to monitor the health of sustainment and modernization programs to sustain a safe, secure, reliable, and effective nuclear deterrent.

