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Department of Defense
OFFICE OF PREPUBLICATION AND SECURITY REVIEW

Modernized Selected Acquisition Report (MSAR)

Air Force Intercontinental Ballistic Missile Fuze Modernization (ICBM Fuze Mod)

FY 2025 President's Budget

Effective: December 31, 2023

Defense Acquisition Visibility Environment

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(U) Common DoD Abbreviations

| | |
|---------|--|
| \$B | Billions of Dollars |
| \$K | Thousands of Dollars |
| \$M | Millions of Dollars |
| ACAT | Acquisition Category |
| Acq O&M | Acquisition-Related Operations and Maintenance |
| ADM | Acquisition Decision Memorandum |
| APA | Additional Performance Attribute |
| APB | Acquisition Program Baseline |
| APPN | Appropriation |
| APUC | Average Procurement Unit Cost |
| BA | Budget Authority or Budget Activity |
| Blk | Block |
| BY | Base Year |
| CAE | Component Acquisition Executive |
| CAPE | Cost Assessment and Program Evaluation |
| CARD | Cost Analysis Requirements Description |
| CCE | Component Cost Estimate |
| CCP | Component Cost Position |
| CDD | Capability Development Document |
| CLIN | Contract Line Item Number |
| CPD | Capability Production Document |
| CY | Calendar Year or Constant Year |
| DAB | Defense Acquisition Board |
| DAE | Defense Acquisition Executive |
| DAES | Defense Acquisition Executive Summary |
| DAVE | Defense Acquisition Visibility Environment |
| DoD | Department of Defense |
| DSN | Defense Switched Network |
| EMD | Engineering and Manufacturing Development |
| EVM | Earned Value Management |
| FD | Full Deployment |
| FDD | Full-Deployment Decision |
| FMS | Foreign Military Sales |
| FOC | Full Operational Capability |
| FRP | Full-Rate Production |
| FY | Fiscal Year |
| FYDP | Future Years Defense Program |
| ICD | Initial Capabilities Document |
| ICE | Independent Cost Estimate |
| Inc | Increment |
| IOC | Initial Operational Capability |
| IT | Information Technology |
| JROC | Joint Requirements Oversight Council |
| KPP | Key Performance Parameter |
| KSA | Key System Attribute |

| | |
|----------|--|
| LRIP | Low-Rate Initial Production |
| MDA | Milestone Decision Authority |
| MDAP | Major Defense Acquisition Program |
| MILCON | Military Construction |
| N/A | Not Applicable |
| O | Objective |
| O&M | Operations and Maintenance |
| O&S | Operating and Support |
| ORD | Operational Requirements Document |
| OSD | Office of the Secretary of Defense |
| PAUC | Program Acquisition Unit Cost |
| PB | President's Budget |
| PE | Program Element |
| PEO | Program Executive Officer |
| PM | Program Manager |
| POE | Program Office Estimate |
| R&MF | Revolving and Management Funds |
| RDT&E | Research, Development, Test, and Evaluation |
| SAR | Selected Acquisition Report |
| SCP | Service Cost Position |
| T | Threshold |
| TBD | To Be Determined |
| TY | Then Year |
| U.S. | United States |
| U.S.C | United States Code |
| UCR | Unit Cost Reporting |
| USD(A&S) | Under Secretary of Defense (Acquisition and Sustainment) |

(U) Program Description**Full Name**

Air Force Intercontinental Ballistic Missile
Fuze Modernization

PNO

498

Lead Component

Department of the Air Force

Joint Program

No

Federal Partners

Department of Energy

Adaptive Acquisition Pathway

Major Capability Acquisition

Acquisition Category

IC

Acquisition Status

Active Acquisition

Short Name

ICBM Fuze Mod

Milestone Decision Authority

Component Acquisition Executive

Program Executive Office

Air Force Program Executive Officer/
Intercontinental Ballistic Missiles

Supporting Components

Department of the Navy

Acquisition Type

Major Defense Acquisition Program

Acquired Systems

ICBM Fuze Mod

Mission

The Air Force ICBM Fuze Mod Program will provide arming and fuzing capability to the Mk21 Reentry Vehicle (RV)/W87 Warhead designed to support both the Minuteman III and Sentinel ICBM fleets from 2024 and beyond. The program continues to capitalize on collaboration with the National Nuclear Security Administration (NNSA) and the Navy Mark 5 Alt 370 program on the extensive fuze work done to date to maximize the use of joint technologies, parts, components, development, and production capabilities. The modernized Mk21/W87 fuze will replace the existing fuze while maintaining interfaces, fit, and function. The modernized fuze design implements improved nuclear weapons surety features as required by the National Security Presidential Directive 28, United States Nuclear Weapons Command and Control, Safety, and Security.

(U) Responsible Office**Program Executive Officer**

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(U) Executive Summary

Program Highlights Since Last Report

The Program is executing a tailored acquisition utilizing Department of Defense (DoD) Manual 5030.55 and DoD Instruction 5000.85. The Program is in the Department of Energy (DOE) Phase 6.4 Production Engineering and DoD Production and Deployment phase executing efforts to meet statutory requirements and milestones. The next major milestones are the DoD FRP Decision and DOE Phase 6.5 First Production, both planned for FY 2024.

The ICBM Fuze Mod Program has recently executed several efforts to progress the Program towards the major milestones in FY 2024. The First Production Unit (FPU) for the Arming and Fuzing Assembly (AFA) Trainer was issued in August 2023. Further, all action items from the Production Readiness Review held in October 2022 were completed; therefore, all producibility ratings for the AFA and major components demonstrated sufficient maturity to achieve an AFA FPU in March 2024. Also, Pantex completed the build of the Joint Test Assembly needed for Flight Test Unit Four (FTU-4), which is the final flight test for the Program and will serve as the Initial Operational Test & Evaluation flight, currently scheduled for FY 2024 at Vandenberg Space Force Base, California. To support the developmental scope of the Program, the Program Management Office (PMO) successfully completed a Requirements Verification (RQV) process where 458 of 458 requirements were fully verified, completing the RQV process, well ahead of the Qualification Evaluation Release event.

As the Program transitions from development to production, the ICBM Fuze Mod PMO conducted an Integrated Baseline Review (IBR) to fully account for FY 2021 quantity reductions and Level of Effort support from Kansas City National Security Campus (KCNSC) and Sandia National Laboratories Production Agency (SNL-PA). The SNL-PA IBR close-out approval was issued in January 2023. KCNSC IBR close-out was approved in August 2023 after implementation of a Program Management Baseline re-baseline in July 2023.

The ICBM Fuze Mod Program does not contain software and was granted a waiver from the Clinger-Cohen Act by the Secretary of Air Force Chief Information Officer A6 in FY 2015.

Defense Cost and Resource Center Cost and Software Data Reporting Compliance Rating:
Green Advisory: All outstanding CSDR deliverables are less than or equal to three months overdue.

(U) History of Significant Developments Since Program Inception

| Date | Description |
|-------------|---|
| August 2011 | National Nuclear Security Administration (NNSA) contractors were designing, developing, and producing the Mark 21 (Mk21) 2A3660 AFA. A Determinations & Findings (D&F) was signed on August 22, 2011 to go to Sandia for the design of the 2A3660 AFA. The Production D&F was assigned on December 28, 2012 indicating that the production of the fuze would be through NNSA's Kansas City Plant. |
| August 2013 | The USD(AT&L), as the Chairman of the Nuclear Weapons Council, authorized use of the joint DoD/DOE Instruction 5030.55 for the implementation of the ICBM Fuze Mod program |

| Date | Description |
|----------------|---|
| | and entry into Phase 6.3 Development Engineering. This decision is documented in the Acquisition Decision Memorandum (ADM), dated August 18, 2013, entitled "Air Force Intercontinental Ballistic Missile Fuze Program Phase 6.3 Development Engineering Authorization. |
| December 2013 | ICBM Fuze Mod Program Requirements Traceability Memorandum, dated December 12, 2013, established the performance parameters and capability characteristics objectives and thresholds. These fuze performance parameters were derived from existing Mk21 Fuze performance specifications/requirements, as well as from the requirements memorandum from AFGSC A5/8 ICBM Fuze Modernization Requirements, dated July 8, 2011. |
| September 2014 | DAE approved APB dated September 29, 2014. |
| February 2015 | The government executed an Integrated Baseline Review jointly with the Navy from February 26, 2015 - March 6, 2015. Upon the final concurrence of the executable baseline, the Design Agent (Sandia National Laboratories) began to officially report EVM data. |
| September 2015 | ADM dated September 22, 2015 directed the Air Force to continue to plan and execute the program based on Nuclear Weapons Council, Phase 6.X guidelines while also ensuring all MDAP statutory requirements are met. Since this decision was made after the Phase 6.X equivalent of Milestone B, the program worked to meet or determine equivalency for all Milestone B relevant statutory requirements. |
| May 2017 | Program successfully executed the Baseline Design Review on May 25, 2017. |
| January 2019 | The ICBM Fuze Mod program successfully completed Phase 6.3 (Development Engineering) and entered Phase 6.4 (Production Engineering). Phase 6.4 covers those activities that adopt the development or sustainment design into a manufacturing system that can produce components on a production basis. |
| August 2019 | The ICBM Fuze Mod program declared a schedule breach to FDR, PRR, and DOE Phase 6.5 Milestone Decision FPU due to the FY 2019 funding reduction. The Fuze program began re-baseline activities including updating the schedule and cost estimate. |
| February 2020 | The ICBM Fuze Mod program declared additional schedule breaches to Required Assets Available and DOE Phase 6.6 Milestone Decision (Full Scale Production). The delays were caused by a failure of a Base Metal Electrode capacitor during the Navy's W88 Alt370 qualification testing. The capacitor failure requires a redesign to change capacitors in four of the seven major components in the Arming and Fuzing Assembly. |
| August 2020 | The Air Force Cost Analysis Agency and the Air Force Nuclear Weapons Center developed cost estimates for the ICBM Fuze Mod program. As part of the Air Force SCP process, the two estimates were compared and reconciled consistent with the program's technical baseline. The SCP shows significant Nunn-McCurdy unit cost breaches compared to the original program APB. The updated Program Acquisition Unit Cost of \$2.70M BY 2014 and the Average Procurement Unit Cost of \$1.14M BY 2014 exceed the current baseline estimates of \$2.32M BY 2014 and \$0.96M BY 2014 by 16 and 20 percent, respectively. After this detailed re-assessment of the cost estimate including recent pre-production actuals, the PAUC and APUC breach occurred due to the increased cost estimate of future Model XI accelerometer production. |
| September 2020 | Significant Nunn-McCurdy unit cost breaches officially declared. |
| December 2020 | A new APB for the program was signed December 11, 2020, which incorporated an updated SCP, updated Advance Procurement strategy, new schedule and threshold dates for Milestone C and FRP decision points. |
| September 2021 | The program successfully completed AFA Production Readiness Review (PRR) Phase I, September 2, 2021. |
| October 2021 | A new APB for the program was signed October 4, 2021, establishing the program's Production and Deployment (P&D) phase baseline. The MDA signed the Milestone C ADM October 29, 2021, codifying Milestone C decisions and enabling formal entrance into the |

| Date | Description |
|--------------|--|
| | P&D phase of the program. |
| June 2022 | The program successfully completed AFA PRR Phase II, June 2, 2022. |
| August 2022 | The program successfully completed Flight Test Unit 3 (FTU-3) on Aug 16, 2022. |
| October 2022 | The program successfully completed final PRR on October 26, 2022, and final AFA Trainer PRR on October 27, 2022. |
| March 2023 | The program successfully completed Ground Test Unit-4 testing, and all 50 test cases produced nominal results. |
| August 2023 | The AFA Trainer achieved First Production Unit (FPU) in August 2023, demonstrating the production maturity needed to achieve producibility ratings required for upcoming AFA FPU in FY 2024. |
| March 2024 | All producibility ratings for the Arming and Fuzing Assembly (AFA) major components demonstrated sufficient maturity to achieve AFA First Production Unit in March 2024. |

(U) Schedule**(U) Schedule Events**

| Events | | Production APB (Milestone) 10/4/2021 Objective | Production APB (Current) 10/4/2021 Objective / Threshold | | Current Estimate 12/31/2023 | Actual |
|---|--------------|--|--|-----------|-----------------------------|-------------|
| DOE Phase 6.3 Milestone Decision (Program Initiation) | MS B | Aug 2013 | Aug 2013 | Aug 2013 | - | 1 Aug 2013 |
| Component Conceptual Design Review | PDR | Oct 2014 | Oct 2014 | Apr 2015 | - | 1 Oct 2014 |
| Baseline Design Review | Other | Mar 2017 | Mar 2017 | Sept 2017 | - | 1 May 2017 |
| Prototype Design Review | Other | Feb 2018 | Feb 2018 | Aug 2018 | - | 1 May 2018 |
| DOE Phase 6.4 Milestone Decision (Production Engineering) | Other | Jan 2019 | Jan 2019 | Jan 2019 | - | 1 Jan 2019 |
| Final Design Review | Other | Aug 2020 | Aug 2020 | Apr 2021 | - | 1 Aug 2020 |
| Milestone C | MS C | Aug 2021 | Aug 2021 | Dec 2021 | - | 26 Oct 2021 |
| Production Readiness Review | Other | Jan 2023 | Jan 2023 | Jan 2024 | - | 18 Oct 2022 |
| Full Rate Production | Other | Mar 2024 | Mar 2024 | Mar 2025 | May 2024 | - |
| DOE Phase 6.5 Milestone Decision (First Production) | Other | May 2024 | May 2024 | May 2025 | May 2024 | - |
| RAA | IOC | Feb 2025 | Feb 2025 | Feb 2026 | Feb 2025 | - |
| DOE Phase 6.6 Milestone Decision (Full Scale Production) | FRP Decision | May 2025 | May 2025 | May 2026 | May 2025 | - |

Notes

The ICBM Fuze Modernization PMO, in concert with the National Nuclear Security Administration, SNL, and KCNSC are on track for on-time completion of the Qualification Evaluation Release, First Production Unit leading up to the DoD FRP Decision and and DOE Phase 6.5 APB milestones.

Further, the Production IBRs were completed in FY 2023 and corrected the PMB to account for the full KCNSC production scope of work as a result of the AFGSC-directed quantity reductions in FY 2021 and the associated Level of Effort scope required. The KCNSC IBR close-out approval was issued in August 2023 after a PMB re-baseline was implemented in July 2023. The new PMB does not affect any of the currently baselined APB milestones.

1/ The Under Secretary of Defense for Acquisition, Technology and Logistics, as the Chairman of the Nuclear Weapons Council, authorized use of the joint DoD/DOE Instruction 5030.55 for the implementation of the ICBM Fuze Mod program and entry into Phase 6.3 Development Engineering.

This decision is documented in the ADM, dated August 18, 2013, entitled "Air Force Intercontinental Ballistic Missile Fuze Program Phase 6.3 Development Engineering Authorization.

2/ RAA are being used as a surrogate for IOC. RAA is defined as 10 Mk21 fuzes available for deployment with the technical data, test equipment, and technical training materials required to support wing operations.

3/ FRP Decision shifted from March 2024 to May 2024 to align DoD milestone with DOE Phase 6.5 and FPU baseline. There is no delay to the program.

Schedule Baseline Deviation Explanation

None

(U) Current Significant Schedule Risks and Risks Identified at Milestones/Decisions

| Event | Date | Description |
|---------|------------|--|
| Current | 12/31/2023 | Some of this Program's current risk contains Controlled Unclassified Information (CUI) and have been removed per the Implementation Plan for the DoD's Modernized Selected Acquisition Report Process, dated June 2023, which required the SAR be submitted without any designation relation to dissemination control. |

(U) Performance

Additional information for this section is provided in the classified annex to this submission.

(U) Performance Attributes

| System Qualification Attribute 4: Fuze Replacement Design Life | | KPP |
|--|-----------|---------------------------------------|
| Current Estimate 12/31/2023 | | 30-year design life upon DoD custody. |
| Demonstrated Performance - | | TBD |
| Production APB (Current) 10/4/2021 | Objective | 30-year design life upon DoD custody. |
| | Threshold | 20-year design life upon DoD custody. |
| Production APB (Milestone) 10/4/2021 | Objective | 30-year design life upon DoD custody. |

(U) Requirement Source:

Sponsor(s): United States Air Force

1. Performance Specification, *ICBM Fuze Mod Performance Specification*
Validated By: Joint Requirements Oversight Council, December 6, 2016

Notes**Requirements Source:**

ICBM Fuze Mod Performance Specification dated September 16, 2022
AFGSC Requirements Memorandum dated July 15, 2021

General Performance Notes:

The ICBM Fuze Mod Program is providing a replacement AFA for the Mk21 Reentry Vehicle/W87 Warhead. The program is executing a tailored acquisition utilizing DoD Instruction 5000.85 and DoD Manual 5030.55, Procedures for Joint DOE Nuclear Weapons Life-Cycle Activities (6.X Process), as the governing acquisition directives for program milestones and activities while meeting MDAP statutory requirements.

The ICBM Fuze Mod Program is providing a functionally equivalent replacement for the Mk21 AFA. The fuzes require recapitalization due to the legacy fuze being three times past the original design life. The legacy Mk21 Fuze has completed a refurbishment program; however, this activity does not meet fuze quantity requirements under the current known force structure. The ICBM Fuze Mod is being developed with a 30-year design life to meet current and future Combatant Command ICBM needs for MMIII and Sentinel. The Air Force is leveraging the Navy's Mk5 Alteration 370 program to develop and produce fuzes with common technology and components achieving cost savings and cost avoidance over the lifecycle.

Performance Deviation Explanation

None

(U) Acquisition Budget Estimate**(U) Total Acquisition Estimates and Quantities**

| Category (\$M) Base Year: 2021 | Production APB (Milestone) 10/4/2021 CY\$ obs Objective | Production APB (Current) 10/4/2021 CY\$ obs Objective / Threshold | | Current Estimate PB 2025 CY\$ obs / TY\$ obs | |
|--------------------------------|---|---|---------|--|---------|
| | | RDT&E | 1,508.6 | 1,508.6 | 1,659.5 |
| Procurement | 870.9 | 870.9 | 957.6 | 831.5 | 991.6 |
| MILCON | 0.0 | 0.0 | 0.0 | - | - |
| O&M | 0.0 | 0.0 | 0.0 | - | - |
| Total Acquisition | 2,379.5 | 2,379.5 | - | 2,293.0 | 2,423.3 |
| Program Acquisition Unit Cost | 3.203 | 3.203 | 3.523 | 3.086 | 3.262 |
| Average Procurement Unit Cost | 1.330 | 1.330 | 1.463 | 1.269 | 1.514 |
| Program End-Item Quantity | | | | | |
| Development | 88 | 88 | | 88 | |
| Procurement | 655 | 655 | | 655 | |
| O&M-Acquired | - | - | | 0 | |

Budget Notes

None

Quantity Notes

The funded quantity of 743 includes all the units necessary for development, qualification, certification, operational fielding, aging/surveillance, and replenishment spares. Production efforts have started for all 35 FY 2022 and all 65 FY 2023 production funded units. Deliveries of production units are scheduled to begin in FY 2024. Refer to Air Force Global Strike Command Requirements Memorandum dated July 15, 2021 for quantity reduction of 69 Arming and Fuzing Assemblies. The program's FY 2025 PB procurement budget exhibit reflects a FY 2025 funding reduction of \$16 TY \$M for FY 2025. This funding adjustment supported a critical must pay bill for the Air Force and resulted in a reduced procurement quantity of 18 units in FY25 for this program (total funded 637). However, this MSAR does not reflect the budget exhibit information and, rather, reflects the program's total required production quantity (655). The Air Force Nuclear Weapons Center is working to identify a resolution that returns the Fuze Modernization production schedule to its baseline in FY 2025. Avoiding this quantity reduction in FY 2025 is necessary to prevent production schedule delays, to avoid cost per unit increases, and to meet United States Strategic Command requirements.

Cost Baseline Deviation Explanation

None

(U) Risk and Sensitivity Analysis

| | |
|--|---|
| Current Procurement Estimate Risks (12/31/2023) | |
| 1 | <p>Current Procurement Cost (December 2023): Some of this Program's current risk contains Controlled Unclassified Information (CUI) and have been removed per the Implementation Plan for the DoD's Modernized Selected Acquisition Report Process, dated June 2023, which required the SAR be submitted without any designation relation to dissemination control.</p> <p>Original Baseline Estimate (September 2014): General uncertainty and tailored cost risk was applied to the Original Baseline Estimate while taking into consideration reduced risk in leveraging Navy commonality.</p> <p>Current Baseline Estimate (October 2021): There are no discrete risks identified with the current baseline estimate.</p> |
| Current Baseline Risks (10/4/2021) | |
| There is no Risk and Sensitivity Analysis identified with the Milestone C estimate. | |
| Original Baseline Risks (9/29/2014) | |
| (1) Re-baseline APB in coordination. (2) General uncertainty and tailored cost risk was applied to the Original Baseline Estimate while taking into consideration reduced risk in leveraging Navy commonality. | |

(U) Unit Costs

(U) Current Estimate Compared with Current Baseline

| Category (CY\$M) Base Year: 2021 | Current Baseline 10/04/2021 | Current Estimate PB 2025 | % Change |
|--------------------------------------|--------------------------------|-----------------------------|----------|
| Program Acquisition Unit Cost | | | |
| Acquisition Cost | 2,379.5 | 2,293.0 | |
| Program Quantity | 743 | 743 | |
| PAUC | 3.203 | 3.086 | -3.64% |
| Average Procurement Unit Cost | | | |
| Procurement Cost | 870.9 | 831.5 | |
| Procurement Quantity | 655 | 655 | |
| APUC | 1.330 | 1.269 | -4.52% |

(U) Current Estimate Compared with Original Baseline

| Category (CY\$M) Base Year: 2014 | Original Baseline 09/29/2014 | Current Estimate PB 2025 | % Change |
|--------------------------------------|---------------------------------|-----------------------------|----------|
| Program Acquisition Unit Cost | | | |
| Acquisition Cost | 1,814.8 | 2,026.0 | |
| Program Quantity | 781 | 743 | |
| PAUC | 2.324 | 2.727 | 17.33% |
| Average Procurement Unit Cost | | | |
| Procurement Cost | 663.5 | 734.7 | |
| Procurement Quantity | 693 | 655 | |
| APUC | 0.957 | 1.122 | 17.21% |

The Current Estimate's constant-year dollars have been converted from Base Year 2021 to Base Year 2014 using the National Defense Budget Estimates for FY 2024 (Green Book).

(U) Cost Growth Details

Impacts of Schedule Changes on Unit Cost

Not Applicable.

Impacts of Performance Changes on Unit Cost

None.

Actions taken or Proposed to Control Future Cost Growth

None.

Status of Each Major Contract and Significant Factors Contributing to Cost and Schedule Variance; Projected Effects on Future Program Costs

See Contracts section.

Notes

The funded quantity of 743 includes all the units necessary for development, qualification, certification, operational fielding, aging/surveillance, and replenishment spares. Production efforts have started for all 35 FY 2022 and all 65 FY 2023 production funded units. Deliveries of production units are scheduled to begin in FY 2024. Refer to AFGSC Requirements Memorandum dated July 15, 2021 for quantity reduction of 69 AFAs. The program's FY 2025 PB procurement budget exhibit reflects a FY 2025 funding reduction of \$16 TY\$M for FY 2025. This funding adjustment supported a critical must pay bill for the Air Force and resulted in a reduced procurement quantity of 18 units in FY25 for this program (total funded 637). However, this MSAR does not reflect the budget exhibit information and, rather, reflects the program's total required production quantity (655). The Air Force Nuclear Weapons Center is working to identify a resolution that returns the Fuze Modernization production schedule to its baseline in FY 2025. Avoiding this quantity reduction in FY 2025 is necessary to prevent production schedule delays, to avoid cost per unit increases, and to meet United States Strategic Command requirements.

(U) Life-Cycle Costs

(U) Operating and Support and Disposal Cost Estimates Compared with Baseline

| Category (\$M) Base Year: 2021 | Production APB (Milestone) 10/4/2021 CY\$ obs Objective | Production APB (Current) 10/4/2021 CY\$ obs Objective / Threshold | | Current Estimate CY\$ obs / TY\$ obs | |
|--------------------------------|---|---|-------|--------------------------------------|---|
| | | | | | |
| Total O&S | 367.5 | 367.5 | 404.3 | - | - |
| Total Disposal | - | - | - | - | - |

(U) Current Cost Estimate Sources

None

Operating and Support Baseline Deviation Explanation

None

Cost Notes

Sustainment Strategy

O&S costs for the ICBM Fuze Mod Program are captured within the MMIII scope, as sustainment remains with the MMIII weapon system. The next ICE will be corrected to remove O&S costs, as they are not part of the ICBM Fuze Mod Program budget.

O&S and Disposal Cost Sources: For Programs with an O&S Cost estimate or Disposal Cost estimate the O&S Cost Source and Disposal Cost Source listed in the MSAR are inaccurate due to a system limitation. See MSAR Supplement for corrected source(s).

(U) Operating and Support Variance with Prior Estimate

No Data

(U) Operating and Support Cost Element Structure Estimates by Acquired System

No Data

(U) Annual Operating and Support Costs per Unit Compared with Antecedent System

No Data

(U) Operating and Support Cost Estimate Assumptions

No Data

Additional O&S Estimate Assumptions

None

Antecedent Estimate Assumptions

None

O&S Annual Cost Calculation Memo

O&S costs for the ICBM Fuze Mod Program are captured within the MMIII scope, as sustainment remains with the MMIII weapon system. The next ICE will be corrected to remove O&S costs, as they are not part of the ICBM Fuze Mod Program budget.

(U) Technologies and Systems Engineering

(U) Current Significant Technical Risks and Risks Identified at Milestones/Decisions

| Event | Date | Description |
|---------|------------|--|
| Current | 12/31/2023 | Some of this Program's current risk contains Controlled Unclassified Information (CUI) and have been removed per the Implementation Plan for the DoD's Modernized Selected Acquisition Report Process, dated June 2023, which required the SAR be submitted without any designation relation to dissemination control. |

(U) Production**(U) Low-Rate Initial Production**

| | Original LRIP Determination | Current LRIP Determination |
|----------------------------|-----------------------------|----------------------------|
| Total LRIP Quantity | 26 | 202 |
| Date | 5/18/2018 | 6/24/2021 |
| Reference | ICBM Fuze Mod Program ADM | ICBM Fuze Mod Program ADM |
| LRIP Period | FY 2020 - 2021 | FY 2022 - 2026 |
| Total Procurement Quantity | 655 | 655 |
| LRIP Percentage of Total | 4.0% | 30.8% |

Rationale if LRIP Quantity Exceeds 10% of Total Procurement Quantity (Current Determination)

Approved LRIP quantity of 202 was updated by the ADM dated June 24, 2021. The new LRIP quantity will: (1) establish an initial production base for the program; (2) maintain continuity in production pending completion of operation testing; and (3) provide an efficient ramp-up to Full-Rate Production.

LRIP Notes

The 202 units include: three RDT&E funded for Operational Test and Evaluation. Production funded units include: 35 units in FY 2022, 65 units in FY 2023, and 99 units in FY 2024. Final LRIP unit deliveries are scheduled through FY 2026.

(U) Deliveries and Expenditures**(U) Acquisition Funding**

| | Total Estimate | Actual to Date | Actual, Percent Complete |
|--------------------------|----------------|----------------|--------------------------|
| Years Appropriated | - | - | - |
| Appropriations (TY, \$M) | 2,423.3 | 2,423.3 | 100.0% |
| Expenditures (TY, \$M) | 2,423.3 | 1,530.2 | 63.1% |

(U) End Items Delivered

| | Total Required | Planned to Date | Actual to Date | Actual, Percent Complete |
|---------------|----------------|-----------------|----------------|--------------------------|
| Development | 88 | | | |
| ICBM Fuze Mod | | 38 | 38 | |
| Procurement | 655 | | | |
| Total | 743 | 38 | 38 | 5.1% |

Notes

-The program's FY 2025 PB procurement budget exhibit reflects a FY 2025 funding reduction of \$16 TY\$M for FY 2025. This funding adjustment supported a critical must pay bill for the Air Force and resulted in a reduced procurement quantity of 18 units in FY25 for this program (total funded 637). However, this MSAR does not reflect the budget exhibit information and, rather, reflects the program's total required production quantity (655). The Air Force Nuclear Weapons Center is working to identify a resolution that returns the Fuze Modernization production schedule to its baseline in FY 2025. Avoiding this quantity reduction in FY 2025 is necessary to prevent production schedule delays, to avoid cost per unit increases, and to meet United States Strategic Command requirements.

(U) International Program Aspects

General Memo

Program will not be designed to support international exportability.

Exportability and Business Issues

Program will not be designed to support international exportability.

| | | | |
|--|----------------|--|----|
| Is design for international exportability planned? | No | Industry/Partner Exportability Cost-Sharing? | No |
| If not, has the MDA approved an exportability waiver for a U.S.-only design? | Not Applicable | | |

Program Protection: Technology Security and Foreign Disclosure Issues

Program will not be designed to support international exportability.

(U) Agreements

No International Agreements have been defined for ICBM Fuze Mod



UNCLASSIFIED

**Modernized
Selected Acquisition Report
Supplement**

**Air Force Intercontinental Ballistic Missile Fuze Modernization
(ICBM Fuze Mod)**

FY 2025 President's Budget
As of: December 31, 2023

UNCLASSIFIED

MSAR Supplement Sections

Program Description

Program Use of the Adaptive Acquisition Framework

Technologies and Systems Engineering

Funding Sources (Acquisition)

Funding Sources (Operating and Support)

Acquisition Estimate and Quantity Summary

Annual Acquisition Estimates by Appropriation Account

Acquired System Annual End-Item Quantities by Appropriation Account

Nuclear Costs

Operational Fielding Plan

O&S Independent Cost Estimate

Annual Operating and Support Estimates by Cost Element

Program Description

Full Name

Air Force Intercontinental Ballistic Missile Fuze Modernization

Short Name

ICBM Fuze Mod

PNO

498

Lead Component

Air Force

AAF Pathway

MCA

Acquisition Type

MDAP

Acquired Systems

ICBM Fuze Mod

Related Programs

| Full Name | PNO | Pathway | Type | ACAT/ BCAT | Acquisition Status | Costs in SAR? | |
|-----------|-----|---------|------|---------------|-----------------------|---------------|-----|
| | | | | | | Acq | O&S |
| | | | | | | | |

Program Use of the Adaptive Acquisition Framework

This acquisition is accomplished by a single program in the Major Capability Acquisition Pathway.

Technologies and Systems Engineering

Air Force Intercontinental Ballistic Missile Fuze Modernization

Major Software Efforts

| Title | Status | Fielding Date | Description |
|-------|--------|---------------|-------------|
| | | | |

Major Engineering Changes

| Title | Original Need Date | Fielding Date | Description, Rationale and Program Impacts |
|-------|--------------------|---------------|--|
| | | | |

Funding Sources (Acquisition)

Acquisition Funding Notes

Air Force Intercontinental Ballistic Missile Fuze Modernization

| Category | Account | BA | Line Item | Program Element | RDT&E Project | Shared | Sunk |
|-------------|---------|----|---|-----------------|----------------------------|--------|------|
| RDT&E | 3600F | 05 | 0604851F - Intercontinental Ballistic Missile - EMD | 0604851F | 657006 - Fuze Support | | |
| RDT&E | 3600F | 05 | 0604933F - ICBM Fuze Modernization | 0604933F | 655082 - ICBM Fuze Support | | |
| Procurement | 3020F | 01 | 00099L - Missile Replacement Eq-Ballistic | 0101213F | - | | |
| Procurement | 3020F | 03 | M30FLH - ICBM FUZE MOD | 0101328F | - | | |
| Procurement | 3020F | 03 | M30FLH - ICBM FUZE MOD | 0101213F | - | | |

Funding Sources (Operating and Support)

Note: Budget lines fund activities executed by the Program Office or Sustainment Office.

Operating and Support Funding Notes

O&S costs for the ICBM Fuze Mod Program are captured within the MMIII scope, as sustainment remains with the MMIII weapon system. The next APB update will be corrected to remove O&M costs, as they are not part of the ICBM Fuze Mod Program budget.

Air Force Intercontinental Ballistic Missile Fuze Modernization

| Category | Account | BA | Line Item | Program Element | RDT&E Project | Shared | Sunk |
|----------|---------|----|-----------|-----------------|---------------|--------|------|
|----------|---------|----|-----------|-----------------|---------------|--------|------|

Acquisition Estimate and Quantity Summary

Air Force Intercontinental Ballistic Missile Fuze Modernization

Acquisition Estimates

| Category | PB 2025 | TY (\$M) | Current Base Year | Original Base Year | Report Fiscal Year |
|--------------------------|---------|----------------|-------------------|--------------------|--------------------|
| | | | CY2021 (\$M) | CY2014 (\$M) | CY2024 (\$M) |
| RDT&E | | 1,431.7 | 1,461.5 | 1,291.3 | 1,676.6 |
| Procurement | | 991.6 | 831.5 | 734.7 | 953.9 |
| MILCON | | - | - | - | - |
| O&M | | - | - | - | - |
| Total Acquisition | | 2,423.3 | 2,293.0 | 2,026.0 | 2,630.4 |
| PAUC | | 3.262 | 3.086 | 2.727 | 3.540 |
| APUC | | 1.514 | 1.269 | 1.122 | 1.456 |

Acquisition End-Item Quantities

| System | PB 2025 | Development | Procurement |
|---------------|---------|-------------|-------------|
| ICBM Fuze Mod | | 88 | 655 |
| Total | | 88 | 655 |

Unit Description

The total funded quantity of 743 includes all the units necessary for development, qualification, certification, operational fielding, aging/surveillance, and replenishment spares. Production efforts have started for all 35 FY 2022 and all 65 FY 2023 production funded units. Deliveries of production units are scheduled to begin in FY 2024. Refer to Air Force Global Strike Requirements Memorandum dated July 15, 2021 for quantity reduction of 69 Arming and Fuzing Assemblies. An FY 2025 funding reduction in the FY 2025 PB supported a critical must pay bill for the Air Force. While it did reduce the quantity of production in FY 2025, the Air Force Nuclear Weapons Center is working to identify a resolution that returns the Fuze Modernization production schedule to its baseline in FY 2025. Avoiding this quantity reduction in FY 2025 is necessary to prevent production schedule delays, avoid cost per unit increases, and meet United States Strategic Command requirements.

Current and Future Years Defense Program Summary, TY(\$M)

| Appropriation | Prior | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | To Complete | Total |
|----------------------|----------------|--------------|--------------|--------------|--------------|--------------|------------|-------------|----------------|
| RDT&E | 1,349.6 | 71.7 | 10.4 | - | - | - | - | - | 1,431.7 |
| Procurement | 351.9 | 158.8 | 144.4 | 123.6 | 110.6 | 100.6 | 0.7 | 1.0 | 991.6 |
| MILCON | - | - | - | - | - | - | - | - | - |
| O&M | - | - | - | - | - | - | - | - | - |
| PB 2025 Total | 1,701.5 | 230.5 | 154.8 | 123.6 | 110.6 | 100.6 | 0.7 | 1.0 | 2,423.3 |

Annual Acquisition Estimates by Appropriation Account

(Aligned to Budget Position: PB 2025)

Air Force Intercontinental Ballistic Missile Fuze Modernization

Source for TY\$-CY\$ Conversion: SAF/FMCE Raw and Weighted Inflation Indices for DAF Accounts: 23 Feb 2024

| 3600F - Research, Development, Test & Eval, AF | | | | | |
|---|--|-----------------------|------------------|------------------|-----------------------|
| fiscal year | | Other/ Unallocated | Total TY(\$M) | Weighted Rate | Total CY2021 (\$M) |
| Total | | 1,431.7 | 1,431.7 | - | 1,461.5 |
| 2011 | | 9.700 | 9.7 | 0.851018 | 11.4 |
| 2012 | | 39.727 | 39.7 | 0.865846 | 45.9 |
| 2013 | | 65.545 | 65.5 | 0.880479 | 74.4 |
| 2014 | | 82.443 | 82.4 | 0.892754 | 92.3 |
| 2015 | | 57.861 | 57.9 | 0.901722 | 64.2 |
| 2016 | | 136.659 | 136.7 | 0.915511 | 149.3 |
| 2017 | | 163.213 | 163.2 | 0.934669 | 174.6 |
| 2018 | | 166.634 | 166.6 | 0.954318 | 174.6 |
| 2019 | | 124.302 | 124.3 | 0.972059 | 127.9 |
| 2020 | | 155.476 | 155.5 | 0.997060 | 155.9 |
| 2021 | | 151.158 | 151.2 | 1.043904 | 144.8 |
| 2022 | | 99.400 | 99.4 | 1.099905 | 90.4 |
| 2023 | | 97.500 | 97.5 | 1.138999 | 85.6 |
| 2024 | | 71.730 | 71.7 | 1.168010 | 61.4 |
| 2025 | | 10.400 | 10.4 | 1.193076 | 8.7 |

Annual Acquisition Estimates by Appropriation Account

(Aligned to Budget Position: PB 2025)

Air Force Intercontinental Ballistic Missile Fuze Modernization

Source for TY\$-CY\$ Conversion: SAF/FMCE Raw and Weighted Inflation Indices for DAF Accounts: 23 Feb 2024

| 3020F - Missile Procurement, Air Force | | | | | | | | | |
|--|----------------------------|--------------------------------|-----------------------|----------------|------------------|--------------------|---------------|---------------|--------------------|
| fiscal year | End Item Recurring Flyaway | Non-End Item Recurring Flyaway | Non-Recurring Flyaway | Initial Spares | Depot Activation | Other/ Unallocated | Total TY(\$M) | Weighted Rate | Total CY2021 (\$M) |
| Total | 649.3 | 194.6 | 119.7 | - | 27.9 | - | 991.6 | - | 831.5 |
| 2011 | | | | | | | - | 0.860501 | - |
| 2012 | | | | | | | - | 0.874873 | - |
| 2013 | | | | | | | - | 0.895024 | - |
| 2014 | | | | | | | - | 0.908231 | - |
| 2015 | 3.279 | 0.866 | 0.446 | - | 0.109 | - | 4.7 | 0.919372 | 5.1 |
| 2016 | 9.557 | 2.526 | 1.299 | - | 0.318 | - | 13.7 | 0.937172 | 14.6 |
| 2017 | 11.929 | 3.152 | 1.622 | - | 0.397 | - | 17.1 | 0.960992 | 17.8 |
| 2018 | 4.395 | 1.161 | 0.597 | - | 0.146 | - | 6.3 | 0.984964 | 6.4 |
| 2019 | 9.697 | 2.562 | 1.318 | - | 0.323 | - | 13.9 | 1.013650 | 13.7 |
| 2020 | 10.115 | 2.673 | 1.375 | - | 0.337 | - | 14.5 | 1.053041 | 13.8 |
| 2021 | 30.346 | 8.019 | 4.125 | - | 1.010 | - | 43.5 | 1.100565 | 39.5 |
| 2022 | 70.319 | 18.582 | 9.559 | - | 2.340 | - | 100.8 | 1.141899 | 88.3 |
| 2023 | 95.852 | 25.330 | 13.029 | - | 3.189 | - | 137.4 | 1.171360 | 117.3 |
| 2024 | 110.780 | 29.270 | 15.060 | - | 3.690 | - | 158.8 | 1.197530 | 132.6 |
| 2025 | 78.650 | 36.150 | 24.800 | - | 4.800 | - | 144.4 | 1.222853 | 118.1 |
| 2026 | 73.820 | 27.710 | 18.470 | - | 3.600 | - | 123.6 | 1.248533 | 99.0 |
| 2027 | 69.680 | 22.030 | 15.830 | - | 3.060 | - | 110.6 | 1.274752 | 86.8 |
| 2028 | 70.920 | 14.600 | 12.180 | - | 2.900 | - | 100.6 | 1.301522 | 77.3 |
| 2029 | - | - | - | - | 0.700 | - | 0.7 | 1.328854 | 0.5 |
| 2030 | - | - | - | - | 1.000 | - | 1.0 | 1.356760 | 0.7 |

Acquired System Annual End-Item Quantities by Appropriation Account

(Aligned to Budget Position: PB 2025)

Air Force Intercontinental Ballistic Missile Fuze Modernization

| 3600F - Research, Development, Test & Eval, AF | | | | |
|--|---------------|--|--|-----------|
| fiscal year | ICBM Fuze Mod | | | Total |
| Total | 88 | | | 88 |
| Undistributed | 88 | | | 88 |

Acquired System Annual End-Item Quantities by Appropriation Account

(Aligned to Budget Position: PB 2025)

Air Force Intercontinental Ballistic Missile Fuze Modernization

| 3020F - Missile Procurement, Air Force | | | | |
|--|---------------|--|--|------------|
| fiscal year | ICBM Fuze Mod | | | Total |
| Total | 655 | | | 655 |
| Undistributed | | | | - |
| 2022 | 35 | | | 35 |
| 2023 | 65 | | | 65 |
| 2024 | 99 | | | 99 |
| 2025 | 104 | | | 104 |
| 2026 | 110 | | | 110 |
| 2027 | 125 | | | 125 |
| 2028 | 117 | | | 117 |

Nuclear Costs

Air Force Intercontinental Ballistic Missile Fuze Modernization

Program's Use of Department of Energy Resources

None

Operational Fielding Plan

Air Force Intercontinental Ballistic Missile Fuze Modernization

System: ICBM Fuze Mod

Fielding and Inventory Notes

Some of this Program's Operational Fielding Plan contains CUI and have been removed per the implementation plan for the DoD's Modernized Selected Acquisition Report process, dated June 2023, which required the MSAR be submitted without any designation relation to dissemination control.

ICBM Fuze Mod Fielding Plan and Inventory

| fiscal year | Store | Field | Expend/Loss | Decommission | Inventory |
|-------------|-------|-------|-------------|--------------|-----------|
| 2023 | | | | | |
| 2024 | | | | | - |
| 2025 | | | | | - |
| 2026 | | | | | - |
| 2027 | | | | | - |
| 2028 | | | | | - |
| 2029 | | | | | - |

O&S Independent Cost Estimate

Air Force Intercontinental Ballistic Missile Fuze Modernization

Independent and Current Cost Estimate Comparison

| Category | CY2021 (\$M) | Independent Cost Estimate 9/9/2021 | Current Estimate | Variance with ICE (%) |
|-------------------------------|--------------|------------------------------------|------------------|-----------------------|
| Unit-Level Manpower | | | | - |
| Unit Operations | | | | - |
| Maintenance | | | | - |
| Sustaining Support | | | | - |
| Continued System Improvements | | | | - |
| Other | | | | - |
| Total O&S | | - | - | - |

Independent Cost Estimate Source

Event: Milestone C
 Type: Independent Cost Estimate
 Approved by: D, CAPE, September 9, 2021
 Note: O&S costs for the ICBM Fuze Mod Program are captured within the MMIII scope, as sustainment remains with the MMIII weapon system. The next ICE will be corrected to remove O&S costs, as they are not part of the ICBM Fuze Mod Program budget.

Current Cost Estimate Source

Type:
 Approved by:
 Note: An updated ICE is being generated as part of the Full Rate Production Decision, scheduled for FY 2024.

Cost Estimate Variance Explanation

Annual Operating and Support Estimates by Cost Element

Air Force Intercontinental Ballistic Missile Fuze Modernization

System: ICBM Fuze Mod

Source for TY-CY Conversion: Not Applicable

| Operating and Support Cost Elements | | | | | | | |
|-------------------------------------|-------------------------|---------------------|-----------------|------------------------|------------------------------------|-------|--------------------|
| fiscal year | 1.0 Unit-Level Manpower | 2.0 Unit Operations | 3.0 Maintenance | 4.0 Sustaining Support | 5.0 Continuing System Improvements | Other | Total CY2021 (\$M) |
| Total | - | - | - | - | - | - | - |