Agency Priority Goal | Action Plan | FY 23 – Q4

Nuclear Security

Goal Leaders:

- Dr. Marvin Adams, Deputy Administrator for Defense Programs, National Nuclear Security Administration
- Michael A. Thompson, Principal Assistant Deputy Administrator for Stockpile Sustainment for Defense Programs, National Nuclear Security Administration
- Corey Hinderstein, Deputy Administrator for Defense Nuclear Nonproliferation, National Nuclear Security Administration
- Kasia Mendelsohn, Principal Assistant Deputy Administrator for Defense Nuclear Nonproliferation, National Nuclear Security Administration

Goal Overview

Goal statement

- Maintain and modernize the U.S. nuclear weapons stockpile and dismantle retired nuclear weapons, as directed by the President through the Nuclear Posture Review, as well as enable further international nuclear nonproliferation and arms control progress.
  - By September 30, 2023, complete 100 percent of annual B61-12 bomb deliveries required to support fiscal years 2022 and 2023 U.S. Air Force operational needs.
  - By September 30, 2023, complete 100 percent of annual W88 Alt 370 warhead deliveries required to support fiscal years 2022 and 2023 U.S. Navy operational needs.
  - By September 30, 2023, replace 330 cesium irradiators with non-radioactive source-based technologies.

Problem to Be Solved

- Achieve and sustain steady state production for the B61-12 and W88 Alt 370.
- While radioactive sources such as cesium-137 play an important role in commercial, medical, and research facilities, they also pose a “dirty bomb” risk and require compliance with regulatory requirements and enhanced security to prevent theft and/or use for malicious purposes.
- At the start of the Cesium Irradiator Replacement Project in 2015, approximately 750 cesium irradiators were in use in the United States. The Defense Nuclear Nonproliferation (DNN) Cesium Irradiator Replacement Project (CIRP), which started in 2015, has replaced 348 cesium irradiators to date.

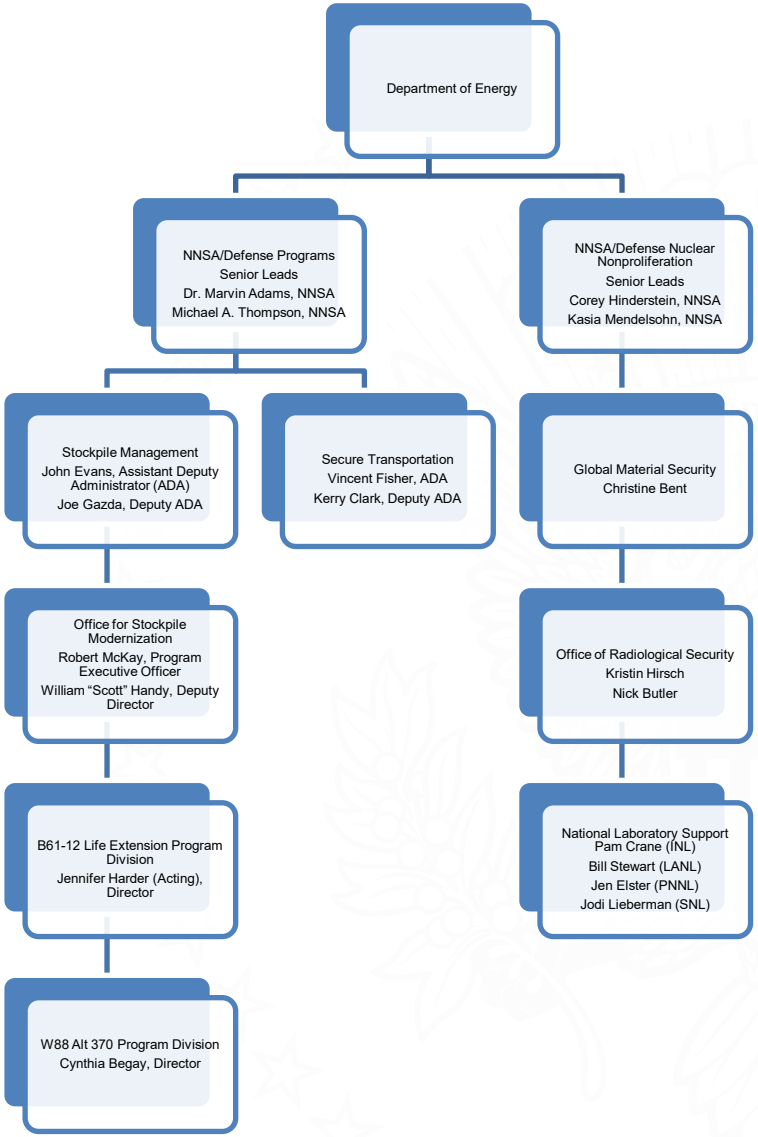
What Success Looks Like

- Delivery schedules for the B61-12 and the W88 Alt 370 are met.
- Thanks to the maturation of technology, viable X-ray alternatives to cesium-137 irradiators that reduce or eliminate the need for these requirements are now available and are in use at many facilities across the country.
- Replacing cesium-137 with non-radioactive source-based technologies enhances global security by preventing high-activity radioactive materials from being used in acts of terrorism.

Contributing programs

Achievement statement		Key indicator(s)	Quantify progress			Frequency
By…	**We will…**	**Name of indicator**	**Target value**	**Starting value****	**Current value**	**Update cycle**
09/30/23	Complete 100 percent of annual B61-12 bomb deliveries required to support fiscal years 2022 and 2023 U.S. Air Force operational needs.	Percent of B61-12 bomb deliveries in FY 2022 and FY 2023	FY 2022:20% FY 2023:100%	0%	100%	Quarterly
09/30/23	Complete 100 percent of annual W88 Alt 370 warhead deliveries required to support fiscal years 2022 and 2023 U.S. Navy operational needs.	Percent of W88 Alt 370 warhead deliveries in FY 2022 and FY 2023	FY 2022: 20% FY 2023 100%	0%	100%	Quarterly
09/30/23	Replace 330 cesium irradiators with non-radioactive source-based technologies.	Additional cesium irradiator users volunteering for the CIRP program.	330	190	348	Quarterly

Goal Team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W88 Alt 370 Program Division
Cynthia Begay, Director

Goal Strategies (B61-12 & W88 Alt 370)

- As the Nation's nuclear weapons age and exceed their stockpile design life, NNSA must extend their life expectancy. NNSA will sustain and enhance the scientific capability to assess weapon performance and component and manufacturing technologies and supporting infrastructure required to execute the Stockpile Stewardship and Management Plan (SSMP) and ensure the safe and secure transportation of nuclear materials and weapons components.

- NNSA will also continue to invest in advancing existing capabilities and developing emerging capabilities to assure a strong nuclear deterrent now and into the future. With continued support, NNSA will ensure that the nuclear deterrent has the responsive, agile infrastructure needed to meet requirements.

Goal Strategies (Cesium Irradiators)

- The goal of the Cesium Irradiator Replacement Project (CIRP) is to eliminate the risk of radiological terrorism by reducing and removing radioactive sources and source-based devices where feasible.

- The CIRP approach provides incentives to facilities interested in replacing cesium-137 irradiators with non-radioisotopic X-ray devices. These incentives include the safe removal and disposal of disused irradiators and payment of up to 50 percent toward the purchase price of new devices.

- The laboratory teams responsible for administering aspects of the project include individuals with extensive experience and access to both historical and new data.

Goal Strategies (Cesium Irradiators)

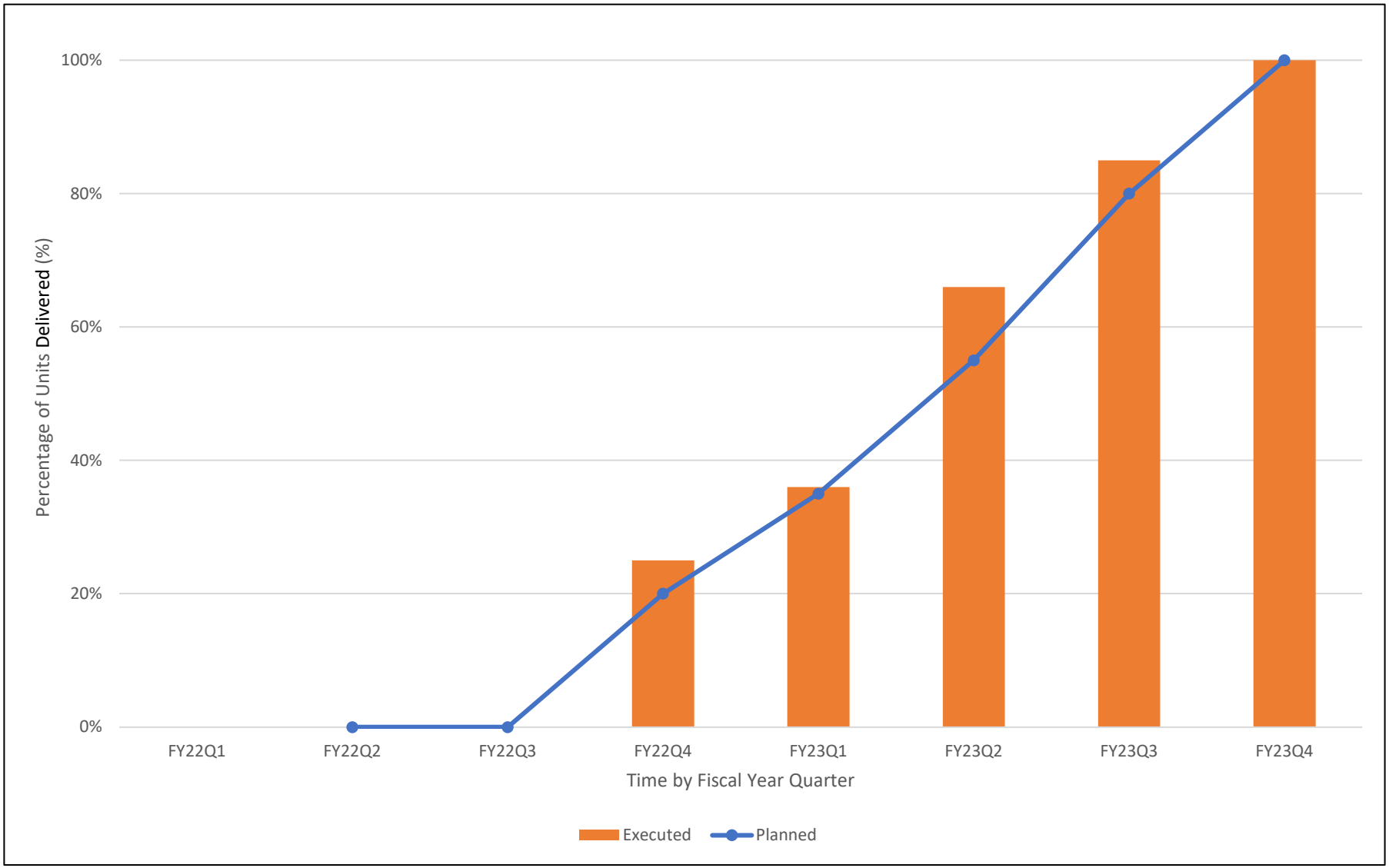
[External factor] The COVID-19 pandemic and the need to focus on patient treatment could delay or prevent user participation in CIRP.

- [Mitigation] DNN will continue to conduct outreach to potential participants through industry meetings, targeted workshops, and one-on-one discussions.

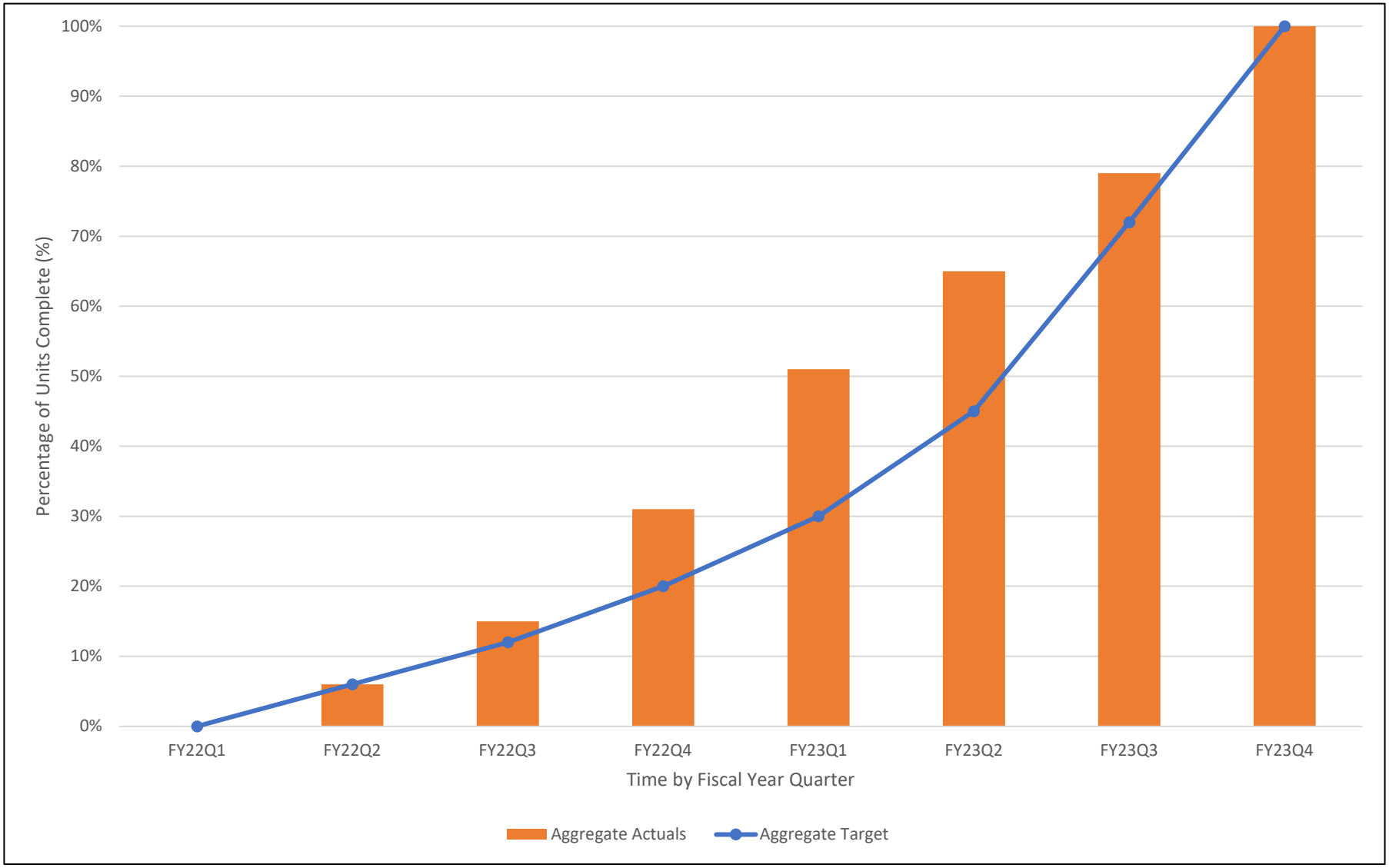
[External factor] COVID-19 related travel restrictions could prevent DNN from removing the disused cesium irradiators.

- [Mitigation] DNN will continue to implement a thorough COVID-19 tracking and safety program to ensure safety while continuing to replace and remove cesium irradiators.

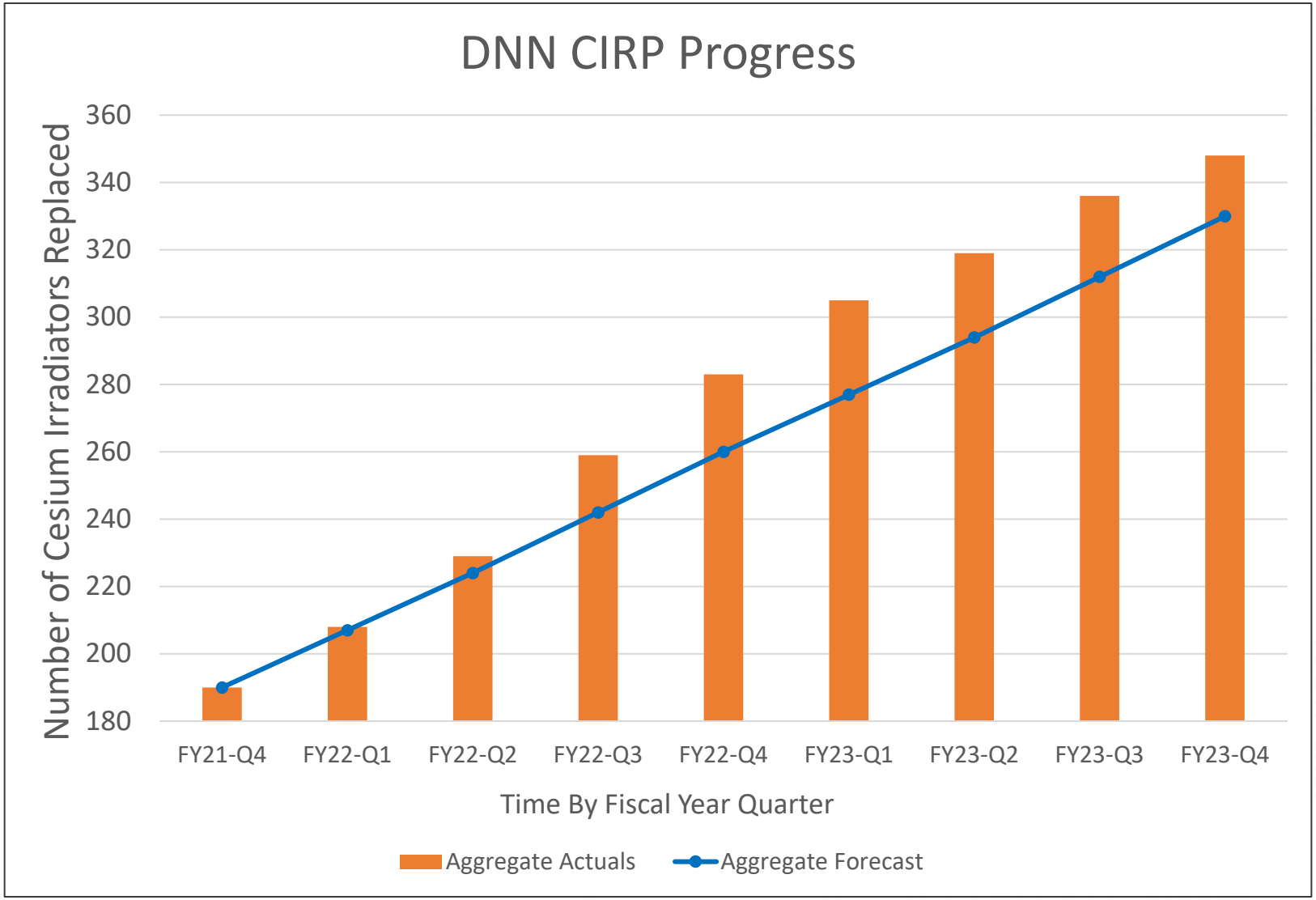
Key indicators (B61-12)



Key indicators (W88 Alt 370)



Key indicators (Cesium Irradiators)



Key milestones (B61-12)

- NNSA completed the B61-12 Life Extension Program First Production Unit November 23, 2021.
- In May 2022, the B61-12 completed production of the first Initial Operational Capability quantities.
- On June 29, 2022, the Nuclear Weapon Council formally accepted the B61-12 into the stockpile and authorized the program to enter Phase 6.6, Full-Scale Production.
- As of Q4 FY2023, the Program is ahead of NNSA production schedules and meeting all U.S. Air Force schedule commitments.

Milestone Summary

Key Milestone	Milestone Due Date	Milestone Status	Change from last quarter	Owner	Comments
Deliver 20 percent of B61-12 bomb deliveries in FY 2022 required to support FY 2022-2023 U.S. Air Force operational needs.	Q4, FY 2022	Complete		NNSA, Defense Programs	
Deliver the remaining 80 percent of B61-12 bomb deliveries in FY 2023 required to support FY 2022-2023 U.S. Air Force operational needs.	Q4, FY 2023	Complete	15%	NNSA, Defense Programs	

Key milestones (W88 Alt 370)

- On July 1, 2021, NNSA achieved the First Production Unit for the W88 Alt 370 Program.
- The W88 Alt 370 was formally accepted into the stockpile by the Nuclear Weapons Council in December 2021.
- On June 29, 2022, the NWC authorized the program to enter Phase 6.6, Full-Scale Production.
- The Program delivered all FY22 and FY23 Navy commitments on schedule. (Deliveries were made in January, April, June, July, and September 2023).

Milestone Summary

Key Milestone	Milestone Due Date	Milestone Status	Change from last quarter	Owner	Comments
Deliver 20 percent of W88 Alt 370 warhead deliveries in FY 2022 required to support FY 2022-2023 U.S. Navy operational needs.	Q4, FY 2022	Complete		NNSA, Defense Programs	
Deliver the remaining 80 percent of W88 Alt 370 warhead deliveries in FY 2023 required to support FY 2022-2023 U.S. Navy operational needs.	Q4, FY 2023	Complete	21%	NNSA, Defense Programs	

Key milestones (Cesium Irradiators)

- To monitor progress toward the goal, the program will identify key milestone at the end of each year.

Milestone Summary					
Key Milestone	**Milestone Due Date**	**Milestone Status**	**Change from last quarter**	**Owner**	**Comments**
Replace 70 irradiators in FY 2022	Q4, FY 2022	Complete		NNSA, Defense Nuclear Nonproliferation	Exceeded FY22 target by 23 replacements
Replace 70 irradiators in FY 2023	Q4, FY 2023	Complete		NNSA, Defense Nuclear Nonproliferation	Replaced 348 devices, exceeding the overall goal to replace 330 cesium irradiators by September 30, 2023, by 18 replacements

Narrative – FY 23 Q1

As of December 2023, NNSA completed 35 percent of annual B61-12 bomb deliveries required to support fiscal year (FY) 2022-2023 U.S. Air Force operational needs. NNSA remains on track to deliver the required remaining quantities and meet 100 percent of planned deliveries by the end of FY 2023.

As of December 2023, NNSA completed 51 percent of W88 Alt 370 warhead deliveries required to support FY 2022-2023 U.S. Navy operational needs. NNSA remains on track to deliver the required remaining quantities and meet 100 percent of planned deliveries by the end of FY 2023.

As of December 2022, NNSA completed 22 cesium irradiator replacements in FY23. The overall goal to replace 330 cesium irradiators in the United States with non-radioactive source-based technologies by September 30, 2023, is on target.

Summary of progress

Narrative – FY 23 Q2

As of March 2023, NNSA completed 66 percent of annual B61-12 bomb deliveries required to support fiscal year (FY) 2022-2023 U.S. Air Force operational needs. NNSA remains on track to deliver the required remaining quantities and meet 100 percent of planned deliveries by the end of FY 2023.

As of March 2023, NNSA completed 65 percent of W88 Alt 370 warhead deliveries required to support FY 2022-2023 U.S. Navy operational needs. NNSA remains on track to deliver the required remaining quantities and meet 100 percent of planned deliveries by the end of FY 2023.

As of March 2023, NNSA completed 36 cesium irradiator replacements in FY23. The overall goal to replace 330 cesium irradiators in the United States with non-radioactive source-based technologies by September 30, 2023, is on target.

Narrative – FY 23 Q3

As of June 2023, NNSA completed 85 percent of annual B61-12 bomb deliveries required to support fiscal year (FY) 2022-2023 U.S. Air Force operational needs. NNSA remains on track to deliver the required remaining quantities and meet 100 percent of planned deliveries by the end of FY 2023.

As of June 2023, NNSA completed 79 percent of W88 Alt 370 warhead deliveries required to support FY 2022-2023 U.S. Navy operational needs. NNSA remains on track to deliver the required remaining quantities and meet 100 percent of planned deliveries by the end of FY 2023.

As of June 2023, NNSA completed 53 cesium irradiator replacements in FY23. The overall goal to replace 330 cesium irradiators in the United States with non-radioactive source-based technologies by September 30, 2023, is complete.

Narrative – FY 23 Q4

As of September 2023, NNSA completed 100 percent of annual B61-12 bomb deliveries required to support fiscal year (FY) 2022-2023 U.S. Air Force operational needs.

As of September 2023, NNSA completed 100 percent of W88 Alt 370 warhead deliveries required to support FY 2022-2023 U.S. Navy operational needs.

As of September 2023, NNSA completed 65 cesium irradiator replacements in FY23. NNSA replaced 348 devices to date, exceeding the overall goal to replace 330 cesium irradiators by September 30, 2023, by 18 replacements.

Summary of Accomplishments FY 22- FY23

In the past two years, NNSA completed 100 percent of annual B61-12 bomb deliveries required to support fiscal year (FY) 2022-2023 U.S. Air Force operational needs. All FY 2022-2023 deliveries were completed on schedule and the B61-12 is 4% ahead of production schedule.

In the past two years, NNSA completed 100 percent of W88 Alt 370 warhead deliveries required to support FY 2022-2023 U.S. Navy operational needs. All FY 2022-2023 deliveries were completed on schedule.

In the past two years, NNSA completed 158 cesium irradiator replacements. NNSA replaced 348 devices to date, exceeding the overall goal to replace 330 cesium irradiators by September 30, 2023, by 18 replacements.

Data accuracy & reliability

- B61-12 bomb and W88 Alt 370 warhead delivery data was obtained from the NNSA Federal Program Office.

- Defense Nuclear Nonproliferation (DNN) uses NNSA's Program Information Management System, Generation 2 (G2) to track, verify, and validate key performance measures for the Cesium Irradiator Replacement Project (CIRP):
  - Accommodates varied levels of management controls and is intended to be the key management communication tool for assisting in project planning leading to the development and posting of Portfolio/Project Work Plans (PWPs), measuring project and program performance in a fully integrated fashion, and enforcing change control procedures.
  - Acts as the system of record for scope, schedule, and budget data.
  - Provides an interface for Project/Portfolio Managers to view their portfolio's status to aid in the planning, execution, and closeout of numerous projects within the Protect, Remove, and Reduce strategies. G2 provides DNN with increased flexibility to assess and report opportunities and impacts of policy changes, budgetary constraints, as well as congressional mandates.

Additional information (B61-12 & W88 Alt 370)

Contributing Programs

Organizations:

- NNSA – successfully maintains a safe, secure, and effective nuclear deterrent in close coordination with the Department of Defense.

Program Activities:

- Stockpile Stewardship Program – certifies that the U.S. nuclear weapons stockpile remains safe, secure, and effective without the use of nuclear explosive testing.
- Research, Development, Test & Evaluation – strengthens key science, technology, and engineering capabilities.
- Secure Transportation – provides safe, secure transport of the Nation's nuclear weapons, weapon components, and special nuclear material throughout the nuclear security enterprise.
- Safety, Infrastructure, and Operations – modernizes the national security infrastructure.

Policies:

- Department of Energy Order (DOE O) 452.3, Management of the Department of Energy Nuclear Weapons Complex – emphasizes that the management of the United States nuclear weapons stockpile is the DOE's highest priority for the NNSA and the DOE Nuclear Weapons Complex.
- National Nuclear Security Administration (NNSA) Policy (NAP) 413.2, Program Management Policy – provides increased organizational discipline, clearly defined management responsibilities and authorities, and consistency across both Headquarters and field offices to increase management efficiency and effectiveness. It also eliminates management redundancies and provides for guidance on tasking and direction from NNSA programs to Management and Operating (M&O) contractors.

Other Federal Activities:

- Human Capital and Business Operations – strengthens NNSA's diverse, highly-skilled workforce through successful recruitment and retention and development in leadership and technical competencies to support existing and future nuclear security requirements.
- Interagency Partnerships – partners with the Departments of Defense and Nuclear Weapons Council, State, and Homeland Security, and the U.S. Intelligence Community to ensure that technical capabilities are accessible and applied to meet the needs of the broader national security community.

Stakeholder / Congressional Consultations

Together with continued support from Congress, its committees and staff, and state and local stakeholders, NNSA will ensure that its world-class workforce has the resources and the responsive, agile infrastructure needed to steward the systems that comprise our deterrent today and, should the need arise, to design the systems of tomorrow.

Additional information (Cesium Irradiators)

Contributing Programs

Organizations

- Idaho National Laboratory (INL) and Los Alamos National Laboratory (LANL) – remove excess, unwanted, or disused radioactive sealed sources that pose a potential risk to national security, health, and safety and manage this aspect of the CIRP
- Pacific Northwest National Laboratory (PNNL) and Sandia National Laboratories (SNL) – manage the Cesium Irradiator Replacement Project (CIRP) outreach and alternative technology irradiator device replacement contracts

Policies:

- H.R. 5515 – John S. McCain National Defense Authorization Act for Fiscal Year 2019

Stakeholder / Congressional Consultations

- NNSA proactively engages Congress, its committees and staff, and state and local stakeholders to sustain its ongoing relationship and openly communicate its mission, goals, and budget.