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# ***SOUTH CAROLINA GOVERNOR'S NUCLEAR ADVISORY COUNCIL***

NNSA – Savannah River Field Office

Update

April 25, 2019



# Overview

- For nearly 70 years, SRS has played a vital role in National defense. With its proven track record, SRS *will* remain a central player in our nuclear security mission.
- NNSA’s infrastructure has suffered the effects of aging and underfunding, *but* we are now working on recapitalizing the nuclear weapons complex of laboratories and plants.
- The Nuclear Posture Review stresses the importance of rebuilding production capability and capacity to produce materials necessary for weapons requirements for a modern, robust, flexible, and resilient nuclear force in support of National security strategy.
- More than \$3B in total funding to SRS over the next five years is expected for all NNSA-related work.

6/13/2023

Final



NATIONAL NUCLEAR SECURITY ADMINISTRATION

## Mission

To protect the American people by maintaining a safe, secure, and effective nuclear weapons stockpile by reducing global nuclear threats; and by providing the U.S. Navy with safe, militarily-effective nuclear propulsion plants.

You fulfill a vital role in keeping the U.S. safe from nuclear dangers.



**Maintaining the Stockpile:** NNSA ensures the United States maintains a safe, secure, and reliable nuclear stockpile through the application of unparalleled science, technology, engineering, and manufacturing.



**Counterterrorism and Counterproliferation:** NNSA’s counterterrorism, counterproliferation, and nuclear incident response programs are ready to respond to stolen or misplaced radioactive materials, a nuclear weapon out of the control of a nation, or an improvised nuclear device.



**Nonproliferation:** NNSA works to prevent nuclear weapon proliferation and reduce the threat of nuclear and radiological terrorism around the world. The agency endeavors to prevent the development of nuclear weapons and the spread of materials or knowledge needed to create them.



**Powering the Navy:** NNSA provides militarily effective nuclear propulsion plants and ensures their safe, reliable, and long-lived operation.



*“As I have traveled to all of our labs, plants, and sites and met with people across our complex, I have been left with one overwhelming impression: the incredible workforce that makes up our nuclear security enterprise is up to all of the challenges we have before us.”*

**Lisa Gordon-Hagerty**

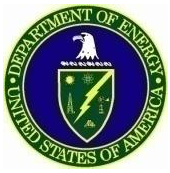
DOE Undersecretary for Nuclear Security and NNSA Administrator



# MOX Termination

- Repurposing MOX for plutonium pit production will allow NNSA to move forward with a two-pronged approach to recapitalize U.S. defense plutonium capabilities.
- Three phase transition: Development; Implementation; and Operations & Disposition.
- NNSA is committed to the former MOX workforce – a resource that will continue to be very valuable.
- NNSA sponsored job fair for MOX employees.
  - Representatives from DOE/NNSA and contractors.
  - More than 200 former MOX employees hired thus far.





# Future Defense Programs – Plutonium Pit Production



**Dan Brouillette** @EnergyDepSec · Apr 18

Productive trip through the Southeast this week where I was able to see the progress being made at @SRSNews and visit with @USCAiken Chancellor Dr. Sandra Jordan about education and workforce development.



- 2018, Nuclear Weapons Council certified NNSA’s recommended alternative as most viable to meet DoD’s requirement for no fewer than 80 plutonium pits per year by 2030.
- Proposed mission would include repurposing former MOX facility to produce 50 pits per year at SRS and 30 pits per year at Los Alamos National Laboratory.
- Proposed pit production mission would require significant and skilled workforce:
  - Design and construction would reach peak in 2023 and require ~ 2,000 staff.
  - 50 pits per year would require more than 700 staff for more than 50 years.
- The proposed project would be implemented in an environmentally responsible manner.





# Future Defense Programs – Tritium Production



- Tritium is an essential material in nuclear weapons. Since the 1950s, SRS has been providing the tritium used in our nuclear deterrent.
- Tritium production is increasing to meet military requirements. Maintaining and improving the infrastructure to support this mission is a high priority.
- SRTE capital investments have grown from \$1.8M in FY 2014 to \$33.9M in FY 2018 and a planned \$34.5M in FY 2019, to include plant preparation, people preparation, and performance improvement.



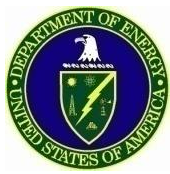
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# *Future Defense Programs – Tritium Production*

- SRS hired an additional 134 people in FY 2018, bringing the total to about 700 federal and contractor employees.
- The Tritium Finishing Facility (TFF) is the last major project under our modernization efforts to improve 1950s vintage facilities.
- The number of extractions at Tritium Extraction Facility will increase tenfold over the next five to ten years, which will require additional personnel.





# Current Nonproliferation Work – Surplus Plutonium Disposition



6/13/2023

- Repack and ship material for National security program
- NNSA is continuing to pursue the dilute and dispose approach to disposition surplus plutonium using an existing glovebox in K-Area for disposal at WIPP.
- Adding capability and capacity to improve EM's current downblending activities.
  - KIS Glovebox improvement modifications.
  - Establishing characterization and storage capability in K-Area.
  - Entry control facility modifications to improve personnel and material movements in K-Area.
- In addition to expediting the removal of plutonium from South Carolina, DNN also provides about \$22M annually to SRNL for National security work.





# ***Future Nonproliferation Work – Surplus Plutonium Disposition***

## ***Near Term Plan to Continue Efforts***

- NNSA requested congressional appropriations in FY 2020 for the Surplus Plutonium Disposition project to install three additional gloveboxes with supporting systems in K-Area to expand dilution capability.
- Pursue opportunities for project acceleration



## ***Longer Term Plan to Remove Plutonium***

- Complete construction and installation and achieve operational readiness for the additional three gloveboxes and supporting processes.
- Complete hiring additional staff to support operations of SPD gloveboxes.
- Commence SPD downblend operations.







# *NNSA – SRS Future*

We are committed to an enduring future for the Savannah River Site. The Department continues to evaluate multiple options for the future of the site, all of which involve long-term visions.

