NNSA SRS Overview
Making the world a safer place

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NNSA Mission Areas

**Defense Programs**
Maintain a safe, secure, and reliable nuclear weapons stockpile to help ensure the security of the U.S. and its allies, deter aggression, and support international stability

*A National Ignition Facility technician examines a damage inspection instrument used to assess the optics in the target chamber.*

**Naval Reactors**
Provide the U.S. Navy with safe, militarily effective nuclear propulsion systems, and ensure their continued safe and reliable operation

*Nuclear-powered submarine, VIRGINIA, returning to port following her highly successful sea trials.*

**Defense Nuclear Nonproliferation**
Detect, prevent, and reverse the proliferation of weapons of mass destruction, and promote international nuclear safety

*A container with naturally occurring radioactivity processed through a radiation portal monitor as part of NNSA’s Second Line of Defense Program.*

**Emergency Operations**
Administer and direct the programs of the national nuclear/radiological emergency response capability to ensure availability and viability to respond to nuclear and radiological emergencies within the U.S. and abroad

*Dep Energy Sec Daniel Poneman (center) reviews Leading Nuclear Counter-terrorism Assets.*
Defense Program Mission

"To provide the nation a safe, secure, and effective nuclear weapons stockpile without underground testing"

Directed Stockpile Work

Infrastructure for the Enterprise

Mini-TCAP Experimental Unit

Research, Development: Engineering, Science and Technology

Safe and Secure Transportation
To reduce the global nuclear threat by detecting, securing, safeguarding, disposing and controlling nuclear and radiological material worldwide, as well as promoting the responsible application of nuclear technology and science.

Secure Russian Nuclear Weapons Material

Detect and Deter Illicit International Nuclear Transfers

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MOX Construction Site – December 2011

Field Collection & Detection Systems

Secure Civil Nuclear and Radiological Materials Worldwide

Nuclear Nonproliferation Program Mission

Conduct Cutting-Edge Research and Development

Eliminate Weapons-Usable Material
Crisis Response:
Identification, characterization, rendering safe, and final disposition of any nuclear weapon or radioactive device.

Consequence Management:
Respond to and mitigate the effects of nuclear and radiological incidents.

Search Response Team
Provides assets for complex search operations using both technical and operational expertise.

Joint Technical Operations Team
Provides scientific-technical personnel and equipment during a nuclear or radiological WMD terrorist incident.

Accident Response Group
Provides technical response to U.S. nuclear weapons accidents.

Nuclear/Radiological Advisory Team
Worldwide all-purpose nuclear emergency response with the highest-level advisory and operational capabilities.

Radiation Emergency Assistance Center/Training Site
Provides 24-hour consultation on radiation-affected health problems.

Aerial Measuring System
Provides aviation-based equipment to respond to radiological emergencies.

Federal Radiological Monitoring Assessment Center
Provides multi-agency operational framework for coordinating on-scene monitoring and assessments during a radiological emergency.

ARG
Provides technical response to U.S. nuclear weapons accidents.

SRT
Search Response Team

JTOT
Joint Technical Operations Team

NRAT
Nuclear/Radiological Advisory Team

FRMAC
Federal Radiological Monitoring Assessment Center

REAC/TS
Radiation Emergency Assistance Center/Training Site

AMS
Aerial Measuring System

NARAC
National Atmospheric Release Advisory Center

RAP
Radiological Assistance Program
Provides first response capability to Federal, State, local governments for incidents involving radiological emergencies.

Emergency Operations Office
NUCLEAR INCIDENT TEAM

Provides scientific-technical personnel and equipment during a nuclear or radiological WMD terrorist incident.

Provides real-time predictions of atmospheric transport of radioactivity from a nuclear accident or incident.

Provides 24-hour consultation on radiation-affected health problems.

Provides aviation-based equipment to respond to radiological emergencies.
NNSA SRS Facilities

Defense Programs:
- Tritium Complex
- Tritium Supply
- Nuclear Stockpile Maintenance
- Nuclear Stockpile Evaluation
- Helium-3 Recovery

Nuclear Nonproliferation:
- MOX & WSB Projects
- Convert weapons-grade plutonium to mixed oxide fuel
- use in commercial nuclear reactors
- makes it unsuitable for use in nuclear weapons
Conversion of at least 34 metric tons of weapons grade plutonium into mixed oxide fuel for use in commercial nuclear power plants. Once irradiated, plutonium can no longer readily be used for weapons purposes.

- **Pit Disassembly and Conversion (PDC)**
  - Disassemble nuclear weapon pits, remove impurities, and convert the metal into oxide for MFFF
- **Mixed Oxide Fuel Fabrication Facility (MFFF)**
  - Produce mixed oxide fuel elements for irradiation in commercial nuclear power plants
- **Waste Solidification Building (WSB)**
  - Process high activity and low activity liquid waste streams from MFFF to a form suitable for onsite or off-site disposal
DOE’s preferred alternative for pit disassembly and the conversion of surplus plutonium metal to feed the MFFF, is to use some combination of facilities at TA-55 at LANL, K-Area at SRS, H-Canyon/HB-Line at SRS and MFFF at SRS, rather than to construct a new stand-alone facility.
Mixed Oxide Fuel Fabrication Facility (MFFF) Status

• Began Construction: August 2007
• Total Project Complete: 60%
• Facility Construction Complete: 50%
• Process Building Structure Complete: 76%
  – Now installing piping, HVAC, glove boxes, cable trays, roof
• 11 of 16 support facilities are complete
• 3 additional support buildings are in construction or planning phases
• Scheduled for Completion: October 2016
• Current Employment: 2609
MFFF - March 2012
Waste Solidification Building (WSB) Status

- Began Construction: December 2008
- Total Project Complete: 76%
- Facility Construction Complete: 67%
- Process building concrete complete
- Installation of piping, ductwork, cable tray, and long lead equipment (process tanks, evaporators, diesel generator, etc) in progress
- Scheduled for Completion: 2012
- Current Employment: 170