



Los Alamos National Laboratory Update for The Northern New Mexico Citizens' Advisory Board

**Kevin W. Smith
Manager, Los Alamos Site Office**

August 29, 2012

Presentation Outline

- **NNSA Mission Overview**
- **LANL Facilities**
- **LANL Mission**
- **Environmental Management Update**
- **Outlook for the Future**

LASO Mission Statement

Contract administration of Los Alamos National Laboratory's Management and Operating (M&O) contract, site stewardship, and monitoring day-to-day operations are conducted in a safe, secure, ethical, and environmentally sound manner

Our Goal

**To be the best Site Office
in the Department of Energy**

About the National Nuclear Security Administration (NNSA)

Created by U.S. Congress as a separately organized unit of the U.S. Department of Energy

Established on October 1, 2000

NNSA oversees the operations of the U.S. Nuclear Weapons Enterprise

- Four production plants
- Three design laboratories
- Test Site
- 35,000 contractor employees

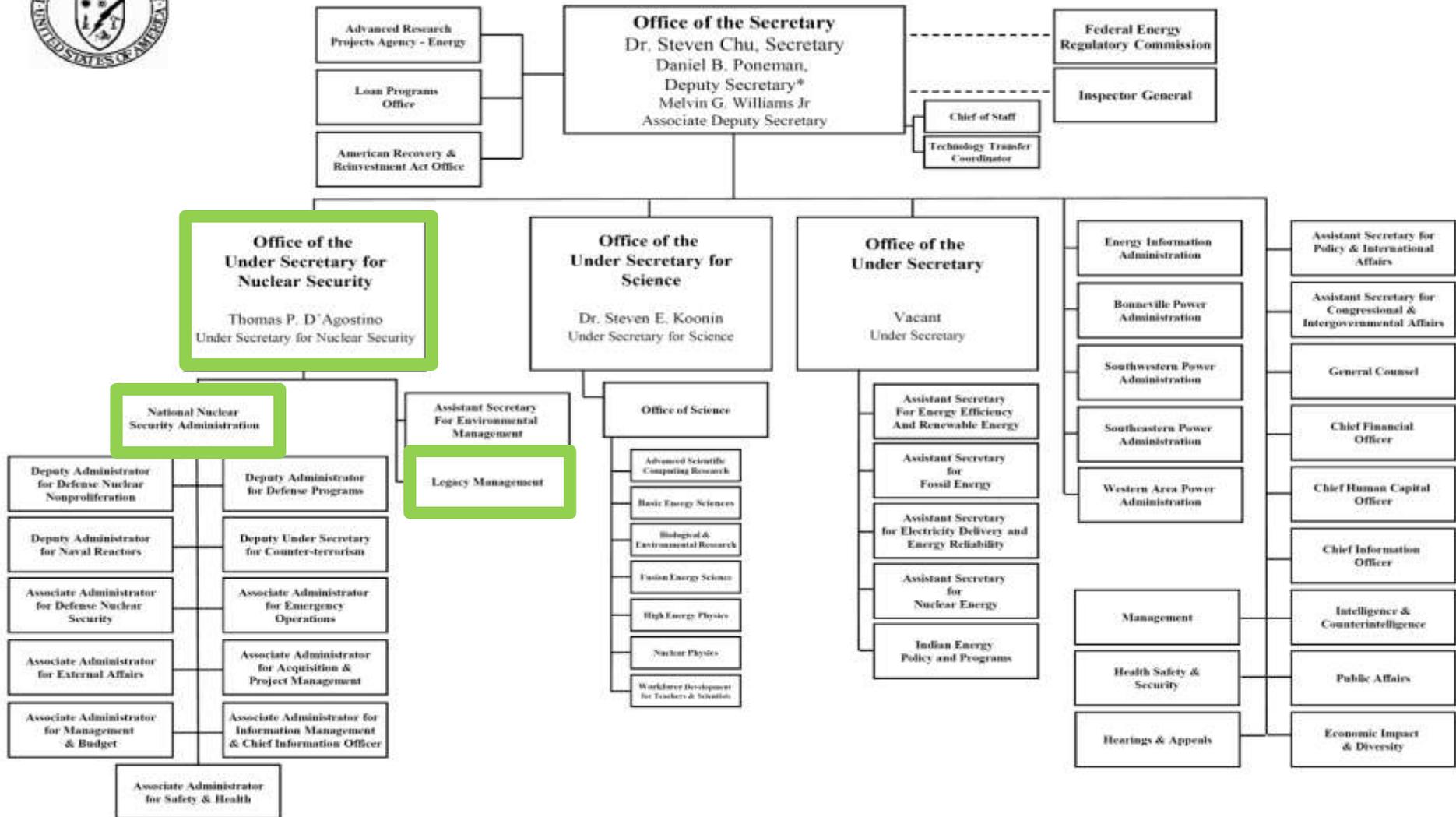


NNSA National Security Enterprise





DEPARTMENT OF ENERGY



* The Deputy Secretary also serves as the Chief Operating Officer

06 Oct 11

Under Secretary for Nuclear Security & Administrator: Thomas P. D'Agostino
Principal Deputy Administrator: Neile L. Miller

Office of Science and Policy
Dimitri Kusnezov

Chief of Staff
Janis Greene (Acting)

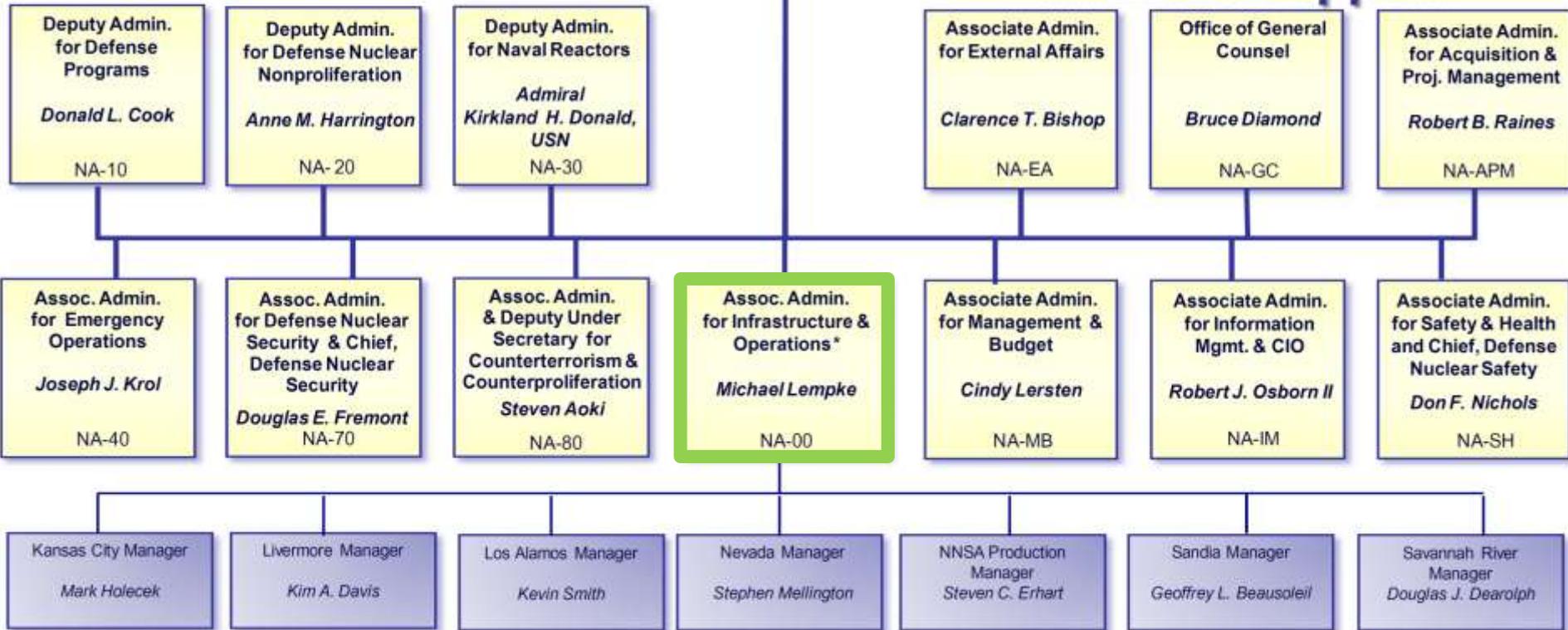
Office of Civil Rights
Debra Parrish

Associate Principal Deputy Administrator*
Michael Lempke

NA-1

Mission

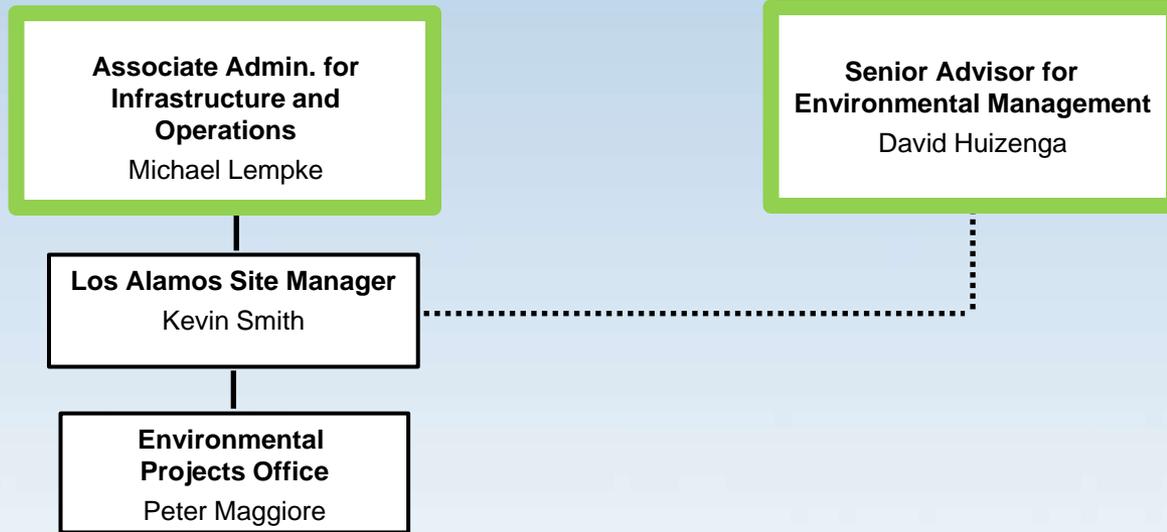
Mission Support



* Dual Hatted Position

May 2012

NNSA/EM Organizational Relationship



Kevin W. Smith
Site Office Manager



Office of the Manager



Juan Griego
Deputy Manager

Quality Assurance



Anita Leivo
Manager

Chief Counsel



Silas DeRoma
Site Counsel

Contract Administration



Bob Poole
Supervisor

National Security Missions



George J. Rael
Assistant Manager

Environmental Projects



Pete Maggiore
Assistant Manager

Safeguards and Security



Michael Duvall
Assistant Manager

Safety Operations



C. H. Keilers, Jr.
Assistant Manager

Field Operations



John Krepps
Assistant Manager

Business Administration



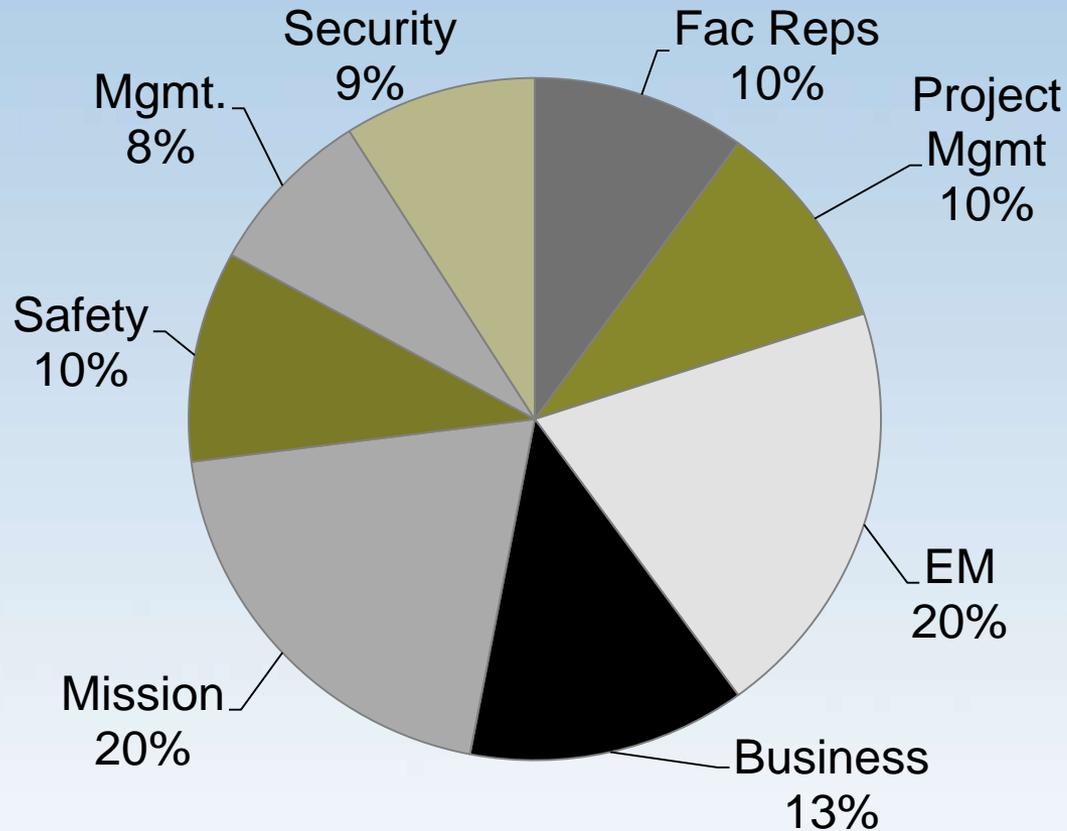
Timothy O'Leary
Assistant Manager

CMRR Project Office



Herman C. Le-Doux
Federal Project Director

Los Alamos Site Office Demographics



107 NNSA
28 EM

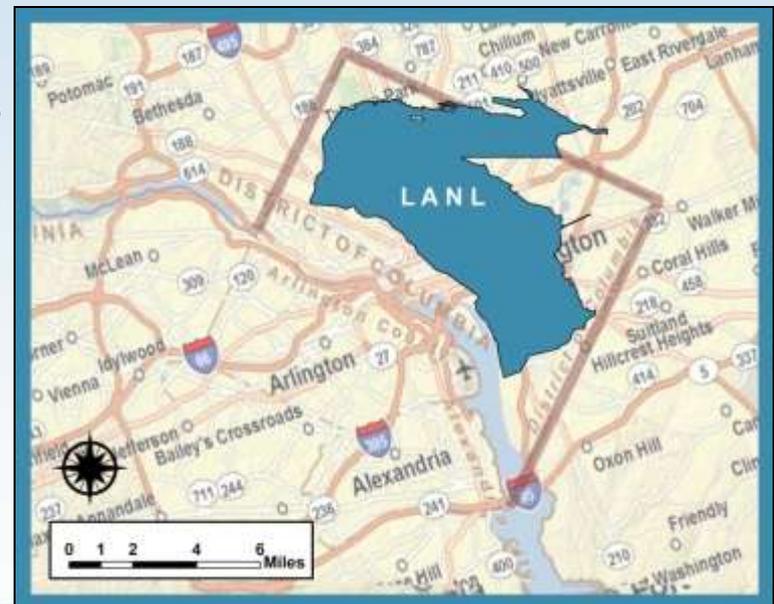
** 80 percent of staff have BA, MA, or PhD*

Los Alamos at a Glance

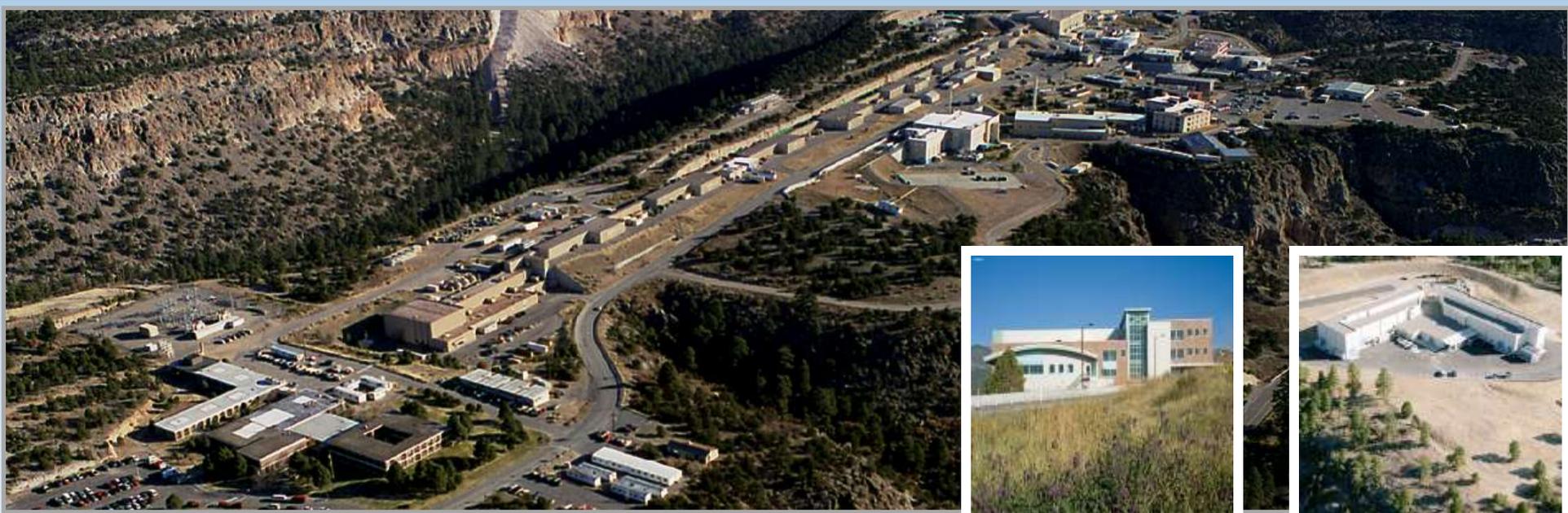


The oldest, most complex, and second largest site is working hard to transform to become more efficient:

- ~ 39 square miles
- 1,169 buildings
- 9 M gross square feet
- 268 miles of roads (100 paved)
- 128 radiological facilities



Los Alamos Facilities: Unique Facilities



- Nuclear facilities address critical stockpile stewardship challenges
- Supercomputing facilities
- DARHT allows researchers to study weapons performance
- Nanotechnology center drives critical research programs
- LANSCE draws international scientists studying materials



Radiological Laboratory
Utilities/Office Building



Dual Axis Radiographic
Hydrodynamic Test Facility



Center for Integrated
Nanotechnologies



Nicholas C. Metropolis
Center

Key Nuclear Facilities

■ Nuclear Facilities (Hazard Category 2&3)

- Chemistry and Metallurgy Research (CMR) Facility
- Weapons Engineering Tritium Facility (WETF)
- TA-55 Plutonium Facility (PF)
- Waste Characterization Reduction and Repackaging Facility (WCRRF)
- Radioactive Liquid Waste Treatment Facility (RLWTF)
- Waste Storage and Disposal Facility (Area G)
- Radioactive Assay Nondestructive Testing (RANT) Facility

■ Accelerator Facilities

- Dual Axis Radiographic Hydrodynamic Test Facility (DARHT)
- Los Alamos Neutron Science Center Facilities (LANSCE)

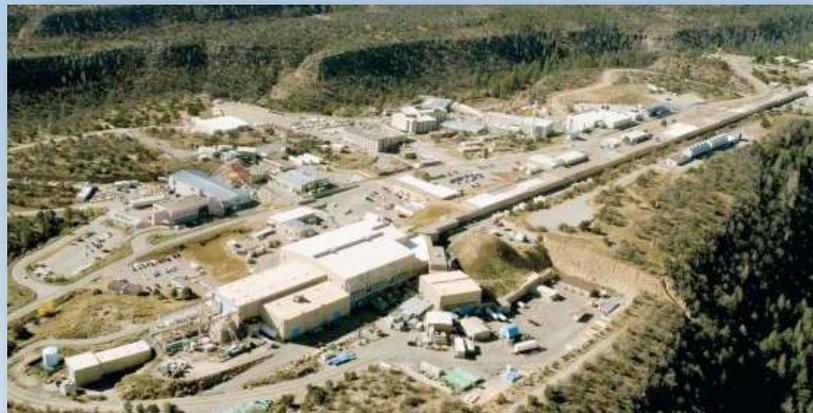
LANL Mission



Our unique facilities: Tools for mission execution



Plutonium Facility: Pit manufacturing



LANSCE: Linear proton accelerator



Supercomputing center: simulation and modeling

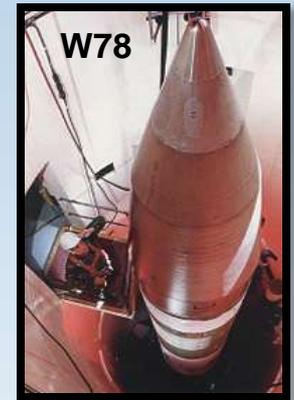
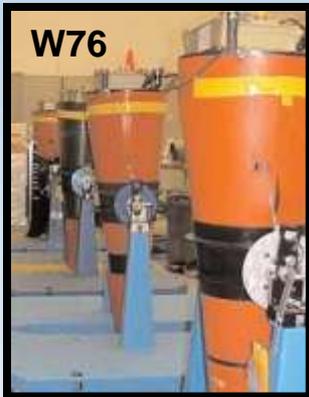
LANL: a national security science laboratory serving the national interest

- We anticipate, innovate, and deliver solutions
- We span the spectrum from Discovery through Applied Science to Prototypes
- We use the outstanding science, engineering, and technology from our core stockpile stewardship mission for other national needs



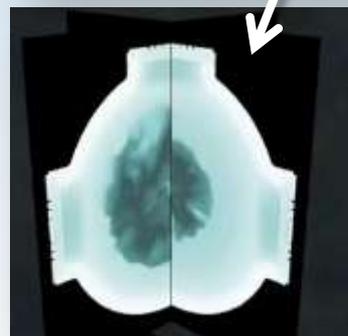
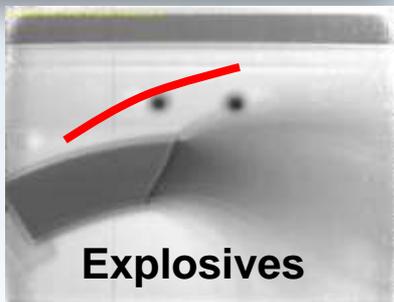
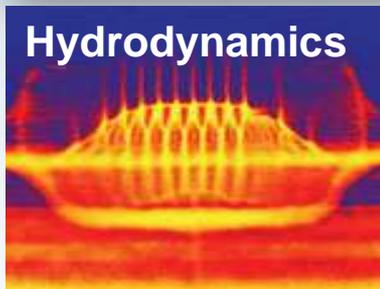
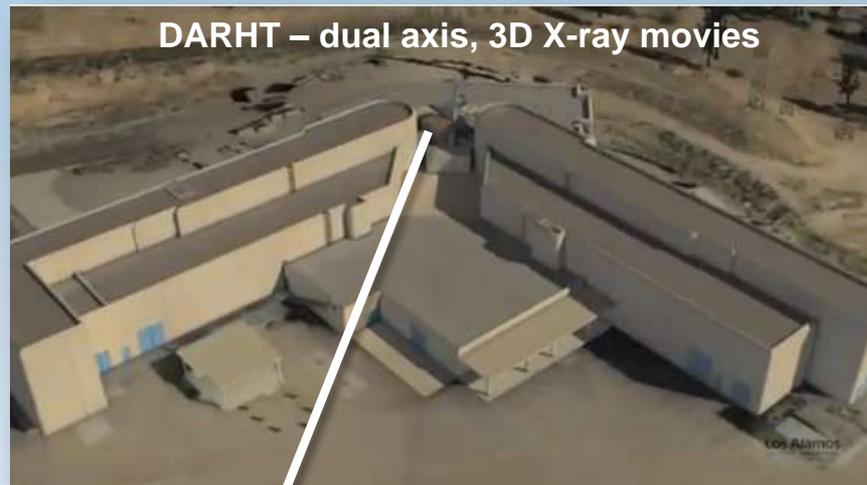
Stockpile Stewardship

- Sustaining the safety, security, and effectiveness of the nation's deterrent through Stockpile Stewardship is our core mission



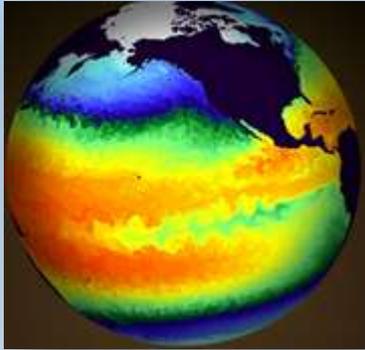
Confidence without nuclear testing
requires fundamental understanding
of science and engineering

Modeling, simulation, radiography, and non-nuclear testing help provide assurance



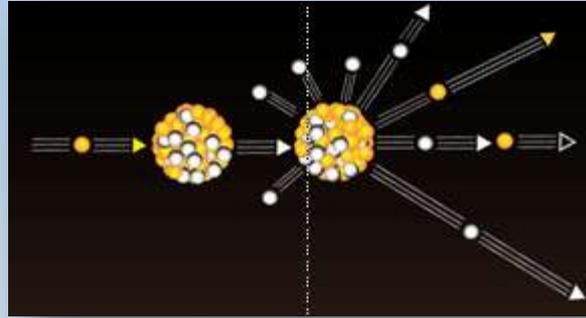
Proton Radiography

Los Alamos Energy Security Pillars



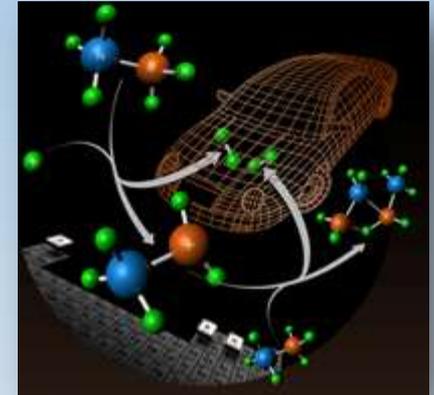
Impacts of Energy Demand Growth

- Coupled predictive models for climate, infrastructure impact analysis
- Prediction of abrupt change at multiple scales (regional to global)
- Global security and policy implications



Sustainable Nuclear Energy

- Efficient extraction of energy content from fuel
- Nonproliferation & safeguards
- Effective waste management



Concepts and Materials for Clean Energy

- Energy storage, generation, and transmission
- Revolutionary alternatives to petroleum
- Clean fossil energy

Reducing threats of weapons of mass destruction and terrorism is critical to the security of our nation

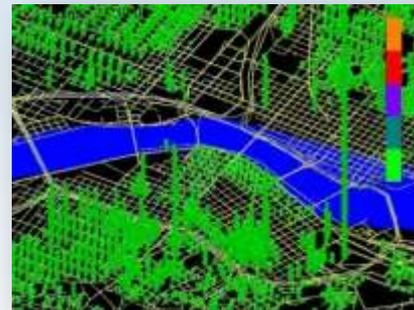
- Space-based nuclear detonation detection, RF and lightning studies
- Imagery analysis and exploitation technology
- Securing nuclear materials in Russia, as well as other nations
- Advances in nuclear detection technology, active and passive techniques, novel materials
- Liquid explosives detector development and testing for homeland security applications



MagViz Security Scanner



GPS- and DSP-based NUDET detectors



NISAC modeling and simulation



Understanding international nuclear proliferation risks

Audits & Ethics Director
Jeanette Y. Bannion

Community Programs Office
Kurt Steinhaus

Chief Prime Contracts
Steve Shook

Office of Equal Opportunity & Diversity
Charles (CJ) Basco

Ombuds Office
Mary Beth Stevens (Acting)

Institutional Leaders


Charlie McMillan
 Laboratory Director


Elizabeth Sellers
 Deputy Laboratory Director


Executive Director
 Rich Marquez


Executive Office Manager
 Peggy Gonzales

Chief Information Officer
Tom Harper

General Counsel
David Szinski

Chief Financial Officer
Glenn Kizer

LANL, LLC Executive Staff Director
Jerry Ethridge

Comm. & Gov. Affairs
Lisa Rosendorf

Alan Bishop
Principal Associate Director
Science, Technology & Engineering

Bret Knapp
Principal Associate Director
Weapons Programs

Terry Wallace
Principal Associate Director
Global Security

Carl Beard
Principal Associate Director
Operations & Business

Paul Henry
Principal Associate Director
Capital Projects

| | | | | |
|---|---|---|---|--|
|  Chemistry, Life, & Earth Sciences Assoc. Director |  Engineering Sciences Assoc. Director |  Experimental Physical Sciences Assoc. Director |  Information Technology Assoc. Director |  Theory, Simulation, & Computation Assoc. Director |
|---|---|---|---|--|

| | | |
|--|--|--|
|  Plutonium Science & Manufacturing Assoc. Director |  Weapons Engineering & Experiments Assoc. Director |  Weapons Physics Assoc. Director |
|--|--|--|


Threat Identification & Response
Assoc. Director

| | | | | |
|--|--|--|---|--|
|  Business Services Assoc. Director |  Environment, Safety, Health Assoc. Director |  Maintenance & Infrastructure Planning Assoc. Director |  Nuclear & High Hazard Operations Assoc. Director |  Security & Safeguards Assoc. Director |
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| | |
|---|---|
|  Environmental Programs Assoc. Director |  Project Management Assoc. Director |
|---|---|

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|---|---|--|---|--|
| ADCLES Business | ADE Accelerator Operations & Technology | ACEPS Materials Physics & Applications | ADIT Departmental Computing Services | ADTSC Computer, Computational & Statistical Sciences |
| Chemistry | Applied Engineering & Technology | Materials Science & Technology | Network & Infrastructure Engineering | High Performance Computing |
| Earth & Environmental Sciences | Prototype Fabrication | Los Alamos Neutron Science Center | Software & Applications Engineering | Theoretical |
| Physics | | | | |

| | | |
|---|---------------------------------------|-------------------------------------|
| ADPSM Integrated Program Management | ADW Weapons Experiments | ADK Computational Physics |
| Nuclear Component Operations | Weapons System Engineering | Theoretical Design |
| Manufacturing Engineering & Technology | Nuclear Process Infrastructure | |

ADTR
Decision Applications

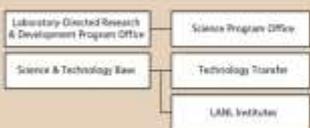
International & Applied Technology

Intelligence & Space Research

Nuclear Stewardship

| | | | | |
|--|---|---|---|------------------------------------|
| ACES Acquisition Services | ACESH Environmental Protection | ADMPP Infrastructure Planning | ADMHO O&M Facility Operations | AOS Emergency Operations |
| Central Training | Industrial Hygiene & Safety | Maintenance & Site Services | Engineering Services | Safeguards |
| Human Resources | OSM/Worker Safety Office | Environmental & Waste Management Facility Operations | Security Operations | |
| Information Resource Management | Occupational Medicine | Fire Protection Division | Physical Security | |
| | Radiation Protection | LANGL Facility Operations | | |
| | Waste & Environmental Services | Operations Support | | |
| | Environmental Safety Health-Deployed Resources | Safety Base | | |
| | ES&H Integration Office | Science & Technology Operations | | |
| | | TA-21 Facility Operations | | |
| | | TA-53 Facility Operations | | |
| | | Utilities & Industrial Facilities | | |
| | | Weapons Facility Operations | | |

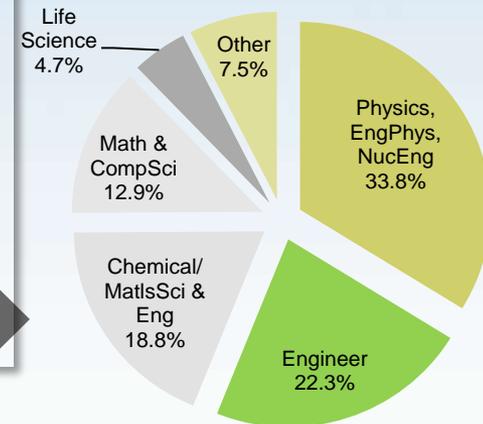
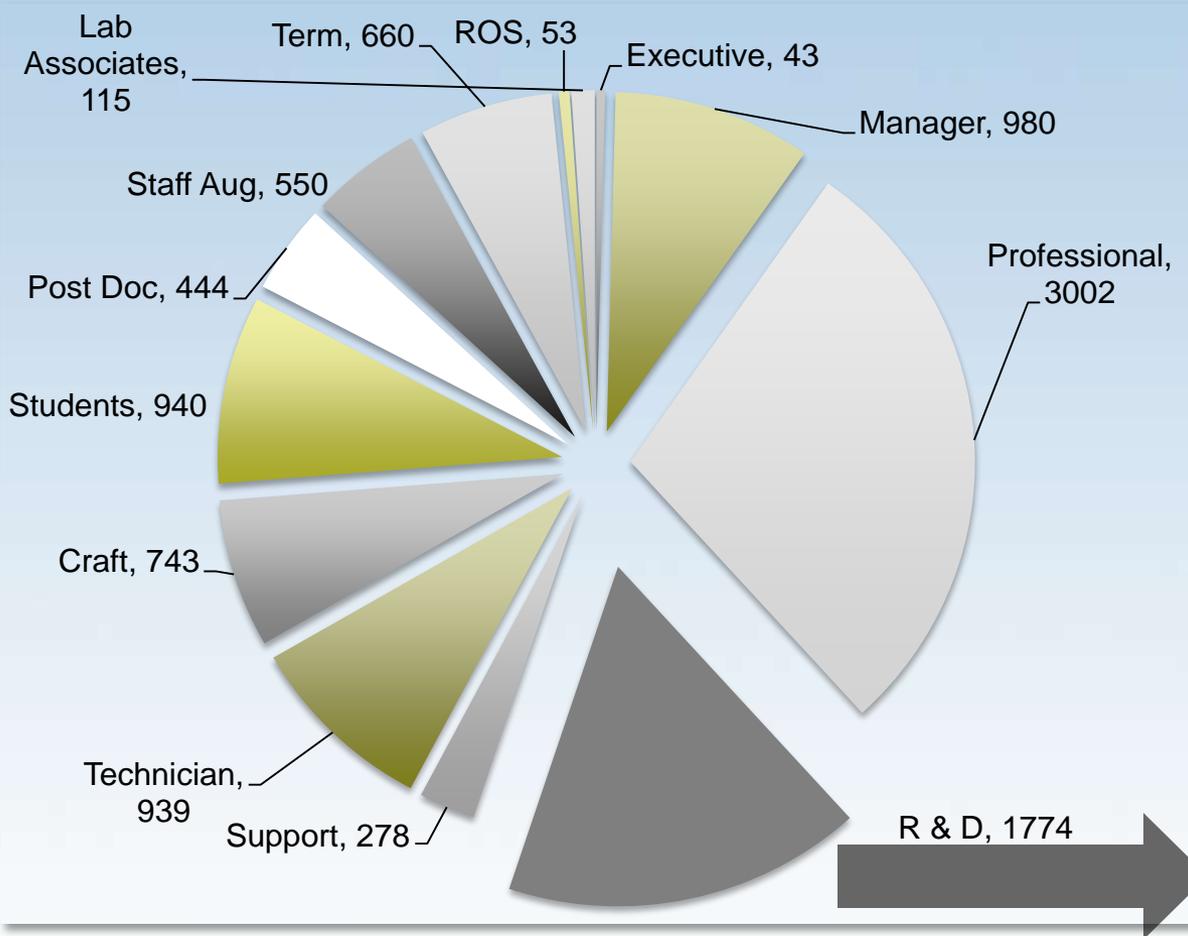
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| ADFP Business & Project Services Division | ACPM Site Projects |
| Contract Actions | |
| Engineering & Technology | |
| Regulatory Management | |
| TA-21 Closure | |
| LANL TRU Program | |
| Waste & Project Services | |
| CMRS | Functions |



08/27/12

LANL current workforce is 10,521

LANL



Environmental Management Provides Emphasis on Compliance and Stewardship



LANL Cleanup – Substantial Progress

- 2147 original sites
 - 1064 sites remain
 - 208 of remaining sites are LANL complete and are in closure process with NMED
 - Of the remaining sites, initial investigation completed or underway
 - Last sites in Consent Order schedule were evaluated to be lowest priority/risk



LANL is Well Monitored

- Extensive groundwater monitoring network in place lab-wide
 - Only two known regional aquifer contaminant plumes at LANL
 - Perchlorate and Chromium beneath Mortandad Canyon
 - RDX beneath Technical Area 16
 - No drinking water wells impacted from LANL contaminants
- Comprehensive stormwater management and monitoring
 - Controls installed to support Consent Order, EPA Individual Permit and Buckman Direct Diversion
 - Early notification to support Buckman
 - Direct sampling of Buckman and Rio Grande

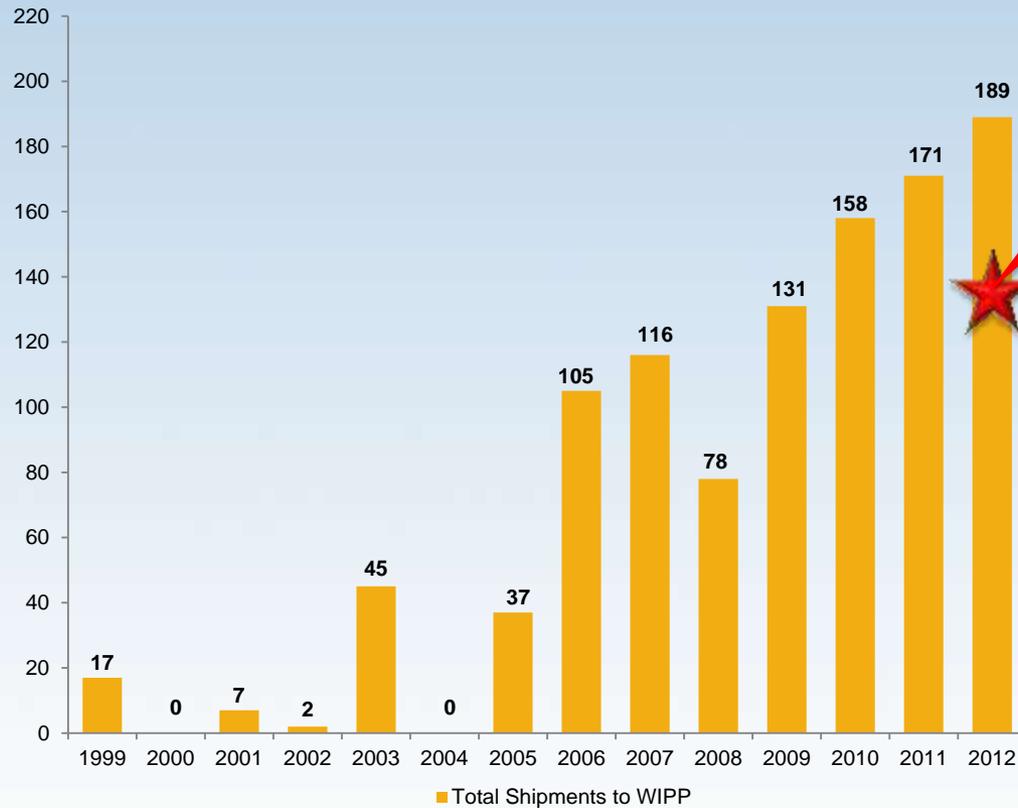


Recovery Act Funds Provided a Boost

- Completed environmental remediation projects funded by the American Recovery and Reinvestment Act
 - \$212 million in ARRA funding provided boost to already-planned work
 - Decontamination and demolition of 24 Manhattan Project and Cold War-era buildings
 - Cleanup of about 6 acres to residential standards
 - Installation of 16 regional groundwater monitoring wells
 - Reduced footprint by ~175,000 square feet



Shipping Performance



1,000th shipment
to WIPP
June 6, 2012



1,000 Shipments and Counting



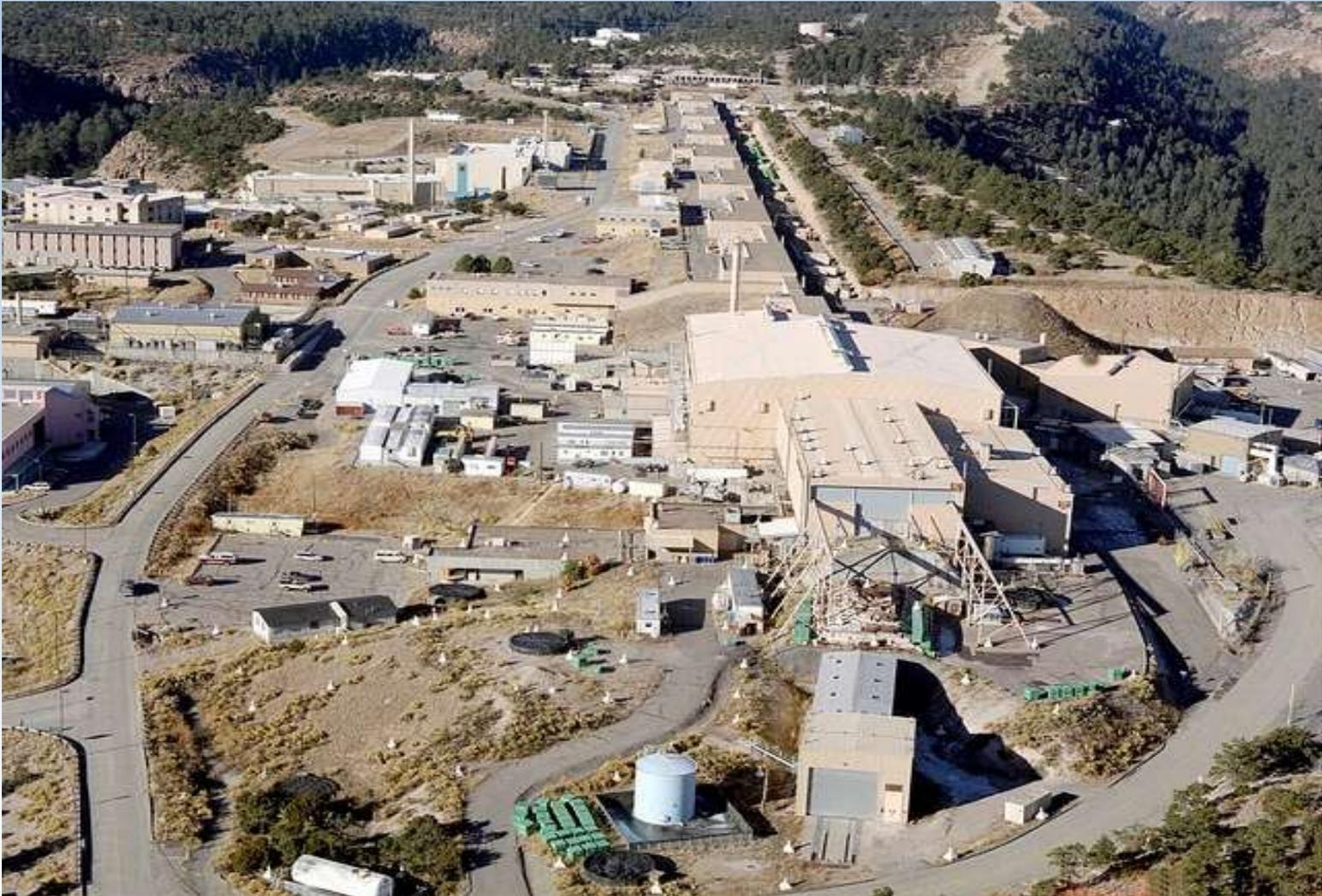
NNMCAB plays a vital role in our success



Challenges for the future – Hot Topics



Lujan Neutron Scattering Center Incident



Los Alamos Facilities: Chemistry and Metallurgy Research Replacement (CMRR)

- CMRR will provide 21st century science capabilities for a variety of national science missions
- CMRR will support a broad range of activities including:
 - non-proliferation/IAEA training
 - nuclear energy R&D
 - space power
 - homeland security
- CMRR NF will improve site security and allow for consolidation of nuclear material
 - Deferred for 5 years
- CMRR NF adds @ 20,000 square feet of lab space to support operations in Plutonium Facility
 - Analytical chemistry
 - Actinide R&D
 - Materials characterization
 - Vault storage



Los Alamos Facilities: Interagency Fire Center



- Groundbreaking for the East Jemez Interagency Fire Center, which is to be located on LANL property, took place on June 13
- The Center will house administrative offices, and a communications and command center. A staging area for aerial resources will also be located on the grounds of the complex.

- The Interagency Fire Center is a Federal partnership between the USFS, National Park Service, and DOE
- The Fire Center will benefit the entire region by centralizing fire fighting capabilities for the agencies involved



 EAST JEMEZ INTERAGENCY FIRE CENTER
BANDELIER NATIONAL MONUMENT

EXTERIOR PERSPECTIVE 

Los Alamos Facilities: NM Consortium Biology Laboratory

- The NM Consortium Biology Laboratory is a successful collaboration
 - UNM
 - NMSU
 - NM Tech
 - LANL
- Los Alamos County location, funded by County and Los Alamos National Bank
- Groundbreaking on May 18, 2012
- Facility for bio-fuels research

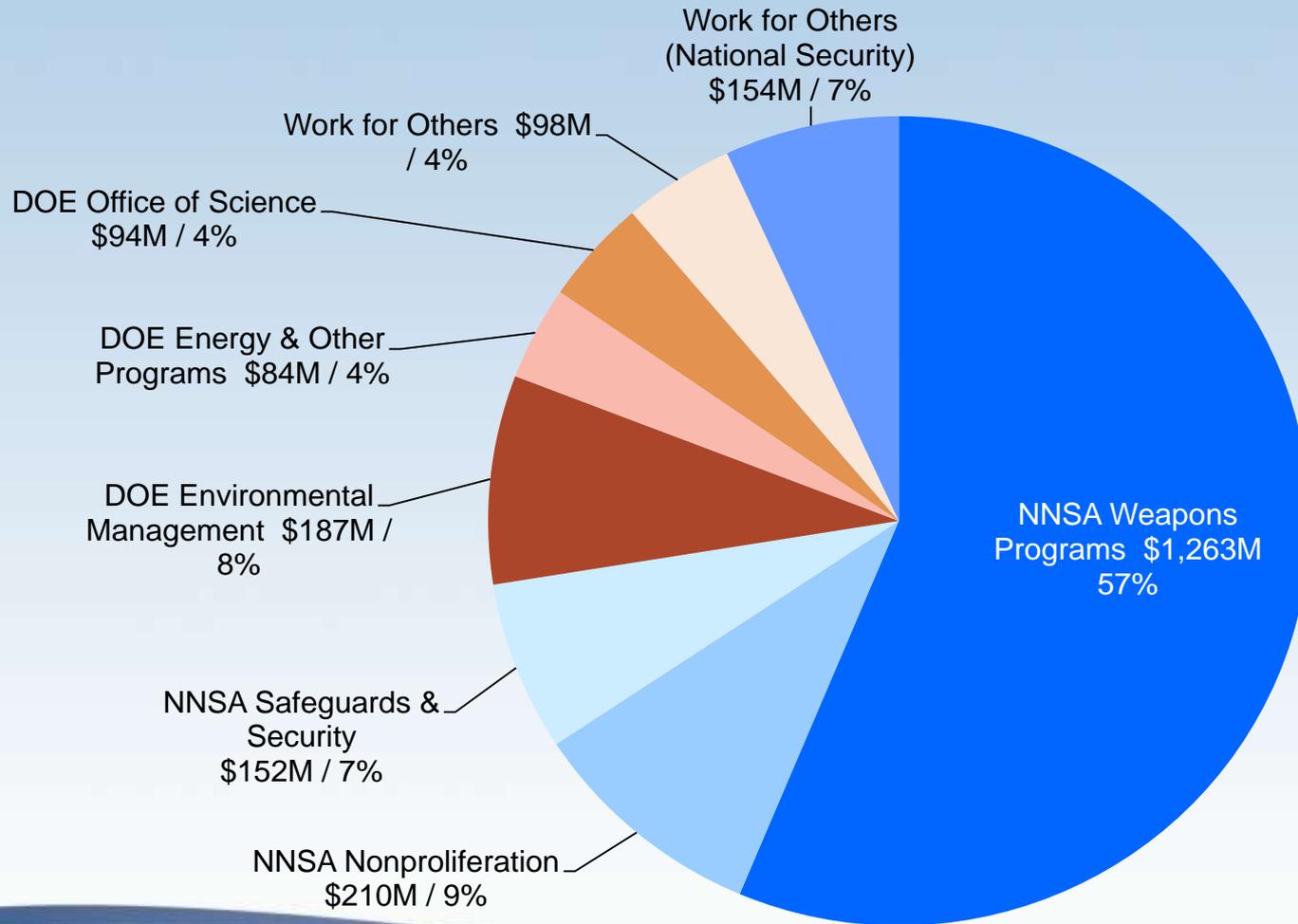


Framework Agreement

- Removal of non-cemented above-ground TRU currently-stored at Area G by June 2014 (3,706 m³)
- Removal of all newly generated TRU waste received in Area G during FY12/FY13, by December 2014
- Develop schedule for disposition of the below-ground TRU at Area G by December 2012
- Groundwater and surface water protection
- Storm Water Individual Permit
- Successful Buckman Direct Diversion Project

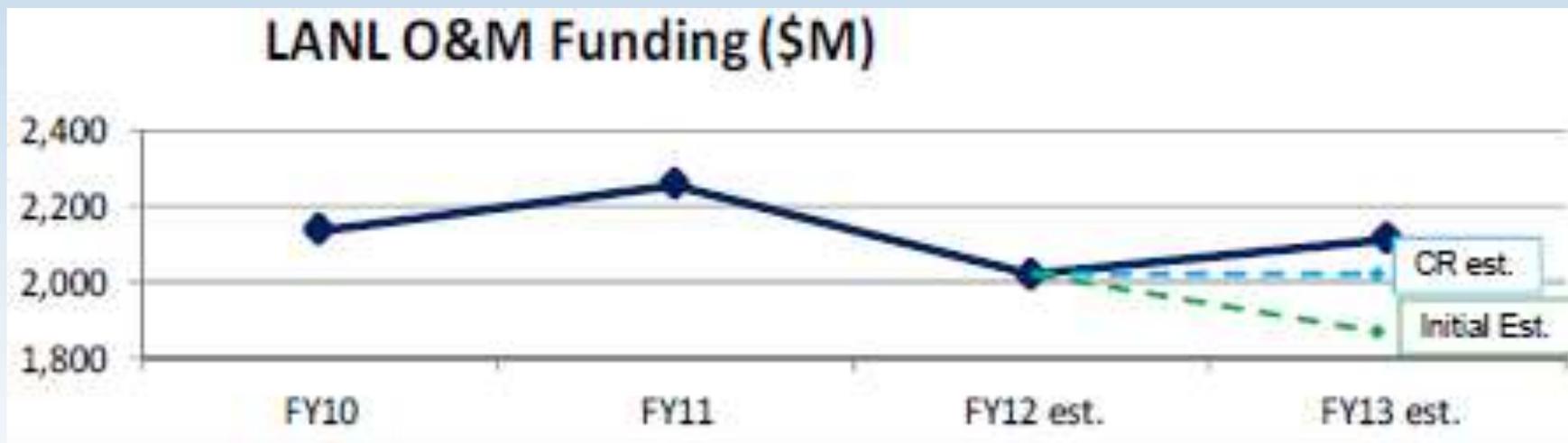


FY12 est. LANL Budget Authority = \$2,242M



FY13 Budget Outlook

- With an election year, a Continuing Resolution appears probable
- House and Senate marks reflect solid support for DOE/NNSA budget request



50 Year Environmental Stewardship Plan

- Demonstrates the Lab's commitment to protecting human health and the environment by using this long-term strategy to:
 - Clean-up the past
 - Control the present
 - Live a sustainable future
 - Communicate transparently
- Aligns long-term site stewardship goals across programs
- Provides an ongoing scorecard of LANL performance against requirement standards
- Drives change and improves the ability for DOE to operate and introduce new missions while being a good neighbor
- Currently using the Plan to anticipate, recognize, evaluate, and control/mitigate emerging environmental challenges
- Community and regulator participation
 - Addresses community interests
 - Provides technical justification for decisions on regulated actions

Los Alamos National Laboratory
will live in Harmony with
New Mexico and the Environment

