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Title:	Laboratory Overview
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Intended for:	David Coss, Mayor of Santa Fe

Los Alamos
NATIONAL LABORATORY
EST. 1943

Form 836 (7/06)

Laboratory Overview

David Coss, Mayor of Santa Fe

December 21, 2010

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LANL: A national security science laboratory serving the national interest

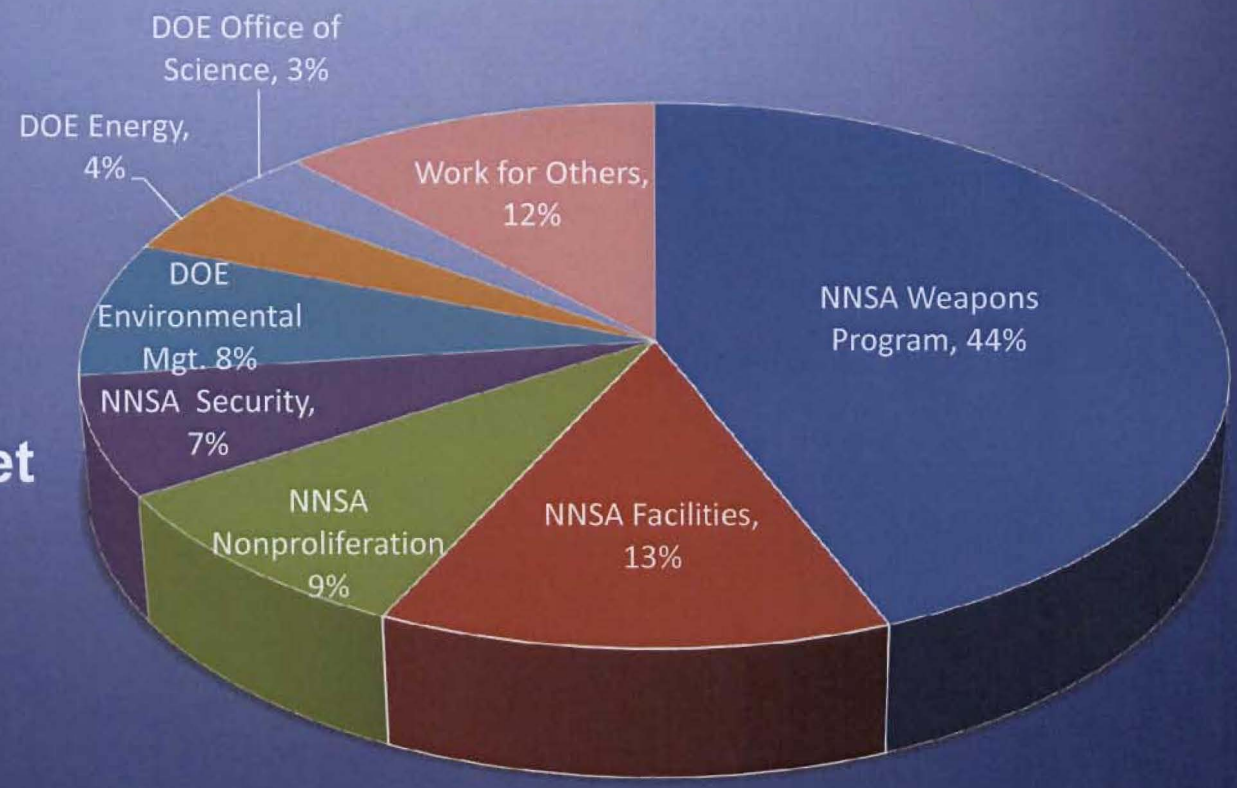
- We anticipate, innovate, and deliver solutions
- We span the spectrum from Discovery through Applied Science to Prototypes
- We utilize the outstanding science, engineering, and technology from our core stockpile stewardship mission for other national needs

" It is even more important that the scientific talent and the scientific infrastructure of these nuclear security labs are maintained."

Secretary Chu while visiting
Los Alamos and Sandia National Laboratories in April 2009

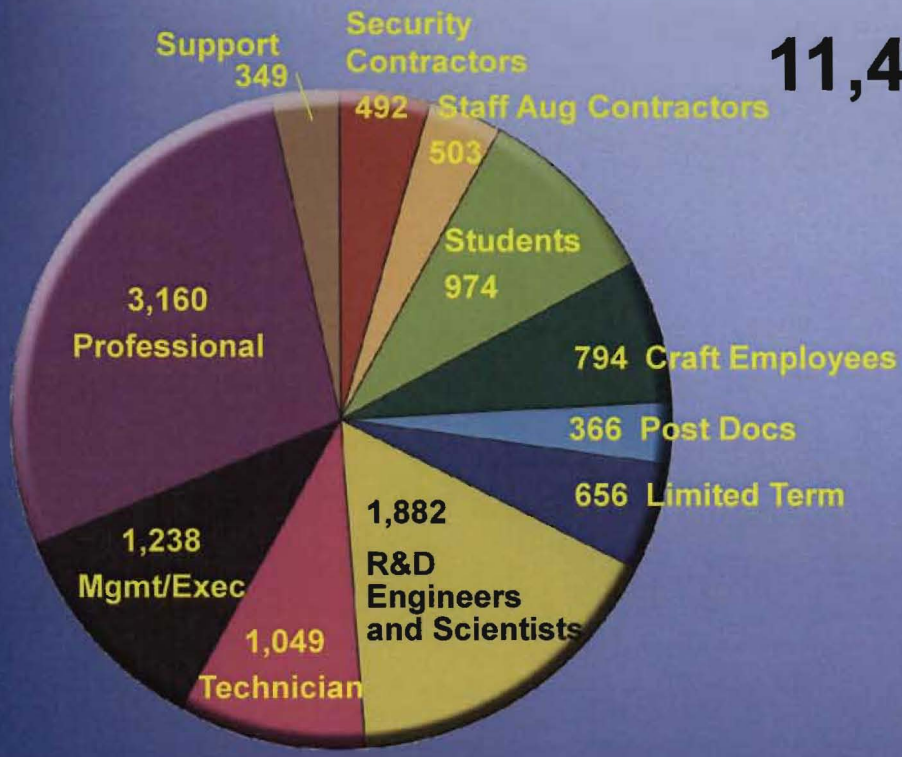
Lab Budget

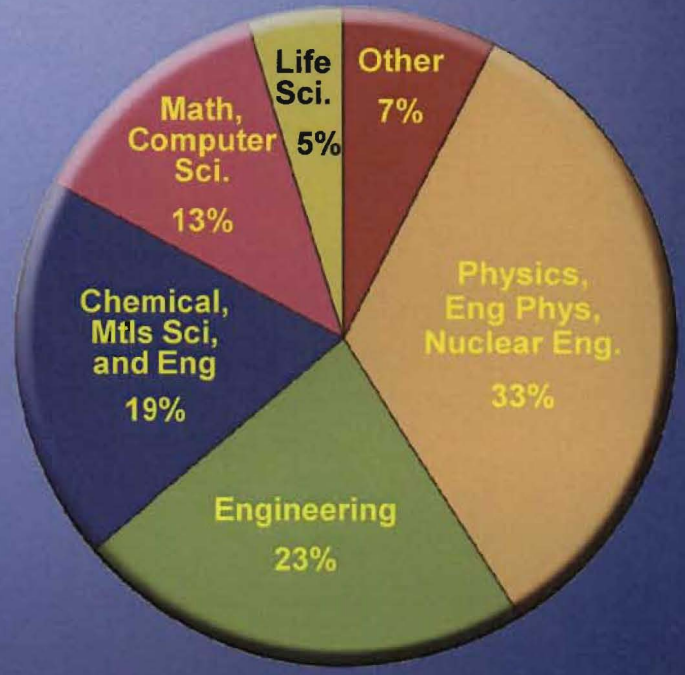
LANL Programs



***The Laboratory's FY11 annual budget is approximately $2.5 billion.**

11,463 - Current Work Force





R&D Scientist and Engineer Disciplines

LANL is: Broad and deep science

- Drawn from across the nation
- 2,211 PhDs
- 28% of career workforce started as students or post docs

Our people make Los Alamos great!

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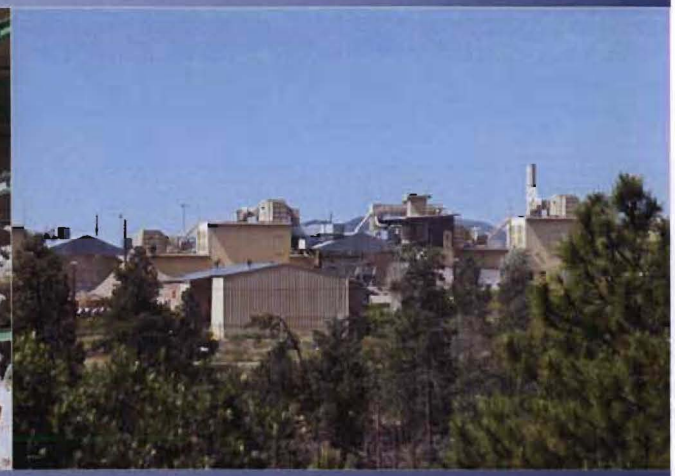
Los Alamos, the oldest, most complex, and second largest site is working hard to transform into a more efficient site



- ~ 40 square miles
- 1,169 buildings with 9.0M gross sq. feet
  - 16 nuclear facilities
  - 43% of space is more than 40 years old
- 268 miles of roads (100 paved)
- 1M sq. feet of footprint reduction
- D & D of post-WWII production facilities

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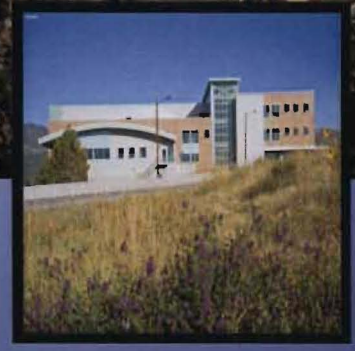

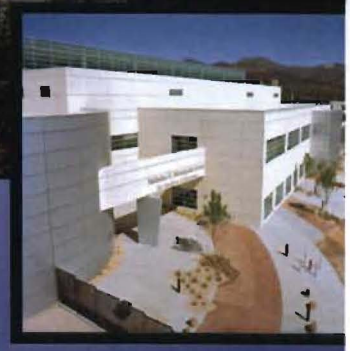

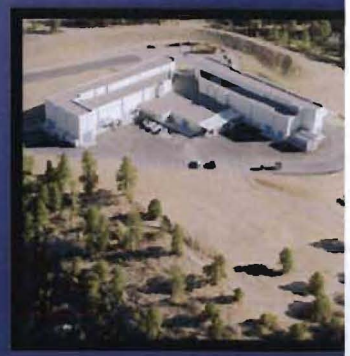

Los Alamos is:

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

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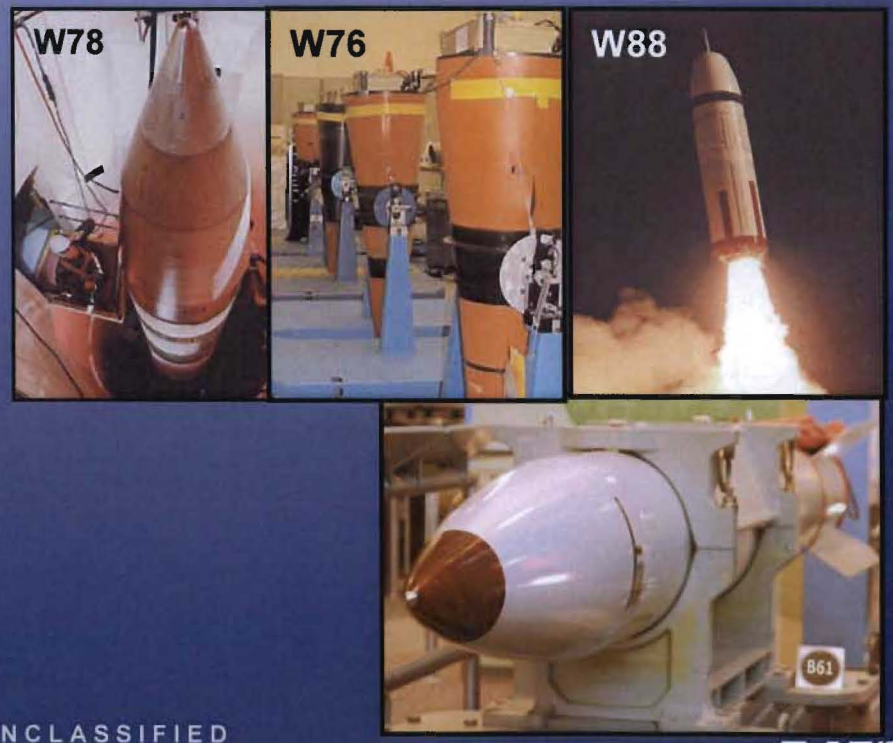
Sustaining the safety, security and effectiveness of the Nation's deterrent through Stockpile Stewardship is our core mission

- Los Alamos is the design agency for warheads which constitute more than 60% of nation's deterrent and the majority of the on-alert deterrent
- Managed through surveillance and life extension
- Confidence without nuclear testing is based on a more fundamental science and engineering understanding



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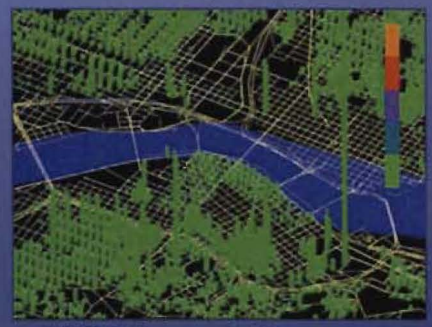
Reducing threats of weapons of mass destruction and terrorism is critical to the security of our nation

- 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

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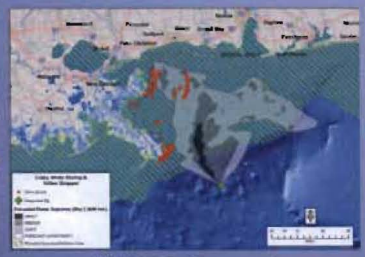
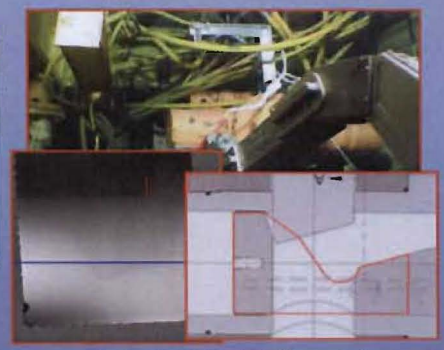
NNSA

Our ability to respond quickly and effectively in a crisis has been demonstrated again in the Gulf of Mexico

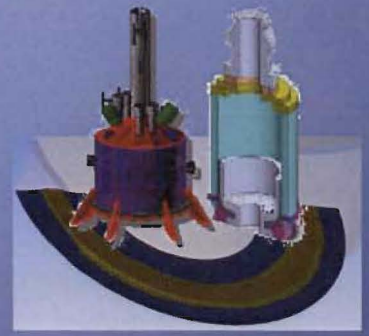
Deepwater Horizon
Explosion & Fire
9:45am 20APR2010



NISAC Support
24/7 Consequence Analysis
24APR2010 – Ongoing



Radiography Performed
Including MCNPX & image analysis – *2D radiography depth record at 5000'*
13, 15MAY2010 – Ongoing



Containment Design
Support design & analysis (FEA) of containment structures
28MAY2010 – Ongoing

VOC Monitoring
Lab support requested for potential VOC monitoring (ES&H)
2JUN2010 – Ongoing

BP OIL SPILL – SUPPORT TIMELINE (activities represent only portions of effort)

Platform Lost
Leaving crippled BOP and Riser
22APR2010

DOE Request
LANL capabilities to support response
30APR2010 Personnel deployed, acoustics, radiography, imaging, fluids all engaged
29APR2010 – Ongoing

Top Kill Support – Fluid Analysis
Independent validation of BP well models and analysis to inform Top Kill before, during & after attempt
15MAY2010 – 1JUN2010

Science Team Support
On site Houston support transitions to greater support of Secretary's team, answering requests and directed analysis
30MAY2010 – Ongoing

Risk/Decision Support
Potential support for modeling & risk analysis moving forward
4JUN2010 – Ongoing

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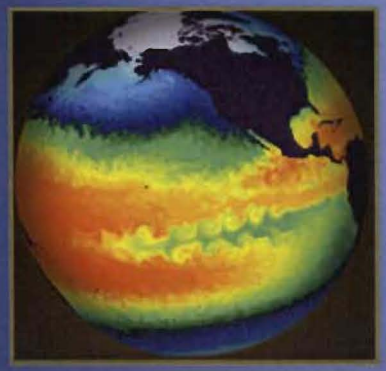
NNSA

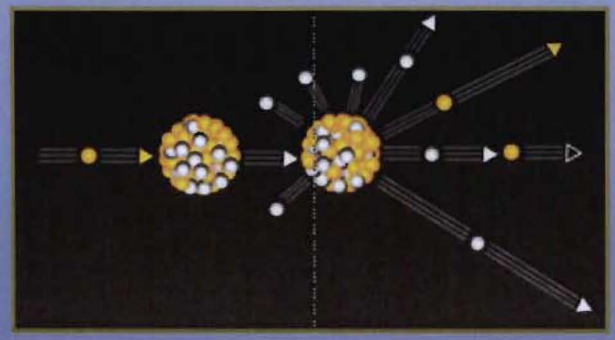
Operated by Los Alamos National Security, LLC for DOE/NNSA

Los Alamos Energy Security Pillars



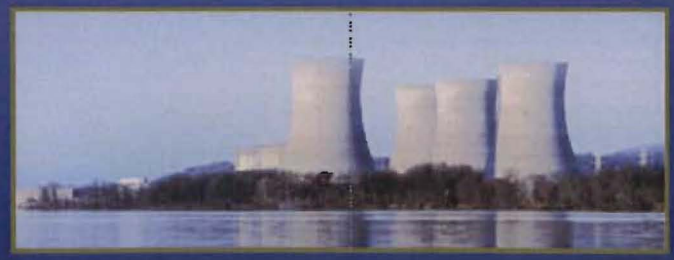
Impacts of Energy Demand Growth

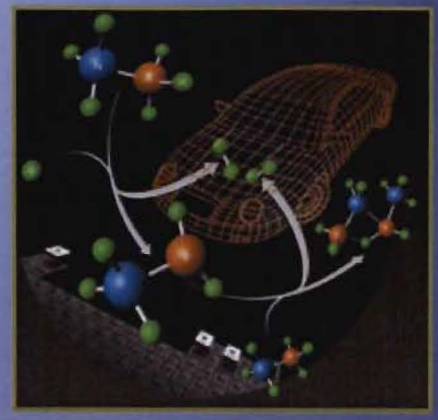
- Coupled predictive models for climate, infrastructure impact analysis
- Prediction of abrupt change at multiple scales (regional to global)
- Global security and policy implications



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

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