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Title:	Los Alamos- A National Security Laboratory for the Nation A discussion with Community Leaders
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Los Alamos
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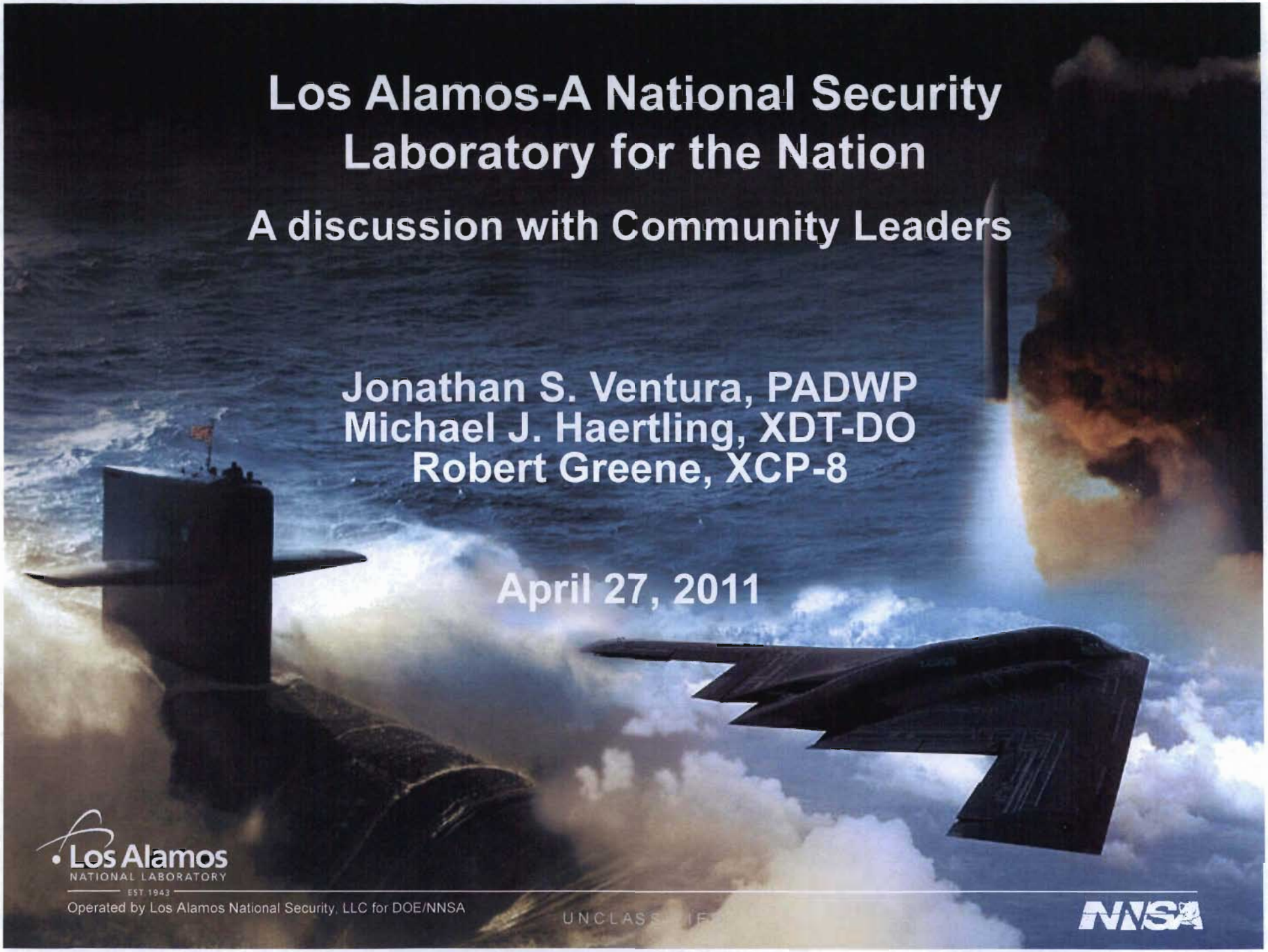
Form 836 (7/06)

Attached is a slide presentation on LANL's nuclear weapons program for community leaders from Los Alamos and surrounding counties.


Los Alamos-A National Security Laboratory for the Nation
A discussion with Community Leaders
Jonathan S. Ventura, PADWP
Michael J. Haertling, XDT-DO
Robert Greene, XCP-8
April 27, 2011
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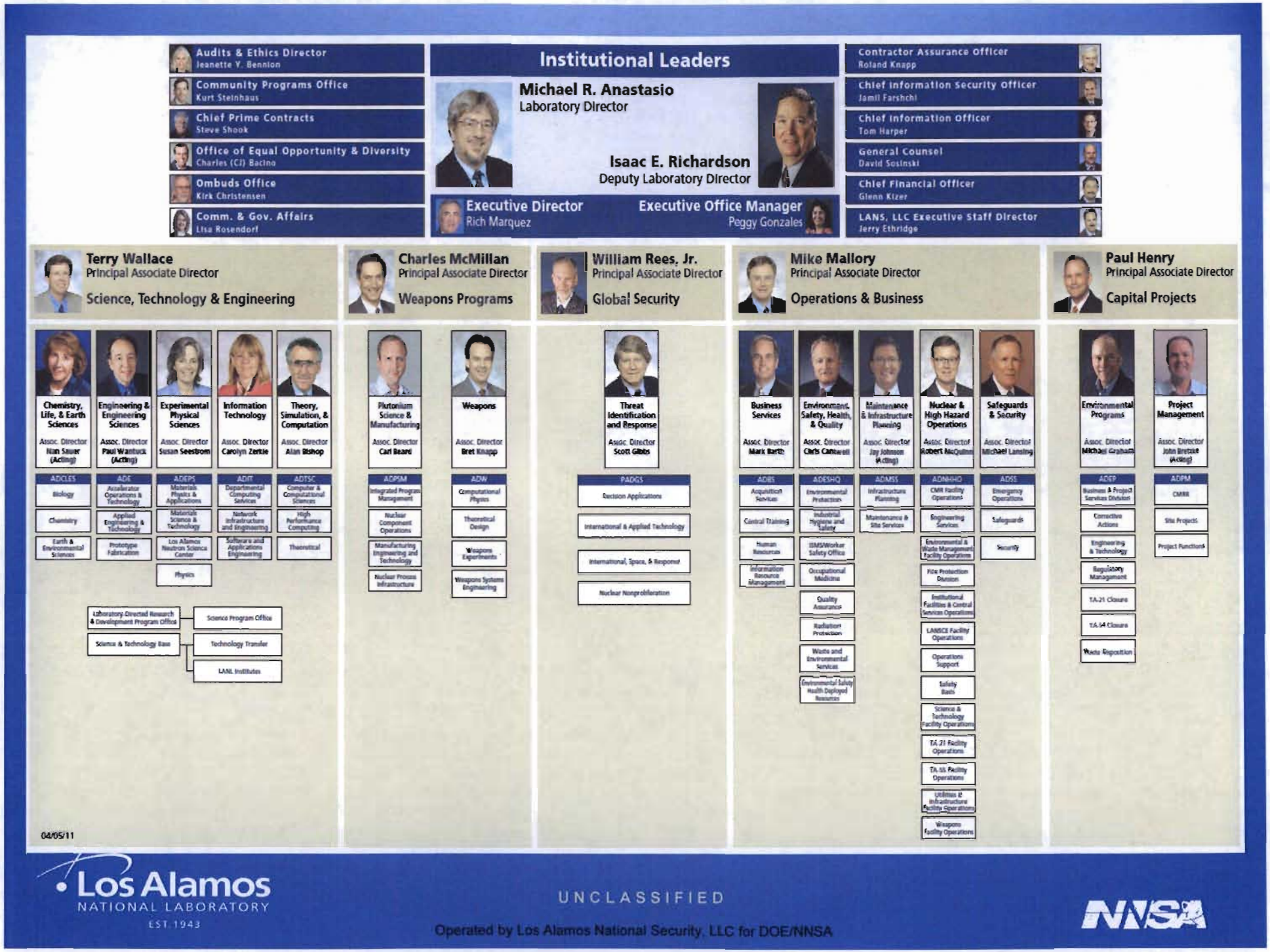

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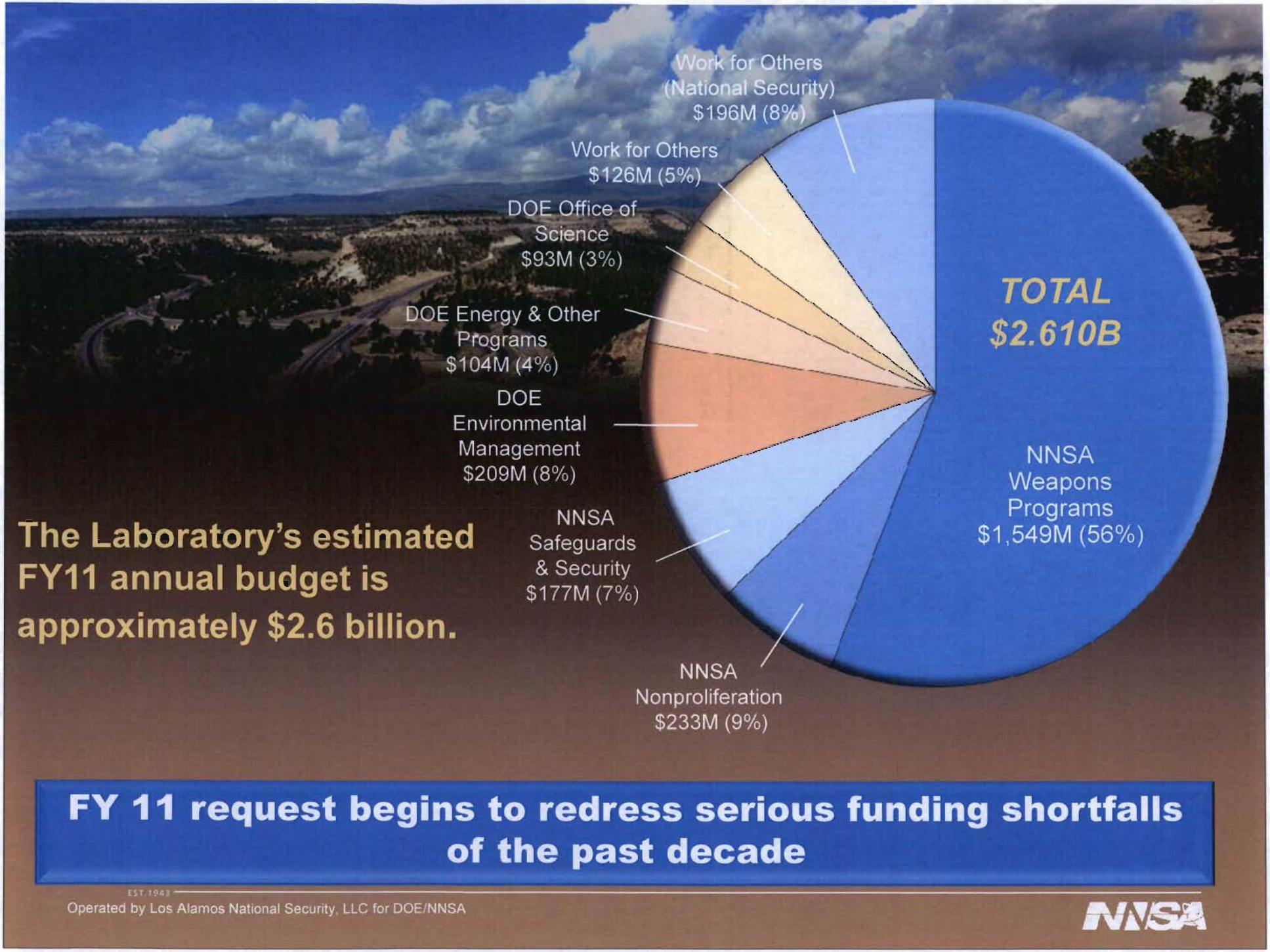
Work for Others
(National Security)
$196M (8%)
Work for Others
$126M (5%)
DOE Office of
Science
$93M (3%)
DOE Energy & Other
Programs
$104M (4%)
DOE
Environmental
Management
$209M (8%)
NNSA
Safeguards
& Security
$177M (7%)
NNSA
Nonproliferation
$233M (9%)
TOTAL
$2.610B
NNSA
Weapons
Programs
$1,549M (56%)
The Laboratory's estimated FY11 annual budget is approximately $2.6 billion.
FY 11 request begins to redress serious funding shortfalls of the past decade
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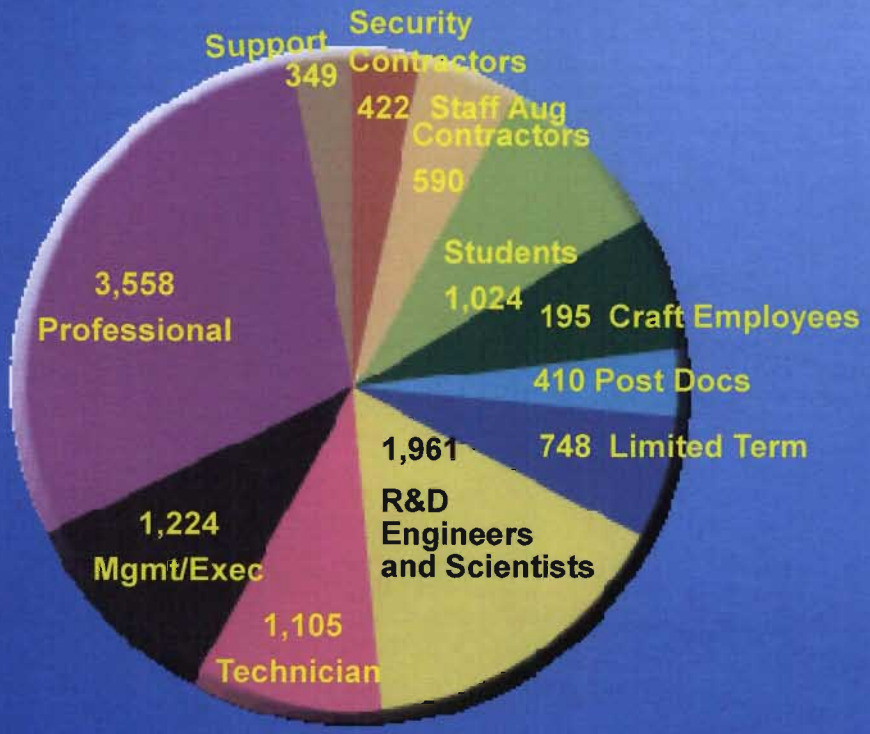
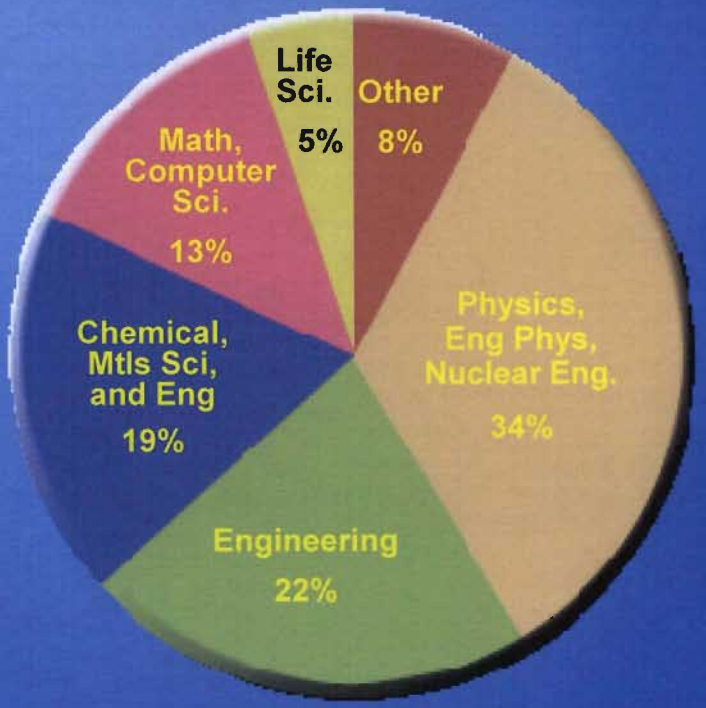
LANL is: Broad and Deep Science





R&D Scientist and Engineer Disciplines

12,182 - Current Work Force

- Drawn from across the nation
- 2,256 PhDs
- More than 28% of career workforce started as students or post docs

Our people make Los Alamos great!

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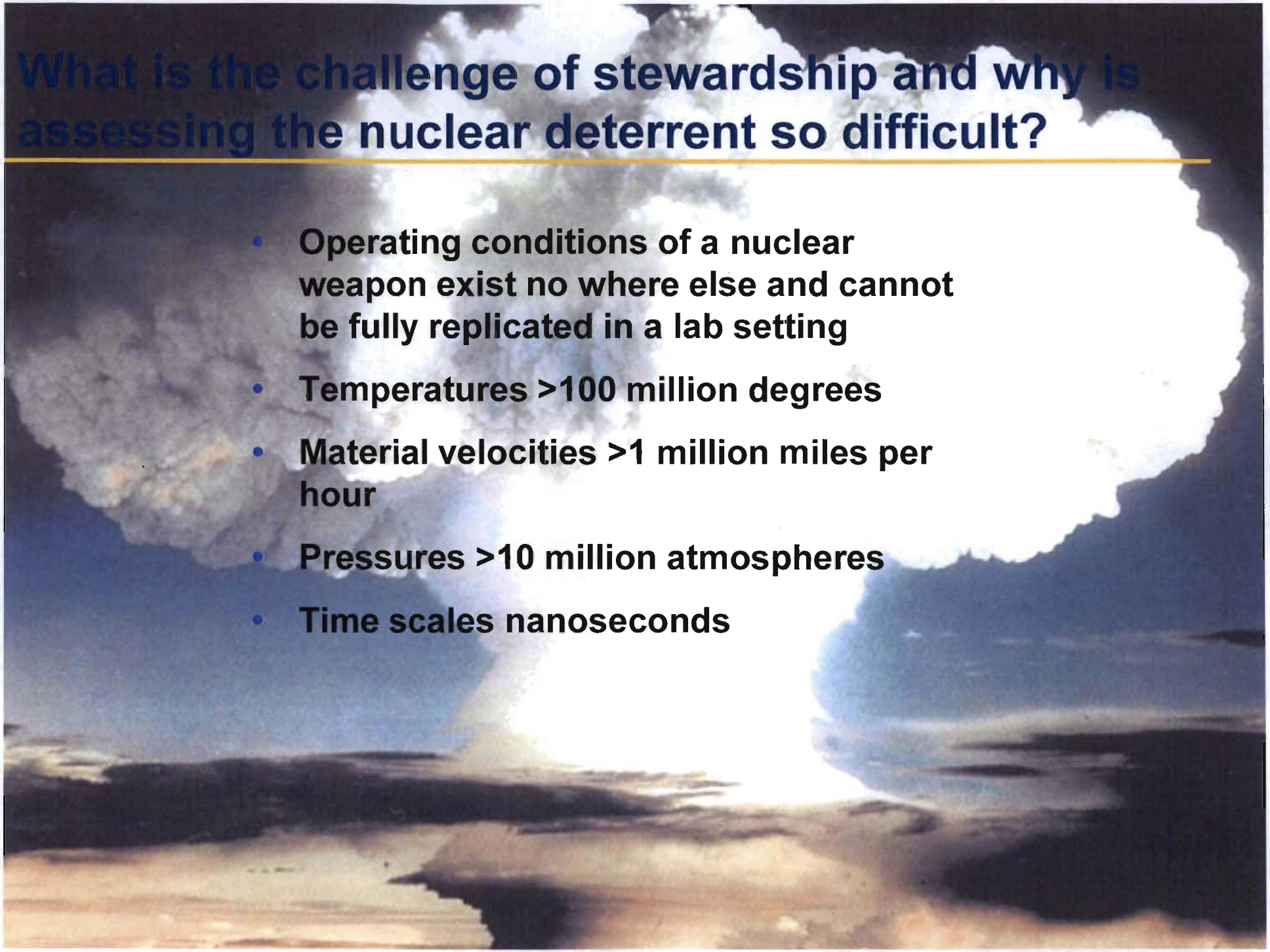
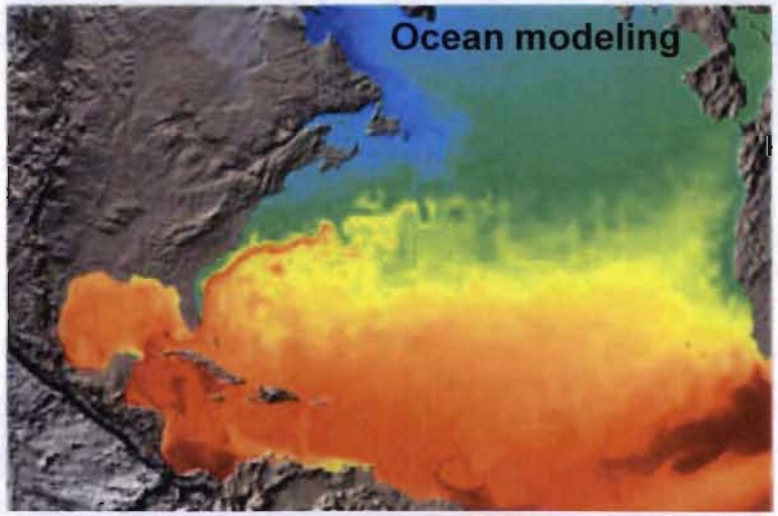


What is the challenge of stewardship and why is assessing the nuclear deterrent so difficult?

- Operating conditions of a nuclear weapon exist no where else and cannot be fully replicated in a lab setting
- Temperatures >100 million degrees
- Material velocities >1 million miles per hour
- Pressures >10 million atmospheres
- Time scales nanoseconds

Los Alamos provides science and engineering solutions to the Nation's security issues

- **Stockpile Stewardship is core mission**
- **Lab's tools also address other national priorities**
- **Technologies to reduce national security threats**
- **Solutions to challenges of energy security**



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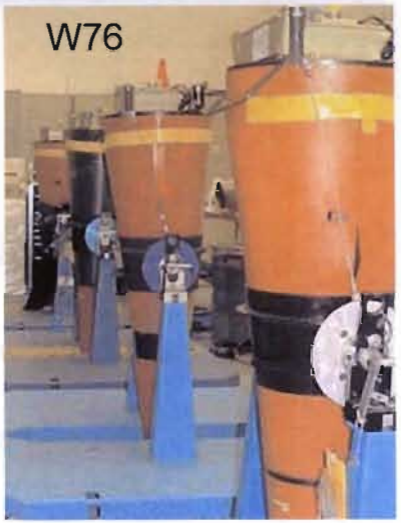
LANL is the design laboratory for the majority of the Nation's deterrent

- LANL is the design laboratory for:
  - W76 SLBM
  - W88 SLBM
  - B61Gravity bomb
  - W78 ICBM
- Each Triad leg offers complimentary and reinforcing benefits



LANL maintains a carefully balanced three part weapons program to sustain the Nation's deterrent

- **Stockpile management**
  - B61 Life Extension Program (LEP)
  - Support to plants on W76 LEP
  - Complete build of W88 pits begin work on W87 pits
- **Science, technology and engineering investments**
  - Use science tools to generate data to support assessment and resolve stockpile issues
- **Infrastructure investments**
  - Create modern, state-of-the-art facilities to sustain laboratory capabilities
  - Hire and train next generation

LANL's unique science and engineering infrastructure a critical component of U.S. deterrent

Metropolis Center for Modeling & Simulation

High Explosive laboratories

Los Alamos Neutron Science Center

Plutonium Processing Facility

Chemistry and Metallurgy Building

Dual Axis Radiographic Hydrotest Facility

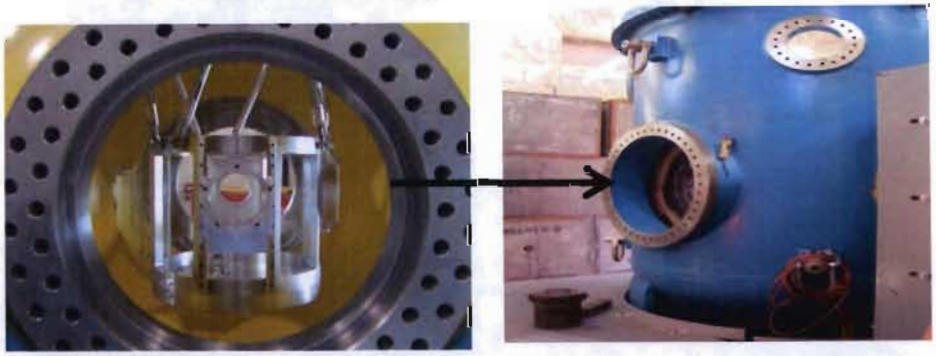
SIGMA Building

Chemistry & Metallurgy Research Replacement (RLUOB)

DARHT world class imaging in support of the deterrent

- World class X-ray radiography for non-nuclear hydrodynamic tests
- Axis 1 single image, operational since 1999
- Axis 2 up to four images operational 2009
- World's first dual axis experiment December 2009
- 4 large scale dual axis hydros 2010
- Experiments fully contained to reduce environmental impacts and increase shot rate

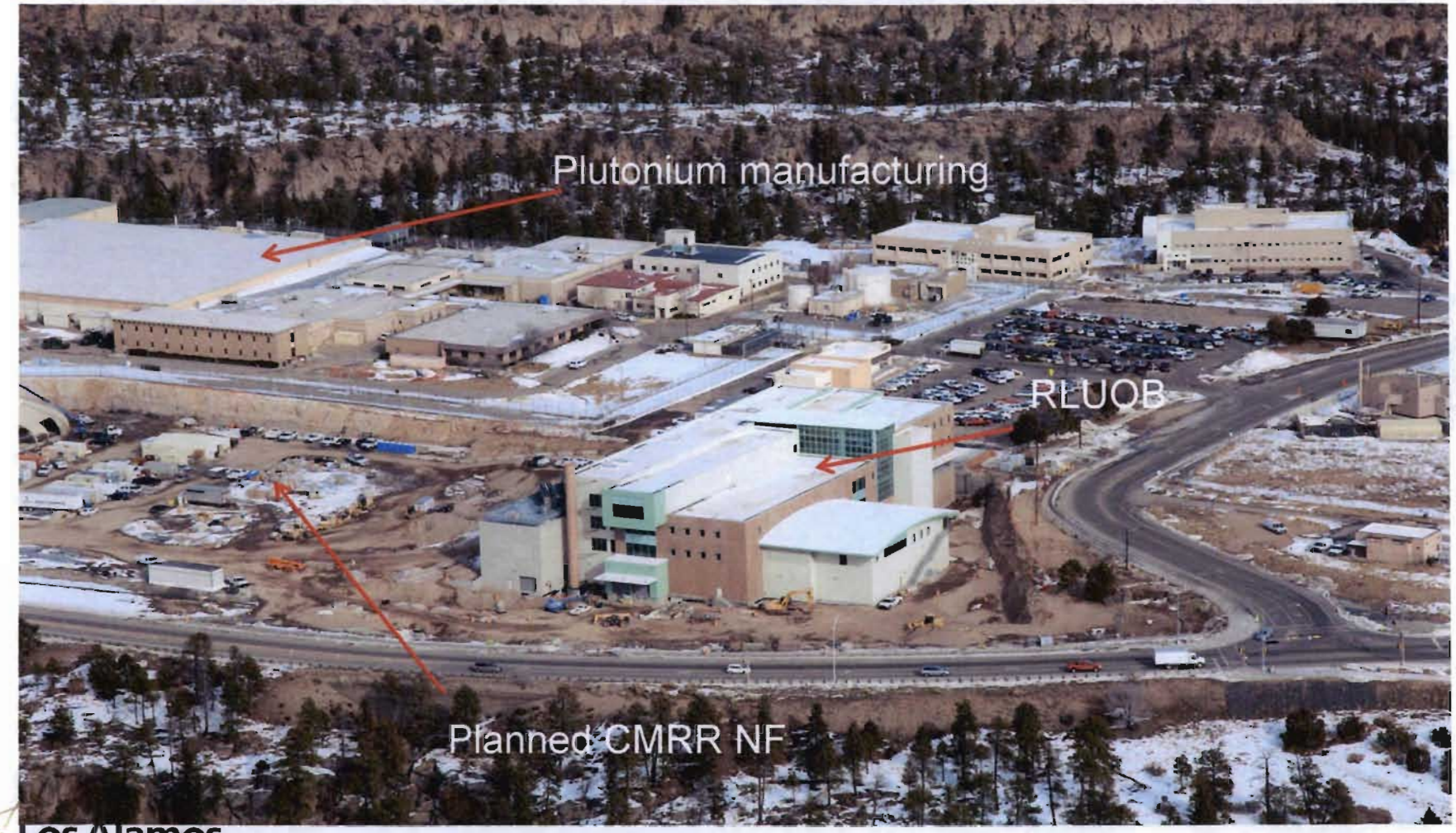
DARHT Containment System



Supercomputing critical to Stewardship and other scientific missions

- Stockpile challenges are increasingly complex as systems continue to age
- DARHT, LANSCE etc provide large data sets to resolve stockpile challenges
- Data sets require ever more capable machines that can quickly process information
- Road Runner world's first machine to operate at 1.105 petaflops (million billion calculations per second)
- Cielo coming on line Feb 2011@ 1.1 petaflops upgrade to 1.35 in summer 2011

TA-55 the Nation's center of plutonium science and manufacturing



CMRR will provide 21st century actinide science capabilities supporting a variety of national security missions

- **Phase 1 of CMRR—RLUOB completed on time/budget**
- **Phase 2 (equipment install) underway on schedule and budget**
- **CMRR will support a broad range of LANL activities including:**
  - non-proliferation/IAEA training
  - nuclear energy R&D
  - space power
  - homeland security
- **CMRR NF will improve site security and allow for SNM consolidation**
- **CMRR NF adds @ 20,000 square feet of Cat I/2 lab space to support operations in PF-4**
  - Analytical chemistry
  - Actinide R&D
  - Materials characterization
  - Vault storage

Annual Assessment– A statutory requirement and the highest priority of the Lab Director

- Detailed reports are prepared by lab staff on each warhead
- Lab Director briefed in detail by staff
- Lab Director issues letter to Secretaries of Defense & Energy and Chair of the NWC
- Lab Director briefs the Secretary of Energy
- STRATCOM prepares separate report and briefs the Secretary of Defense
- Secretaries of Defense & Energy brief the President
- President advises Congress

LANL's expertise in high explosives is being applied to the IED problem

- Intensive 3 day course to learn how to detect, identify, and characterize a variety of improvised explosive compounds
- Training began in 2009
- The program is funded by DoD
- 100s war fighters have been trained

2010 a year of significant accomplishment for the Los Alamos National Laboratory

- DIR testified before 2 Senate committees on new START
- 14th Annual assessment completid
- Successfully executed 4 DARHT hydro shots
- Operating Road Runner in secure environment
- Installed Cielo supercomputer in SCC
- Supporting plants on W76-1 build
- Initiated 6.2/2A study on B61 LEP
- Conducting subcritical experiments in Nevada
- Completing build of W88 WR pits to support US Navy
- Completed RLUOB construction outfitting ahead of schedule and under budget
- Selective hiring underway in XTD,XCP,SMS,W divisions
- Established Metropolis Post Doctoral fellowship program
- Awarded 5 R&D 100 awards bringing LANL's total to 117