



Sandia  
National  
Laboratories

*Exceptional service in the national interest*



# SANDIA NATIONAL LABORATORIES

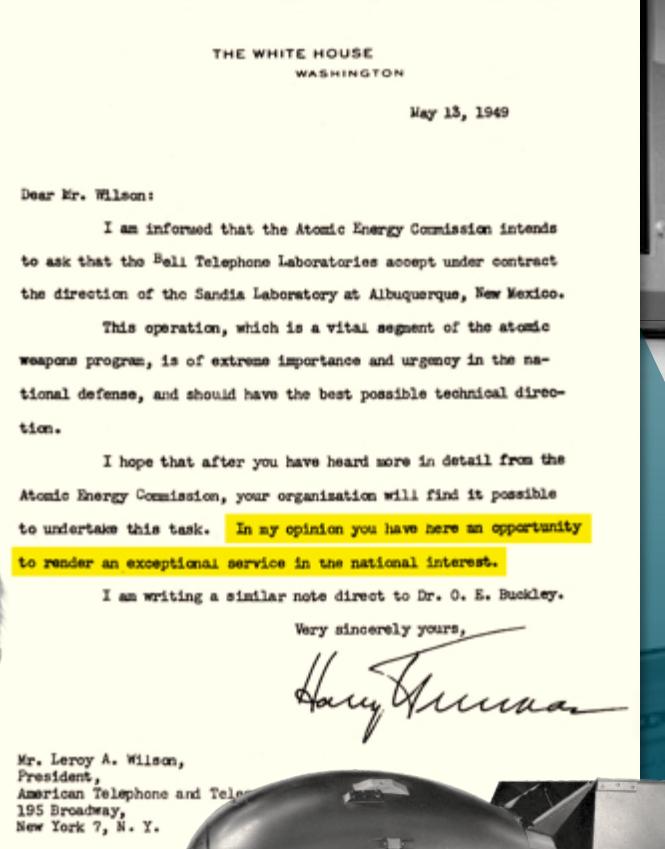
# An Overview



Sandia National Laboratories is a multimission laboratory managed and operated by National Technology & Engineering Solutions of Sandia, LLC, a wholly owned subsidiary of Honeywell International Inc., for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-NA0003525.

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# SANDIA ORIGINATED FROM THE MANHATTAN PROJECT



*Exceptional service  
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# SANDIA IS A FEDERALLY FUNDED RESEARCH AND DEVELOPMENT CENTER (FFRDC) MANAGED AND OPERATED BY

National Technology & Engineering Solutions of Sandia, LLC, a wholly owned subsidiary of Honeywell International Inc.

Government-owned, contractor-operated

## FFRDCs

- Serve as long-term strategic partners to the federal government
- Operate in the public interest with objectivity and independence
- Maintain core competencies in missions of national significance

# SANDIA: ONE OF THE TWO LARGEST NATIONAL LABORATORIES



**13,078**  
New Mexico

**1,842**  
California

**\$3.9B** FY21 Total  
Labs Costs

60.5% allocated to Nuclear Deterrence

## Office of Science Laboratories

- 1 Ames Laboratory Ames, Iowa
- 2 Argonne National Laboratory Argonne, Illinois
- 3 Brookhaven National Laboratory Upton, New York
- 4 Fermi National Accelerator Laboratory Batavia, Illinois
- 5 Lawrence Berkeley National Laboratory Berkeley, California
- 6 Oak Ridge National Laboratory Oak Ridge, Tennessee
- 7 Pacific Northwest National Laboratory Richland, Washington
- 8 Princeton Plasma Physics Laboratory Princeton, New Jersey
- 9 SLAC National Accelerator Laboratory Menlo Park, California
- 10 Thomas Jefferson National Accelerator Facility Newport News, Virginia

## Other DOE Laboratories

- 1 Idaho National Laboratory Idaho Falls, Idaho
- 2 National Energy Technology Laboratory Morgantown, West Virginia Pittsburgh, Pennsylvania Albany, Oregon

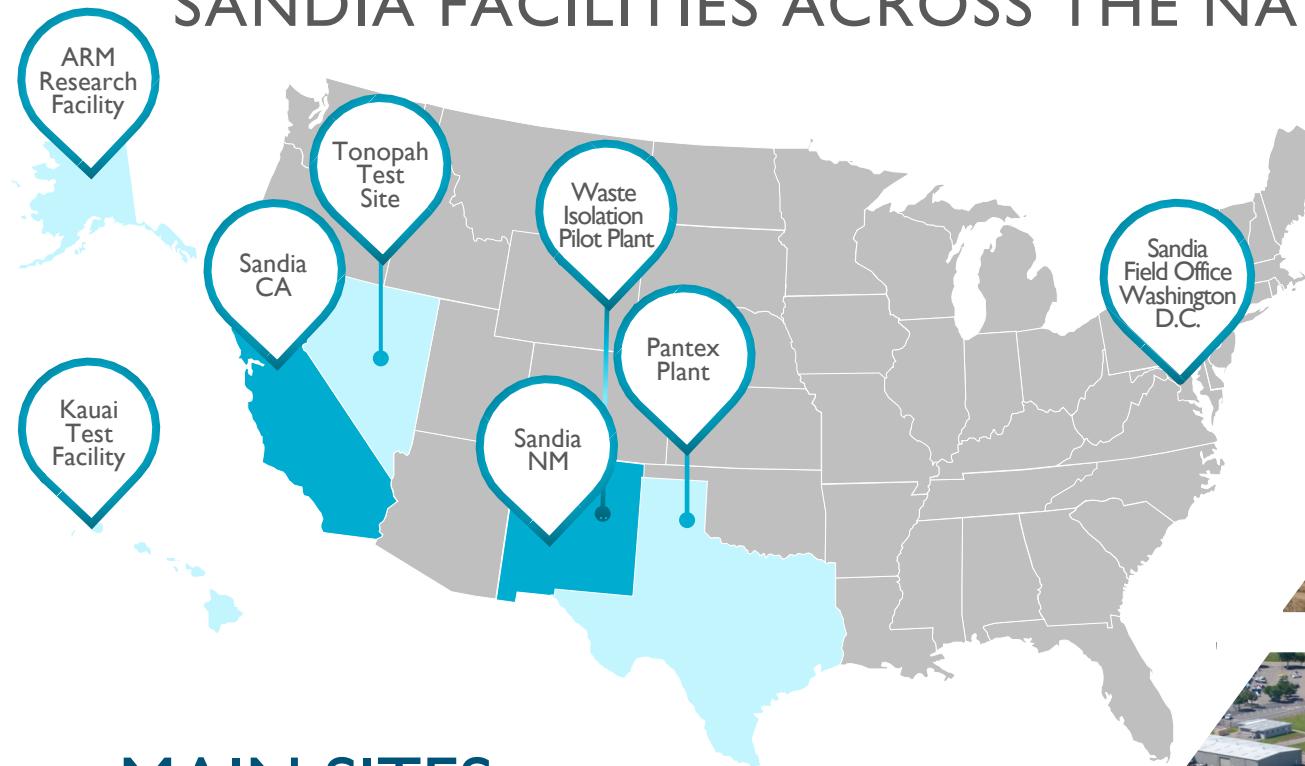
- 3 National Renewable Energy Laboratory Golden, Colorado
- 4 Savannah River National Laboratory Aiken, South Carolina

## NNSA Laboratories

- 1 Lawrence Livermore National Laboratory Livermore, California
- 2 Los Alamos National Laboratory Los Alamos, New Mexico
- 3 Sandia National Laboratories Albuquerque, New Mexico Livermore, California



# SANDIA FACILITIES ACROSS THE NATION



## MAIN SITES

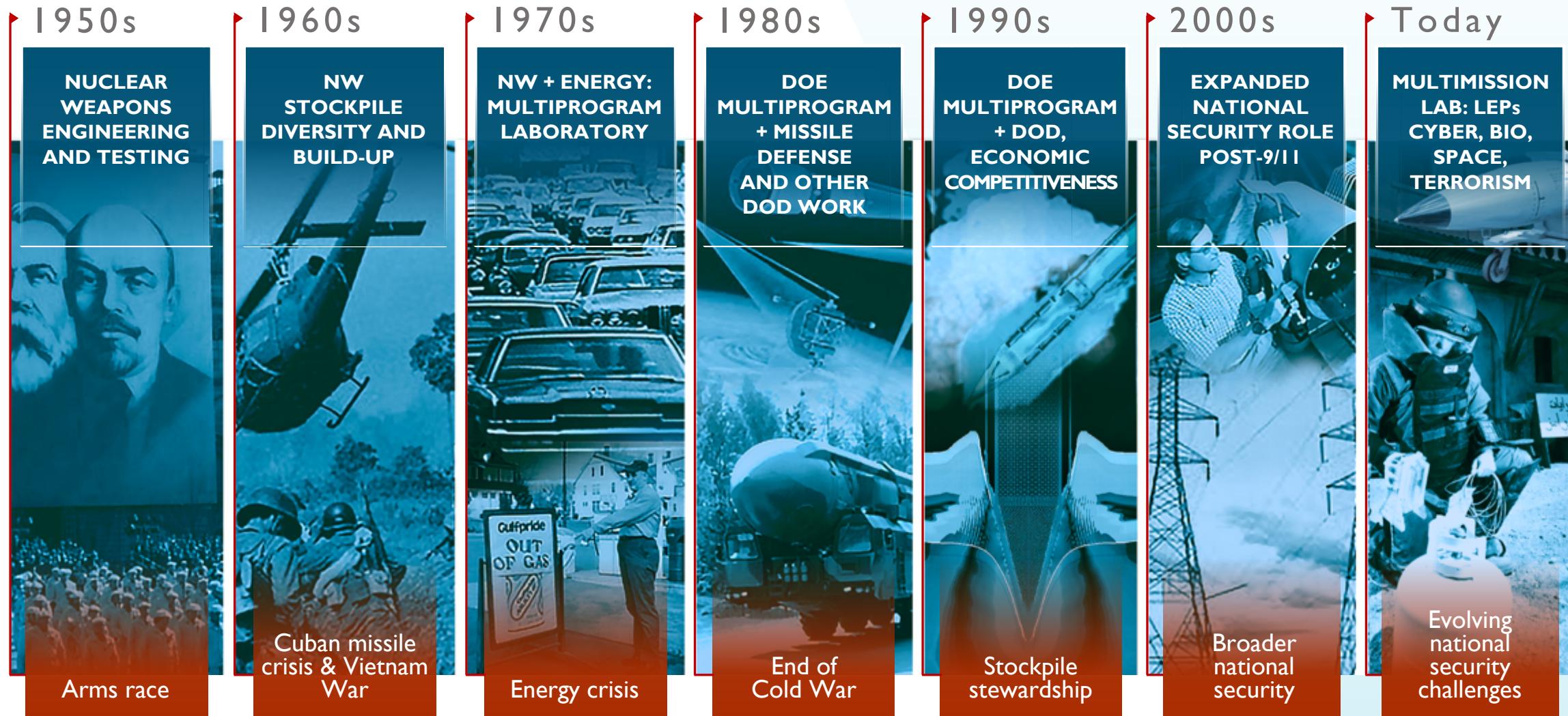
Albuquerque, New Mexico  
Livermore, California

Average age of facilities is 39 years

- >7,000,000 sq. ft. of labs and offices
- >300 sq. mi. of property



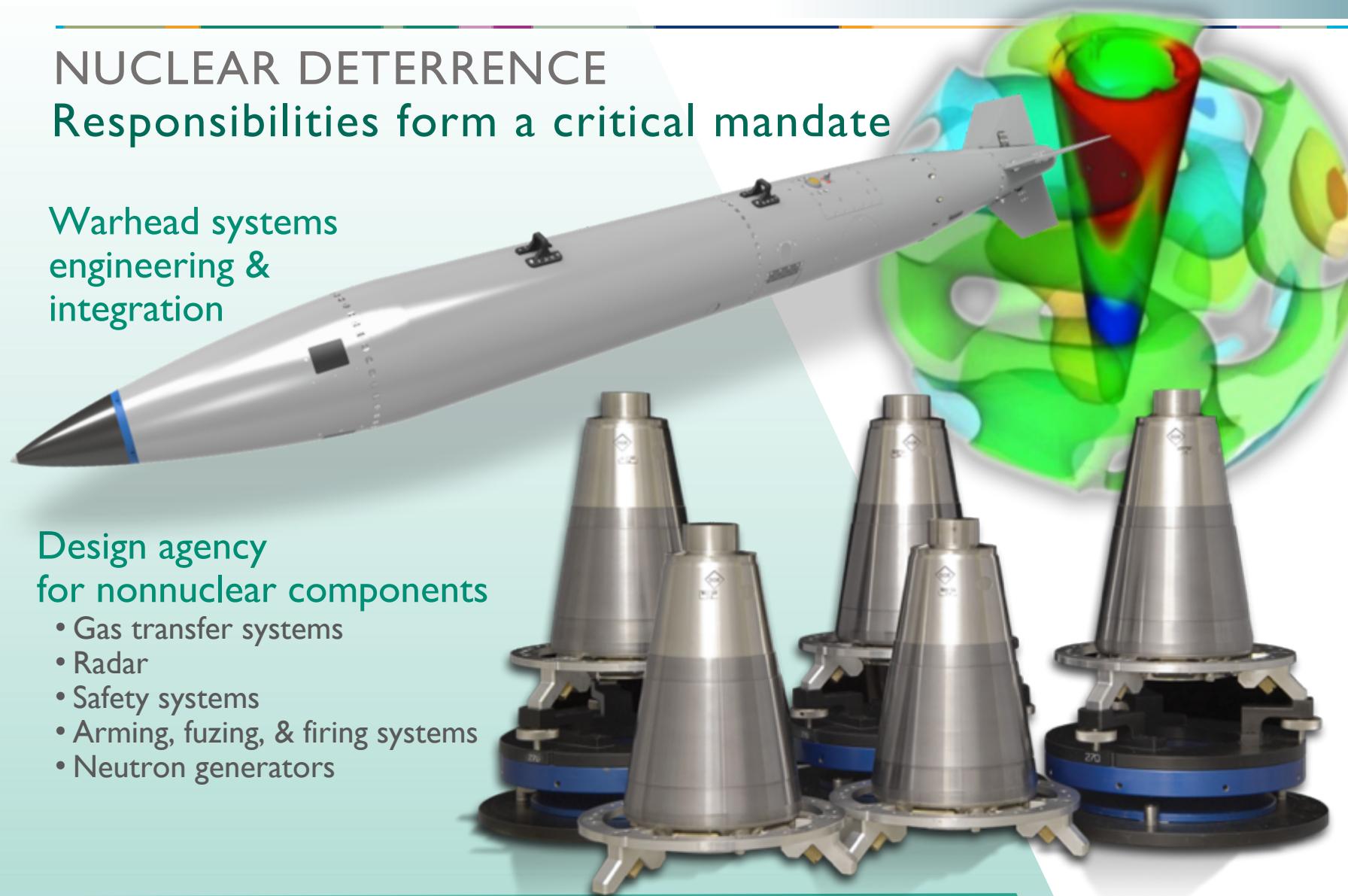
# SANDIA'S ROLE EVOLVES WITH NATIONAL SECURITY NEEDS



# NUCLEAR DETERRENCE

## Responsibilities form a critical mandate

Warhead systems  
engineering &  
integration



### Design agency for nonnuclear components

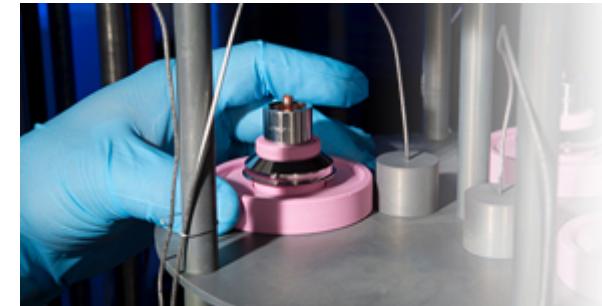
- Gas transfer systems
- Radar
- Safety systems
- Arming, fuzing, & firing systems
- Neutron generators

Sandia's Mission Assurance organization proactively  
prevents defects and ensures mission success

### Multidisciplinary capabilities

Required for design,  
qualification, production,  
surveillance, computation/  
experimentation

- Major environmental test facilities & diagnostics
- Materials sciences
- Light-initiated high explosives
- Computational analytics



### Production agency

- Neutron generators
- Sandia external production
- Microelectronics
- Thermal batteries



# CAPABILITIES FROM OUR NUCLEAR WEAPONS PROGRAM HELP US SOLVE COMPLEX NATIONAL SECURITY PROBLEMS

GAS TRANSFER  
SYSTEMS

HYDROGEN FUELING SYSTEMS  
HYDROGEN SAFETY

MATERIALS SCIENCE

RADIATION-TOLERANT  
& CORROSION-RESISTANT MATERIALS  
HYDROGEN STORAGE

MICROELECTRONICS

POWER SYSTEMS FOR GRID  
& ELECTRIC VEHICLES

NUCLEAR WEAPONS  
& RADIATION EFFECTS

SOLAR TOWER  
EMP-RESILIENT GRID

POWER SOURCE  
& BATTERIES

GRID-SCALE STORAGE  
ELECTRIC VEHICLES

## BIG THINGS WE ARE DOING TODAY



# SANDIA'S ENERGY & HOMELAND SECURITY RESPONSE TO GLOBAL CRISIS

**SHIELDS UP**



## SHIELDS UP

Russia's invasion of Ukraine could impact organizations both within and beyond the region. [malicious cyber activity](#) against the U.S. homeland, including as a response to the unprecedented economic costs imposed on Russia by the U.S. and our allies and partners. Evolving intelligence indicates that the Russian Government is exploring options for potential cyberattacks. Every organization—large and small—must be prepared to respond to disruptive cyber incidents. As the nation's cyber defense agency, CISA stands ready to help organizations prepare for, respond to, and mitigate the impact of cyberattacks. When cyber incidents are reported quickly, we can use this information to render assistance and as warning to prevent other organizations and entities from falling victim to a similar attack.



**REUTERS**

### IAEA loses contact with safeguards monitoring systems at Chernobyl



**The New York Times**

### *As Tanks Rolled Into Ukraine, So Did Malware. Then Microsoft Entered the War.*



Ukrainians gather in a train station in Kyiv in an effort to leave the city shortly after the Russian invasion began. Lynsey Addario for The New York Times

**The Washington Post**

### What is the strategic oil reserve, and can it lower gas prices?



An oil pump in Culver City, Calif. Biden is releasing about 180 million barrels of oil from the Strategic Petroleum Reserve to try to temper high gas prices. (Kyle Grillot/Bloomberg)

## SANDIA ENERGY WORK – EXAMPLE

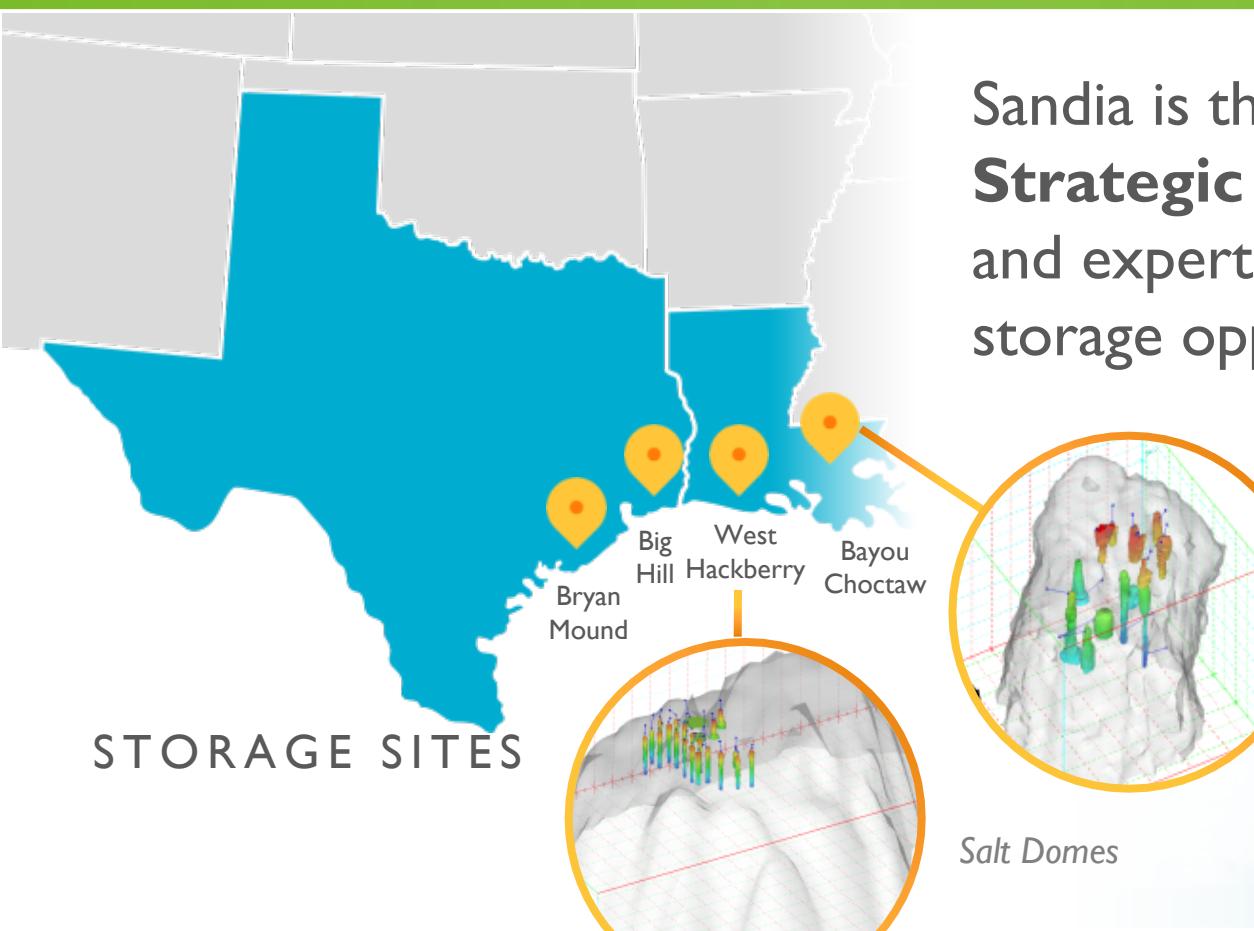
Sandia leverages decades of Arctic research, development, and operations in the region to address global challenges and national security issues

- Energy resilience
- Environmental modeling
- Harsh-environment testing
- Emerging national security challenges



## SANDIA ENERGY WORK – EXAMPLE

Sandia has 40+ years of geologic underground storage experience



Sandia is the technical advisor for the nation's **Strategic Petroleum Reserve**. Capabilities and expertise can be applied to other underground storage opportunities.



## SANDIA ENERGY WORK – EXAMPLE

Sandia's transformational R&D is helping to modernize the electric grid for decarbonization, security, and resilience

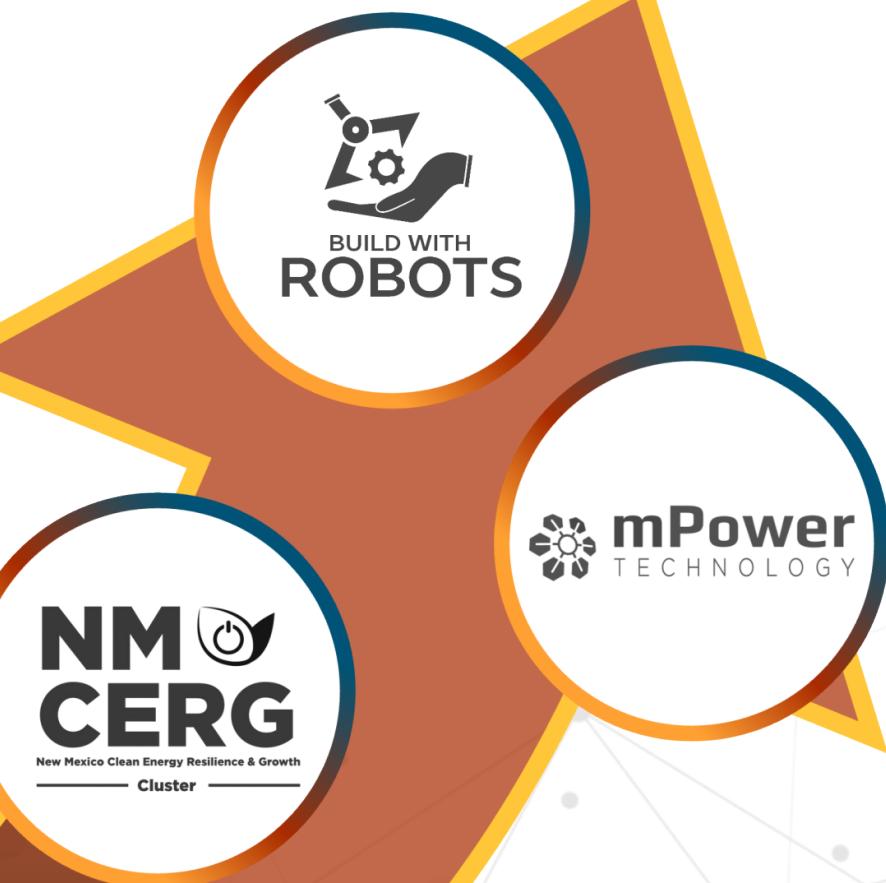
- Cybersecurity
- Physical security
- Microgrids and distributed energy
- Energy storage
- Power electronics
- Resilience



# SANDIA SUPPORTS NEW MEXICO BUSINESS AND TECHNOLOGY POLICY



New Mexico Small Business Assistance Program and the Technology Readiness Initiative (TRGR) enables Sandia and Los Alamos to provide technical assistance to New Mexico businesses.



## HOW CAN STATE GOVERNMENTS USE THE NATIONAL LABS?

We bring technical knowledge to inform policy

As an FFRDC, Sandia's team of experts can provide federal agencies with R&D expertise to advise and serve in the public interest.

Want to learn more?

Contact us at  
[govrela@sandia.gov](mailto:govrela@sandia.gov)





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