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Director, Nuclear Reactor Development



# Idaho National Laboratory – Enabling Energy Dominance and Security Through Research, Development and Demonstration

Battelle Energy Alliance manages INL for the  
U.S. Department of Energy's Office of Nuclear Energy



Idaho National Laboratory

# Seventeen DOE National Laboratories



# “Spectrum” of DOE Laboratories

## Multipurpose Science Labs

Brookhaven National Laboratory

SLAC NATIONAL ACCELERATOR LABORATORY

BERKELEY LAB

Argonne NATIONAL LABORATORY

Pacific Northwest NATIONAL LABORATORY

OAK RIDGE National Laboratory

## Multipurpose Security Labs

Los Alamos NATIONAL LABORATORY

Sandia National Laboratories

Lawrence Livermore National Laboratory

## Multipurpose Environmental Lab

SRNL<sup>®</sup>  
SAVANNAH RIVER NATIONAL LABORATORY  
OPERATED BY SAVANNAH RIVER NUCLEAR SOLUTIONS

SCIENCE

TECHNOLOGY

Jefferson Lab  
*Exploring the Nature of Matter*

PPPL  
PRINCETON PLASMA PHYSICS LABORATORY

Fermilab

AMES LABORATORY  
U.S. DEPARTMENT OF ENERGY

INEL Idaho National Laboratory

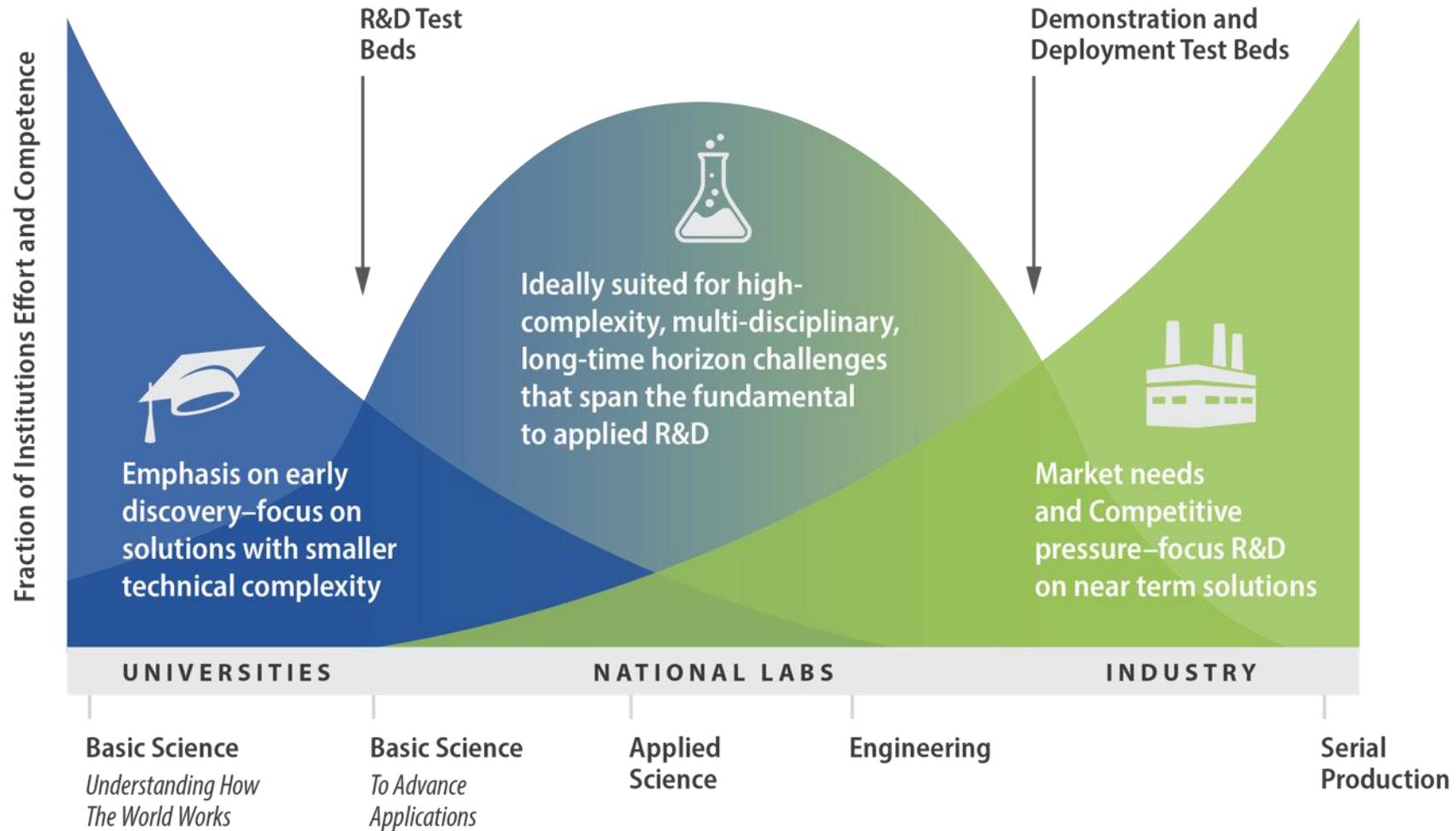
NREL  
NATIONAL RENEWABLE ENERGY LABORATORY

NETL  
NATIONAL ENERGY TECHNOLOGY LABORATORY

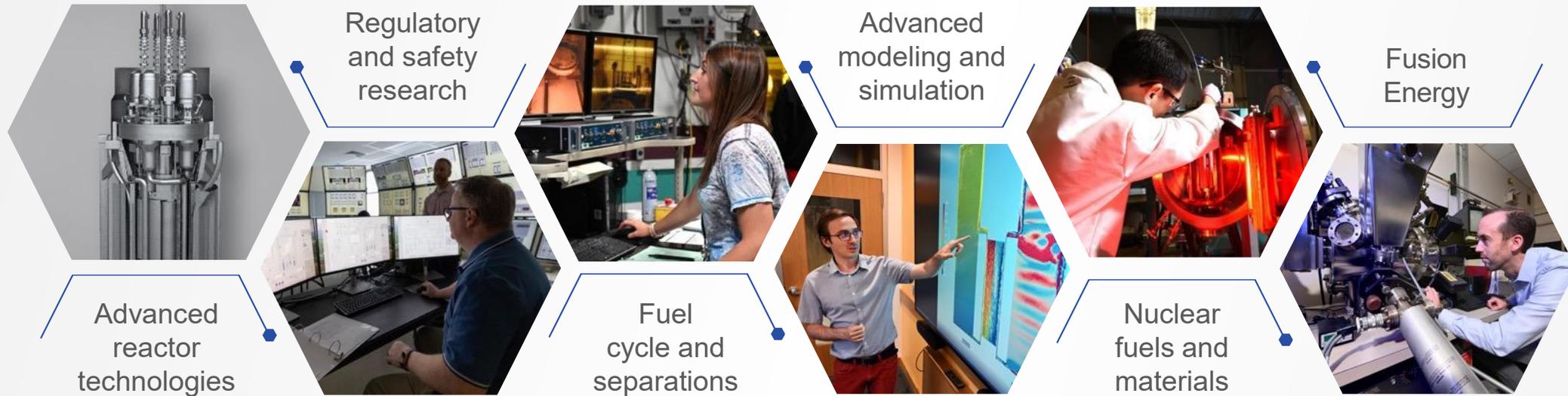
## Single Program Science Labs

## Multipurpose Energy Technologies Labs

# DOE labs support the entire technology lifecycle



# Sustaining the existing commercial reactor fleet and expanding deployment of nuclear energy



# Advanced reactor size comparison

## Large-Scale Reactor

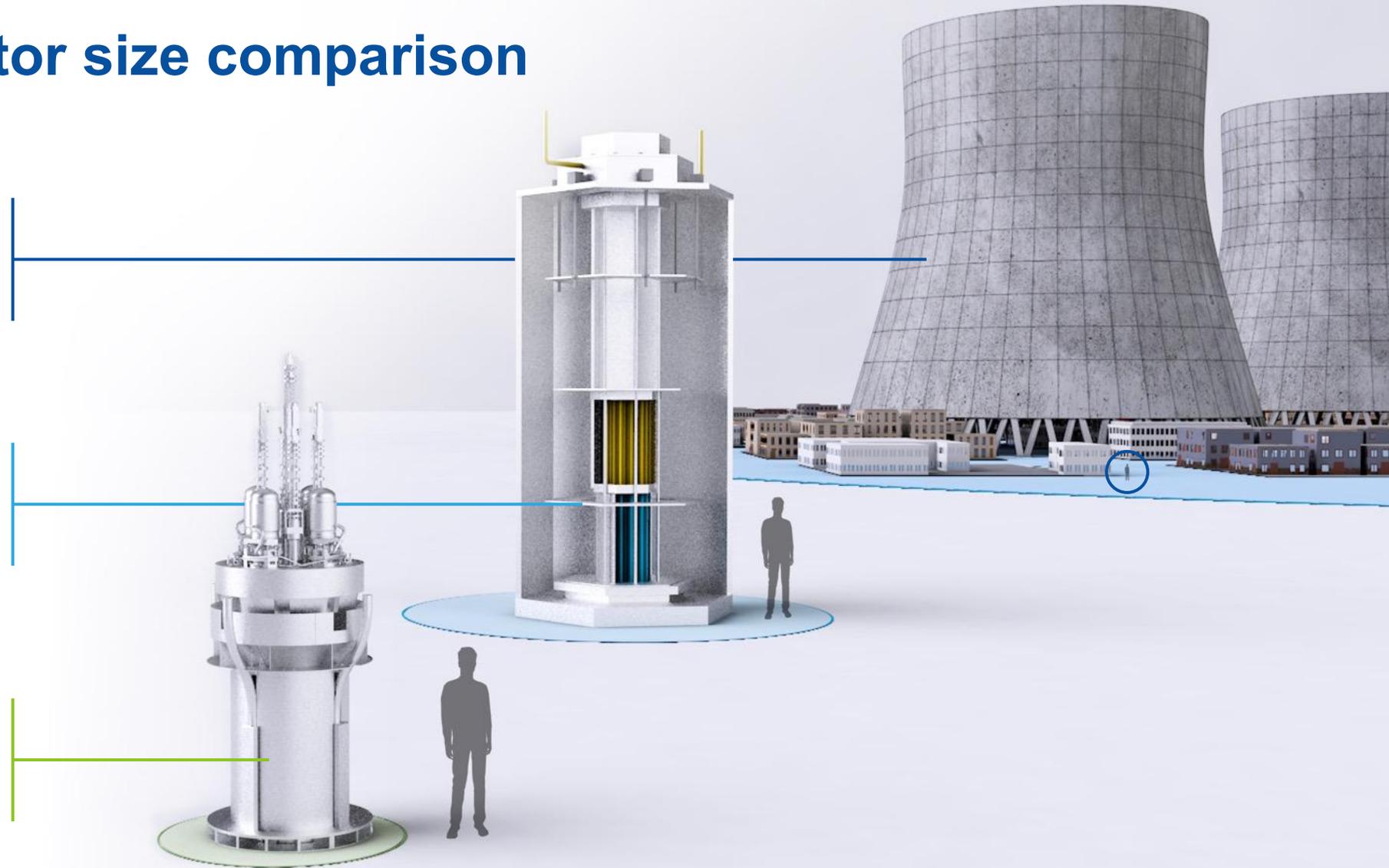
300 MW – 1,000+ MW  
1,500 ACRES

## Small Modular Reactor

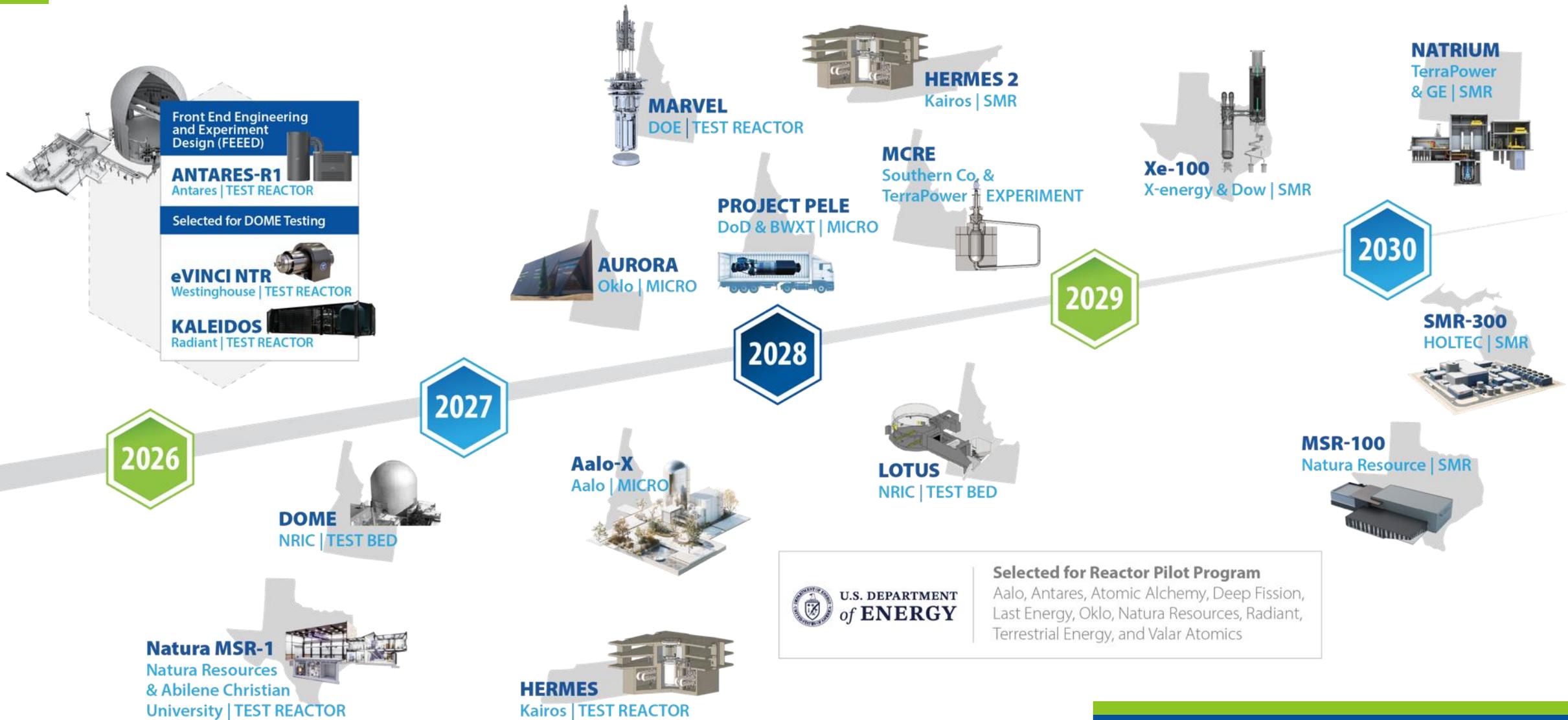
20 MW – 300 MW  
50 ACRES

## Microreactor

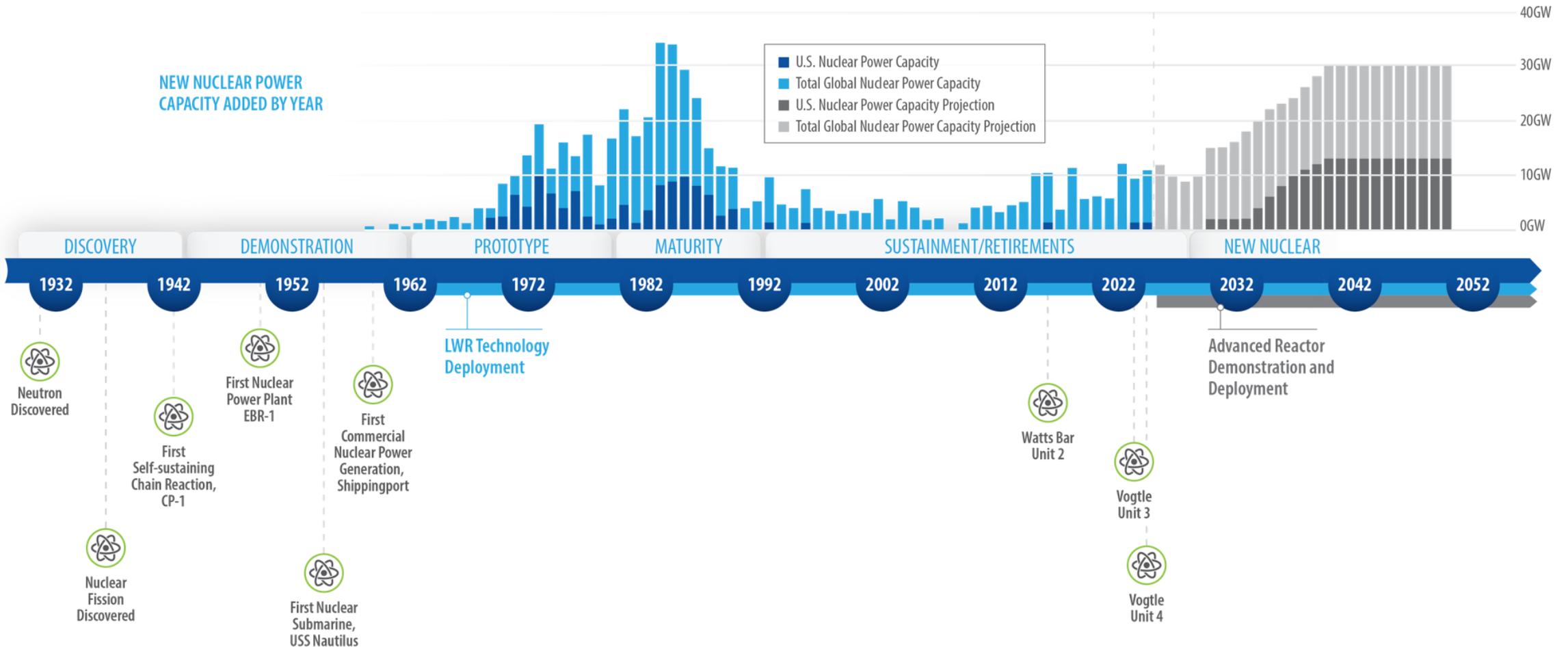
1 MW – 20 MW  
LESS THAN AN ACRE



# Accelerating advanced reactor demonstration and deployment



# Technical innovation and strategic partnerships will overcome technical, geopolitical, policy, and economic challenges to deployment





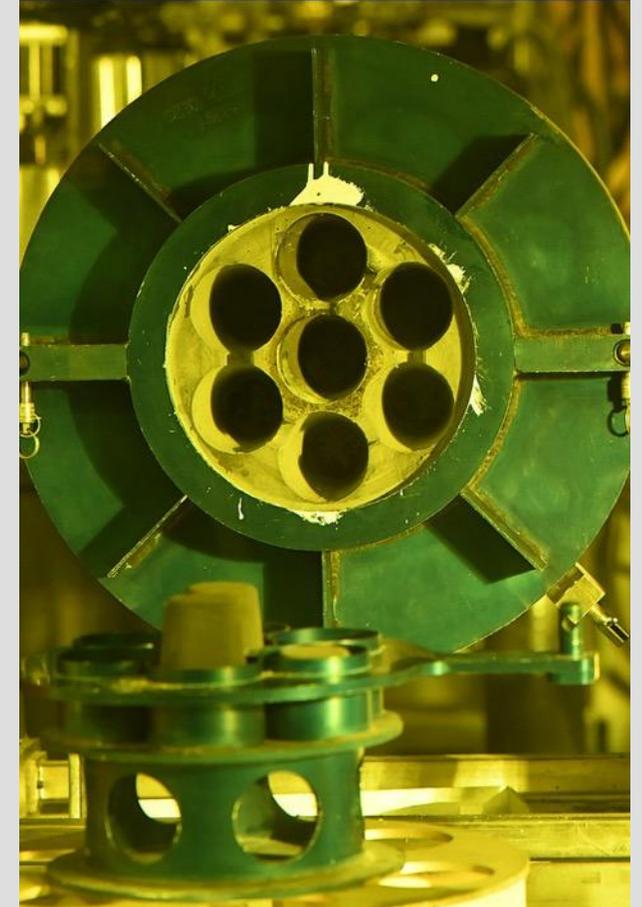
## Nuclear Energy Executive Orders

- Reinvigorate the Nuclear Industrial Base
- Reform Nuclear Reactor Testing at DOE
- Deploy Advanced Nuclear Reactor Technologies for National Security
- Reform the Nuclear Regulatory Commission

President Donald Trump holds up a signed executive order in the Oval Office of the White House May 23, 2025 in Washington, DC. Win McNamee/Getty Images

# Reinvigorate the Nuclear Industrial Base

- Strengthen the Domestic Nuclear Fuel Cycle
  - Reports on recycling and waste management, and domestic uranium
  - Expand conversion and enrichment capabilities
  - Halt Pu dilute and dispose and establish a program to make available to industry
  - Update uranium management policy and prioritize fuel fabrication facilities to supply test reactor fuel
- Funding for restart, completion, uprate or construction of nuclear plants (5GW uprates, 10 new large reactors by 2030)
- Grow Nuclear Workforce
  - Perform gap analysis of apprenticeship programs
  - Increase access to national labs



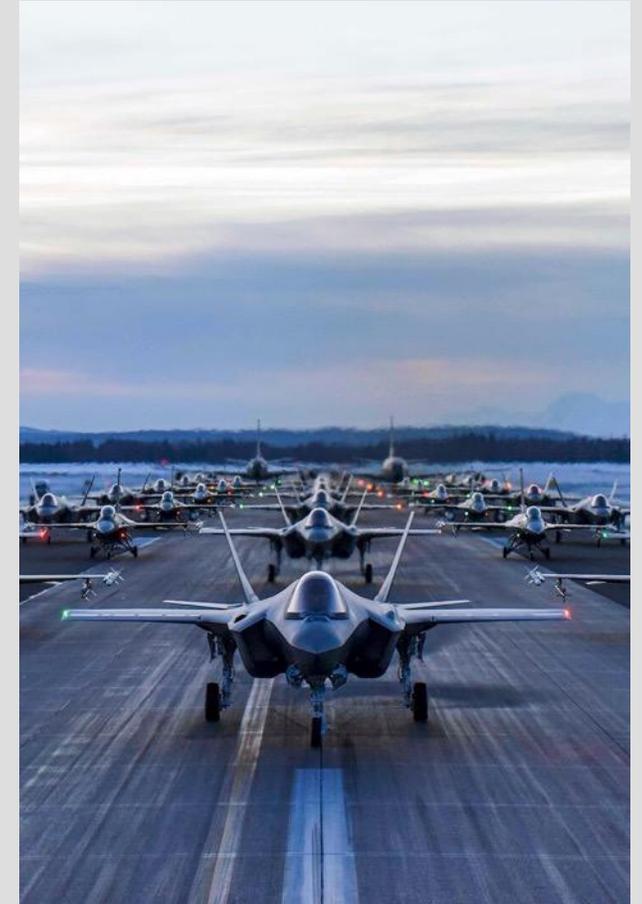
# Reform Nuclear Reactor Testing at Department of Energy

- Define qualified test reactors and revise DOE and national laboratory requirements to “significantly expedite” deployment of advanced reactors
- Establish a "pilot program" outside of national laboratories and approve of at least three reactors with the goal of achieving criticality by July 4, 2026
- Streamline environmental reviews and reform DOE NEPA requirements



# Deploy Advanced Nuclear Reactor Technologies For National Security

- Deploy advanced nuclear reactors on military and DOE sites
- Release 20 metric tons of HALEU for any project on DOE sites powering AI and other infrastructure
- Interagency coordination and NEPA streamlining
- International engagement and exports - 123 Agreements – 20 by close of the 120<sup>th</sup> Congress

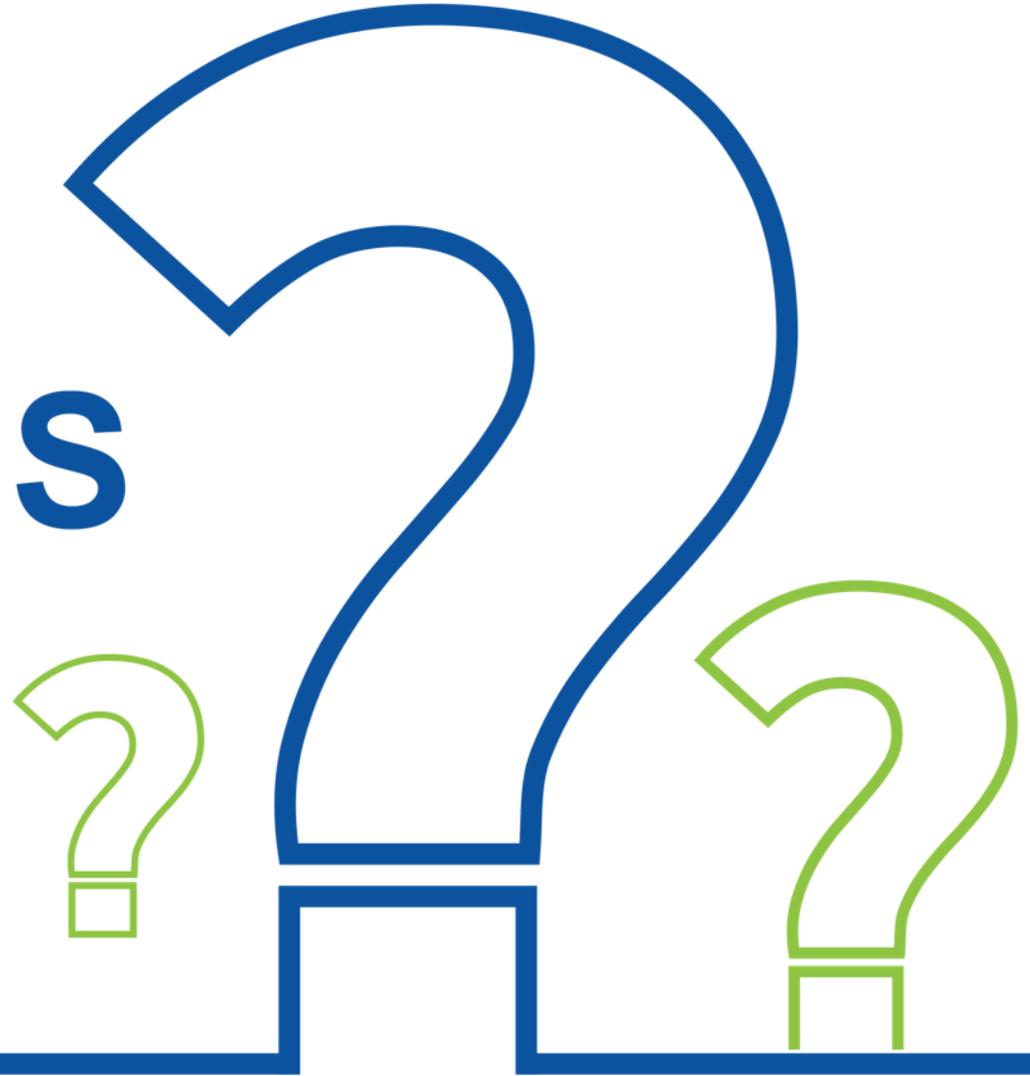


# Reform the Nuclear Regulatory Commission

- Reestablish U.S. nuclear leadership leading to a quadrupling of nuclear power by 2050
- Reform culture and restructure NRC to increase availability of and innovation in nuclear
- Revise current NRC processes and regulations and establish "fixed deadlines"
- Reconsider linear no-threshold (LNT) model
- Credit DOE or DOD reactor reviews



# QUESTIONS





# Idaho National Laboratory

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*Battelle Energy Alliance manages INL for the U.S. Department of Energy's Office of Nuclear Energy. INL is the nation's center for nuclear energy research and development, and also performs research in each of DOE's strategic goal areas: energy, national security, science and the environment.*