



ALD S9 Presentation NHS Overview

November 2023

Changing the World's Energy Future

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Associate Laboratory Director

National and Homeland Security



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



Idaho National Laboratory

INL is One of DOE's Multi-Program National Laboratories

Nuclear Science and Technology

National and Homeland Security Science and Technology

Energy and Environment Science and Technology



Addressing Energy and Security Challenges at Scale

\$1,630 M FY22 Total Operating Cost
5,500+ Employees
569,178 Acres
890 Square Miles



4 Operating reactors

12 Hazard Category II & III non-reactor facilities/ activities

50 Radiological facilities/activities

17.5 Miles railroad for shipping nuclear fuel

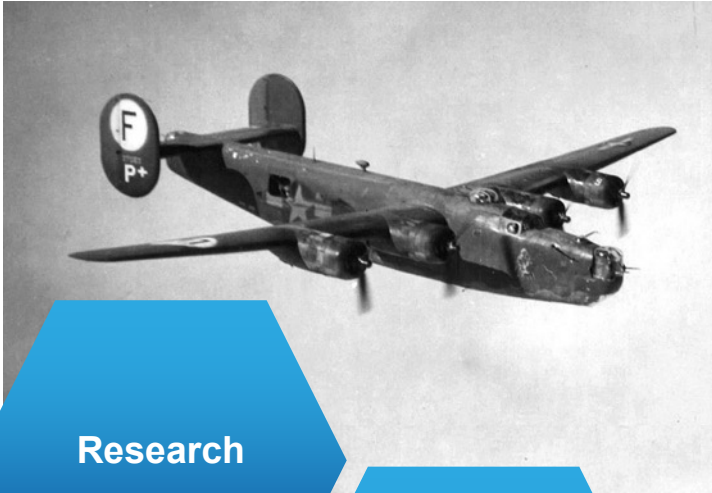
44 Miles primary roads (125 miles total)

9 Substations with interfaces to two power providers

126 Miles high-voltage transmission lines

3 Fire Stations

National & Homeland Security History



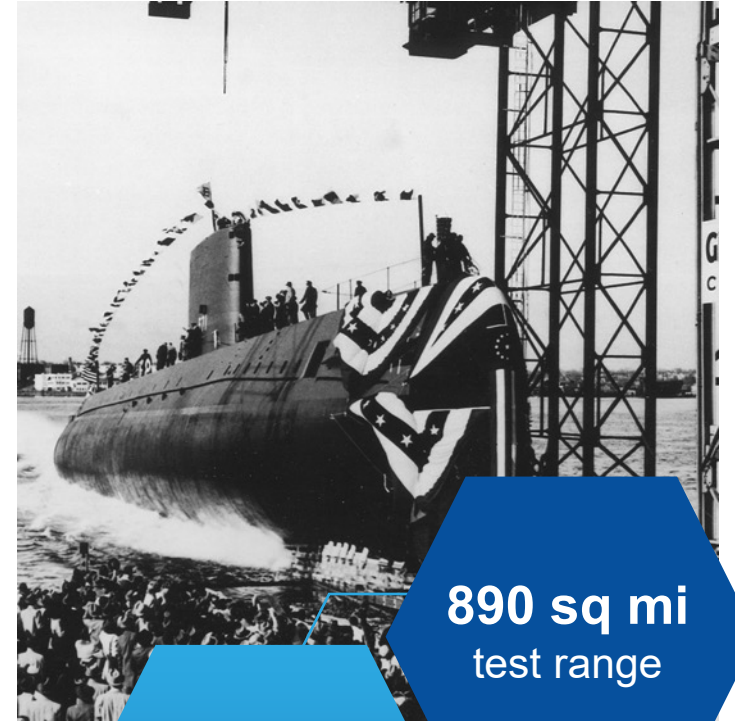
Research

Development

Demonstration



INL has supported **national security research** for nearly 80 years.



890 sq mi
test range

Deployment

National and Homeland Security Focus Areas

Industrial Cybersecurity

Improving infrastructure security through cyber threat analysis, vulnerability assessments, and engineer expertise



Infrastructure Resilience

Strengthening infrastructure resilience through dependency analysis, risk assessments, and visualization tools



Nuclear Security

Preventing the illicit use of nuclear or radiological materials through detection, forensics, security, and safeguards



National Defense

Advancing defense community solutions through materials science, armor development, explosives and radiological materials analysis



Workforce Development

Accelerating the talent pipeline through collaborative research programs and new education models



Industrial Cybersecurity



Innovating, developing, and applying control systems cybersecurity solutions.

Infrastructure and Risk Analysis

Dependency &
Interdependency
Analysis

All Hazards
Risk Analysis

Risk
Management

Nationally
Recognized
Infrastructure
Studies



Advancing infrastructure and risk analysis to create a more secure and resilient world.

Wireless Security



Creating and deploying wireless technology solutions.

Workforce Development

Cyber
Organizational
Development

Academic and
Community
Outreach

Sector Specific
Training

Emerging
Engineering
Trends

Addressing workforce development needs to protect the nation's critical infrastructure

Infrastructure, Ranges, and Capabilities



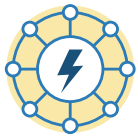
Deploying our cyber-physical capabilities

Current Programs and Tools

Cyber-Informed Engineering (CIE) - “engineer out” cyber risk throughout the design and operation lifecycle, rather than add cybersecurity controls later

Cybersecurity for the Operational Technology Environment (CyOTE™) - asset owners improve identification of adversarial techniques within operational technology (OT) environments

CyTRICS™ - cyber vulnerability testing, forensics, and digital subcomponent enumeration



Improves cybersecurity supply chain for ICS



Uses expert testing



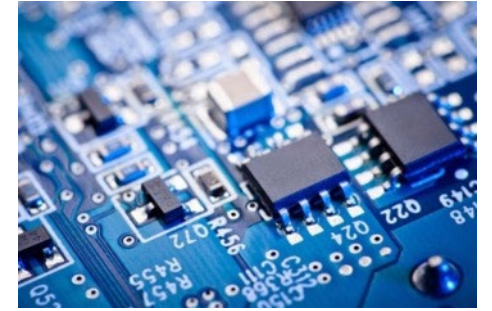
Identifies common-mode vulnerabilities



Partners with vendors and asset owners



Relationships & Continuing Engagement



National & Homeland Security's Vision for the Future



- Scale Cyber-Informed Engineering
- All-Hazards Infrastructure Resilience
- Increased Supply-Chain Security
- Secure Wireless Communication
- Nuclear Nonproliferation Risk Reduction
- Next Generation Materials Science

Aligning and adapting our capabilities to meet evolving national security challenges.



Idaho National Laboratory

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