

# *Idaho National Laboratory*

## *An Overview*



[www.inl.gov](http://www.inl.gov)



# Historical Perspective



**1949**  
National Reactor Testing Station established



**1952**  
Materials Test Reactor begins critical operation



**1951**  
Experimental Breeder Reactor I produces electricity



**1955**  
Arco, Idaho powered by BORAX III reactor



**1967**  
Advanced Test Reactor begins critical operation

# Historical Perspective

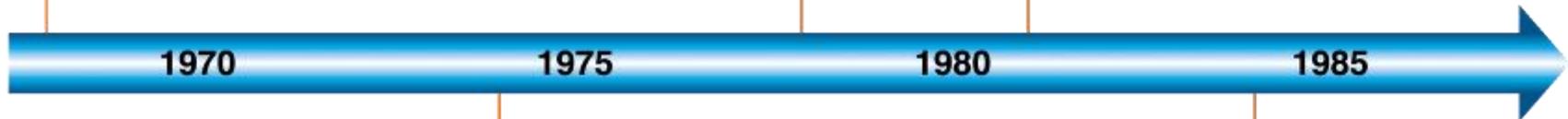


**1968**  
NRTS  
Supercomputing  
Center built



**1978**  
LOFT engineers conduct  
facility's first nuclear test

**1981**  
INEL's Raft River  
Geothermal Pilot Plant  
starts up



1970

1975

1980

1985

**1974**  
NRTS renamed Idaho National  
Engineering Laboratory



**1984**  
INEL Research  
Center dedicated



# Historical Perspective

**1994**  
DOE names INEL lead lab for environmental management

**1997**  
DOE assigns Idaho lead lab status for nuclear reactor development



**2002**  
Standup of new Geocentrifuge Research Laboratory



1990

1995

2000

2005

**1996**  
INEL alternate fuel buses deployed at Olympics in Atlanta

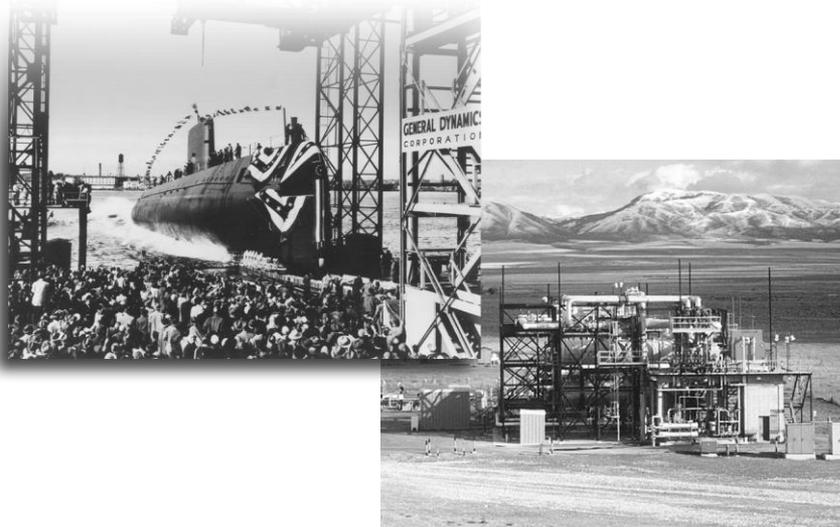


**2001**  
Idaho's STAR Fusion Facility named National User Facility

**2005**  
INEEL and ANL-W combined to create new Idaho National Laboratory

## Historic Contributions

- Proof of breeder reactor concept
- Development of Navy nuclear propulsion systems/operator training
- Design and construction of 52 nuclear reactors
- Production of key medical and industrial isotopes
- Nuclear reactor safety code development
- Leadership of DOE hydropower and geothermal programs
- Hybrid and electric vehicle testing
- Armor production
- NASA program support



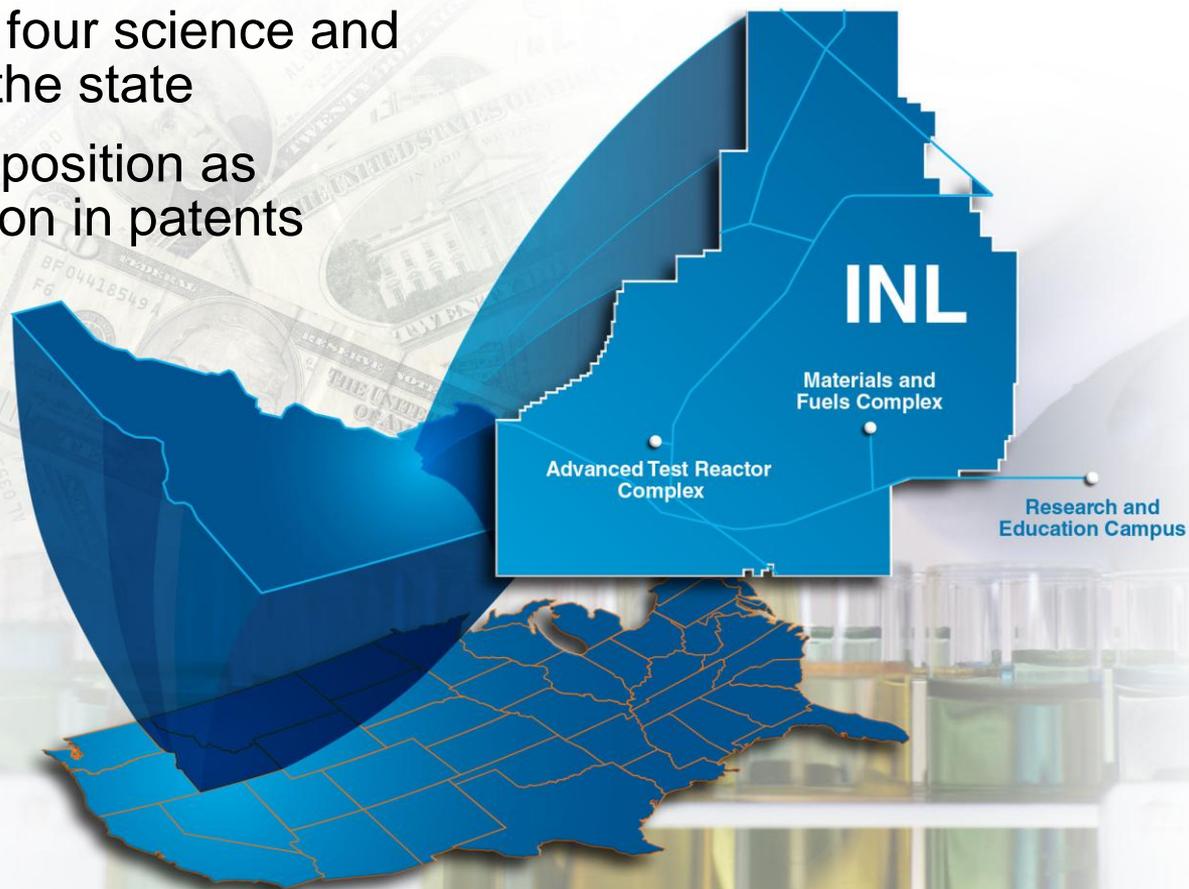
## ***INL's Position Today – Nationally***

- One of only 10 DOE multiprogram labs
- DOE's designated lead lab for nuclear energy research, development and demonstration
- A major contributor in national and homeland security, alternate and renewable energy and science technology



## ***INL's Position Today – in Idaho***

- One of the state's largest employers
- Considered one of the four science and technology “pillars” of the state
- Contributes to Idaho's position as number one in the nation in patents issued per capita



# INL's Three Main Facility Areas

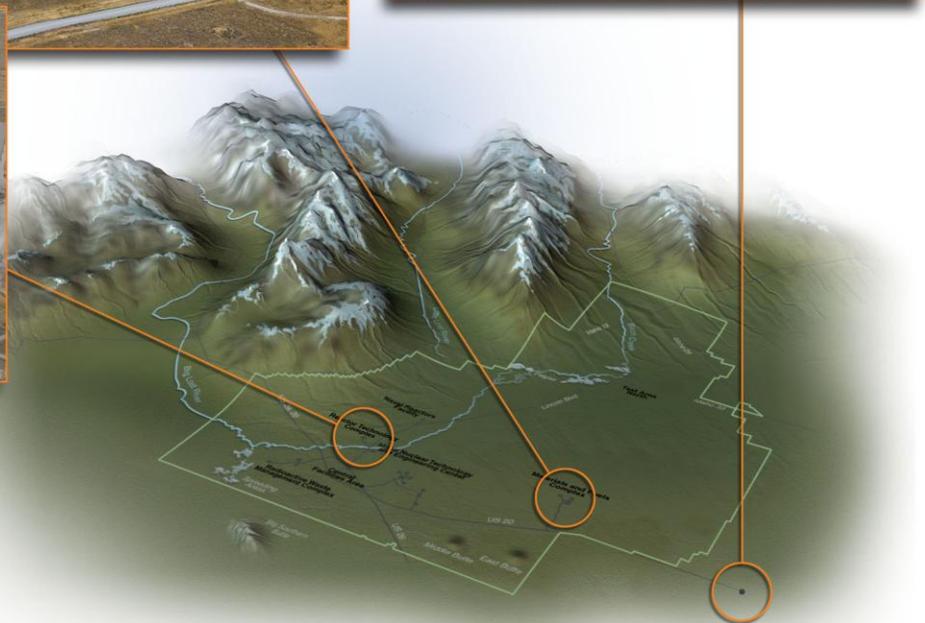
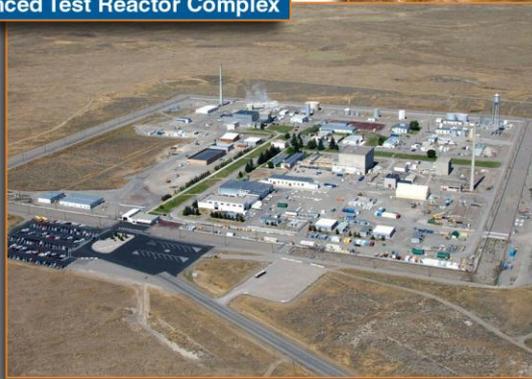
Materials and Fuels Complex



Research and Education Campus



Advanced Test Reactor Complex



# ***Advanced Test Reactor Complex***

## Key Assets

- Advanced Test Reactor
  - Nation's most versatile test reactor
  - Materials and fuels testing; isotope production
- STAR
  - Fusion safety testing



# *Materials and Fuels Complex*

## Key Assets

- Hot Fuel Examination Facility/Fuel Conditioning Facility
  - Hot cells for fuel studies
- Center for Space and Security Power Systems
  - Assembly and testing of space batteries



# *Research and Education Campus*

## Key Assets

- INL Research Center
  - Multiprogram labs
- Information Operations Research Center
  - National and Homeland Security studies



## ***INL's Major Business Centers***

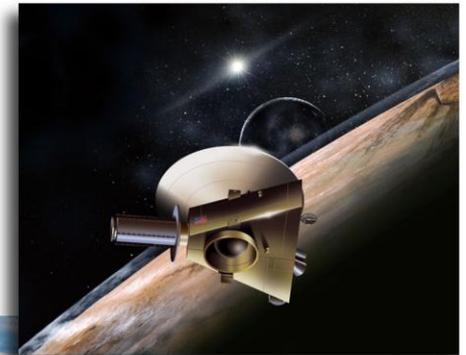
- Nuclear Programs
- Nuclear Operations
- National and Homeland Security
- Energy and Environment
- Specific Manufacturing Capability
- Facilities and Site Services



# ***Nuclear Programs***

## **Primary Responsibilities**

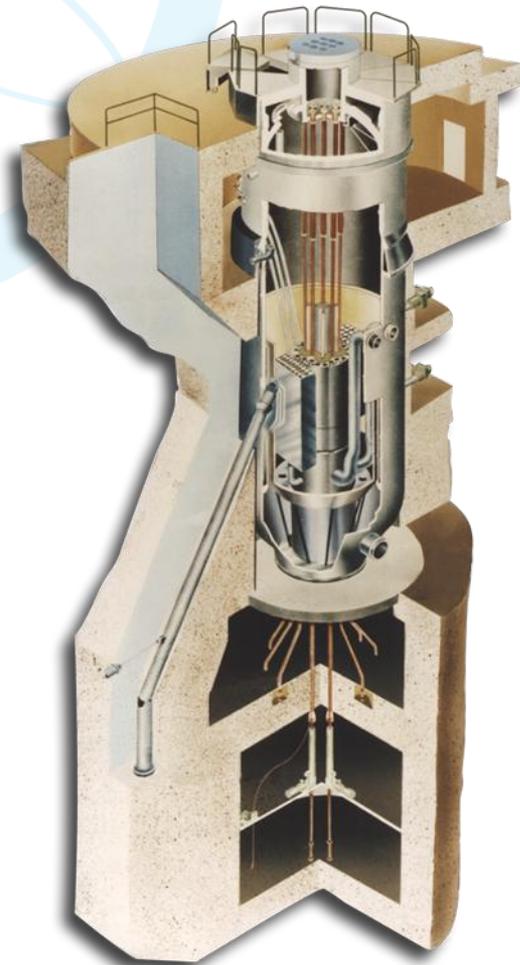
- Lead the global nuclear energy agenda
- Lead and deliver the Next Generation Nuclear Plant
- Build the basics for the fuel cycle of the future
- Power space exploration for the nation
- Support strategic commercial partnerships
- Provide technical bases and analyses for reactor system safety and operating regulations



# ***Nuclear Operations***

## **Primary Responsibilities**

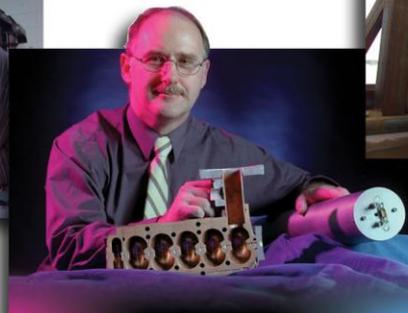
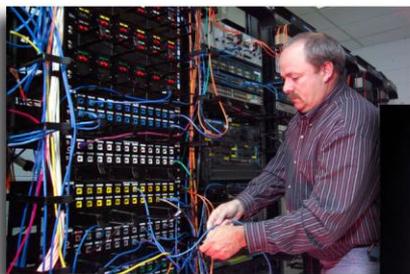
- Maintain and operate the Advanced Test Reactor
- Assure primary mission fulfillment
  - National Security reactor/materials applications
  - Current generation commercial reactor support
  - Medical, industrial and national interest isotope production



# *National and Homeland Security*

## **Primary Responsibilities**

- Critical Infrastructure Protection – Reduce cyber and physical risks to infrastructures
- Nuclear Nonproliferation – Prevent the illicit use, acquisition, and transportation of radiological material
- Defense Systems and Technology – Develop innovative technologies and survivability solutions for military customers
- Special Projects – Support federal agencies through material science, information analysis / operations and engineered prototypes



# Energy and Environment

## Primary Responsibilities

- Establish five labwide distinctive scientific signature capabilities
  - Instrumentations, Control and Intelligent Systems
  - Materials and Nuclear Fuels Science and Technology
  - Microbiological and Geological Systems Science
  - Separations and Actinide Science
  - Theory, Modeling and Simulation
- Manage alternate and renewable energy research portfolio



# *Specific Manufacturing Capability*

## **Primary responsibilities**

Manufacture armor packages

- Used for U.S. Army's M1-A2 Abrams Main Battle Tanks
  - Assignment first received in 1985
  - Full production achieved in 1988
  - More than 3,900 packages have been produced at the facility



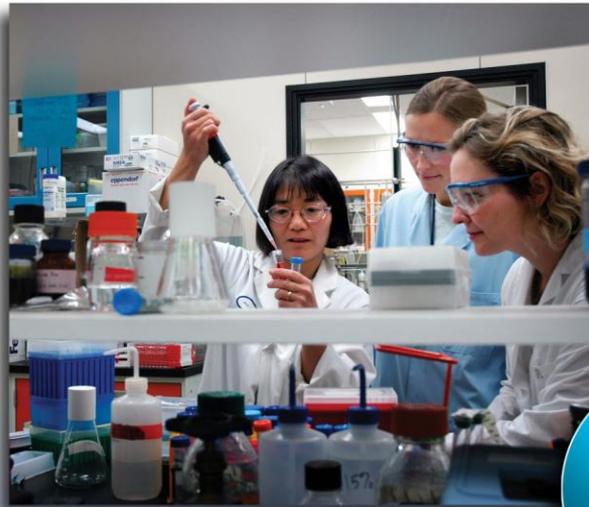
## ***Facilities and Site Services***

- Emergency Services
- Facility Management
- R&D Support Services
- Safeguards and Security Services



## INL Future Plans

- Continue conducting all operations with simultaneous excellence in science, safe operations and community service
- Continue growing the business base
- Modernize and consolidate research infrastructure
- Invest in INL's most precious asset – it's people





Idaho National Laboratory