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National Lab Day

Lectures

10-8-2019

70th Anniversary Idaho National Lab

Marianne Walck

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70th Anniversary



Marianne Walck
*Deputy Laboratory Director for
Science and Technology,
Chief Research Officer*

October 8, 2019

www.inl.gov





NREL at a Glance

2,400

Employees,
Plus more than
500
early-career
researchers and
visiting scientists



World-Class
facilities,
renowned
technology
experts

81
7

Partnership
with industry,
academia, and
government



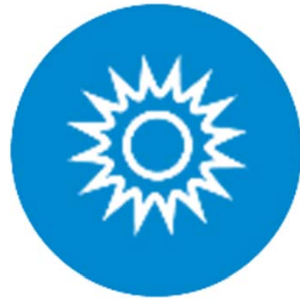
Campus
operates as a
living
laboratory

\$1.1
billion
annually

**National
Economic
Impact**

Scope of NREL Research Portfolio

NREL develops renewable energy and energy efficiency technologies and practices, advances related science and engineering, and transfers knowledge and innovations to address the nation's energy and environmental goals



Building Energy Efficiency



Renewable Generation



Sustainable Transportation



Energy Systems Integration

Energy Analysis & Decision Support			
Residential Buildings	Solar	Advanced Biofuels	Grids of all scales
Commercial Buildings	Wind and Water	Vehicle Components & Systems	Renewable Integration & Storage
	Biomass		System Design & Operation Tools
	Hydrogen		Integrated Energy Planning
	Geothermal		

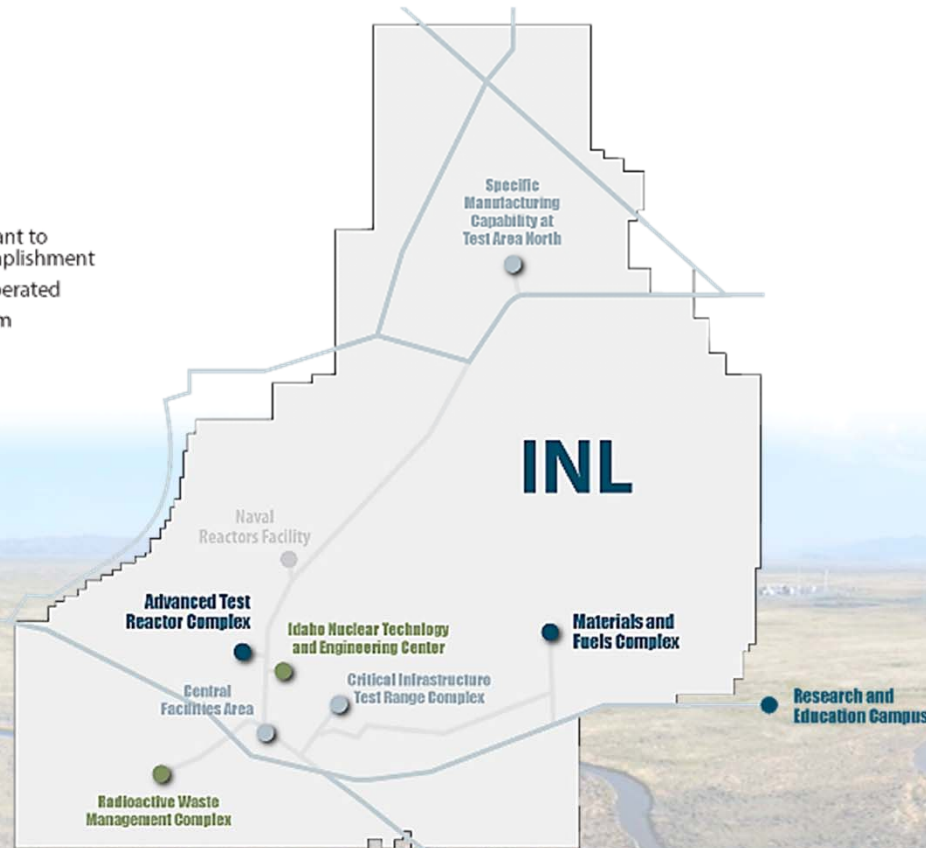
Foundational Science underpins these efforts

The Idaho National Laboratory Site – A Unique Capability for the Nation

569,178 Acres
890 Square Miles

- Public Highways
- Main Site Roads
- Primary INL Campus Important to NE and other Mission Accomplishment
- Presently EM Owned and Operated
- Supporting INL Multiprogram Missions

0 2 4 6 8
Scale in Miles



- 16** Nuclear facilities (Haz Cat 1, 2 & 3)
- 44** Radiological facilities
- 4** Operating reactors
- 17.5** Miles railroad for shipping nuclear fuel
- 40** Miles primary roads (125 total)
- 7** Substations with interfaces to three power providers
- 112** Miles high-voltage transmission lines
- 3** Fire stations

4,638 Employees

FY18 Business Volume \$1.1 B

A Multiprogram National Laboratory and the Nation's Nuclear Laboratory



- 890-square-mile remote geographic area
- Multiple reconfigurable city-sized sites

We are uniquely positioned to address energy and security challenges at scale

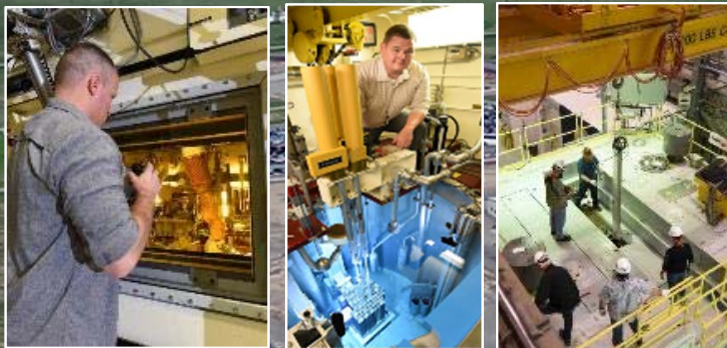
Advanced Test Reactor

- **Steady State Neutron Irradiation of Materials and Fuels**
 - Naval Nuclear Propulsion Program
 - Industry
 - National laboratories and universities



Materials and Fuels Complex

- **Transient Testing**
- **Analytical Laboratories**
- **Post-Irradiation Examination**
- **Advanced Characterization**
- **Fuel Fabrication**
- **Space Nuclear Power and Isotope Technologies**

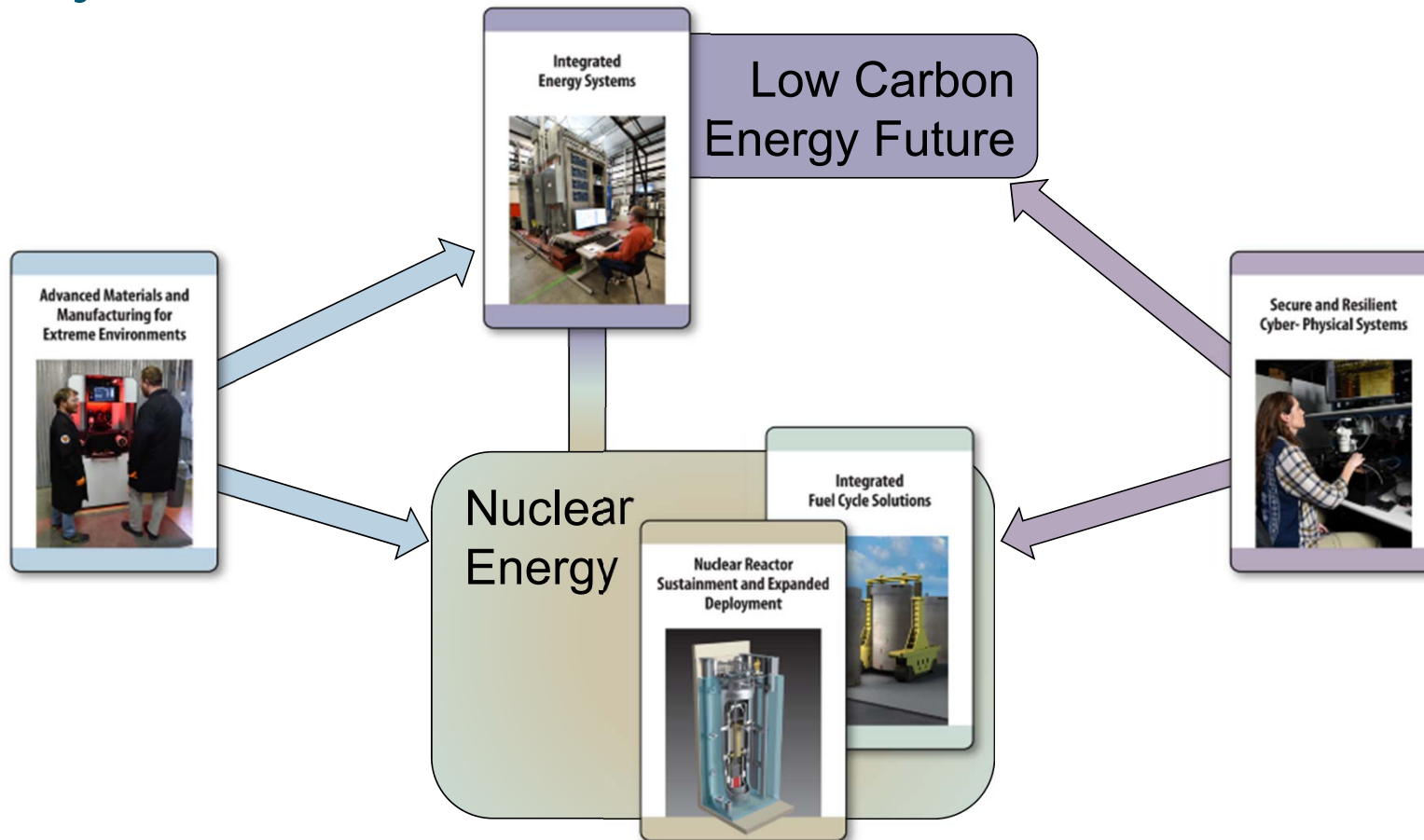


Research Education Campus

- **Cybercore Integration Center**
- **Collaborative Computing Center**
- **Center for Advanced Energy Studies**
- **Energy Innovation Laboratories**
- **Energy Systems Laboratories**

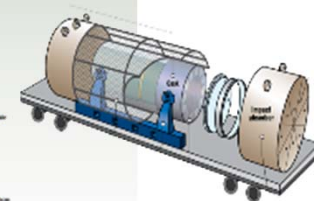
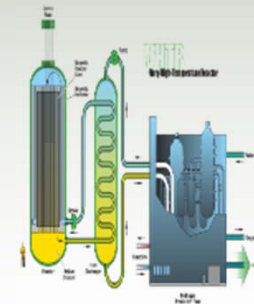
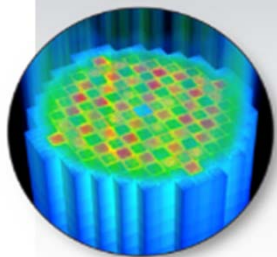
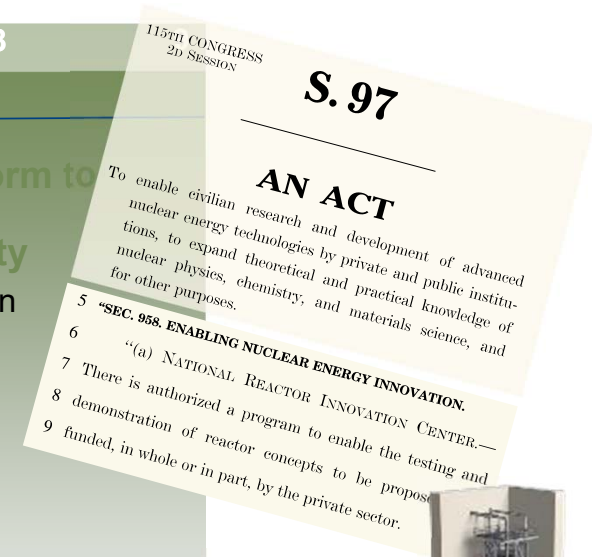


INL's Current Strategic Focus Will Advance Energy and Security Goals for the Nation



August 15, 2019: The National Reactor Innovation Center Established at INL

1	2	3	4	5	6	7	8
Proof-of-Concept			Proof-of-Performance		Proof-of-Operations		
R&D to Address Technical Feasibility <ul style="list-style-type: none"> Materials and Fuels Validated predictive modeling and simulation capabilities Experimental Capabilities 			Establish Performance of Nuclear Technologies <ul style="list-style-type: none"> Validation data Irradiation and transient testing Irradiated materials characterization 		Demonstration Platform to Address Economic/Operational Feasibility <ul style="list-style-type: none"> Sites for demonstration Licensing Support Integrated energy systems support 		





Idaho National Laboratory

