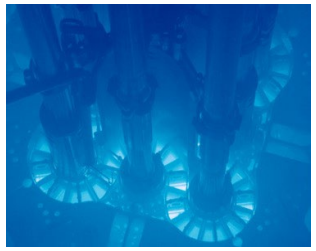
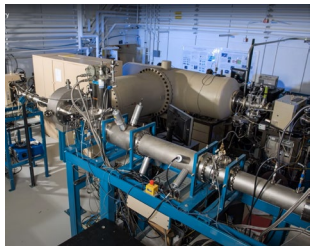
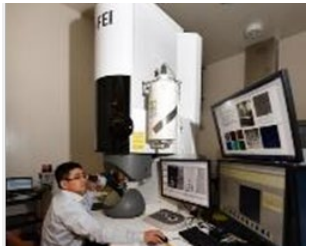
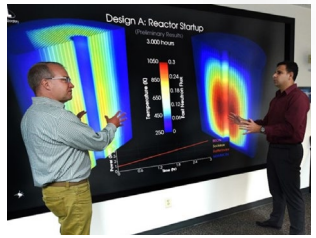
U.S. DEPARTMENT OF ENERGY | Office of NUCLEAR ENERGY

Nuclear Science User Facilities

Chris Barr, PhD
NSUF Program Manager

NSUF Overview

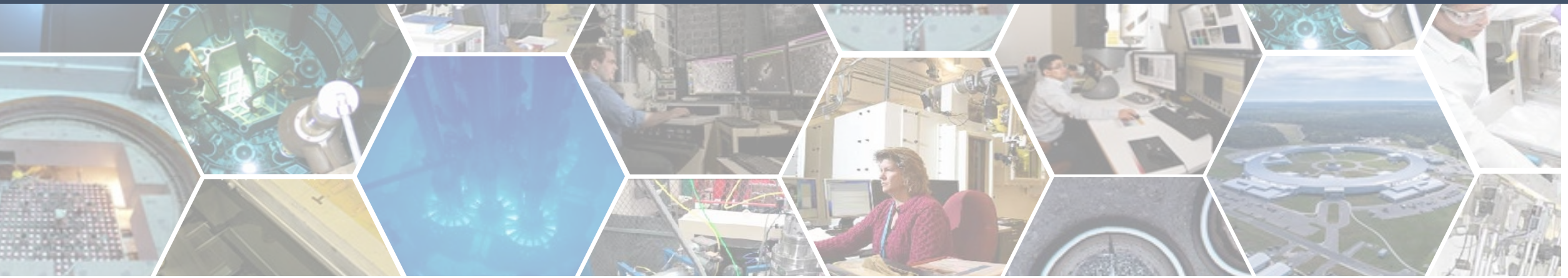
Neutron Reactors		Ten reactor facilities at national laboratories and universities including the Advanced Test Reactor at INL
Gamma & Ion Irradiation		Five gamma irradiation facilities and ten ion beam facilities at national laboratories and universities
Post-Irradiation Examination		Multiple hot cell and broad post-irradiation examination facilities including advanced characterization methods
Beamlines		Synchrotron and neutron beamlines for nuclear fuel and materials studies
Computational Resources		Scientific high-performance computing capabilities for advanced modeling and simulation at INL

NSUF Nuclear Science User Facilities

Consortium-based user facility model with 20+ partner sites

Available to industry, academia, and national labs for non-proprietary R&D for nuclear energy technologies

Key Program Elements



User Awarded Access

- Rapid Turnaround Experiments
- Consolidated Innovative Nuclear Research FOA
- Technical Expertise and Project Support

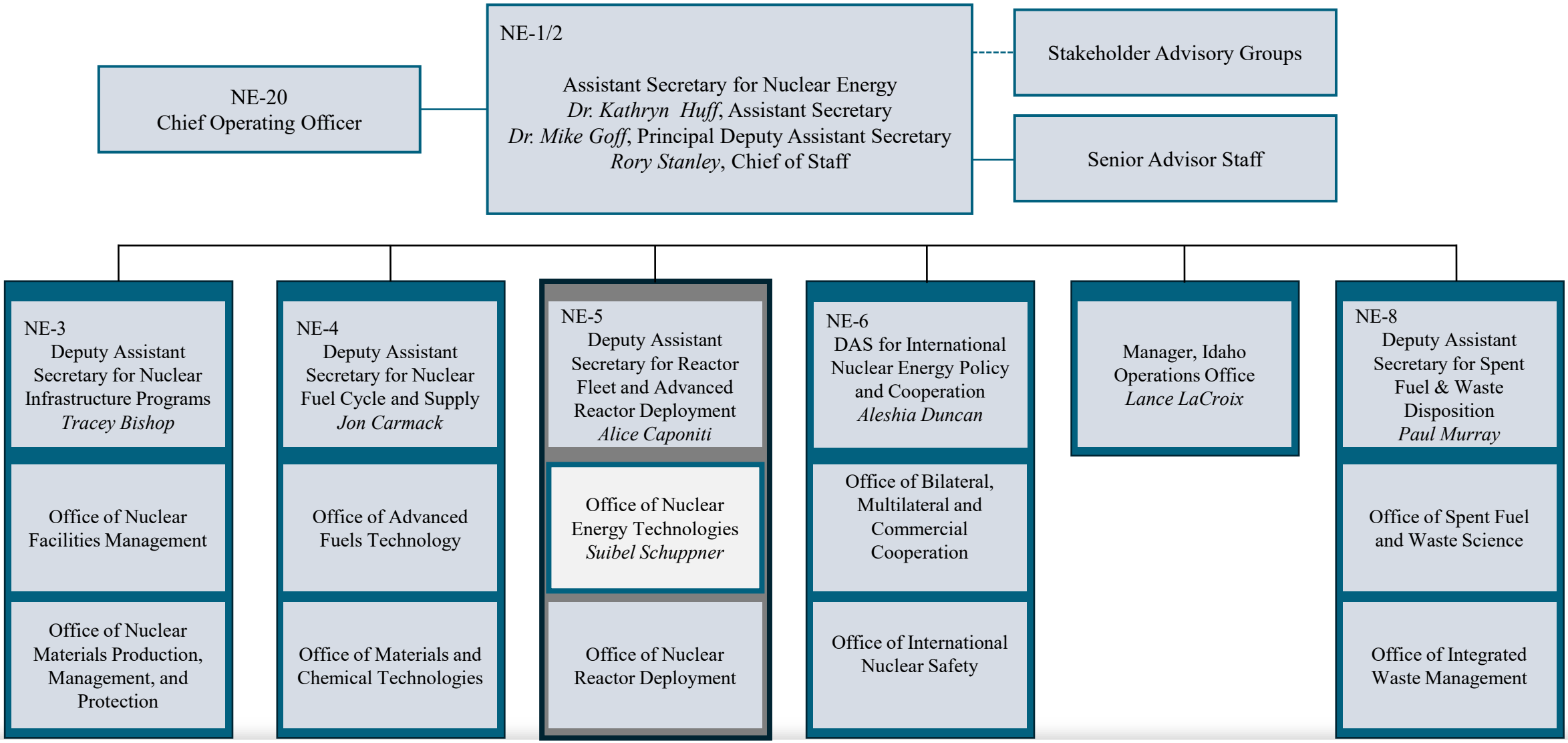
Capabilities and Library

- Nuclear Fuel and Materials Library (9000+ materials)
- Capability improvements and international collaboration library irradiations

High Performance Computing

- User access to high performance computing resources (HPC) at Idaho National Laboratory (INL)
- Nuclear Research Data System (NRDS)

NSUF Location within Office of Nuclear Energy



Office of Nuclear Energy Technologies

Nuclear Energy Enabling Technologies (NEET)

Conducts research and development (R&D) and makes strategic investments in research capabilities to develop innovative and crosscutting nuclear energy technologies to resolve U.S. industry nuclear technology development issues

NEET Program Elements:

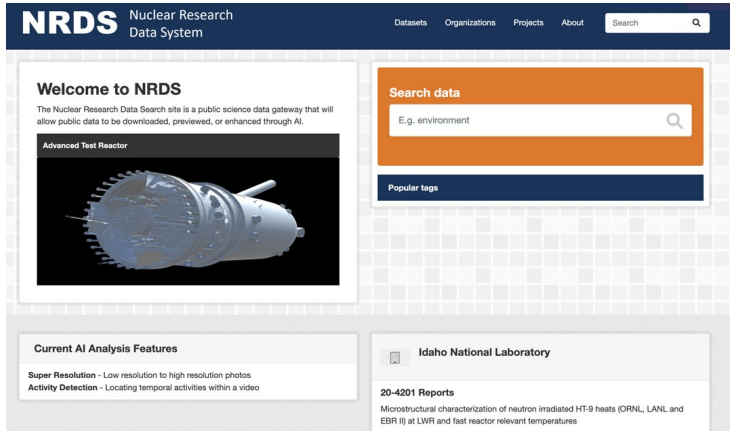
- Crosscutting Technology Development (CTD)
- Nuclear Energy Advanced Modeling and Simulation (NEAMS)
- Nuclear Science User Facilities (NSUF)

NSUF Budget Overview (Dollars in Thousands):

- FY 2023 Enacted: $35,000 total, $12,000 for Computational Support
- FY 2024 Request: $35,000 total, $12,000 for Computational Support

Perspective

- Maintain emphasis on open and competitive user access opportunities for all users across industry, national labs and academia
- Enhance stakeholder engagement and communication to highlight the significant technical contributions and success stories from user access projects
- Provide equitable access to NSUF data
- Expand the user base – new initiatives include future MSI pilot workshop



- **User organization participation, feedback, and communication with NSUF leadership is an integral component to a successful NSUF program**

NSUF User Organization Meeting

Q & A Session

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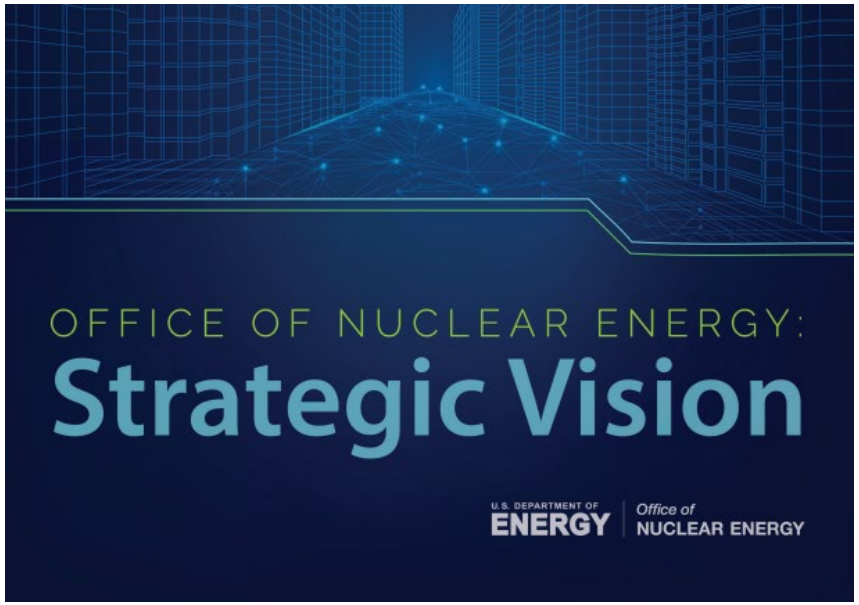
EXTRA SLIDES

Office of Nuclear Energy: Mission and Goals

Mission: The Office of Nuclear Energy (NE) mission is to advance nuclear energy science and technology to meet U.S. energy, environmental, and economic needs.

Goals:

1. Enable continued operation of existing U.S. nuclear reactors.
2. Enable deployment of advanced nuclear reactors.
3. Develop advanced nuclear fuel cycles.
4. Maintain U.S. leadership in nuclear energy technology.
5. Enable a high-performing organization.



https://www.energy.gov/ne/about-us