



Office of Nuclear Energy Program Update

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U.S. Department of Energy

Office of Storage & Transportation

Midwest Radioactive Materials Transportation
Committee Mid-Year Meeting

September 29, 2026

Minneapolis, MN



U.S. DEPARTMENT
of **ENERGY**

Office of
Nuclear Energy

Spent Fuel and High-Level Waste Disposition

DISCLAIMER

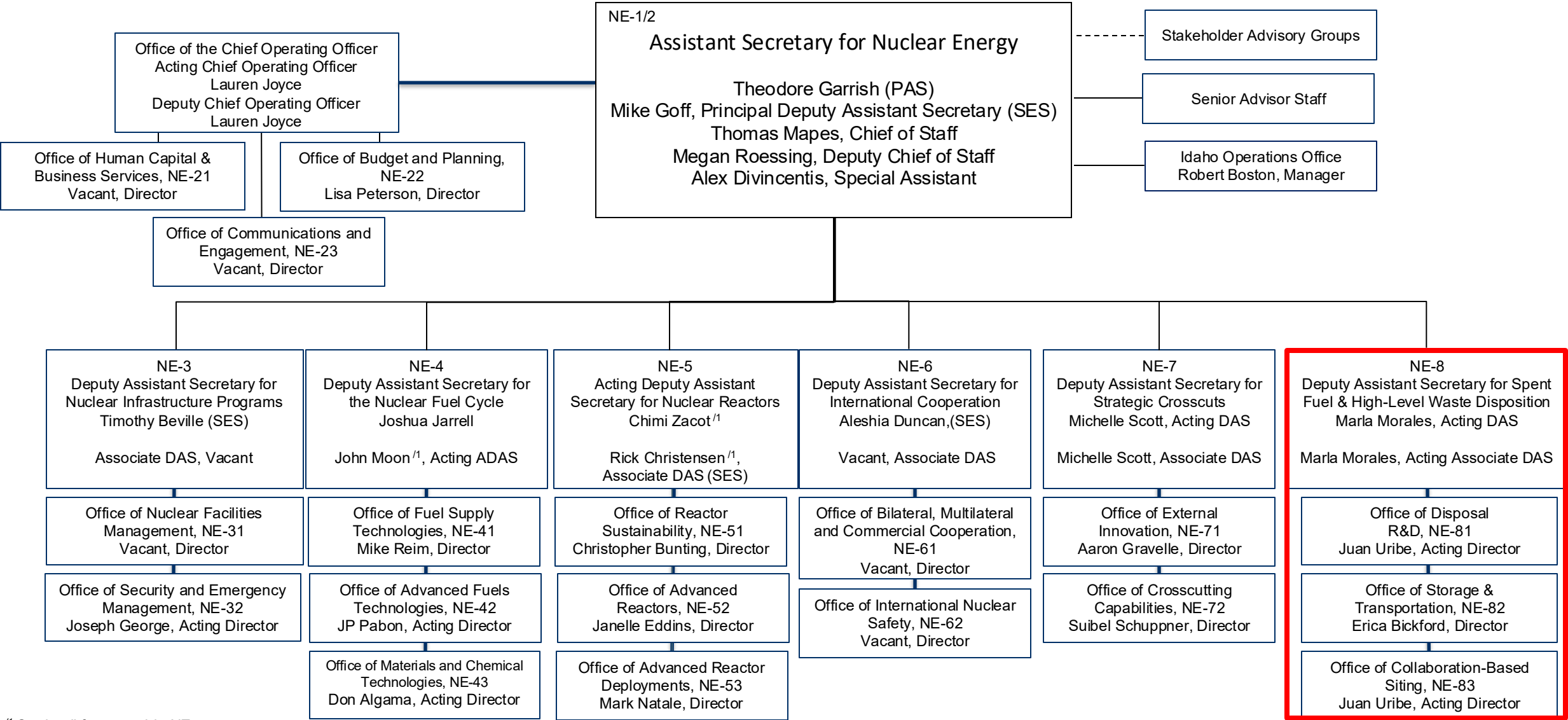
This is a technical presentation that does not take into account contractual limitations or obligations under the Standard Contract for Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste (Standard Contract) (10 CFR Part 961).

To the extent discussions or recommendations in this presentation conflict with the provisions of the Standard Contract, the Standard Contract governs the obligations of the parties, and this presentation in no manner supersedes, overrides, or amends the Standard Contract.

This presentation reflects technical work which could support future decision making by the U.S. Department of Energy (DOE or Department). No inferences should be drawn from this presentation regarding future actions by DOE, which are limited both by the terms of the Standard Contract and Congressional appropriations for the Department to fulfill its obligations under the Nuclear Waste Policy Act including licensing and construction of a used nuclear fuel¹ repository.



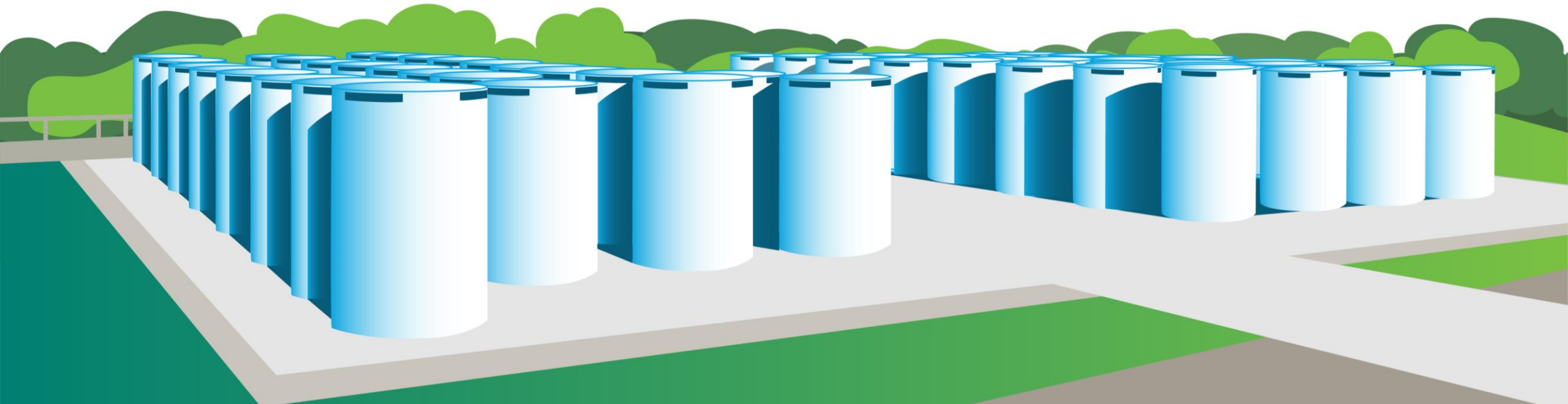
¹The term “used nuclear fuel” is intended to be synonymous with the term “spent nuclear fuel” as used and defined in the Nuclear Waste Policy Act of 1982, as amended, and the Standard Contract for the Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste (10 CFR Part 961).



^{/1} On detail from outside NE

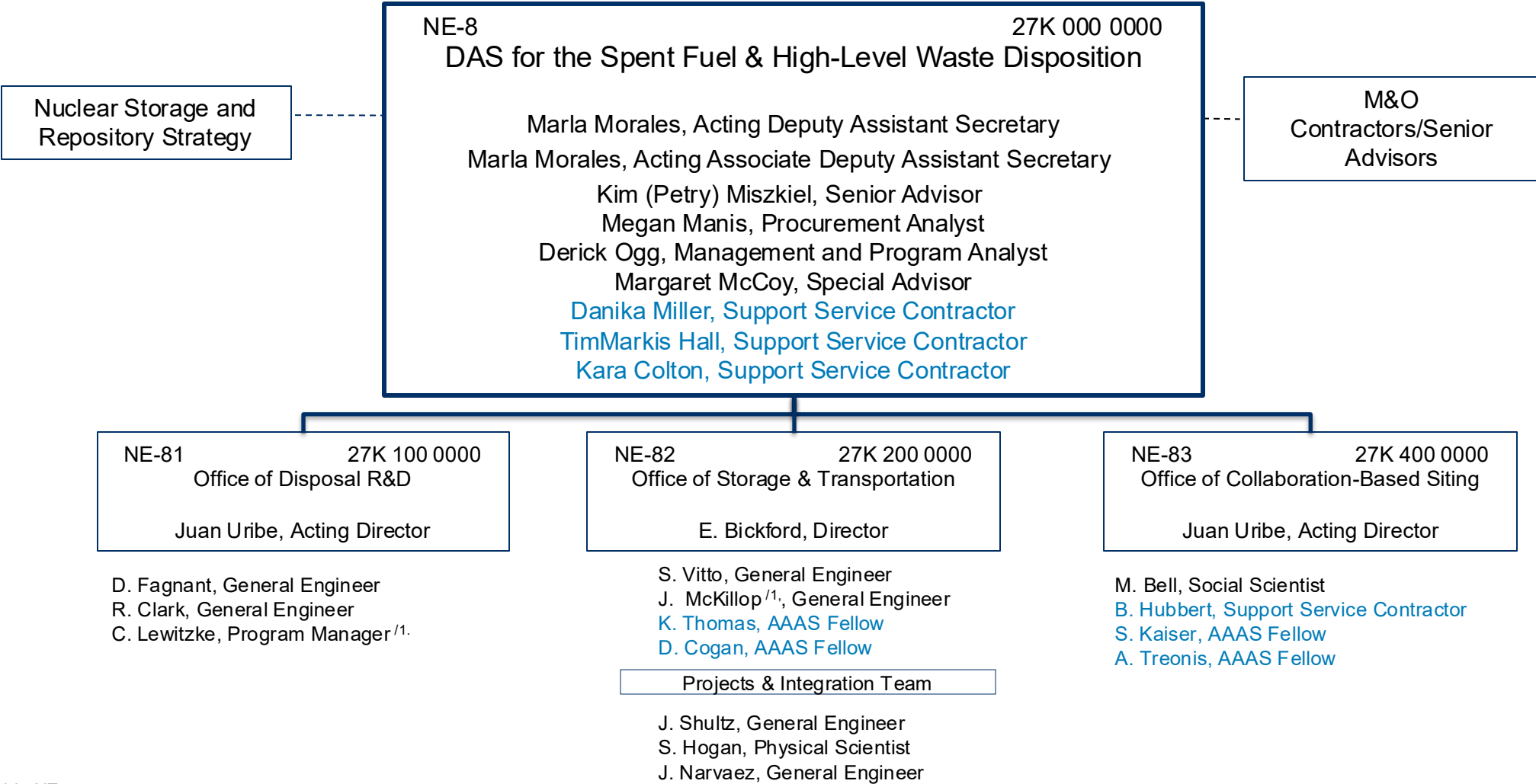
Office of Spent Fuel & High-Level Waste Disposition

Mission: Develop and implement a plan for the safe and secure long-term management of the Nation's used nuclear fuel (UNF) and high-level radioactive waste (HLW).





Deputy Assistant Secretary Spent Fuel & High-Level Waste Disposition, NE-8



^{/1} On detail from outside NE

New Detailees & Fellows



Jordan McKillop, detailee from DOE-GC. Managing work under the Center for Used Fuel Research.



Dan Cogan, AAAS Fellow. Supporting transportation and storage projects.



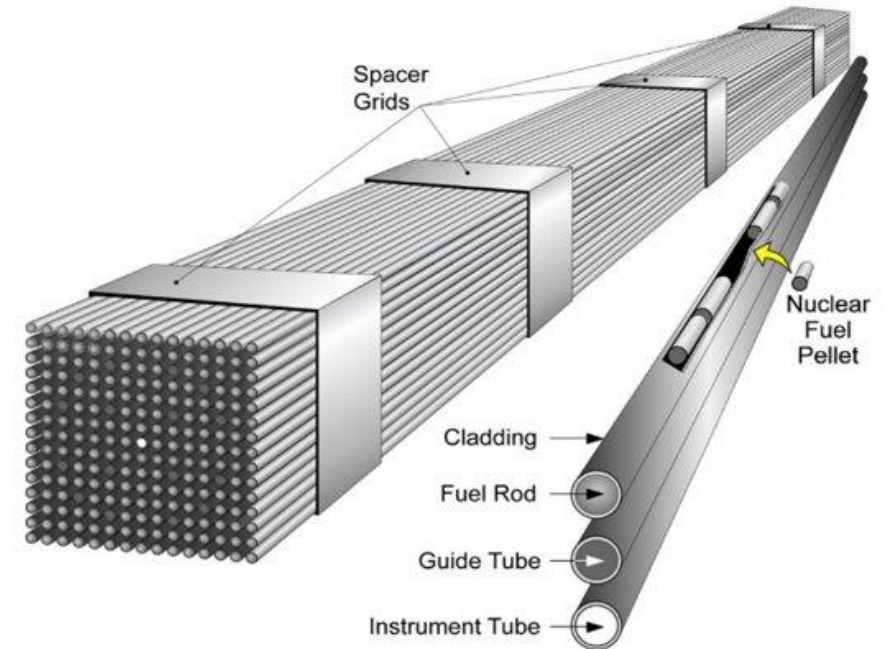
Dr. Amy Treonis, AAAS Fellow. Supporting siting and disposal projects.



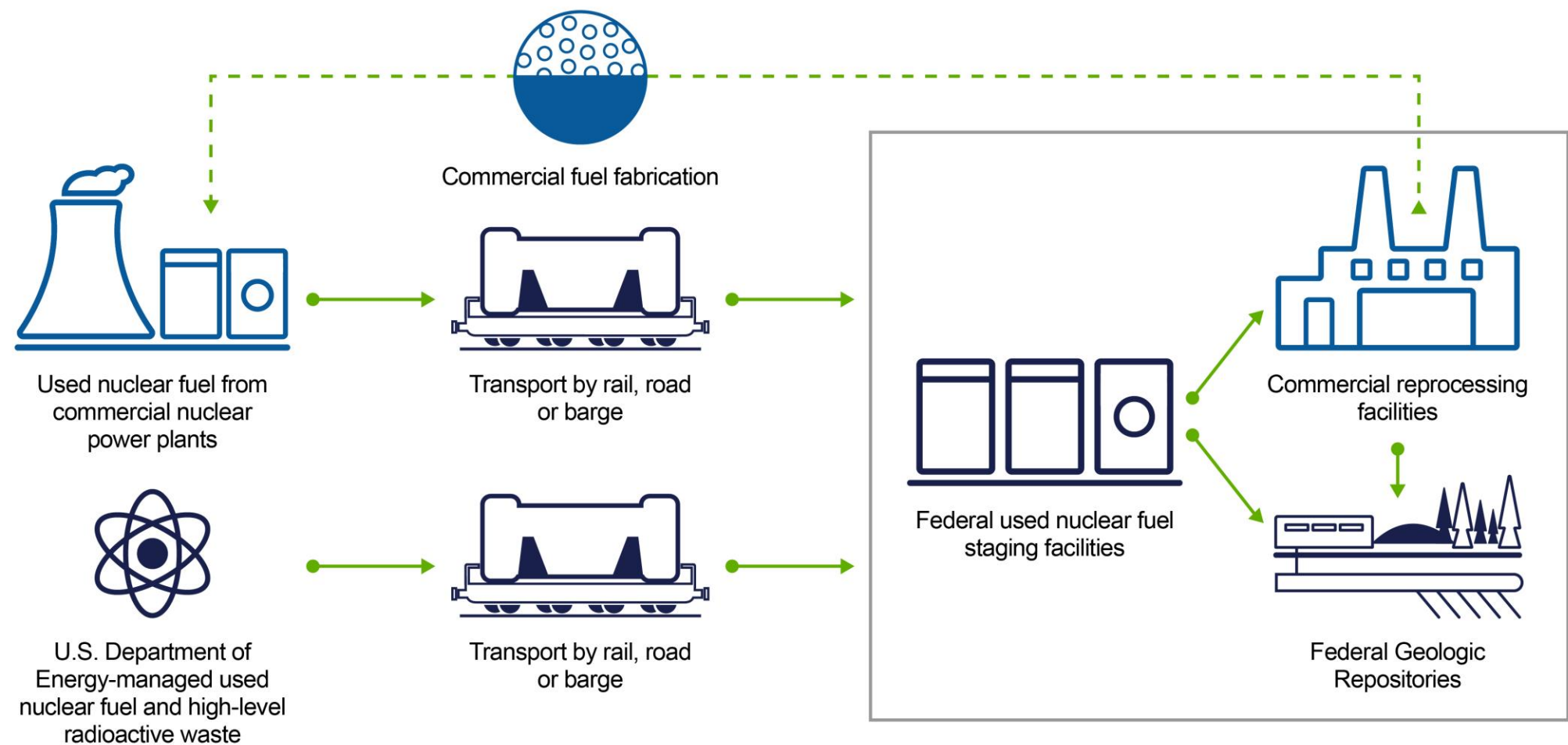
Chenée Lewitzke, detailee from DOE-NNSA. Supporting siting and disposal projects.

Change in Terms – SNF now UNF

- As of December 2025, the Office of Nuclear Energy (DOE-NE) is using the term "used nuclear fuel" (UNF) rather than "spent nuclear fuel" (SNF).
 - The term "used nuclear fuel" is intended to be synonymous with the term "spent nuclear fuel" as used and defined in the Nuclear Waste Policy Act of 1982, as amended, and the Standard Contract for the Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste (10 CFR Part 961).
- DOE-NE is also now using the term "Federal staging facilities" (FSF) instead of Federal consolidated (interim) storage facilities (C[I]SF). The intent is for FSF(s) to be components of the Nuclear Lifecycle Innovation Campuses, potentially co-located with commercial fuel reprocessing/recycling facilities.
 - FSFs will be licensed by the Nuclear Regulatory Commission under 10 CFR Part 72. The conceptual engineering design for the facility remains the same.



Integrated Waste Management System for UNF & HLW



Update on FY27 Appropriations

- The U.S. Government is funded under a Continuing Resolution (CR) through December 11, 2026
- House released draft FY27 Energy & Water Appropriations Bill in May 2026
 - \$112 million for Used Nuclear Fuel & High-level Waste Disposition (+\$10 million)
 - Authorizing Language: "USED NUCLEAR FUEL AND HIGH LEVEL WASTE DISPOSITION The recommendation includes \$19,000,000 for the Center for Used Fuel Research. The Department recently announced the development of Nuclear Lifecycle Innovation Campuses to support activities across the full nuclear fuel lifecycle, including fuel fabrication, enrichment, reprocessing used nuclear fuel, and disposition of waste, using a collaborative siting approach. This action marks an initial step towards potentially establishing voluntary Federal-State partnerships designed to advance regional economic growth, enhance national energy security, and build a coherent, end-to-end nuclear energy strategy for the United States. The Committee supports the Department's efforts to modernize the U.S. nuclear fuel cycle and strengthen America's leadership in advanced nuclear energy. The Committee expects the Department to prioritize acceptance of used nuclear fuel from shutdown reactors in accordance with current contracts."

Update on FY27 Appropriations, cont.

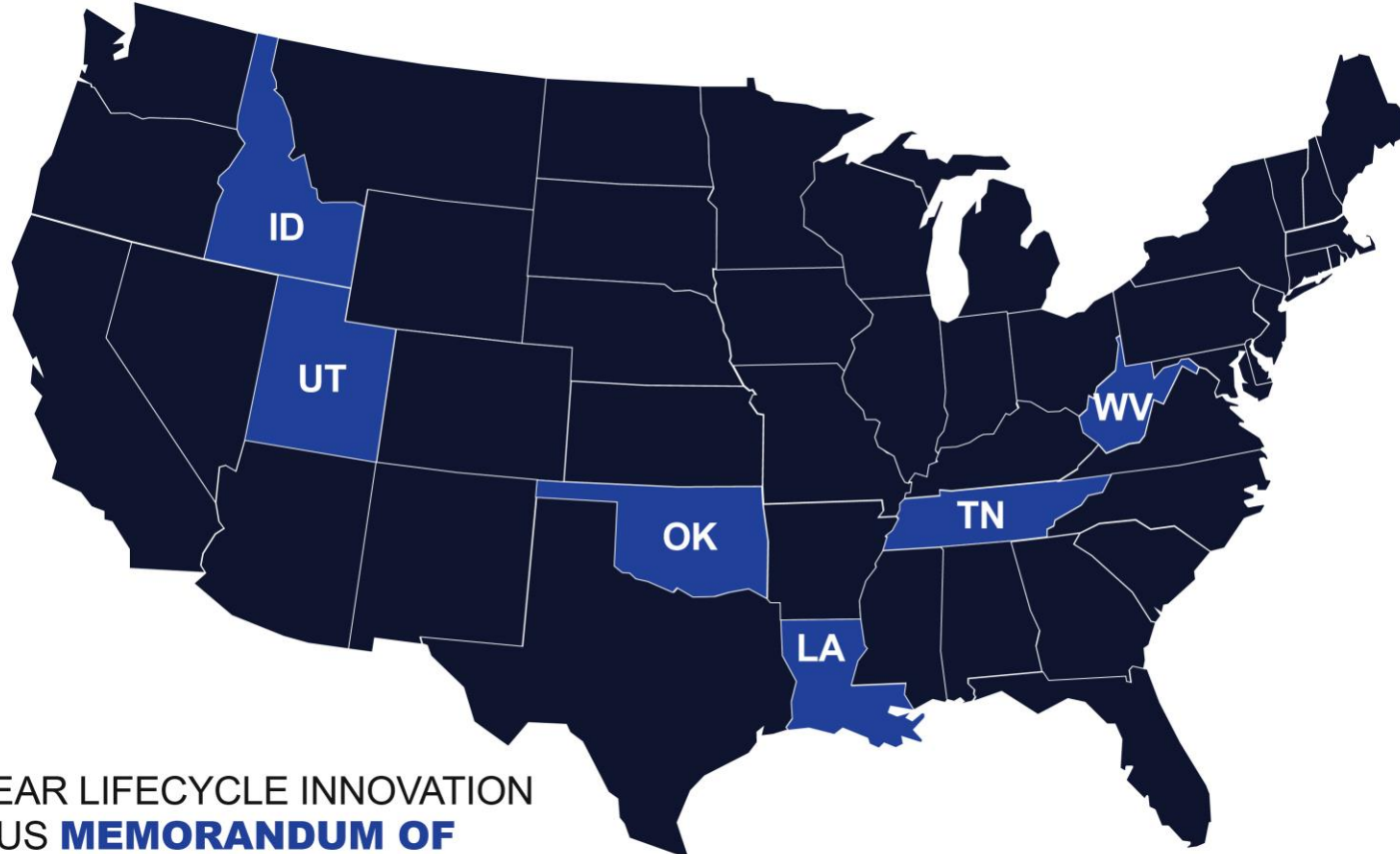
- \$12.04 million for Nuclear Waste Disposal (+\$2.04 million)
- Authorizing Language: "NUCLEAR WASTE DISPOSAL The Committee recommends \$12,040,000 for Nuclear Waste Disposal for Nuclear Waste Fund (NWF) oversight activities. The Committee directs the Department to provide to the Committee not later than 90 days after the date of enactment of this Act a briefing on anticipated future-year requirements for NWF oversight activities."
- Senate: no draft appropriations bills have been released as of Sept. 25, 2026.
- Both Houses of Congress are in recess until after the November election.

Update on Nuclear Lifecycle Innovation Campuses

- Nuclear Lifecycle Innovation Campuses are a new effort to modernize the nation's full nuclear fuel cycle by co-locating functions such as fuel fabrication, enrichment, reprocessing used nuclear fuel, and disposition of waste.
- Innovation Campuses will be established through voluntary federal-state partnerships designed to advance manufacturing and regional economic growth, enhance national energy security and build a coherent end-to-end nuclear strategy for the country.
- For more information: <https://www.energy.gov/ne/nuclear-lifecycle-innovation-campuses>



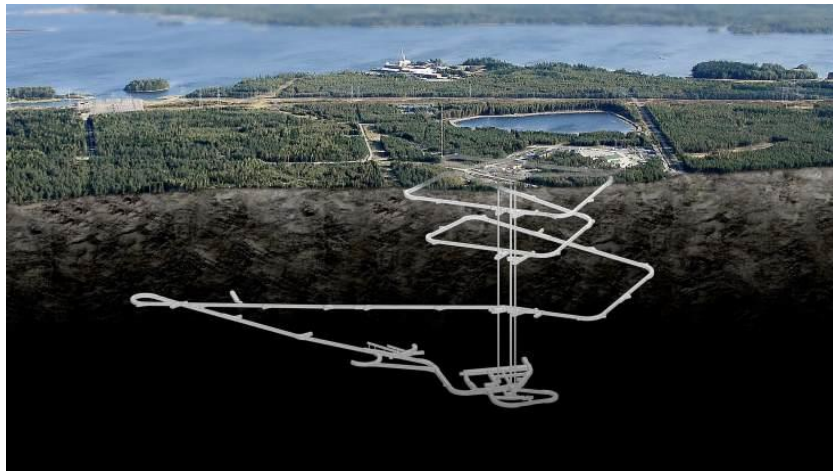
Nuclear Lifecycle Innovation Campuses – Potential Host States



NUCLEAR LIFECYCLE INNOVATION
CAMPUS **MEMORANDUM OF
UNDERSTANDING SIGNATORIES**

- As of September 8, 2026, the States of **Utah, Tennessee, Oklahoma, Louisiana, Idaho,** and **West Virginia** have signed a Memorandum of Understanding (MOU) with DOE to continue exploring the opportunity to become host sites for a Campus
- States that choose to pursue hosting a Campus are expected to sign hosting agreements with DOE by the end of September 2026

Current Activities in Siting & Disposal



Artist's rendering of repository in Finland. Image credit: Posiva

Office Restructuring:

- Offices of Collaboration-Based Siting (CBS) and Disposal R&D to be consolidated into the Office of Siting and Disposal

Siting:

- Assist contender States in their activities to engage in dialogue and build capacity with Communities
- Siting considerations and development of host State agreements for Nuclear Lifecycle Innovation Campuses

Disposal R&D:

- Lessons learned from siting of deep geologic repositories (DGR)
- Developing DGR and deep borehole disposal concepts
- Maintenance for Yucca Mountain site

International collaboration:

- Multilateral agreements, joint projects, site visits, knowledge-sharing

Current Activities in Storage & Transportation

- High Burnup Research Cask (HBURC) Shipment
- Standing up the Center for Used Fuel Research
 - Preparing to open the HBURC
 - Passive canister monitoring demonstration
- Engineering design for storage/staging facilities
- Railcars
 - Procuring additional Atlas railcars
 - Fortis railcar fabrication & testing



DOE's High Burnup Research Cask (HBURC) is Moving to Idaho National Laboratory in 2027



- Research project started in 2013 as a collaboration between DOE and the Electric Power Research Institute (EPRI)
- High burnup UNF stays in reactors longer to produce electricity
- Monitoring characteristics of high burnup UNF in one dry cask at the North Anna Power Station near Mineral, Virginia
- Project will provide data to support safe storage of UNF for DOE's future Federal staging facilities, and for a majority of currently operating U.S. nuclear power plants

Transporting the HBURC

How?

- The size and weight of the cask – more than 180 tons – means that freight rail is the best mode to transport the cask from Virginia to INL
- DOE has designed, tested, and obtained approval for specialty railcars (Atlas) for transporting UNF by rail
- Armed escorts will travel on the train in a rail escort vehicle (REV)

When?

- Spring 2027 – “Dry-run” rail shipments with a spare (no radiological materials) TN-32B cask from Virginia to INL and back to test procedures and inform emergency responders (provide opportunities to view train consist)
- Fall 2027 – UNF shipment



DOE's Atlas railcar



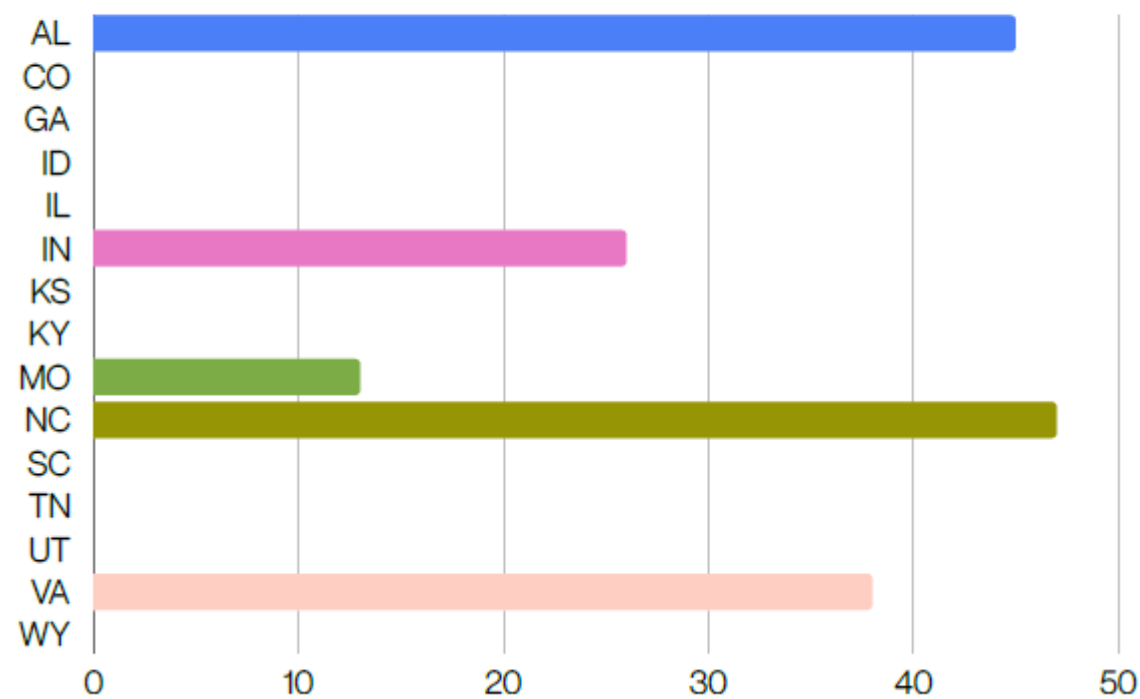
Rail Escort Vehicle

DOE TEPP Training on HBURC Route through Aug. 2026

12 169
TOTAL CLASSES TOTAL TRAINED

DOE’s Transportation Emergency Preparedness Program (TEPP)

STATE TRAINING TOTALS



Training and Technical Assistance: CURRIE Exercise

- DOE is partnering with DOE-NNSA & FBI to conduct HBURC-specific security tabletop training exercises
- FBI and DOE-NNSA conduct Community Unified Response to Radiological Incidents and Emergencies (CURRIE) tabletop exercises
- Supplement to TEPP training focused on security response aspects in addition to safety response
- CURRIE – Topeka completed in Sept. 2026
- CURRIE – Birmingham planned for 2027

CURRIE Topeka Tabletop Exercise

Topeka, Kansas | September 2, 2026 | 9:00am – 4:30pm

Event Information

The Federal Bureau of Investigation (FBI), and the Department of Energy's (DOE) National Nuclear Security Administration (NNSA) are hosting a weapons of mass destruction (WMD) tabletop exercise (TTX) in Topeka, Kansas, "CURRIE Topeka," on 2 September 2026.

Community Unified Response to Radiological Incidents & Emergencies (CURRIE) is an exercise designed to foster collaboration among representatives from local, state, tribal and federal agencies in the event of a radiological incident. The exercise series provides a no-fault, customizable TTX for leaders from all responding and stakeholder organizations to exercise preparedness, crisis and consequence management capabilities.

CURRIE Topeka will be held in concert with DOE's Office of Nuclear Energy's High Burnup Research Cask (HBURC) Project which will be executing the shipment of a spent/used nuclear fuel cask by rail in 2027. The TTX will focus on a hypothetical terrorist-created WMD incident affecting the shipment and the greater Topeka area. For more on the HBURC Project please visit: - <https://curie.pnnl.gov/HBURC-Transport> or scan the QR code below

Participants Include (Local, State, Tribal and Federal)

Law Enforcement
Fire, HAZ-MAT
Transportation Officials
Rail Authority / Industry
Emergency Medical Services
Hospitals
Public Health Agencies
Community Leaders
Emergency Management
Regulators
Military
Public Information Officers
Radiological Industry Representatives



REGISTRATION
Click Here or scan the QR code to register.
Please register prior to 21 August 2026.



LOCATION
The Docking State Office Building
915 SW Harrison St.
Topeka, KS 66612

DATE
Wednesday 2 September 2026

TIME
9:00am to 4:30pm
Check-in starts at 8:30am
A working lunch will be provided.

For more information, please contact:

Marc McCulloch
Exercise Planner
Marc.McCulloch@nnsa.doe.gov

Special Agent Kacie Laidacker
FBI Kansas City
klaidacker@fbi.gov



HBURC



U.S. DEPARTMENT
of ENERGY



Office of Counterterrorism
and Counterproliferation
Nuclear Incident
Preparedness and
Collaboration

Peace Through Atomic Strength



FBI FEDERAL BUREAU
OF INVESTIGATION



U.S. DEPARTMENT
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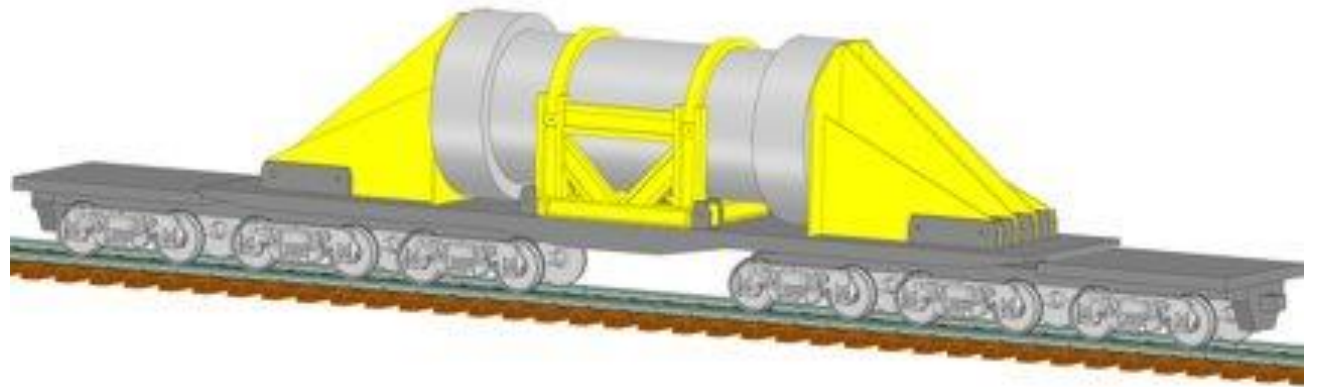
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Upcoming HBURC Shipment Activities This Year

- **Fall 2026**
 - Equipment fabrication
 - Training armed escorts
 - TEPP Training
- **Winter 2026/2027**
 - Equipment fit-up
 - Railcar maintenance
 - CURRIE – Birmingham, AL
- **Spring 2027**
 - Dry-Run Shipment
 - Post Dry-Run training & outreach
- **Summer 2027**
 - Impact limiter fit-up
 - Prep for HBURC shipment
- **Fall 2027**
 - HBURC Shipment
 - Lessons learned



Center for Used Fuel Research Established at Idaho National Laboratory – January 14, 2026

Department of Energy Establishes Center for Used Fuel Research at Idaho National Laboratory.

U.S. Department of Energy designates Idaho National Laboratory as its leading institution for critical research, development, and demonstration efforts concerning used nuclear fuel management.



WASHINGTON — The U.S. Department of Energy (DOE) Office of Nuclear Energy today announced the establishment of the [Center for Used Fuel Research](https://www.energy.gov/ne/articles/department-energy-establishes-center-used-fuel-research-idaho-national-laboratory) (Center) at Idaho National Laboratory (INL), officially designating INL as its leading institution for critical research, development, and demonstration efforts concerning used nuclear fuel (UNF) management. This strategic move underscores the DOE's renewed commitment to solving one of the nation's most pressing energy and environmental challenges and delivers on a key element of the 1995 Idaho Settlement Agreement establishing INL as the DOE lead used nuclear fuel research laboratory.

<https://www.energy.gov/ne/articles/department-energy-establishes-center-used-fuel-research-idaho-national-laboratory>



Center: Passive Canister Monitoring Tech. Demonstration

- Technology Review Panel: review and select UNF canister monitoring technologies
- Technology Development:
 - Non-destructive evaluation technologies: Acoustic emissions, guided wave sensors, fiber optics
 - Companies supported through: Nuclear Energy University Program (NEUP), DOE Small Business Innovation Research (SBIR) Program, Hanford site initiatives
- Deployment in 2027
 - Exploring deployment on a test canister, potentially at San Onofre Nuclear Generating Station (SONGS) or similar facility



Test canister (no radiological material) installation at SONGS - <https://www.songscommunity.com/decomm-digest/hope-for-the-new-year-factual-discussions-about-spent-nuclear-fuel> -

Engineering Design for Storage/Staging Facilities



Artist's rendering of potential Nuclear Lifecycle Innovation Campus

- Conceptual engineering/design for a Federal staging facility (FSF) licensed under 10 CFR Part 72, and associated costs will be completed this fall.
- FSFs are expected to be part of Campus facilities.
- Project awaits location information from Campus siting efforts to proceed with site-specific facility designs.

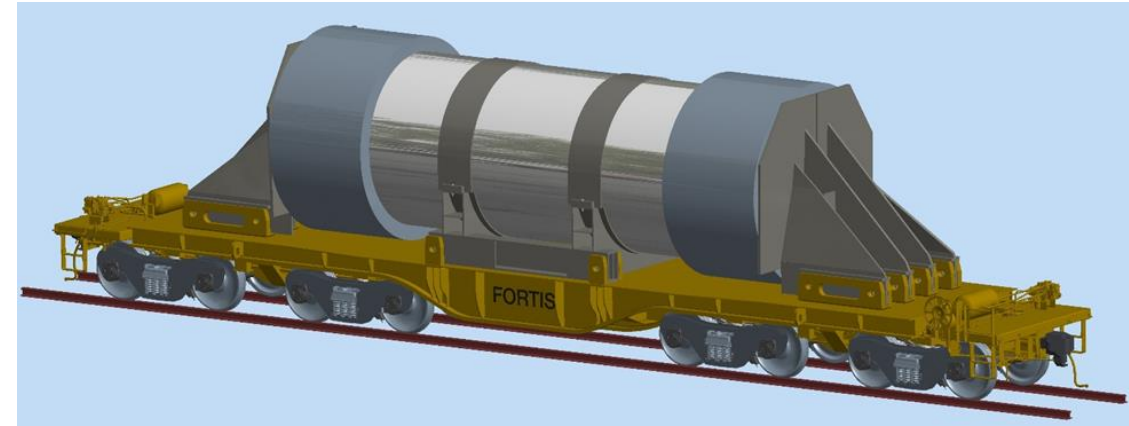
Procuring Additional Atlas Railcars

- DOE will acquire 4 more Atlas railcars from a supplier yet to be determined.
- Depending on the supplier, ramp-up to fabricate the new railcars will be 6 to 12 months.
- The railcars can be used to transport UNF from nuclear power plants and/or DOE sites to Campuses.



Fortis Railcar Fabrication & Testing

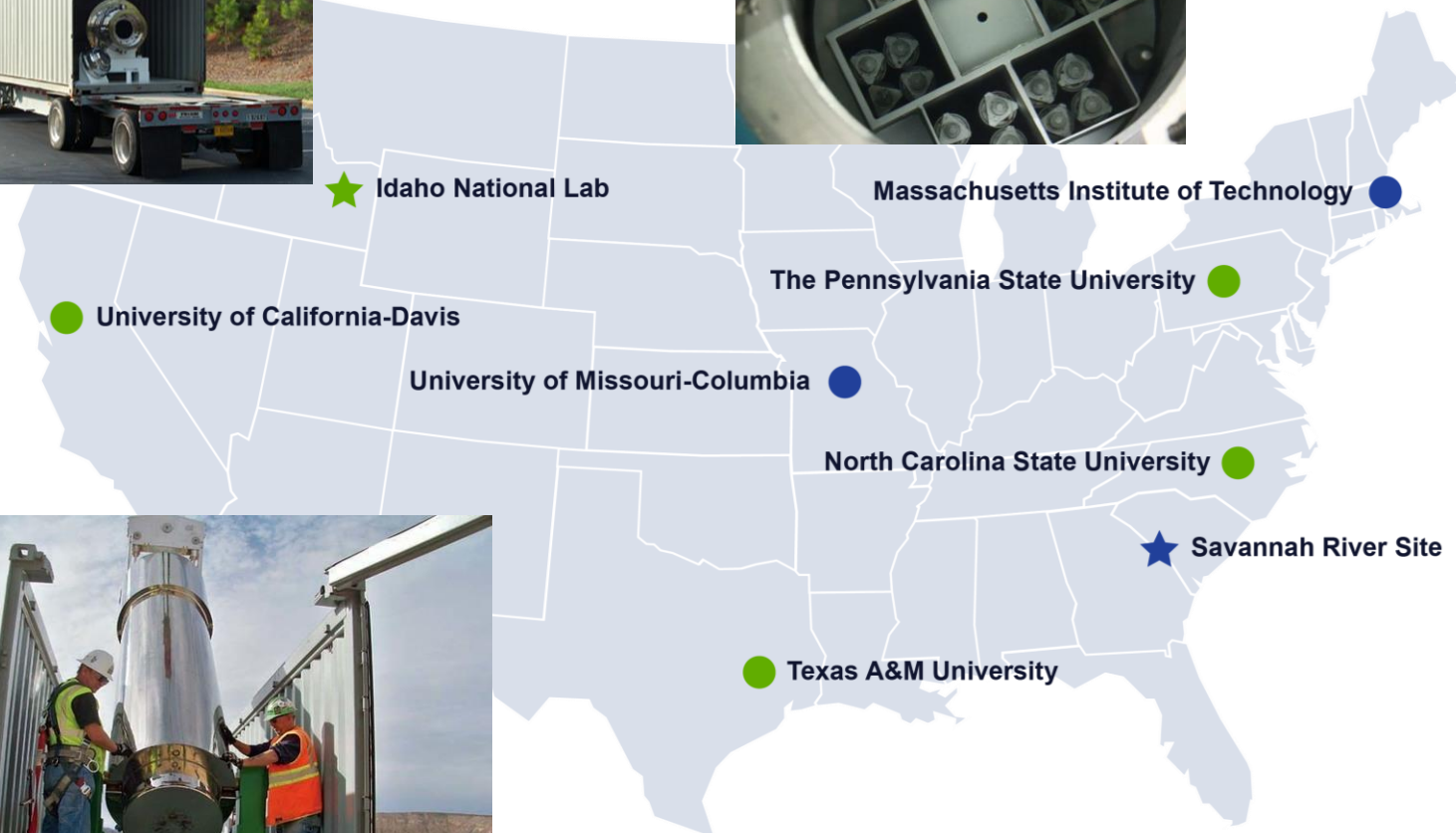
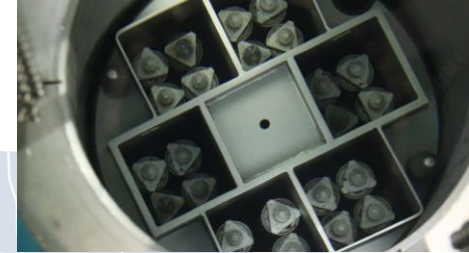
- Fabrication encountered delays. Prototype completion now expected in spring 2027.
- Single-car testing to start shortly after prototype fabricated.
- Naval Reactors (NR) have expressed interest in using the Fortis design to carry their new M-150 cask (to replace their M-140 cask).
- DOE-NE and NR are discussing options for collaborating on Fortis moving forward.



Rendering of DOE's Fortis railcar.

University Research Reactor UNF Shipments, 2026-2030

- 24 U.S. universities have low-power research reactors
- UNF from U.S. university research reactors is sent to Idaho National Laboratory (INL) or the Savannah River Site (SRS) for storage, depending on the type of fuel
- MIT and University of Missouri-Columbia regularly ship to SRS
- Eight universities will ship used nuclear fuel to INL between 2026 and 2030
- Each UNF shipment is 1-2 trucks using a NAC-LWT transportation package (or “cask”)



Update on DOE-NE Cooperative Agreements

- DOE-NE's current cooperative agreements for State Regional Groups and support for TRMTC expire Sept. 30, 2026.
- DOE-NE as a matter of policy requires all contracts and financial assistance awards to be competed.
- New DOE review processes introduced unanticipated delays in posting notices of funding opportunity (NOFOs) for the next 5-year awards.
- NOFOs for five awards were posted at grants.gov, with responses due Sept. 30th.
- No-cost extensions were placed for all five current awards to cover several months.
- DOE-NE hopes to have new awards placed by late fall.



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