

U.S. DEPARTMENT OF
ENERGY

Office of
NUCLEAR ENERGY

Office of Storage & Transportation

(Formerly the Office of Integrated Waste Management)

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US Department of Energy

**FY 2025 University Programs Informational
Webinar**
May 9, 2024
Virtual

NE Program Re-Organization

- **In April 2024 DOE's Office of Nuclear Energy Re-organized**
- **The work of the former Office of Integrated Waste Management is now organized into 2 offices:**
 - The Office of Storage & Transportation (S&T)
 - The Office of Consent-Based Siting

Program Mission

To implement Federal interim storage for commercial spent nuclear fuel following a consent-based siting process.



CURRENT PROGRAM PRIORITIES

2024

Consent-Based Siting/Public Outreach



2025 Conduct a demonstration of the Atlas rail car

Design of Consolidated Interim Storage Facility



2026 Establish the International Center of Excellence for the Research of Spent Nuclear Fuel

Transportation of Spent Nuclear Fuel



2027 Move high burnup cask

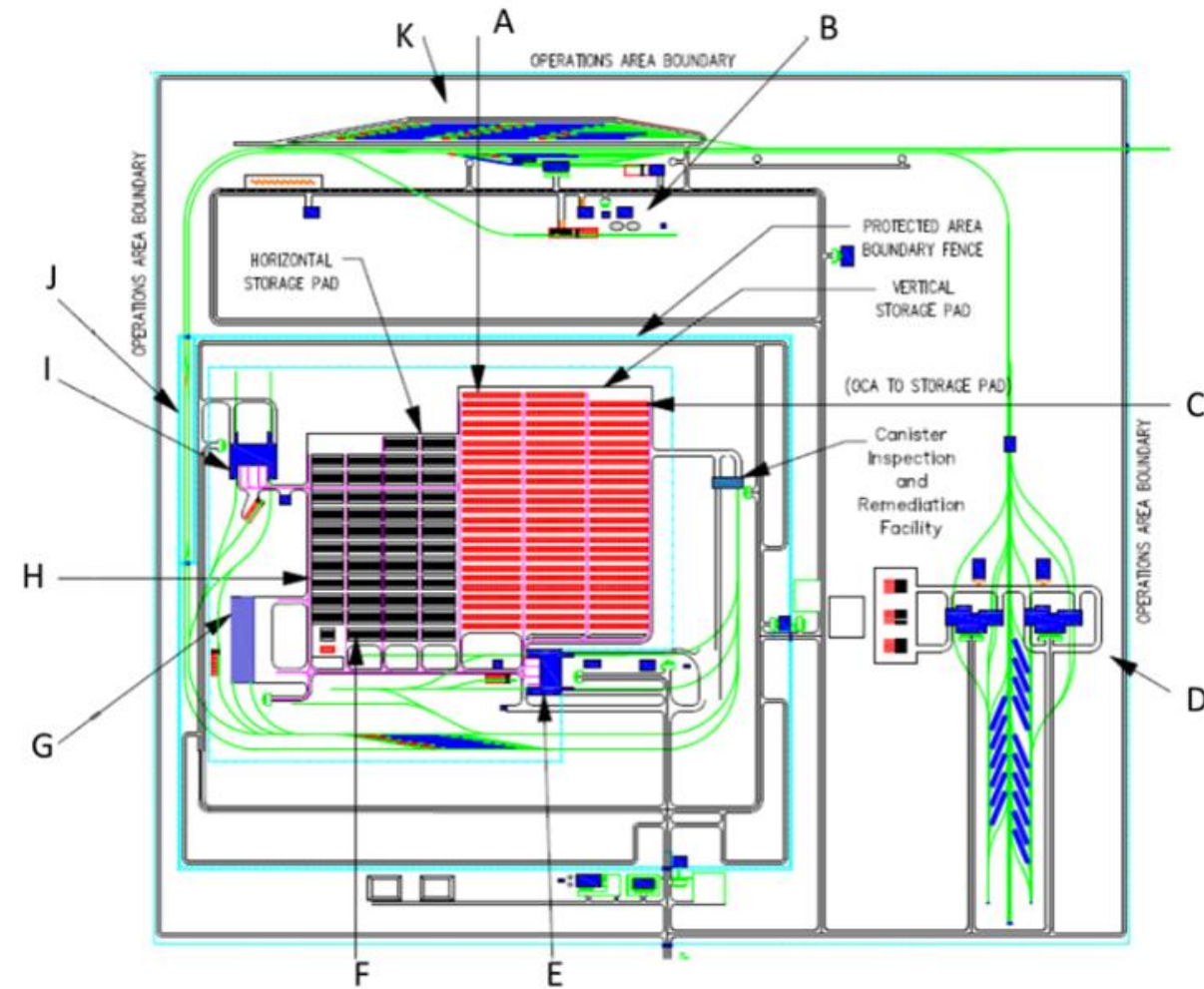
2027 – 2036 Move spent nuclear fuel from shutdown reactor sites?

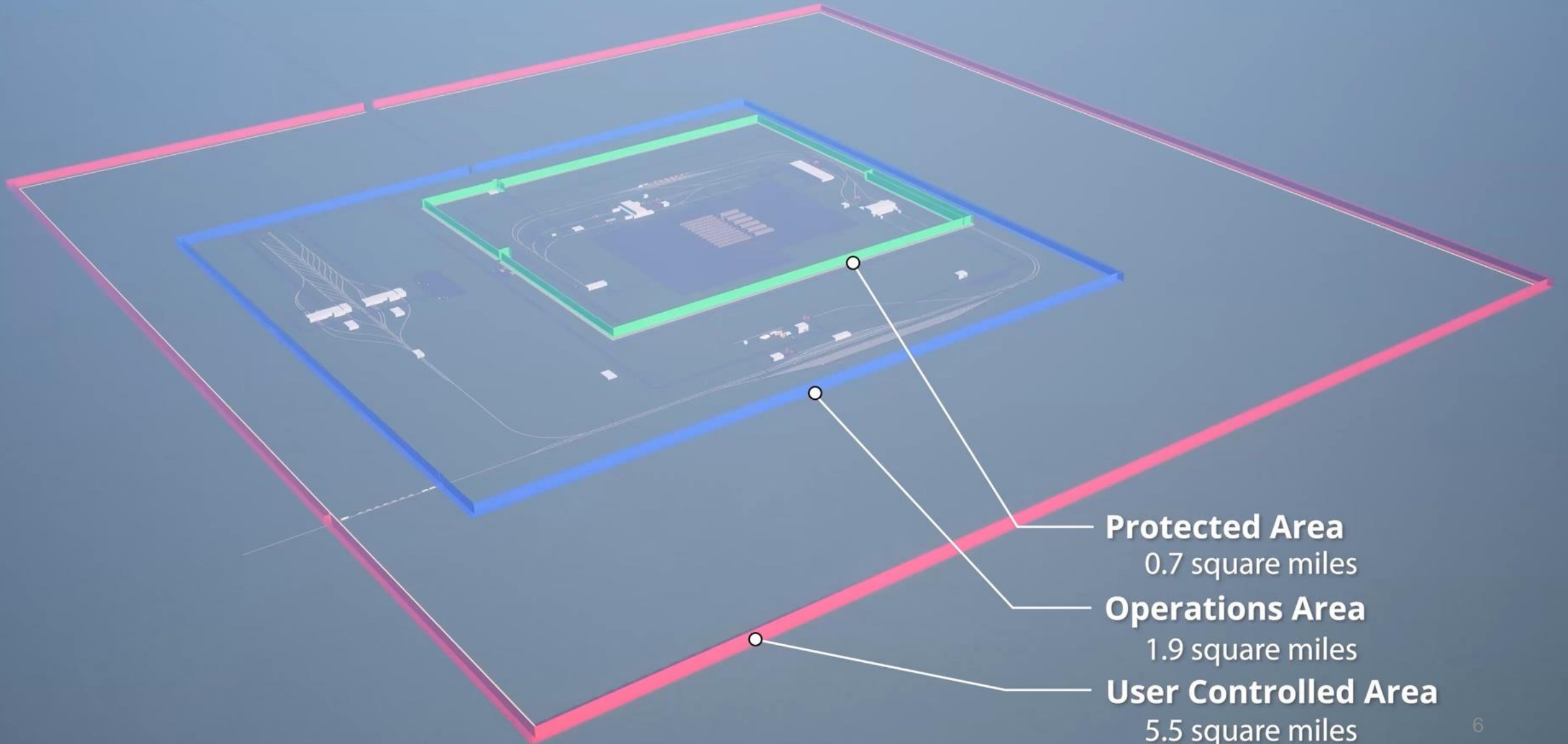
2034 Build out transportation infrastructure for spent nuclear fuel

2038

DOE CISF PROJECT PROGRESS

- In parallel with consent-based siting, DOE is working through the project approval process for a federal consolidated interim storage facility (CISF)
- Utilized a decade of prior work developing functions and requirements, conceptual designs, costs, schedules, and systems analysis
- Project “Mission Need” Approval with DOE’s Deputy Secretary – if approved, becomes an official “DOE Project”





Protected Area

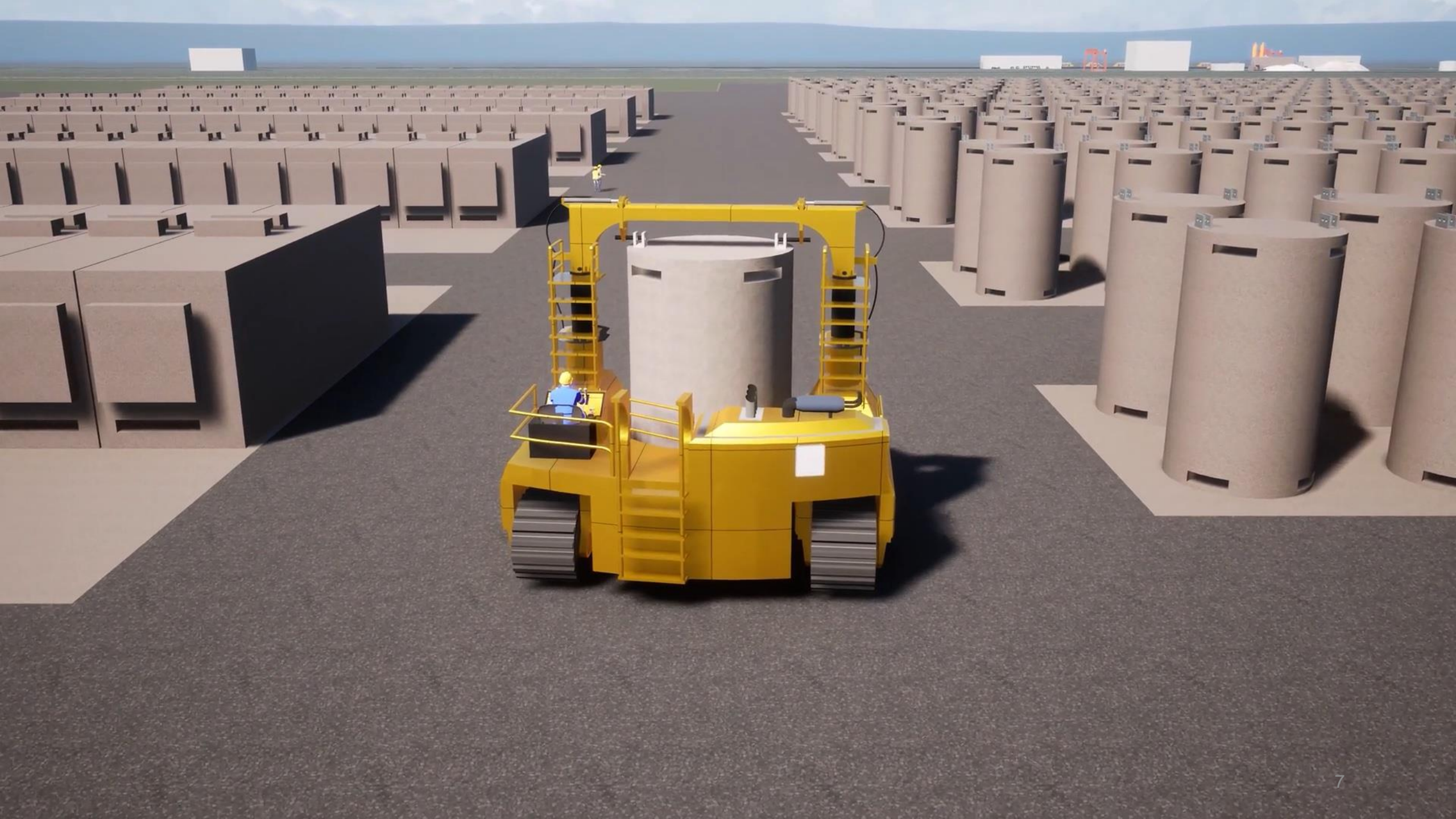
0.7 square miles

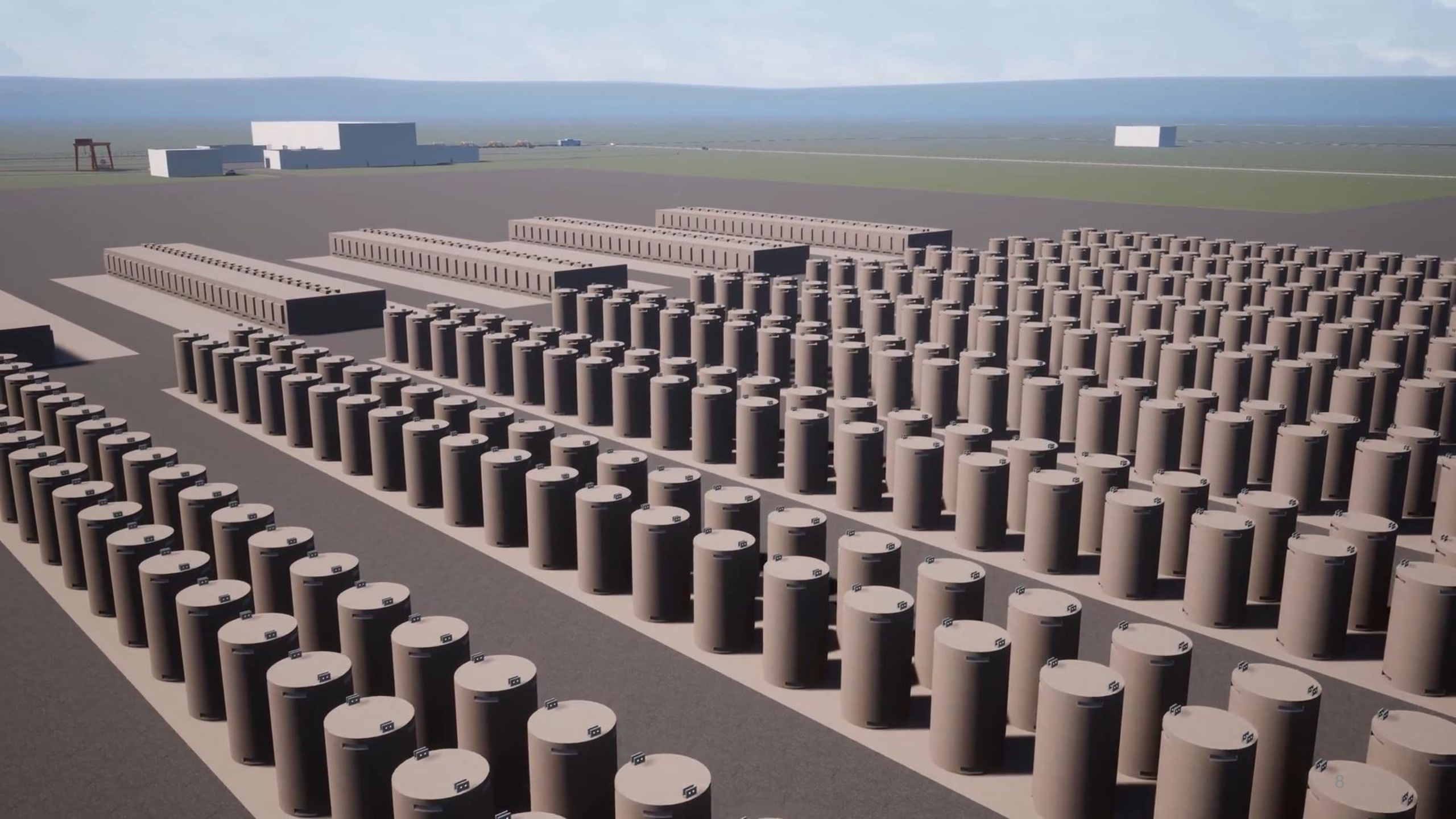
Operations Area

1.9 square miles

User Controlled Area

5.5 square miles







R&D Activities

- **Storage and transportation R&D**

- High-burnup demo cask project
- Shaker table testing of a spent nuclear fuel storage cask
- “Road Readiness” project at DOE-Idaho
- New work in 2025

- **Entering into an MOU with the Electric Power Research Institute (EPRI)**

- **More international collaboration**

- UK, Germany, Belgium, Japan

High Burnup Demo Cask Shipment



- R&D Project Started in 2014
- Collaboration between DOE and EPRI
- Monitoring temperature of high-burnup fuel in dry cask storage
- DOE plans to ship this cask to a DOE facility for further monitoring and R&D
- Planned to ship in 2027

Railcar Development



- **Atlas** (12-axle) railcar: Expected to be approved for transport use in 2024
- **Rail Escort Vehicle (REV)**: Developed in collaboration with the US Navy. Transports armed guards, safety and security equipment.
- **Fortis** (8-axle) railcar: Fabrication began February 2024
- Continuing development of integrated security & safety monitoring system (**ISSMS**) for railcars and integrated with DOE TRANSCOM system for shipment tracking

Package Performance Demonstration

- Developing plans for a **full-sized rail cask package demonstration** (will depend on funding)
 - DOE will lead, and invite Nuclear Regulatory Commission to participate
- US has not tested a current full-sized SNF transportation cask
- Primary purpose is to build public trust and confidence in the safety of spent fuel transport
- Plan to put out a request for information in 2024, to be followed by a request for proposals



Information Resources



- **CURIE - Resource Portal for DOE Nuclear Waste Management Information**
 - Publicly available reports, presentations, fact sheets, historical information
 - curie.pnnl.gov/
- **Integrated Waste Management Storymaps –**
 - Interactive graphically oriented communication tool
 - Provides introductory-level information and visuals on spent nuclear fuel, storage, transportation, etc.
 - [Consent-Based Siting for Consolidated Interim Storage \(pnnl.gov\)](http://pnnl.gov)

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**TOPIC AREA 7 – PUBLIC PERCEPTIONS OF AN INTEGRATED WASTE MANAGEMENT SYSTEM
(ELIGIBLE TO LEAD: UNIVERSITIES ONLY; UP TO 3 YEARS AND \$1,000,000)**

The DOE Office of Nuclear Energy's Office of Integrated Waste Management (IWM) is preparing to construct one or more federal interim storage facilities (CISF), sited using a consent-based process, ready to receive commercial spent nuclear fuel (SNF) as soon as practicable. A consent-based siting process prioritizes the well-being and needs of people and communities, centers upon equity and environmental justice, and is collaborative, phased, and adaptive. The siting and operations of the facility or facilities will involve extensive meaningful public engagement, broad participation, planning, emergency responder training, and more. IWM will need to understand the factors that may influence the long-term vision, design, construction, and maintenance of a major infrastructure development project (e.g., CISF), as well as to gain public trust and confidence for the successful transport of SNF and subsequent operation of interim storage and final disposal facilities.

In support of these efforts, IWM seeks innovative research projects related to 1) facility designs that are reflective of community values and 2) public perceptions about SNF transportation, storage, and disposal. Proposals should clearly identify the challenge being addressed and how the proposed activities will advance IWM efforts.