

U.S. DEPARTMENT OF
ENERGY

Office of
NUCLEAR ENERGY

Office of Integrated Waste Management (IWM) Overview

Erica Bickford, PhD

Acting Director

Office of Integrated Waste Management

US Department of Energy

Office of Integrated Waste Management

Mission

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



Congressional Authorization

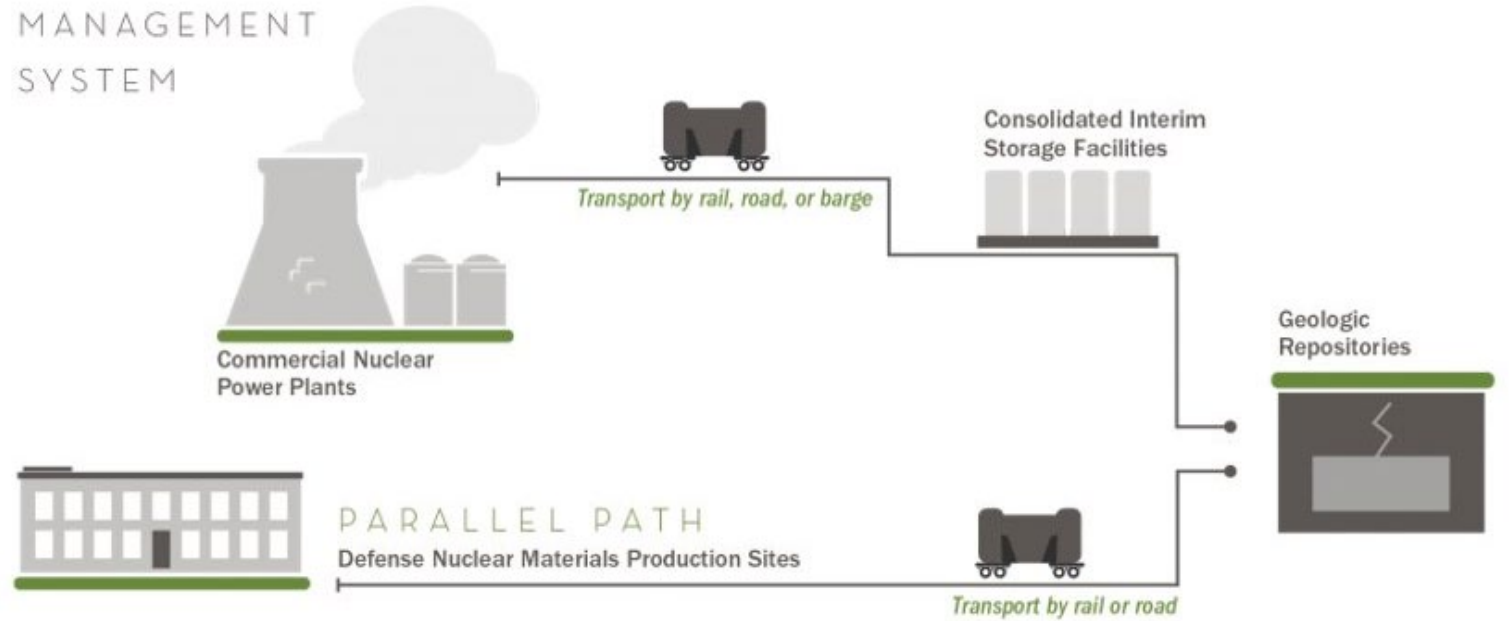
- In the Consolidated Appropriations Act, 2021, Congress provided funds for the Department to move forward on establishing a federal interim storage capability. With this funding, DOE can now pursue activities related to the process for identifying an interim storage site.
 - Included \$20 million for interim storage
 - FY22 appropriations matched FY21 funding levels



Integrated Waste Management System

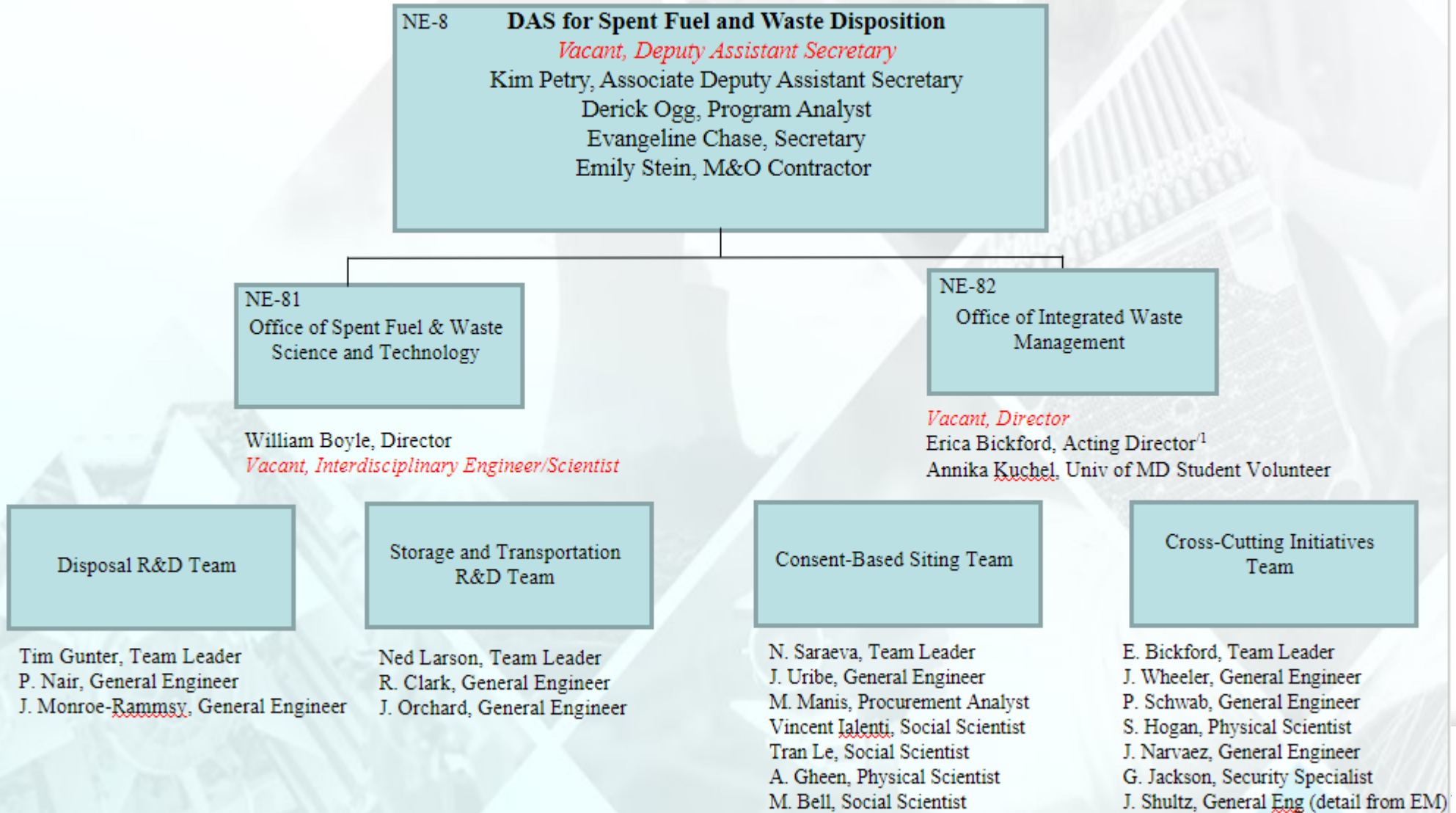
- Storage facility(ies)
- Transportation capability
- Disposal facility(ies)
- Interfaces

INTEGRATED WASTE MANAGEMENT SYSTEM



Staff Resources IWM

Deputy Assistant Secretary for Spent Fuel and Waste Disposition, NE-8



¹ Detailed from within NE

New Staff



Gerry Jackson
Security Specialist



Sara Hogan
Transportation Program
Manager



Natalia Saraeva
Team Leader for
Consent-Based Siting



Megan Manis
Procurement Analyst



John Shultz
Storage Program
Manager (detail)



Angelica Gheen
Health Physicist



Tran Le
Social Scientist



Vincent Ialenti
Social Scientist



Marissa Bell
Social Scientist



Annika Kuchel
Spring Intern



H.R. 2617

One Hundred Seventeenth Congress
of the
United States of America

AT THE SECOND SESSION

Began and held at the City of Washington on Monday,
the third day of January, two thousand and twenty-two

An Act

Making consolidated appropriations for the fiscal year ending September 30, 2023,
and for providing emergency assistance for the situation in Ukraine, and for
other purposes.

Be it enacted by the Senate and House of Representatives of
the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Consolidated Appropriations
Act, 2023".

SEC. 2. TABLE OF CONTENTS.

- Sec. 1. Short title.
- Sec. 2. Table of contents.
- Sec. 3. References.
- Sec. 4. Explanatory statement.
- Sec. 5. Statement of appropriations.
- Sec. 6. Adjustments to compensation.

DIVISION A—AGRICULTURE, RURAL DEVELOPMENT, FOOD AND DRUG
ADMINISTRATION, AND RELATED AGENCIES APPROPRIATIONS ACT, 2023

- Title I—Agricultural Programs
- Title II—Farm Production and Conservation Programs
- Title III—Rural Development Programs
- Title IV—Domestic Food Programs
- Title V—Foreign Assistance and Related Programs
- Title VI—Related Agency and Food and Drug Administration
- Title VII—General Provisions

DIVISION B—COMMERCE, JUSTICE, SCIENCE, AND RELATED AGENCIES
APPROPRIATIONS ACT, 2023

- Title I—Department of Commerce
- Title II—Department of Justice
- Title III—Science
- Title IV—Related Agencies
- Title V—General Provisions

DIVISION C—DEPARTMENT OF DEFENSE APPROPRIATIONS ACT, 2023

- Title I—Military Personnel
- Title II—Operation and Maintenance
- Title III—Procurement
- Title IV—Research, Development, Test and Evaluation
- Title V—Revolving and Management Funds
- Title VI—Other Department of Defense Programs
- Title VII—Related Agencies
- Title VIII—General Provisions

DIVISION D—ENERGY AND WATER DEVELOPMENT AND RELATED
AGENCIES APPROPRIATIONS ACT, 2023

- Title I—Corps of Engineers—Civil
- Title II—Department of the Interior
- Title III—Department of Energy

FY23 Appropriations

- **IWM Funded at \$53 million**
- Note funding in FY21 and FY22 was split between two pots of funds (for Interim Storage and IWMS) and in FY23 they were combined at DOE’s request. The net increase in funding is \$15 million.
- Explanatory statement for Integrated Waste Management Systems:
 - The Department is directed to move forward under existing authority to identify a site for a federal interim storage facility. The Department is further directed to use a consent-based approach when undertaking these activities.
 - The Department is directed to continue site preparation activities at stranded sites, to evaluate the re-initiation of regional transport, and to undertake transportation coordination efforts.

IWM FY23 Planned Activities

- **Consent-Based Siting**
 - Ramp-up Public Outreach and Stakeholder Engagement
- **Continue and Expand Transportation Preparations**
- **Storage Design and Regulatory Considerations**
- **Systems Analysis**



Consent-Based Siting



Request for Information

- Questions on:
 - the consent-based siting process itself
 - removing barriers to meaningful participation—especially for groups and communities who have not historically been well-represented in these conversations
 - interim storage as a component of the nation’s waste management system
- Special focus on ensuring issues of equity and environmental justice are built into the consent-based siting process, as well as the waste management system as a whole



FEDERAL REGISTER

The Daily Journal of the United States Government



N Notice

Notice of Request for Information (RFI) on Using a Consent-Based Siting Process To Identify Federal Interim Storage Facilities

A Notice by the [Energy Department](#) on 12/01/2021



PUBLISHED DOCUMENT

AGENCY:
Office of Spent Fuel and Waste Disposition, Office of Nuclear Energy,
Department of Energy.

ACTION:
Request for information.

SUMMARY:
The Office of Nuclear Energy (NE), U.S. Department of Energy (DOE), requests information on how to site Federal facilities for the temporary, consolidated storage of spent nuclear fuel using a consent-based approach. DOE anticipates that communities; governments at the local, State, and Tribal levels; members of

DOCUMENT DETAILS

Printed version:
[PDF](#)

Publication Date:
12/01/2021

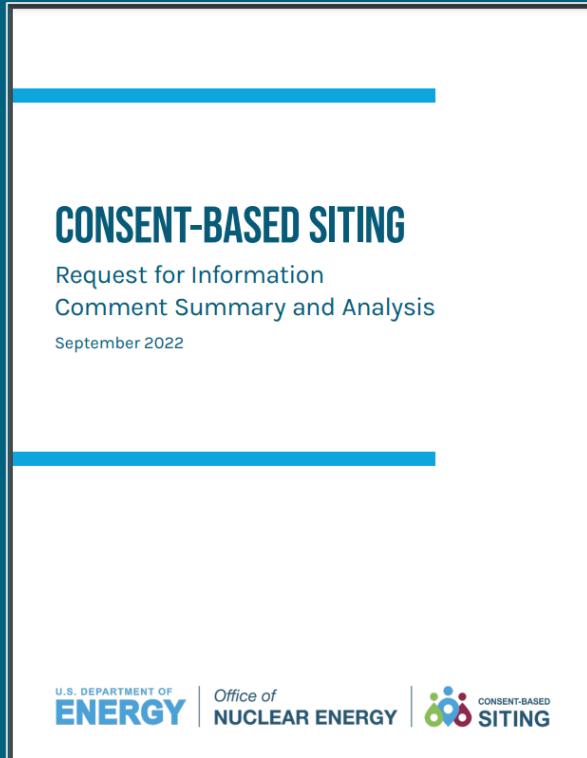
Agency:
[Department of Energy](#)

Dates:
Responses to the RFI must be received by March 4, 2022 by 5:00 p.m. (ET).

Document Type:
Notice

Document Citation:
86 FR 68244

Summary of RFI Feedback



~225 comments received from the following:

- Tribes: 3 from Tribal groups, 3 from Tribes
- States: 12 from State government organizations, 3 from State Regional Groups, and 3 from groups representing State governments or their interests
- Local governments: 7
- NGOs: ~35
- Environmental Justice organizations: 2
- Industry: ~12
- Members of Academia: ~7
- Labor Union: 1
- Private Citizens: ~132 (including 45 “form” letters)

energy.gov/consent-based-siting

Funding Opportunity Informed by Public Feedback

“Funding to Participate: Funding and technical assistance should be provided to Tribes to participate in all stages of the CBS process. Tribes often do not have the same resources, staff capacity, or time as states, so DOE must take proactive steps to ensure that Tribes can participate in the process.”

– Tribal Representatives

“Extensive outreach activities and financial support for interested communities to learn for themselves. Funding should be provided as soon as possible.”

– Private Citizen

Quoted text from Responses to the Request for Information (86 FR 68244)
Available at energy.gov/consentbasedsiting

Funding Opportunity Announcement

- ~~\$16 million~~ **\$26 million**; 6-16 awards; performance period is 18-24 months.
- **Eligible awardees include:**
 - Higher-education institutions (colleges, universities, and other institutions of higher learning)
 - Tribal, State, and local governments (municipalities, towns, cities, and counties)
 - Community foundations
 - Non-governmental organizations (trade associations, 501(c)(3) organizations, and other public groups)
- **Geographically and institutionally diverse awardees**
 - Across the continental United States
- **Builds Capacity For Future Engagement**
 - Establishes a community of practice
 - Strengthens involvement and mutual learning aimed at building trust
 - Special focus on environmental justice



Public Feedback is Informing Next Steps in Consent-Based Siting

1

Further developing consent-based siting process

2

Implementing funding opportunity for interested groups and communities to learn more

3

Clarifying our broader strategy for an integrated waste management system



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Enter Email Address

**More information at
[energy.gov/consent
basedsiting](https://energy.gov/consentbasedsiting)**



Cross-Cutting Initiatives



Transportation Project Updates

Railcar Development

Atlas Railcar with Light Mock-up Load, October 2019



- **Atlas** (12-axle) railcar: continuing multiple railcar testing– expected to be completed in 2023
- **Buffer railcar**: developed in conjunction with the Atlas railcar and will be part of multiple-railcar testing along with Rail Escort Vehicle (**REV**)
- **Fortis** (8-axle) railcar: contract signed and design and fabrication kick-off events (Sept 2022)
- Continue developing integrated security & safety monitoring system (**ISSMS**) for railcars

Transportation Project Updates

Infrastructure Evaluations and Operational Planning

- **Nuclear Power Plant Infrastructure Evaluations for Removal of Spent Nuclear Fuel**

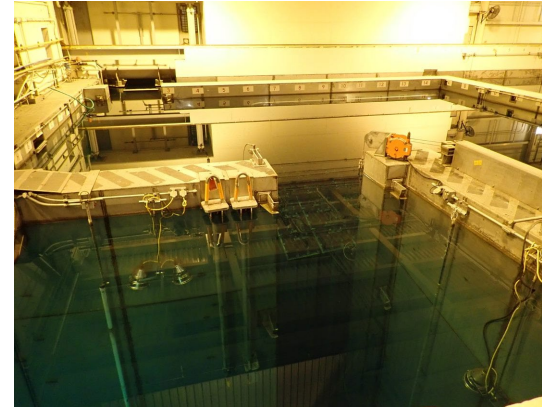
- <https://www.energy.gov/ne/articles/nuclear-power-plant-infrastructure-evaluations-removal-spent-nuclear-fuel>
- 20 site visits completed to date
- New report to be published in 2023

- **Site-Specific De-Inventory Reports**

- Available on www.osti.gov
- Maine Yankee, Connecticut Yankee, Humboldt Bay, Big Rock Point, Kewaunee, Zion, Trojan
- 5 more to be published in 2023

- **Security Considerations**

- Transload site security needs
- Escort/courier security options and requirements



GE Hitachi Morris Operation Spent Fuel Pool, May 2022



Rail spur condition near GE Hitachi Morris Site, May 2022



Indian Point ISFSI, July 2022



Palisades ISFSI, October 2022

Transportation Project Updates

Engagement with Tribes and States

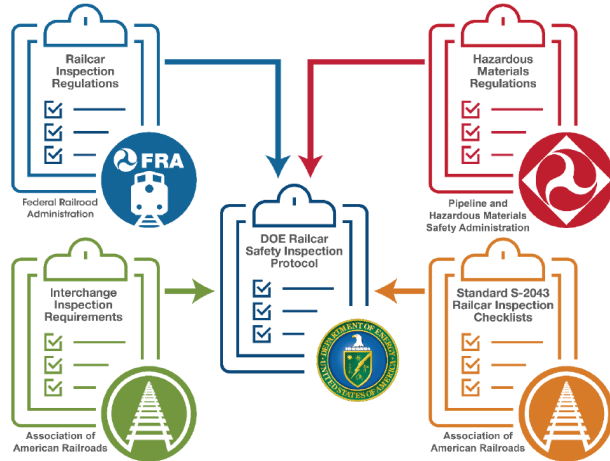
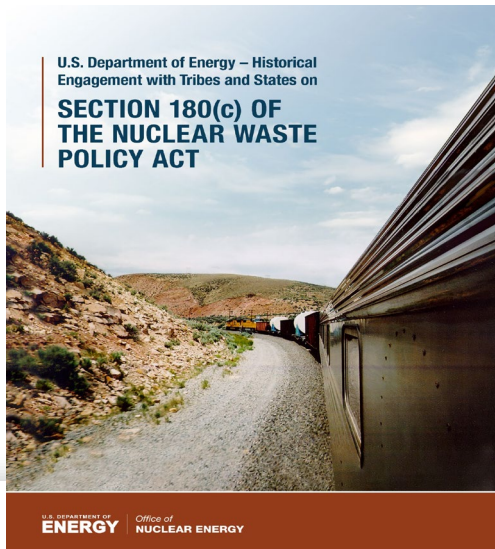


Figure S-1. Components of DOE Railcar Safety Inspection Protocol

- **IWM funds 5 cooperative agreements with State Regional Groups and the Tribal Radioactive Materials Transportation Committee**
 - Supports regional and Tribal committee operations and staff support
 - Supports mid-year meetings
 - Supports participation in DOE's National Transportation Stakeholders Forum (NTSF) Annual Meeting and other DOE-hosted meetings
 - Supports travel to relevant trainings and technical meetings
- **Activities**
 - **IWM federal staff lead three NTSF ad hoc working groups**
 - Section 180(c) ad hoc working group
 - SNF Rail/Routing ad hoc working group
 - SNF Management communications and outreach ad hoc working group
 - **IWM leads a Transportation Core Group**
 - Comprised of chairs/co-chairs/executive committees of State Regional Groups and Tribal Radioactive Materials Transportation Committee

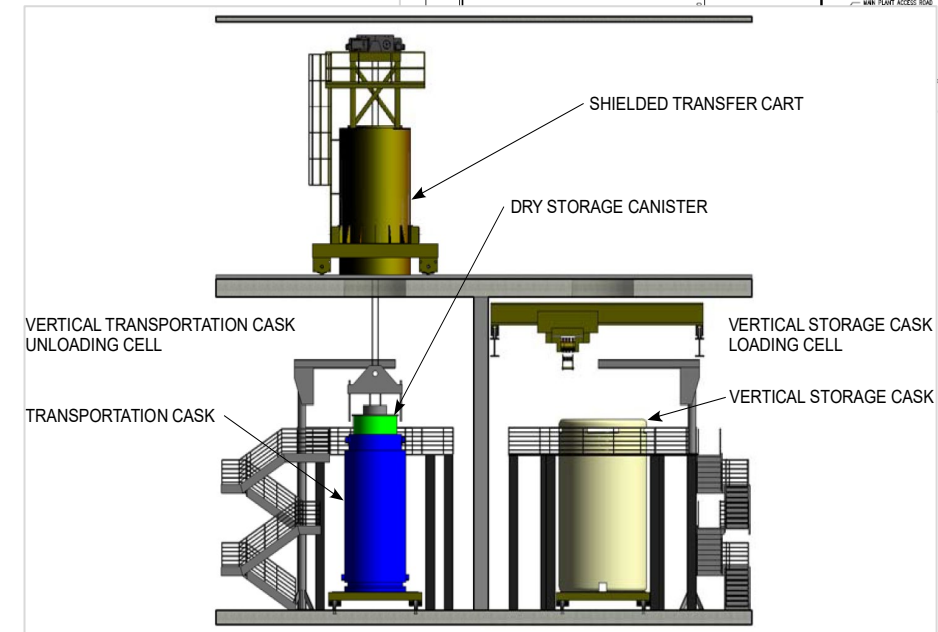
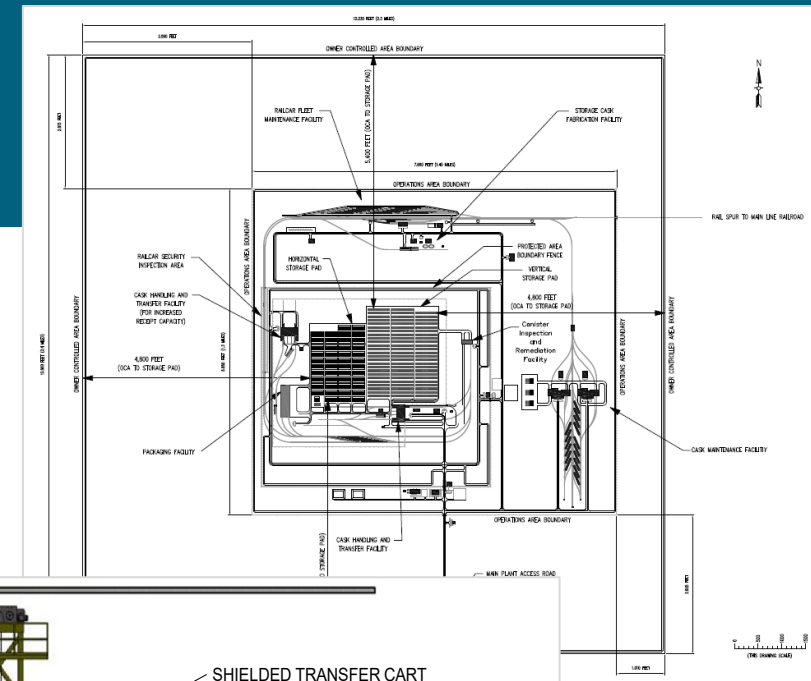


- Developing preliminary plans for a **full-sized rail cask package test** (actual testing will depend on funding).
 - DOE will lead, and invite NRC to participate
- US has not tested a current full-sized SNF transportation cask
- Endorsed by National Academy of Sciences and the Blue Ribbon Commission
- Test will include regulatory tests (unyielding surface) and DOE is also considering non-regulatory (e.g., train collision, waterbody retrieval demonstration)
- Goals include building public trust and confidence in the safety of SNF transportation casks and SNF transportation by rail and gathering technical data



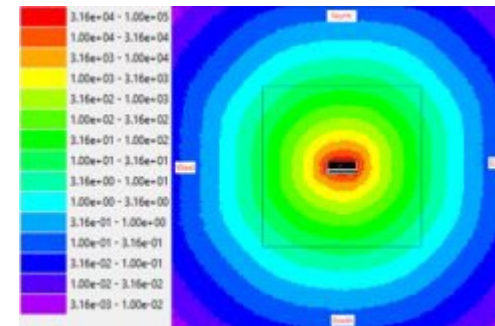
Storage Facilities & Equipment

- **Project management for a federal consolidated interim storage facility**
 - DOE critical decision process for capital projects
- **Storage Facility Design**
 - Functions and requirements
 - Reference design concepts
 - Regulatory analysis
- **Canister inspection and remediation concepts**
 - Helium leak testing



Systems Analysis

- **Computational Tools and Data Management**
 - NGSAM
 - UNF-ST&DARDS
 - Performance and strategic analysis
 - SNF annual inventory update
 - <https://www.osti.gov/servlets/purl/1834721>
- **Systems Engineering**
 - IWM functions and requirements
 - System throughputs
 - Standardization considerations



Spent Nuclear Fuel and Reprocessing Waste Inventory

Spent Fuel and Waste Disposition

Prepared for
U.S. Department of Energy
Office of Nuclear Energy
Spent Fuel and Waste Disposition
SRNL: Shan Peters, Dennis Vinson,
Joe T. Carter
November 2021
FCRD-NFST-2013-000263, Rev. 8

Looking Ahead



Consent-based siting and addressing societal challenges



Need for a disposal pathway



Extended storage research



Foreseeing waste management from advanced reactors deployment



Knowledge management



Thank you

Questions?

