



U.S. DEPARTMENT OF
ENERGY

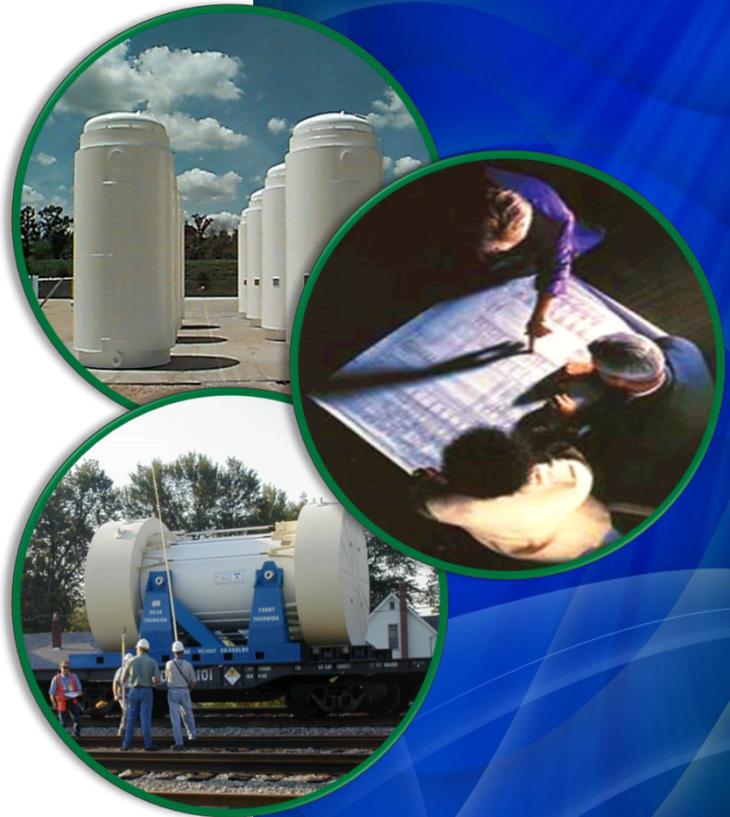
Nuclear Fuels Storage & Transportation Planning Project
Office of Fuel Cycle Technologies

Nuclear Energy

Centralized Used Fuel Resource for Information Exchange (CURIE)

Josh Jarrell
jarrelljj@ornl.gov
Oak Ridge National Laboratory

RNSD Seminar
May 20, 2014





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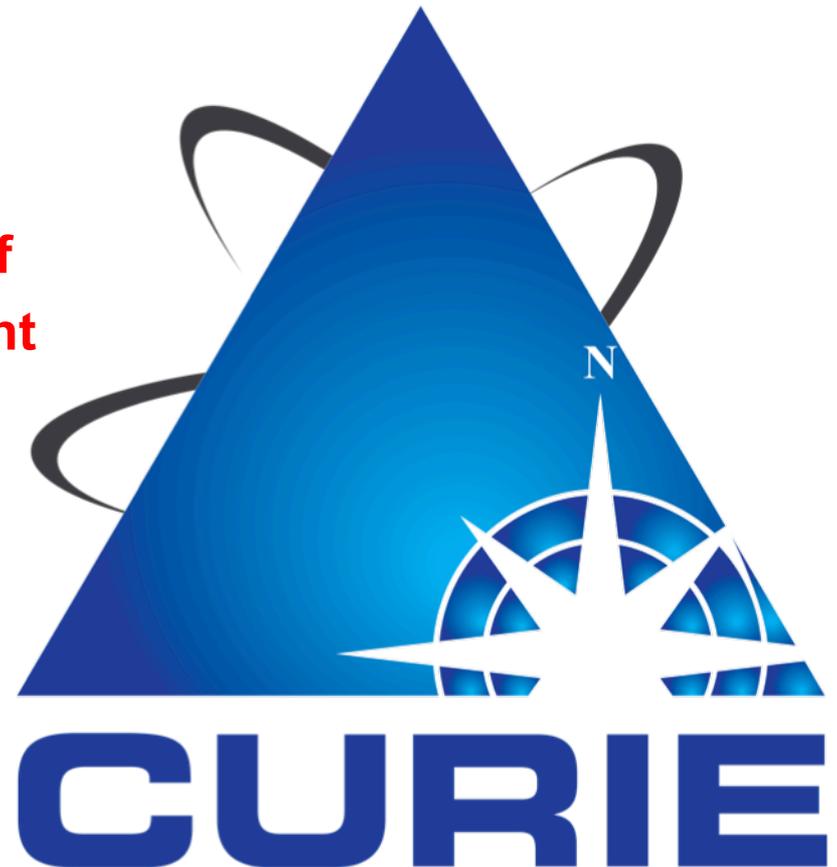
**CURIE is a website for sharing and
accessing documents and data**

■ **Mission**

**To provide flexible, intuitive, and
consolidated document and data
access to support the Department of
Energy's radioactive waste and spent
nuclear fuel management programs
and activities**

■ **Location**

curie.ornl.gov





CURIE fills project needs

Nuclear Energy

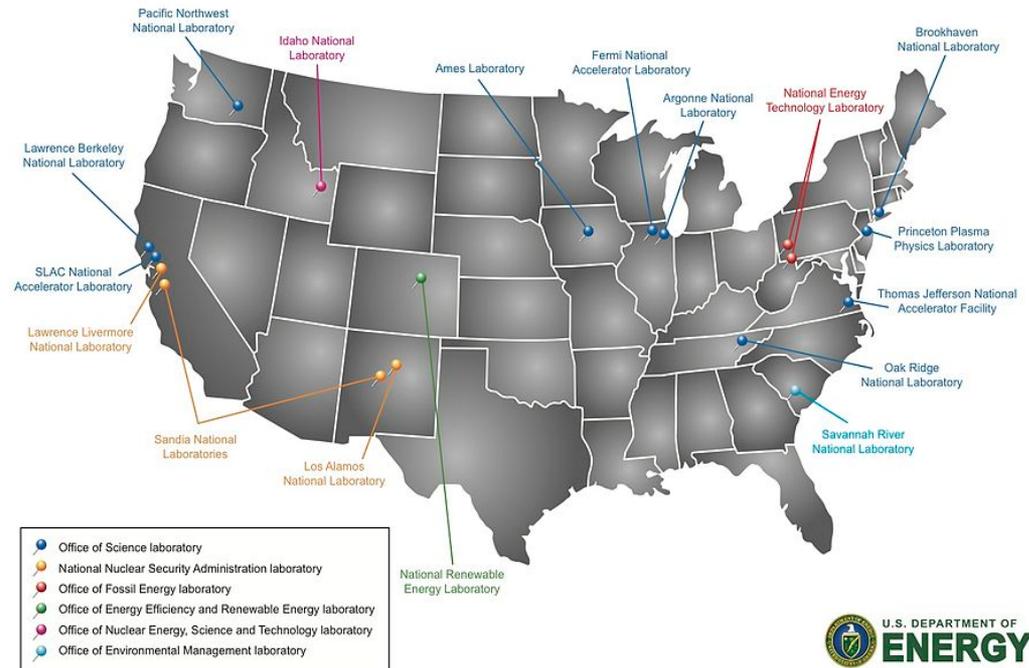
■ Many of the original document management and sharing tools designed for spent nuclear fuel (SNF) communities are no longer accessible

- RES
- LSN

■ The SNF resources are spread out geographically and organizationally

- Must have the ability to share information across multiple systems

Department of Energy National Laboratories

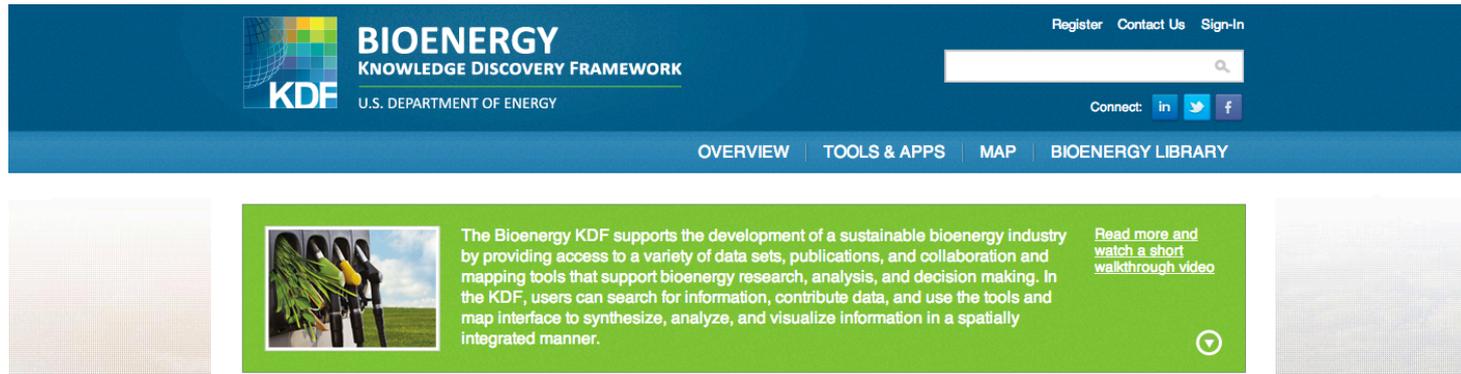




CURIE builds upon previously developed DOE capabilities

■ Many of CURIE's features were developed from DOE's Bioenergy Science Center on Knowledge Discovery Framework (<https://www.bioenergykdf.net>)

- Drupal 7 (content management system)
- Apache Solr (search algorithms)
- PostgreSQL (database)

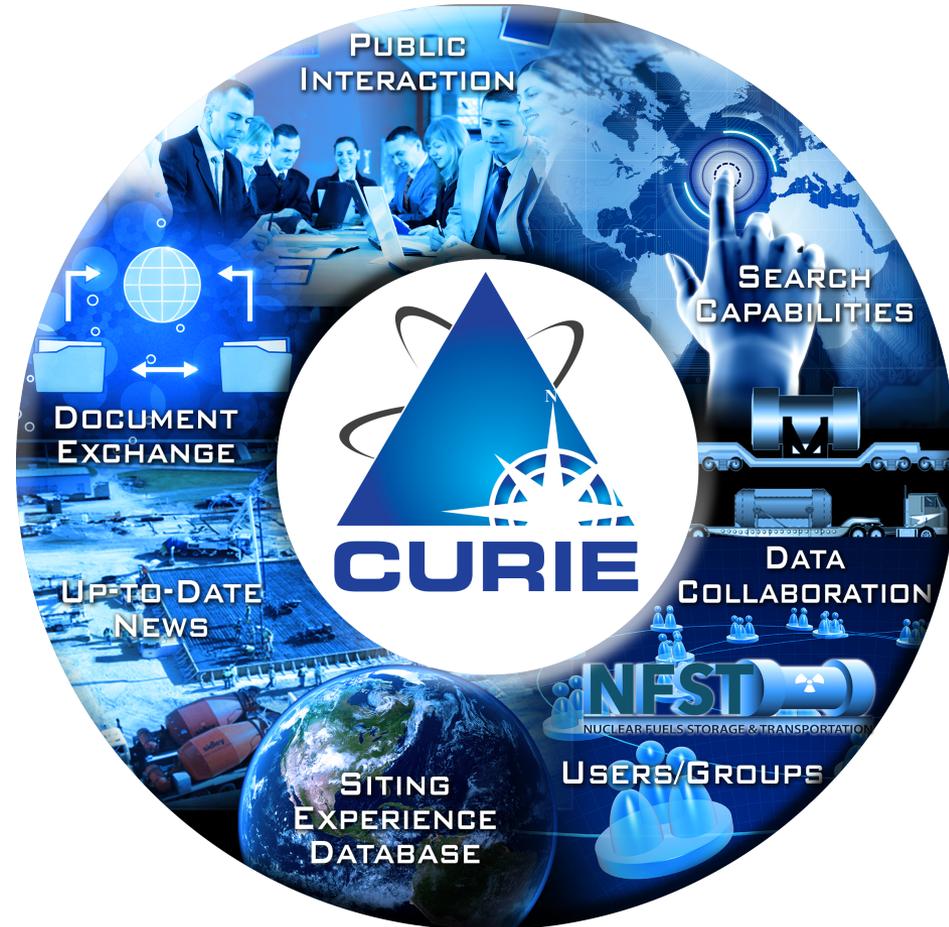


■ CURIE expanded a number of those features, including advanced search algorithms and search results refinement



CURIE has been developed with many capabilities

- Advanced search functionality
- Public and private collaboration environments
- Up-to-date, permissions-based event calendar
- Image galleries
- Automated, live news feed
- Map-based visualization of reactor- and site-specific storage information
- Siting Experience Database





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How would I use CURIE?

■ DEMO



Registration and login are easy

home » user account » register

Account Registration

[Create new account](#) [Log in](#) [Request new password](#)

Username *

Spaces are allowed; punctuation is not allowed except for periods, hyphens, apostrophes, and underscores.

E-mail address *

A valid e-mail address. All e-mails from the system will be sent to this address. The e-mail address is not made public and will only be used if you wish to receive a new password or wish to receive certain news or notifications by e-mail.

Last Name *

First Name *

Organization *

Registration Reason

User login

[Create new account](#) [Log in](#) [Request new password](#)

Username *

Enter your CURIE username.

Password *

Enter the password that accompanies your username.

[Log in using OpenID](#)

[Log in](#)



Registration allows you to upload documents, data, and images

Home » Add content

Add content

Data
A content type for publishing data files to CURIE

Document
Combined Document type for (nearly) all previous separate document content types.

Event
An event content type to add events to the Events Calendar.

Image
Content type to share images through the image gallery

Web Link
Used for documents and information for which the document cannot be uploaded due to copyright information or is only available from the internet. Requires a Title, Abstract, URL, and Keyword for submission



CURIE is accessible to the public, yet provides private community access

- Most documents are publicly available for download without registering
- Registration and administrator approval allow users to upload documents as well as be members of private communities
 - Full edit, check-in/out features available in private groups

Register | Login

CENTRALIZED USED FUEL RESOURCE FOR INFORMATION EXCHANGE

CURIE Home | Siting Experience Database | Resources | Search

The CURIE (Centralized Used Fuel Resource for Information Exchange) website is a national resource, accessible to industry, vendor, Federal, and laboratory partners, which provides usable, collaborative document and data access. It maintains an up-to-date calendar, used nuclear fuel (UNF) image gallery, Featured Documents, and external links to databases and websites. It also maintains the Siting Experience Database, which is a Blue Ribbon Commission on America's Nuclear Future (BRC) near-term recommendation. This database contains information from around the world related to the siting a nuclear waste facility.

CURIE currently maintains 2000+ documents, with the larger majority of these documents publicly accessible. CURIE also maintains private groups, which can share and edit documents privately without the documents becoming publicly available. These private groups are only available to registered users.

Upcoming Events

January 2014						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
29	30	31	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
		INMM Spent Fuel				
19	20	21	22	23	24	25
26	27	28	29	30	31	1

News (Automated Feed)
Radioactive Gold Rush: Nuclear Waste

Recent Documents
Thermal Modeling of NUHOMS HSM-15

Featured Content
Storage and Transport Cask Data for



Steps for loading documents

Home » Add content » Document

Create Document

Map

Documents

RESOURCES

Siting Experience Database

NEWS

Photo Gallery

Title *

Abstract / Summary (Edit summary)

Switch to rich text editor

- Allowed HTML tags: <a> <cite> <blockquote> <code>
- Web page addresses and e-mail addresses turn into links automatically.
- Lines and paragraphs break automatically.

[More information about text formats](#)

Attach Documents

Add a new file *

Upload | Advanced upload | Remote URL

No file chosen

Files must be less than 128 MB.

Allowed file types: txt pdf doc docx xls xlsx ppt pptx png jpeg jpg gif pps odt ods odp.

Author

+

Add a single Authors name per text box. Click "Add Another Item" below to add another text box to enter more Authors - 1 Author per box.

Show row weights

Document Type *

- Select a value -

Keywords *

Publication Date

Month * **Year ***

Apr 2014

Associated Sites

- None -

Arkansas Nuclear One

Beaver Valley

Big Rock Point

Additional Information

Additional information including issue number, Volume, chapter, etc.

Group

- None -

Associate this content with a specific group

Copyright

Optional copyright release statement

I agree *

Terms: The contents and uploaded documents are legal and permitted to be published on this website.



Once a document is loaded, version control is straightforward

■ Clicking “edit” locks the document

- Document must be saved locally for editing
- Edited Versions are saved indefinitely on the server

■ Each group can control who can add, edit, and delete documents

■ Banner reminds you if you’ve locked documents

Home » Evaluation of Options for Permanent Geologic Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste in Support of a Comprehensive National Nuclear Fuel Cycle Strategy, Volume I and Volume II (Appendices) » Edit

✓ This document is now locked against simultaneous editing.

Edit Document Evaluation of Options for Permanent Geologic Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste in Support of a Comprehensive National Nuclear Fuel Cycle Strategy, Volume I and Volume II (Appendices)

Map
Documents
RESOURCES
Siting Experience Database
NEWS
Photo Gallery

View Edit

Title *
Evaluation of Options for Permanent Geologic Disposal of Spent Ni

Abstract / Summary (Edit summary)
This study provides a technical basis for informing policy decisions regarding strategies for the management and permanent disposal of spent nuclear fuel (SNF) and high-level radioactive waste (HLW) in the United States requiring geologic isolation. Relevant policy questions this study can help inform include the following: Is a “one-size-fits-all” repository a good strategic option for disposal? Do different waste types and forms perform differently enough in different disposal concepts that they warrant different treatment? Do some disposal concepts perform significantly better with or without specific waste types or forms? The study provides this basis by evaluating potential impacts of waste forms on the feasibility and performance of representative generic concepts for geologic disposal.



The node 'Evaluation of Options for Permanent Geologic Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste in Support of a Comprehensive National Nuclear Fuel Cycle Strategy, Volume I and Volume II (Appendices)' is locked by you. You may want to 'release the lock' in order to allow others to edit.



CURIE's advanced search options make finding documents easier

■ Relevancy is based on algorithm weights

- Location of search word and number of document views

■ Filtering and sorting is available

- Document type, title, group audience, keywords

Current search
Search found 1028 items

transportation

Filter by document type:

- Report (769)
- Data (153)
- Presentation (55)
- Journal (24)
- Letter (22)
- Ruling (2)

Filter by keywords:

- siting (542)
- repository (179)
- spent fuel (166)

Search Results

Search: transportation Items per page: 25

Title	Document Type	Publication Date	Group	Relevancy
UFD Storage and Transportation - Transportation Working Group Report	Document	2011-08-01	Public	0.94
Assessment of Accident Risk for Transport of Spent Nuclear Fuel to Yucca Mountain Using RADTRAN 5.5	Document	2006-09-01	Public	0.68
Siting of an MRS Facility: Identification of a Geographic Region that Reduces Transportation Requirements	SED Document	1985-04-01	Public	0.68
Regulatory Status of Burnup Credit for Spent-Fuel Storage and Transport Casks	Web Link	2000-11-01	Public	0.68

What's on CURIE right now?



CURIE has over a hundred images related to used fuel and nuclear sites

- Casks
- Canisters
- SNF movements
- General models
- Heavy hauls

Public Gallery

Play Previous Next



Inspection of a rail cask used to transport commercial used nuclear fuel from West Valley to Idaho National Laboratory



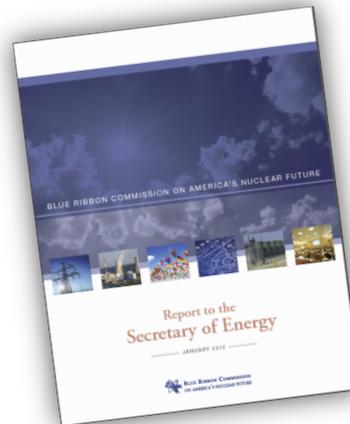


CURIE hosts the BRC-recommended Siting Experience Database

Objective

- Complete the **Blue Ribbon Commission** near-term recommendation:

*To ensure that future siting efforts are informed by past experience, **DOE should build a database of the experience that has been gained and relevant documentation produced in efforts to site nuclear waste facilities, in the United States and abroad.***



Process

- Sandia found and consolidated documents related to eight siting efforts and four international programs
- ORNL integrated Sandia's database of documents into the CURIE website

Results

- Publicly available siting experience database with 700+ searchable documents to satisfy the BRC recommendation

<http://curie.ornl.gov/SED/pages/sed-homepage>





CURIE maintains detailed, map-based visualizations of reactor information

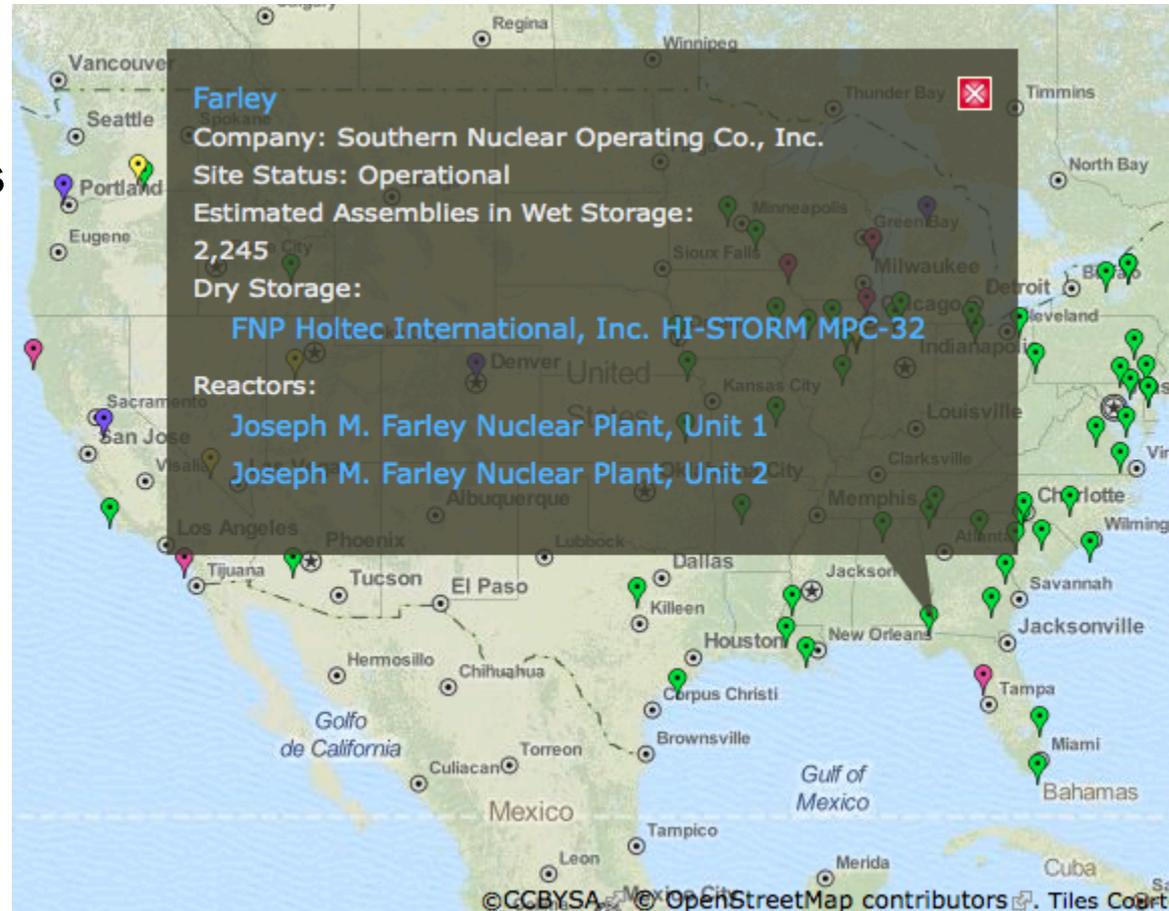
■ Location and basic information for active and shutdown nuclear reactors

- Owner
- Operation Dates
- Capacity

■ Estimated assemblies in wet storage

■ Detailed dry storage information

- Vendor, System, and Model
- Number of canisters and assemblies
- Link to Certificate of Compliance





CURIE has multiple levels of information



FNP Holtec International, Inc. HI-STORM MPC-32

View Edit Merge Terms Devel

Cask Vendor:
Holtec International, Inc.

Cask System:
HI-STORM

Canister/Casks Model:
MPC-32

Canisters/Casks Loaded:
21

Assemblies Stored:
672

Storage Configuration:
Vertical

COC/SNM:
72-1014

Reference Link:
<http://pbadupws.nrc.gov/docs/ML0923/ML092300197.pdf>

Site Abbreviation:
FNP
There is currently no content classified with this term.

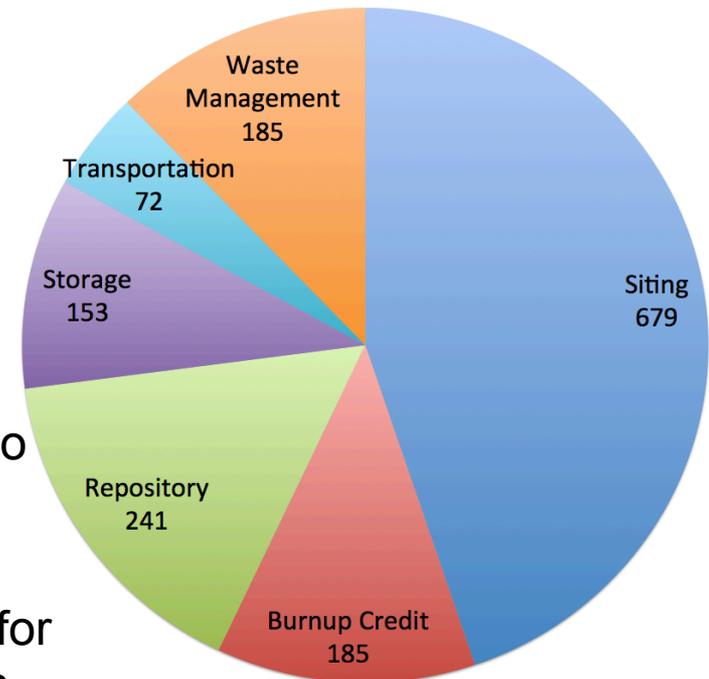




CURIE hosts a broad range of documents and content

■ Over 2000 documents related to SNF, most of which are accessible to the general public

- SNF and cask inventory data
- Technical reports related to
 - SNF characteristics (burnup, criticality, and thermal analyses)
 - SNF and cask transportation
 - Interim storage of SNF
 - Nuclear waste management system analyses
- Court rulings, requests, filings, etc., related to spent fuel in the United States
- Links to pertinent NRC NUREGs, BRC recommendations, OECD NEA Assay Data for SNF, and collaborator and sponsor websites





Go to curie.ornl.gov, register, and start sharing documents

■ CURIE provides

- Access to spent fuel documents and information
 - map based and searchable
- BRC-recommended Siting Experience Database
- Private community document distribution and version control

■ The more people who use, register, and upload documents to CURIE, the better it will be.



■ CURIE's infrastructure and functionality may be useful to other projects