

Nuclear Power Plant Infrastructure Evaluations for Removing Commercial Spent Nuclear Fuel

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Nuclear Power Plant Site Evaluations

- **The purpose of nuclear power plant (NPP) site evaluations is to:**
 - Confirm, gather, and identify gaps in information related to the inventory of spent nuclear fuel (SNF) and greater-than-Class C (GTCC) waste at the NPP sites
 - Document conditions at the NPP sites at time of evaluation
 - Evaluate site transportation experience and near-site transportation infrastructure at the NPP sites
- **Identify gaps in information needed to ship SNF and GTCC waste from the NPP sites**
- **Based on the available information, identify options for transporting SNF and GTCC waste from the NPP sites**

Nuclear Power Plant Infrastructure Evaluations for Removal of Spent Nuclear Fuel

Spent Fuel and Waste Disposition

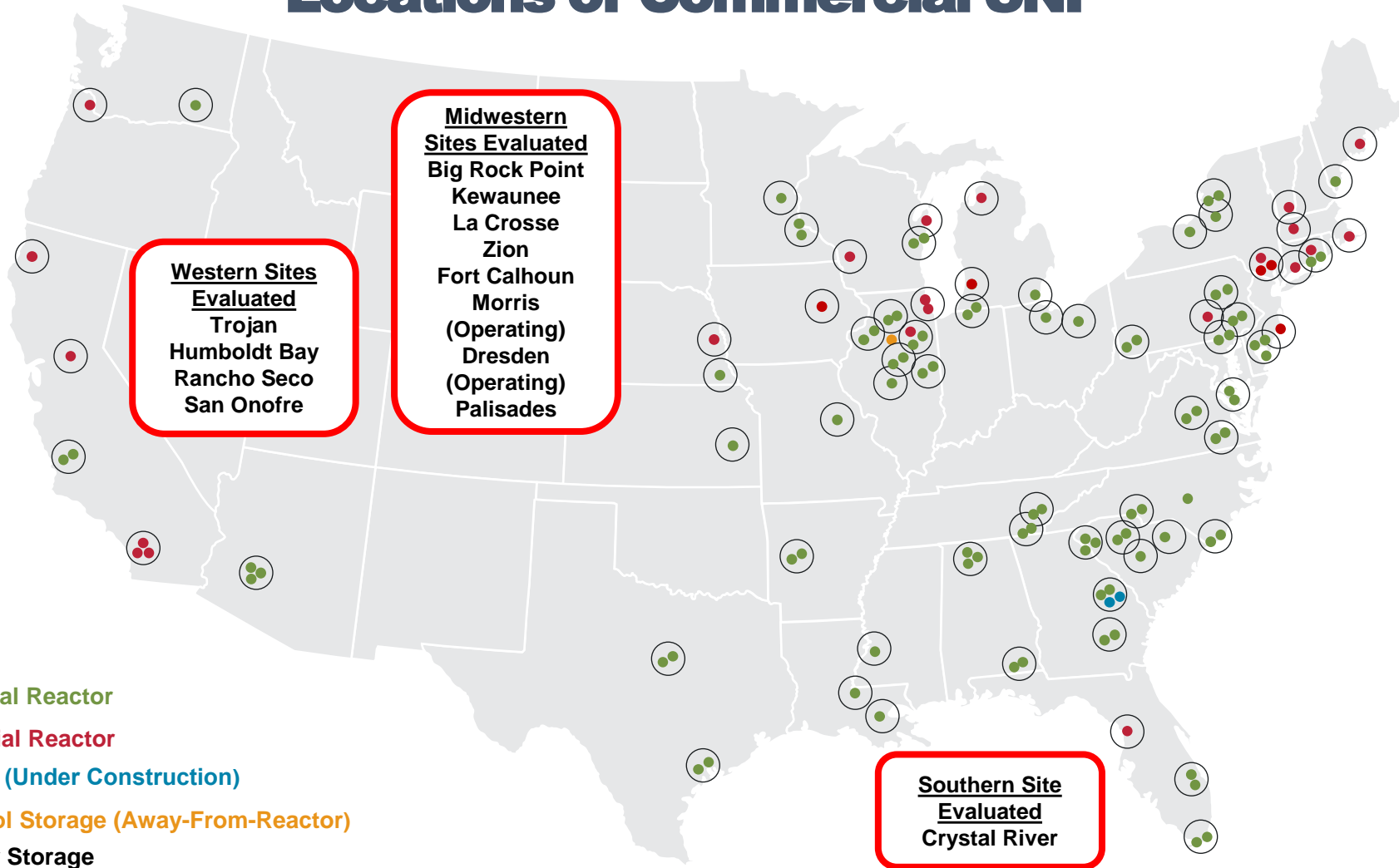
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Aspects of Transportability Evaluated

- **SNF and GTCC inventory and its characteristics – compare the inventory and its characteristics to the U.S. Nuclear Regulatory Commission (NRC) Certificate of Compliance (CoC) for the transportation casks that could be used**
 - Does the burnup, enrichment, and decay heat meet the conditions in the CoC
 - Is the specific dry storage canister model included in the CoC
- **Onsite infrastructure – what is available at a site**
- **Near-site transportation infrastructure – rail, roads, and barge access**
 - Location and capacity of transportation infrastructure and past experience transporting heavy loads to and from the site
 - For sites without direct rail access, need for a heavy haul truck to rail transload
- **Each site is unique so the emphasis placed on these areas depends on the characteristics of the site being evaluated – case-by-case**
- **Data obtained during site evaluations is shared with UNF-ST&DARDS and System Modeling**

Locations of Commercial SNF



- Operating Commercial Reactor
- Shutdown Commercial Reactor
- “New Build” Reactor (Under Construction)
- Commercial SNF Pool Storage (Away-From-Reactor)
- Commercial SNF Dry Storage

Eastern Sites Evaluated
 Maine Yankee
 Vermont Yankee
 Yankee Rowe
 Pilgrim
 Connecticut Yankee
 Oyster Creek
 Indian Point

Southern Site Evaluated
 Crystal River

Midwestern Sites Evaluated
 Big Rock Point
 Kewaunee
 La Crosse
 Zion
 Fort Calhoun
 Morris (Operating)
 Dresden (Operating)
 Palisades

Western Sites Evaluated
 Trojan
 Humboldt Bay
 Rancho Seco
 San Onofre

SNF – Spent Nuclear Fuel
 Updated October 2022

Note: Symbols do not reflect precise locations

NPP Site Evaluation Process

- **Extensive NPP site research**
- **Planning with NPP Site**
 - List of questions submitted to NPP site about two months before site evaluation
 - Coordinate regarding security access requirements and logistics
- **Planning with nearby railroads**
 - Federal Railroad Administration (FRA) leads this activity
 - Identify potential transload locations
- **Planning with Federal, Tribal, State, and State Regional Group partners**
 - US Army Corps of Engineers and US Coast Guard if barging transport mode possible
 - State Regional Groups will often assist in external engagement meetings
 - Variety of State agencies will typically participate in a site evaluation
- **Planning with community engagement or advisory panels**
- **Logistics planning**
- **These activities will typically take 4-6 months**

Document and Database Research Focuses on Areas Relevant to Transportation Planning

- SNF inventory and dry storage systems used at the site
- Onsite infrastructure
- Near-site transportation infrastructure
- Overweight/overdimension transportation experience at the sites

Facility Interface Data Sheet		Crystal River 3	
General Information			
Site:	Crystal River	Unit:	3 Docket Numbers: 50-302
Site Status:	<input checked="" type="checkbox"/> Operating <input type="checkbox"/> Permanent Shutdown <input type="checkbox"/> Decommissioned		
Address:	Power Line Road	Contact Name:	Bob Kunita
	Crystal River, FL 32029	Organization/Position:	Lead Engineer
Site Operator:	Progress Energy, Inc.	Phone Number:	919-548-2709
NSSS Vendor:	Babcock & Wilcox	Fax Number:	919-548-4361
Unit Type:	<input checked="" type="checkbox"/> PWR <input type="checkbox"/> BWR <input type="checkbox"/> Other		
DCSS:	No spent fuel currently in dry storage.		
Site/Plant Cask Handling Information			
Roads			
Best Trunk Route to Nearest Interstate:	Power Line Road US-19 and 98/SR-44 CR-491 SR-200/1-75 (45 miles from the plant)	Weight Limits:	Permit @ 80,000 lbs to 127,000 lbs
Bridges:	1	Weight Limits:	[REDACTED]
Underpasses:	[REDACTED]	Height:	[REDACTED]
Description:	Off-site road dimension limits: 60'-0" long tractor/trailer X 13'-6" high X 8'-6" wide. On-site roads are capable of supporting heavy haul transporter. 3-90° turns in protected area.		
Rail			
Access to Site:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Servicing Railroad Company:	CSXT
On Site Rail:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Last Use:	active
Length of Rail Inside Protected Area:	0	Road Distance to Off-Site Rail Head:	NA
Description:	On-site rails do not extend into receiving area. On-site rails used for coal shipments to 4 fossil plants at the site. Switches outside the protected area.		
Water			
Water Way:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Name:	Crystal River/ Gulf of Mexico
Barge Access:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Last Use:	active
Road Distance to Off-Site Barge Terminal:	NA		
Description:	A coal conveyor used for coal shipments is an obstruction that would require a crane to boom out at least 30'-0" with a cask. No crane is available and no rollout off capabilities.		
Crane			
Capacity:	72 tons	Single Failure Proof:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Rating:	120 tons	Submergeable Hook:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Palm of Hook to Highest Obstruction Distance:	26'-8" (avoids work platform at loading area)		
Description:	Sister hook. 72 ton crane derating for NUREG-0612		

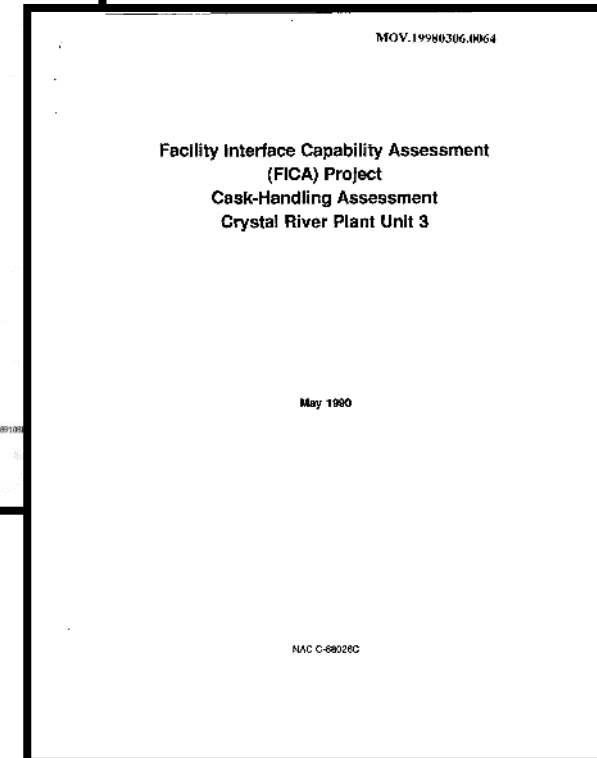
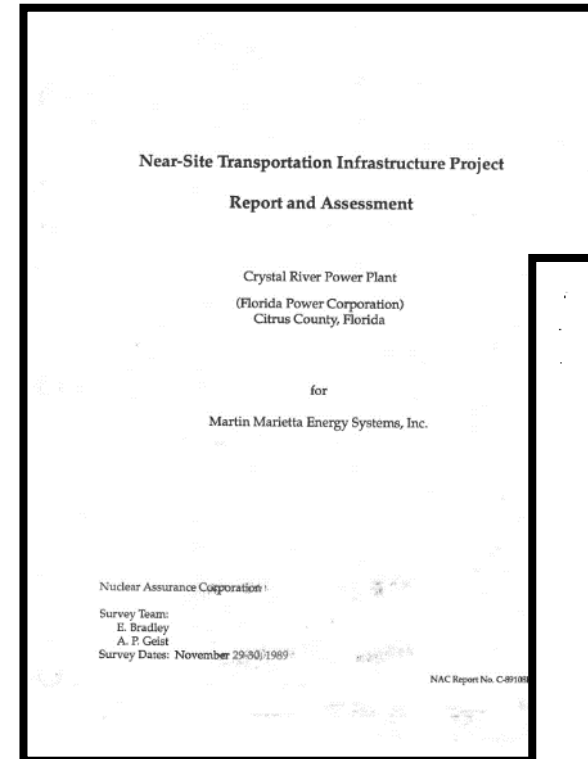
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Facility Interface Data Sheet		Crystal River 3	
Cask Receiving Area Information			
Truck Access:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Access Through Airstock/Access Bay:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Rail Access:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Dimensions: L none W 20'-0" H 73'-8"	
Floor Load Limits:	Maximum Total Load: [REDACTED]	Maximum Area Load:	[REDACTED]
Hatchway:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Dimensions: L 35'-8" W 8'-7"	
Center Point of Hatchway in Relationship to Cask Receiving Area:	9'-0.5" south of Auxiliary Building south outside wall at ground level.		
Description:	27'-0" wide outside area beneath hatchway to Auxiliary Building. Gate access is 28'-0" wide. Hatchway width is limiting for cask.		
Cask Loading Area Information			
Unobstructed U/W Load Area:	<input type="checkbox"/> SFP <input checked="" type="checkbox"/> Cask Pit	Dimensions: L 10'-0" W 10'-0" Depth 40'-2"	
Floor Load Limits:	Maximum Total Load: 50,000 lbs	Maximum Area Load:	[REDACTED]
Fuel Minimum Water Coverage:	9'-0"	Fuel Bundle Lift Height Limit:	17'-4"
Description:	Refuel floor area surrounded by 4'-0" work platform. Crane access height limit is 29'-8".		
Cask Processing Area Information			
Processing Area:	Dimensions: L 10'-0" W 10'-0" H 12'-0"		
Floor Load Limits:	Maximum Total Load: [REDACTED]	Maximum Area Load:	[REDACTED]
Description:	Refuel floor pit area 19'-0" X 24'-0" x 19'-0" deep containing a 2 level scaffolding w/a 10'-0" diameter cask access opening. Crane access height limit is 30'-8".		
Administrative, Technical Specification or Licensing Limitations			
Administrative Limitations:			
Auxiliary Building hatchway cover must be closed during cask loading and decon.			
Technical Specification/License Limitations:			
The cask drop analysis precludes cask handling at the plant due to floor loading capabilities in the processing and loading areas.			
Describe for Handling and Staging Purposes Physical, Technical, or Regulatory Limitations for the Temporary Storage of Loaded or Unloaded Truck or Rail Transport Casks On-site:			
There is sufficient track outside the protected area to assemble/store more than 20 railcars. Storage can not interfere with coal shipments.			

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Sources of Information

- U.S. Nuclear Regulatory Commission (NRC) documents and databases
- Facility Interface Capability Assessments (FICAs)
- Near Site Transportation Infrastructure Reports (NSTIs)
- Services Planning Documents (SPDs)
- Facility Interface Data Sheets (FIDS)
- Industry sources (e.g., StoreFUEL)
- Atomic Energy Commission Environmental Statements and NRC Environmental Impact Statements (EISs)
- License Renewal EISs
- Licensee Irradiated Fuel Management Plans (IFMPs) and Post-Shutdown Decommissioning Activities Reports (PSDARs)



Sources of Information (Continued)

- **Independent Spent Fuel Storage Installation (ISFSI) Managers**

- Confirmed information obtained from other sources
- Clarified current conditions at the sites
- Provided photos and other detailed information

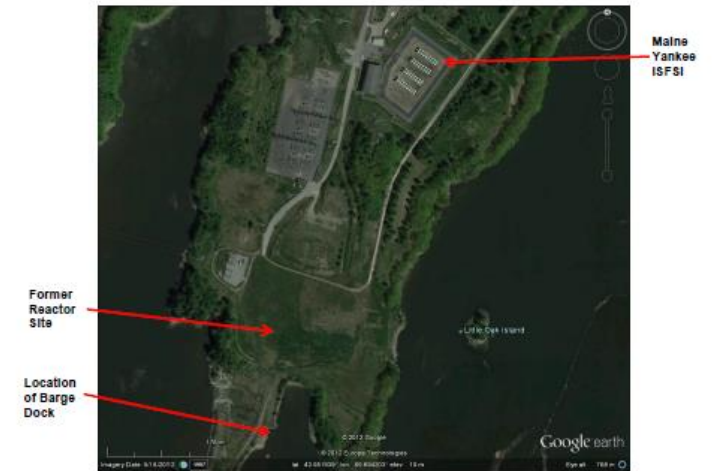
- **Heavy Equipment Lifting, Rigging, and Transporting Companies**

- **Google Earth**

- Understand layout of sites
- Used to provide detailed maps of sites and ISFSIs
- Portray transload locations, and rail and heavy haul routes



Big Rock Point Reactor Pressure Vessel Heavy Haul
Photo courtesy of Barnhart Crane & Rigging



Maine Yankee Site

NPP Site Inventories

- **NPP SNF site inventories based on the GC-859 Nuclear Fuel Data Survey**

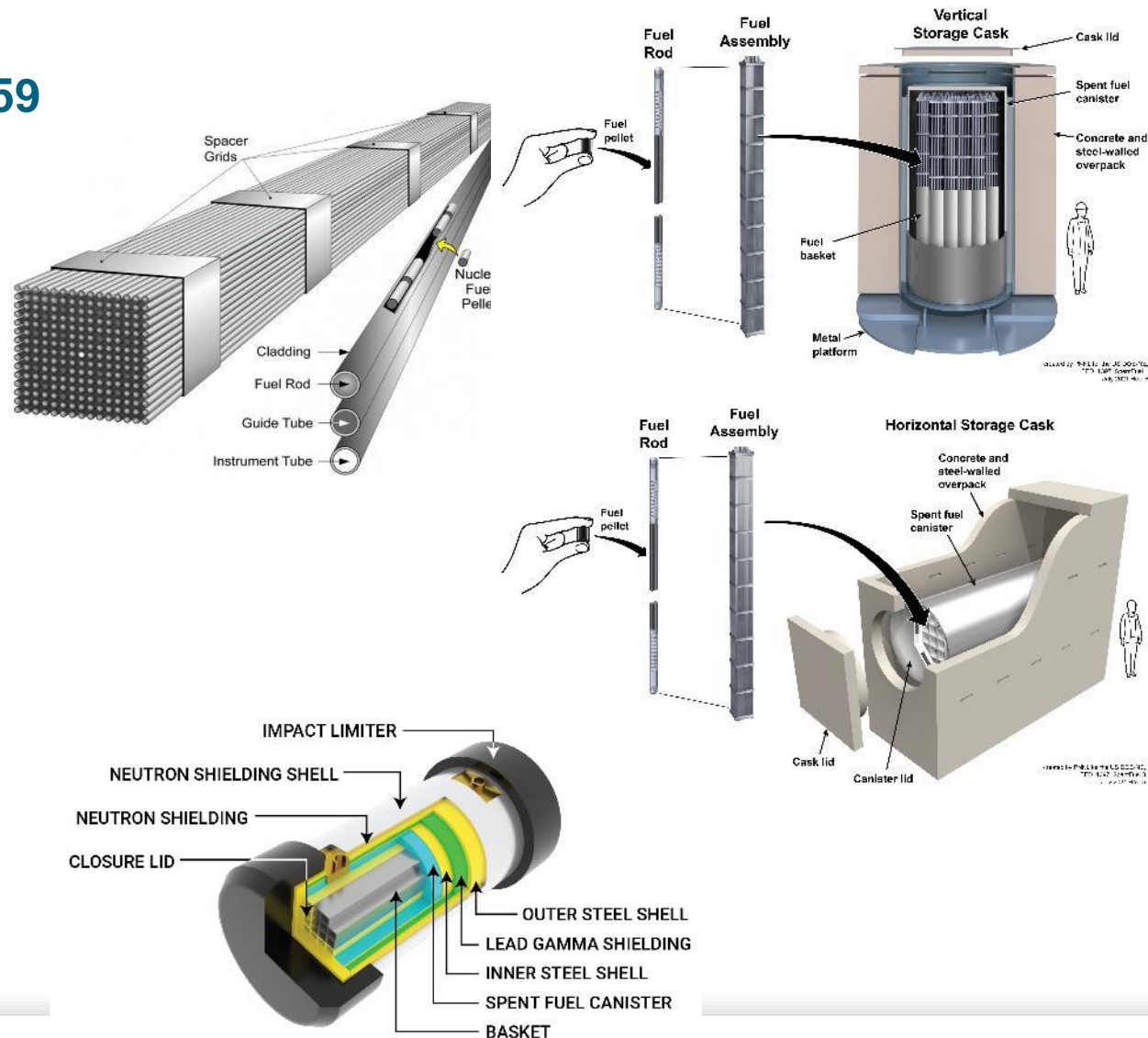
- Database contains the characteristics of the fuel assemblies discharged from each reactor
- Most recent data through December 31, 2017
- This data is augmented by data from the site for discharges after this date
- This data is shared with UNF-ST&DARDS

- **Types of dry storage systems (vendor and model) used at each site's ISFSI**

- Canisters containing SNF and GTCC waste
- Loading maps, logs, etc.

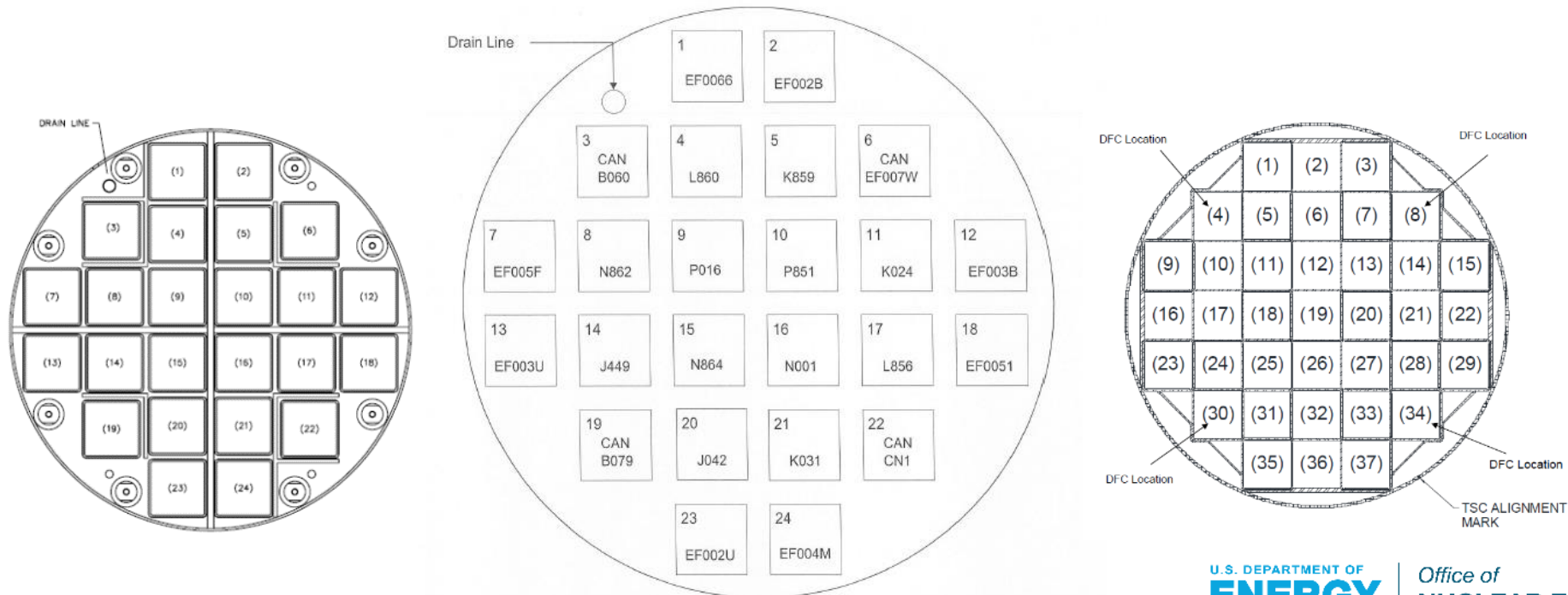
- **Storage features/conditions**

- Number of damaged fuel assemblies
- Number of high burnup fuel assemblies
- Whether fuel assemblies are canned or not canned



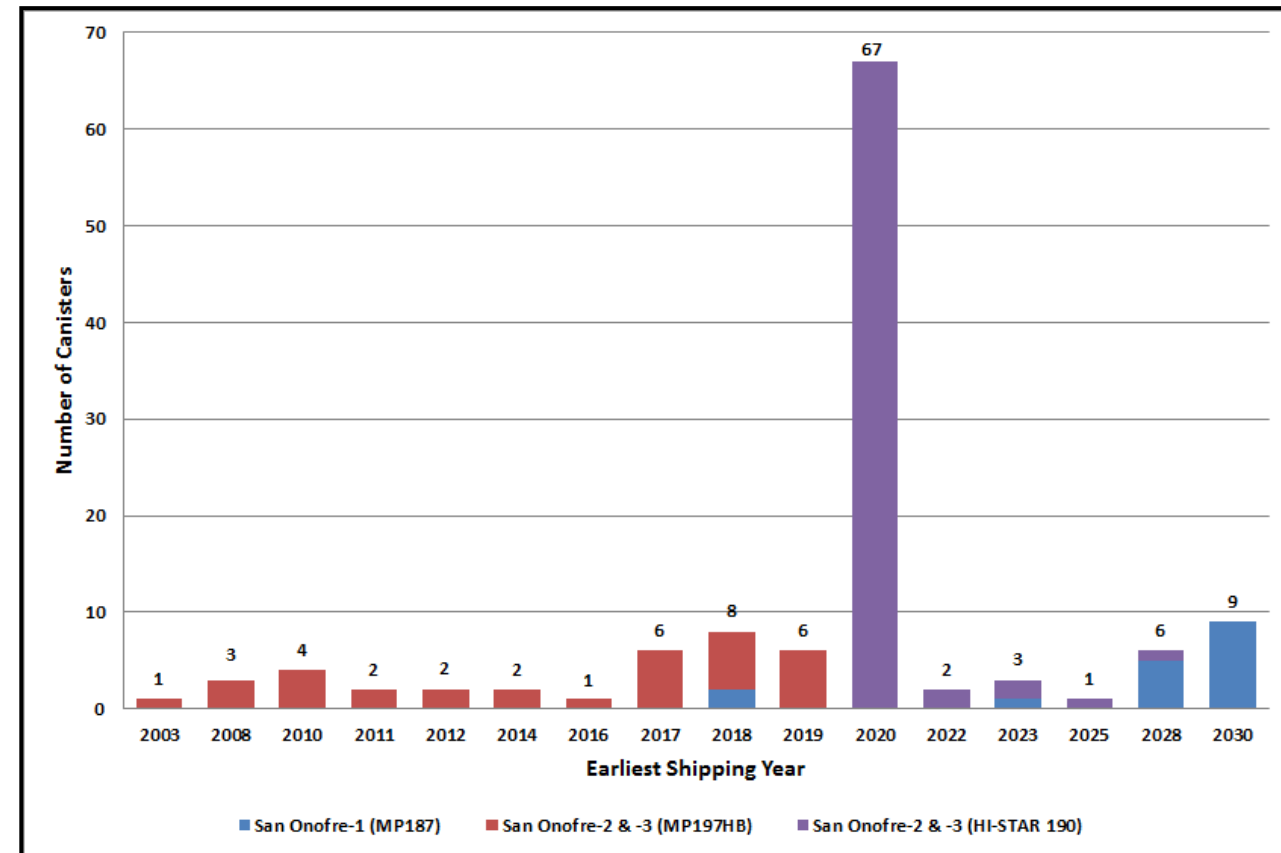
Loading Maps

- Loading maps show the specific locations of SNF assemblies in canisters
- Used to determine realistic temperatures and dose rates
- Also used to determine when a canister may be shipped

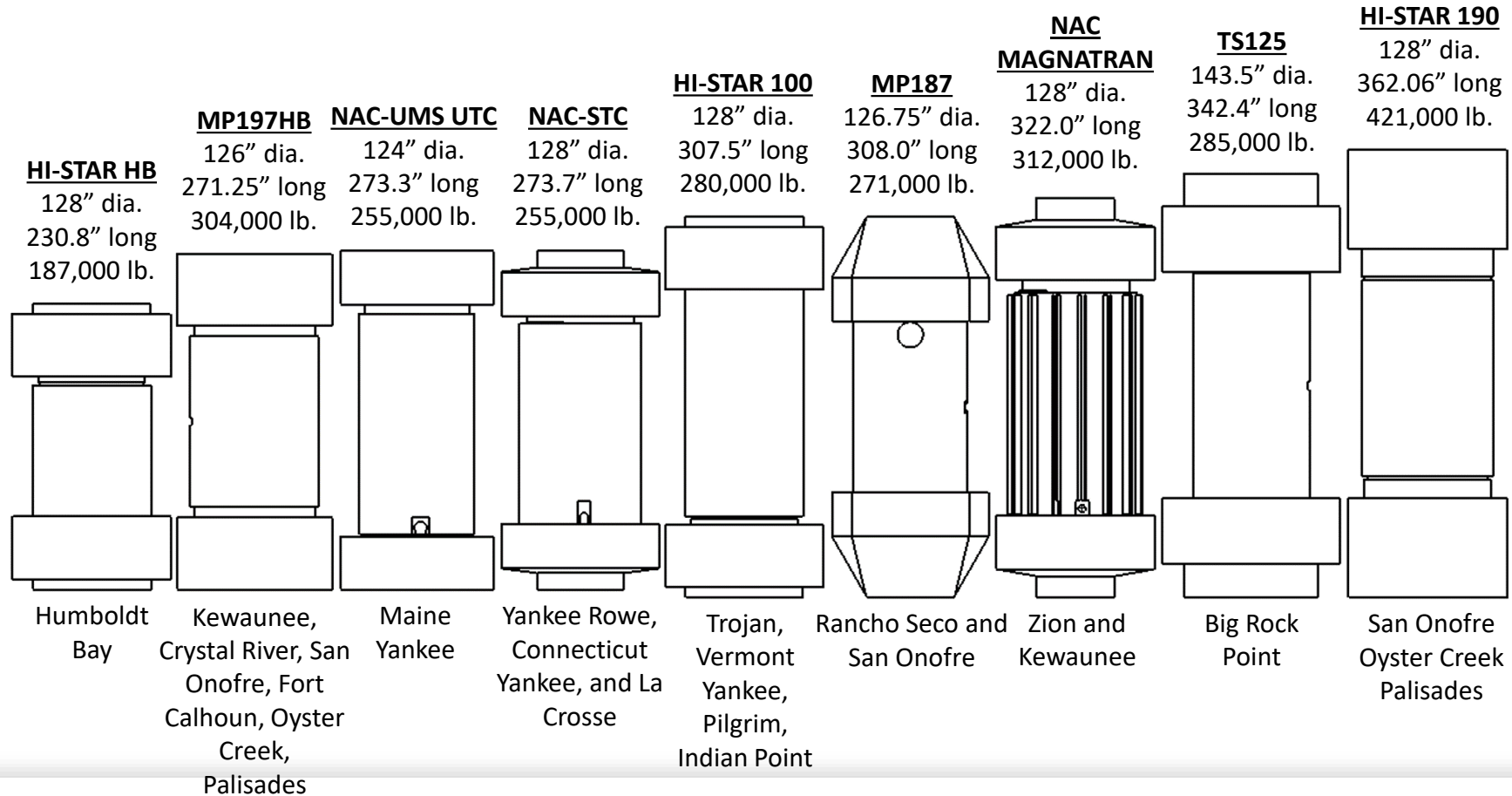


Canister Transportability

- Discharge date, burnup, enrichment, decay heat, and loading map data used to determine when canisters containing SNF may be shipped
- NPP Infrastructure Evaluation Report identifies potential Certificate of Compliance (CoC) modifications that would be required to transport canisters



Transportation Cask Models That Would Be Used to Ship SNF and GTCC Waste from NPP Sites Have a Wide Range of Weights and Dimensions



Site Conditions

- **On-Site Transportation Features**
 - On-Site Rail
 - On-Site Roads for Heavy-Haul Trucks
 - Barge Access
- **On-Site Equipment to Support Transportation Operations**
 - Transfer Casks
 - Cranes and Rigging
- **On-Site Staging Areas for Transport Vehicles, Equipment and Operations Support**

Photo courtesy
of La Crosse



Onsite Rail Spur at La Crosse

Trojan Transfer Station



Photo courtesy of Trojan

Photo courtesy
of Big Rock Point



Big Rock Point Horizontal Transfer System

Near-Site Transportation Infrastructure and Experience

- Evaluate transportation mode options for the NPP sites
- National, Regional, or Short-Line Rail Access
 - Condition and capacity of near-site commercial rail infrastructure
 - Potential transload locations
 - Site experience with rail shipments
- Local Roads and Highways
 - Distance to potential transload locations (rail spurs or sidings)
 - Characteristics and condition of roads and associated infrastructure that would be used by heavy haul vehicles
 - Site experience with heavy haul shipments
- Barge Access
 - Characteristics of onsite or nearby docks/slips/sidings/shorelines
 - Site experience with barge shipments



Potential
Transload
Location at
Indian Point



Junction of Onsite Rail Spur
with BNSF Mainline at San
Onofre



Oyster Creek Barge Landing Access Road

Potential Transload Locations Near NPP Sites



**Portland
Railhead
Near
Connecticut
Yankee**



**Potential
Kewaunee
Transload
Location Near
Bellevue,
Wisconsin**



**Petoskey
Transload
Location
Near Big
Rock Point**



**Gaylord
Transload
Location
Near Big
Rock
Point**

Site Experience Shipping Large Components Key to Understanding How SNF Might Be Moved



**Turbine
Component
Unloading
at Crystal
River**



**Reactor
Pressure
Vessel
Shipping at
Maine Yankee**



**Reactor
Pressure
Vessel
Shipping at La
Crosse**

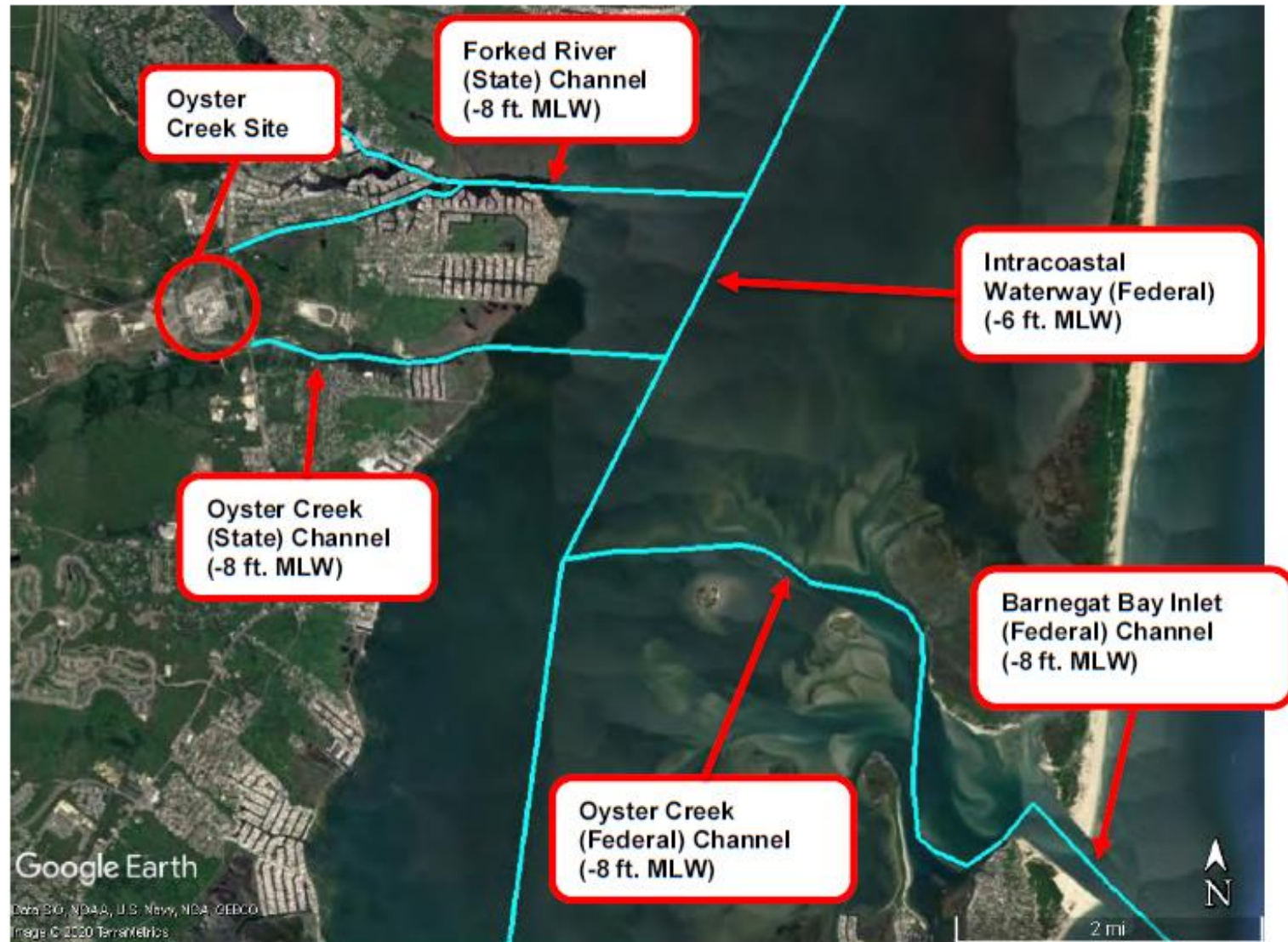


**Steam
Generator
Shipping Near
Kewaunee**

Google Earth and GIS Database Development

- **GIS data on the NPP site is assembled**
- **Data layers are developed in various areas relevant to transportation planning, including:**
 - Property Boundaries and Owner-Controlled Areas (e.g., ISFSI Locations)
 - Highway and Rail Networks
 - Strategic Rail Corridor Networks (STRACNET)
 - Transload Locations
 - Navigable Waterways
 - Tribal Areas
 - Marine Security Zones

Google Earth Image Depicting Navigation Channels and Dredging Depths at Oyster Creek



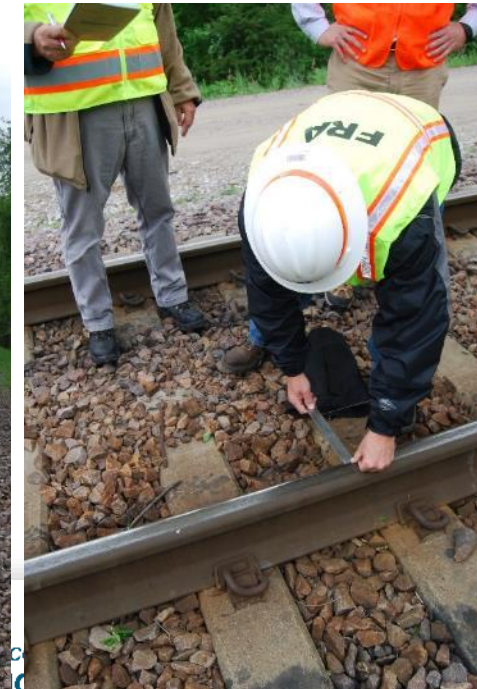
Key Parts of NPP Site Evaluations Are Site Visits

- **Twenty in-person NPP site evaluations conducted from August 2012 through October 2022**
 - Tribal, FRA, State, and State Regional Group (SRG) representatives have participated in 17 site evaluations
- **Site visits typically take place over three days**
- **First day – spent at NPP site**
- **Second day – near-site transportation infrastructure**
 - Rail infrastructure
 - Potential heavy haul truck routes
 - Potential rail and barge transload locations
- **Third day – often spent meeting with community engagement or advisory panels**
- **Notes compiled at the end of each day**



External Engagement During Site Visits

- Tribal and State representatives, SRG representatives, and FRA representatives participate in the entire site visit
 - SRG representatives from the Southern States Energy Board, the Western Interstate Energy Board, the Council of State Governments – Midwest, or the Council of State Governments – Eastern Regional Conference, according to the location of the NPP
 - State representatives typically represent their State department of energy, State department of environmental or natural resources, State Rail Safety Participation Program, State Police, State department of transportation, radiation protection organization, or emergency management organization



External Engagement During Site Visits (continued)

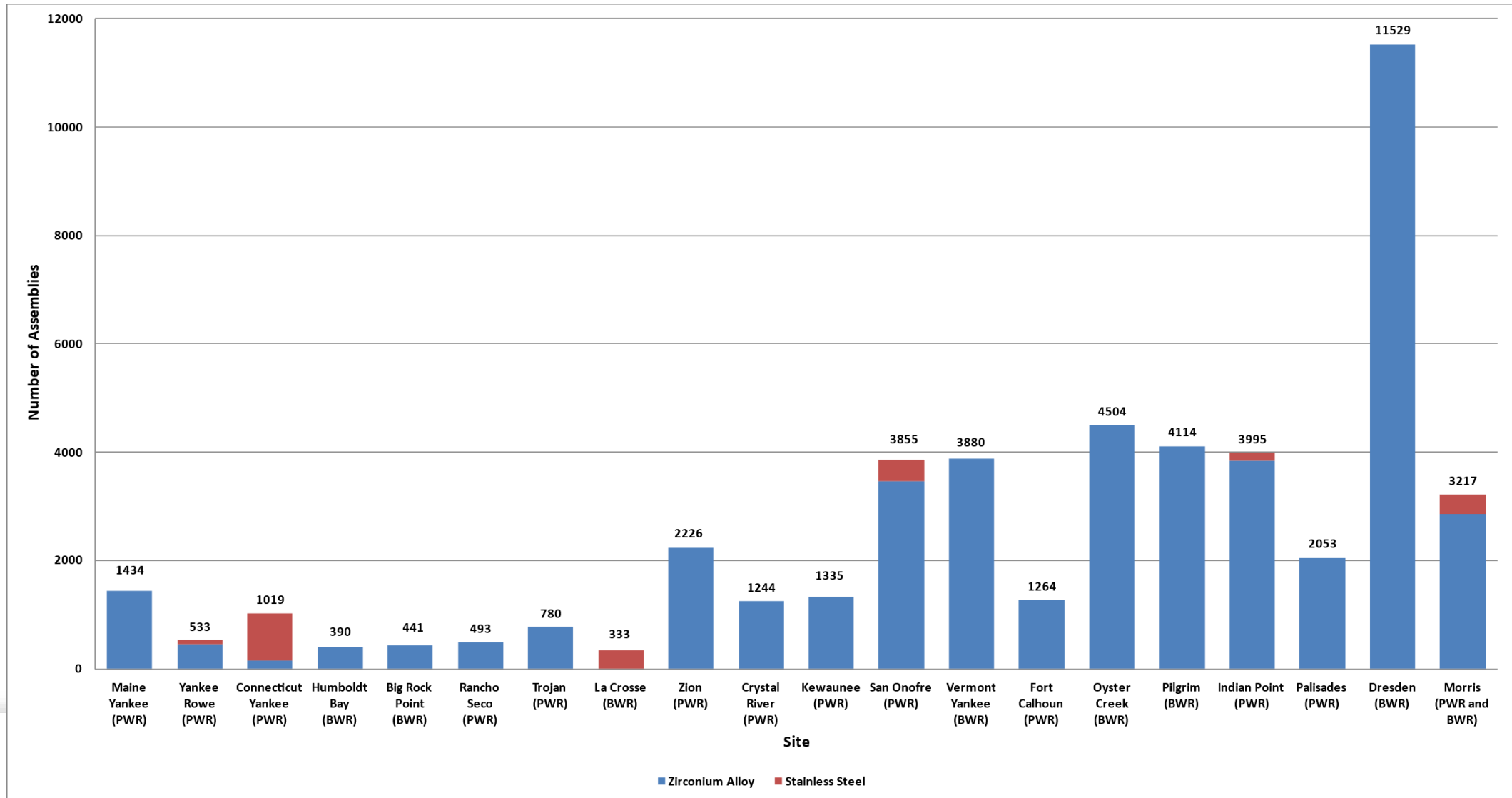
- Tribal representatives explore issues associated with cultural affiliation and Tribal involvement with past and present site activities.
- As the regulator of the U.S. railroads, the FRA representatives bring unique experience to the site visits
 - FRA also coordinates meetings with the railroads that serve the NPP sites
- Meeting with local community engagement or advisory panels
 - Provides an opportunity to inform these panels on DOE activities and the roles and responsibilities of federal agencies during site decommissioning



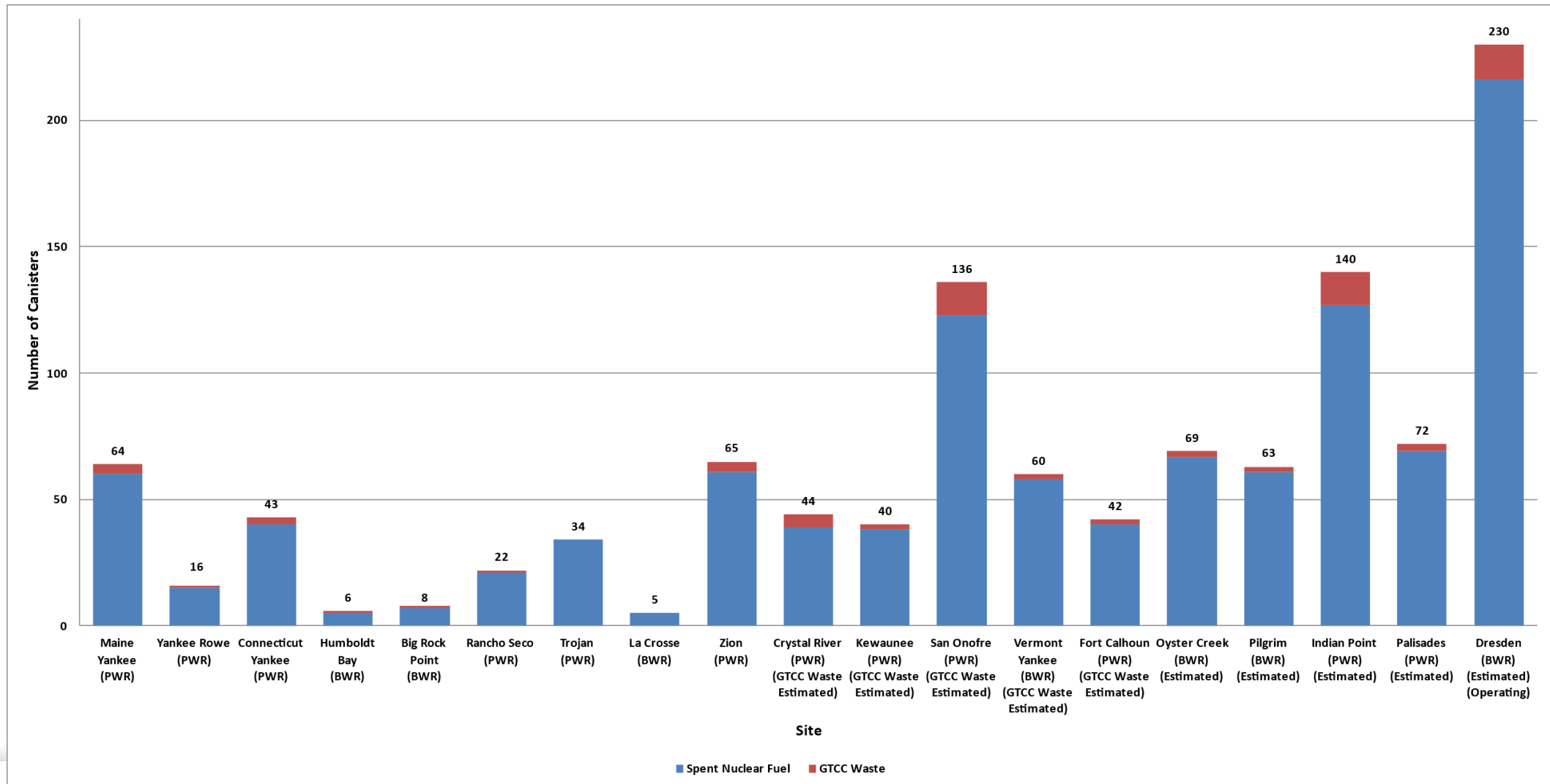
Examples of Results

- The following slides provide examples of the types of information collected during site evaluations

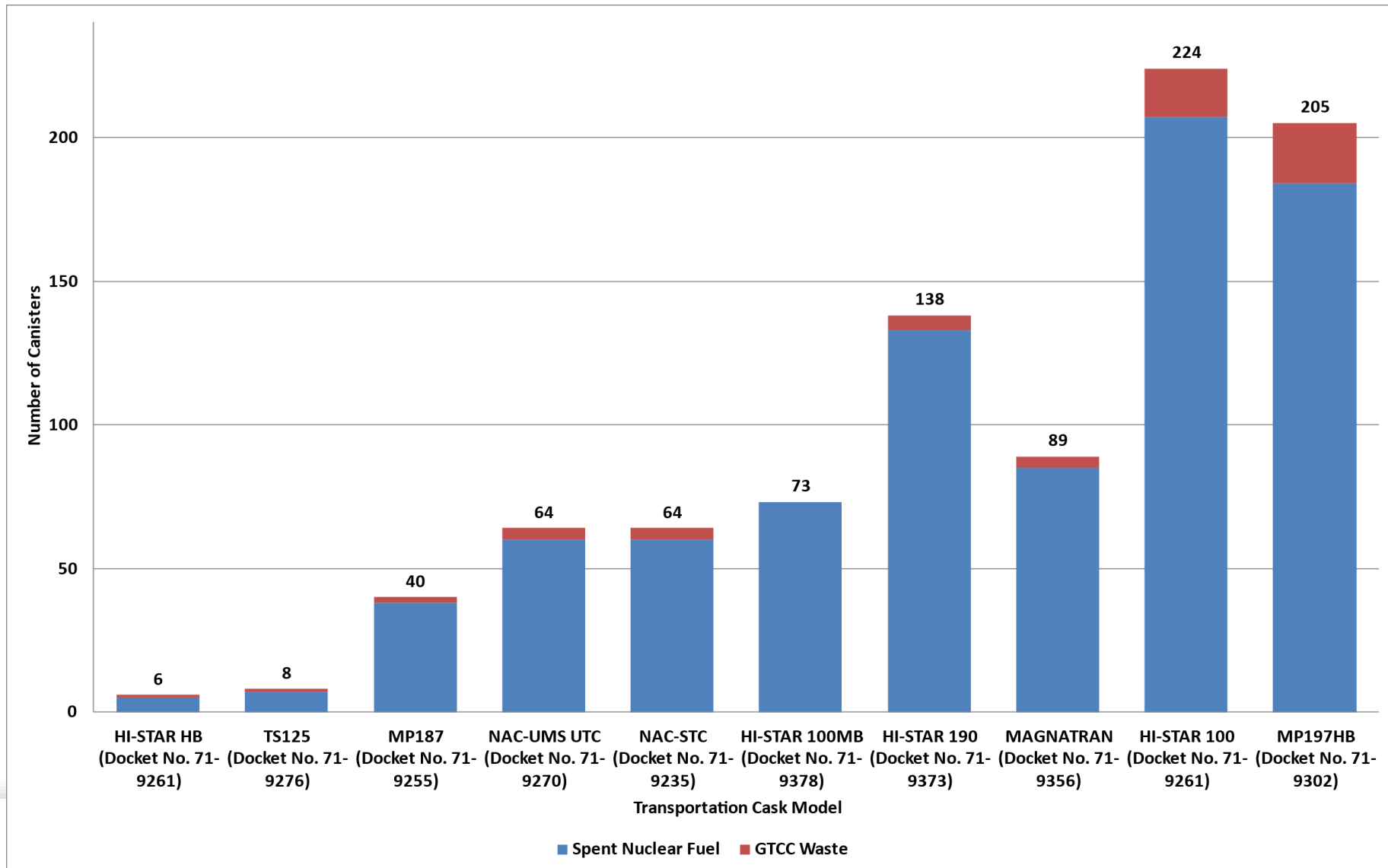
Number of SNF Assemblies at each NPP Site



Number of Dry Storage Canisters at each NPP Site



Number of Canisters by Transportation Cask Type



Types of Dry Storage Systems Deployed at NPP Sites



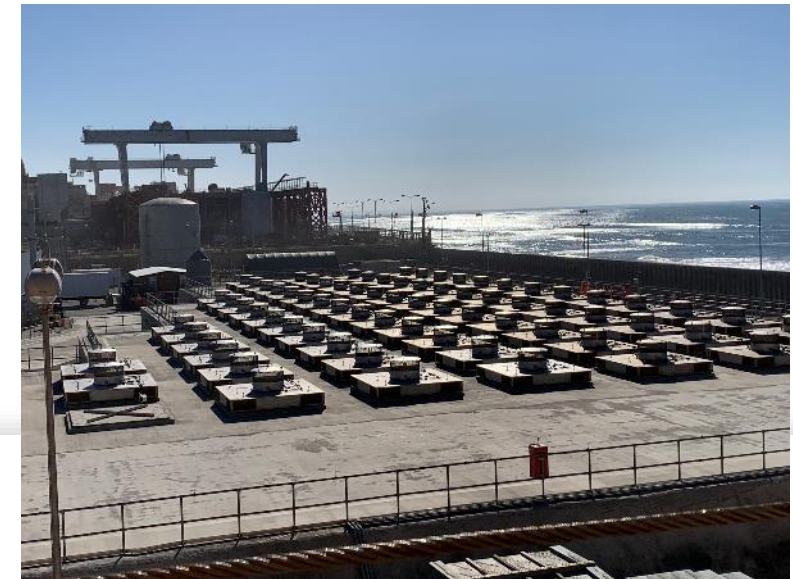
**Horizontal Storage Modules
at Fort Calhoun
(Fort Calhoun, Nebraska)**

**Vertical Concrete Casks at
Maine Yankee
(Wiscasset, Maine)**



**HI-STORM UMAX
Underground Storage
Modules at San Onofre
(San Clemente, California)**

**Underground Storage
Modules at Humboldt Bay
(Eureka, California)**



Transfer Cask, J-Skid, Gantry Towers, and Horizontal Transfer System at Big Rock Point in Michigan



Transfer Cask and J-Skid



Horizontal Transfer System

Gantry Towers



Barge Slip and Onsite Rail at Maine Yankee



Barge Slip



Onsite Rail Line

Offsite Rail Access at Hoosac Tunnel Near Yankee Rowe in Massachusetts



Offsite Rail Access at Hoosac Tunnel



East Entrance to Hoosac Tunnel

Low Overhead Clearance Abandoned Railroad Bridge on U.S. 31 Near Big Rock Point in Michigan



Low Overhead Bridge on U.S. 31



Top of Low Overhead Bridge

Potential Transload Location Near Pilgrim NPP in Massachusetts



Looking East



Looking West



132-lb. Rail



Looking East

Onsite Rail Spur at Fort Calhoun in Nebraska



Rail Spur Looking Southeast

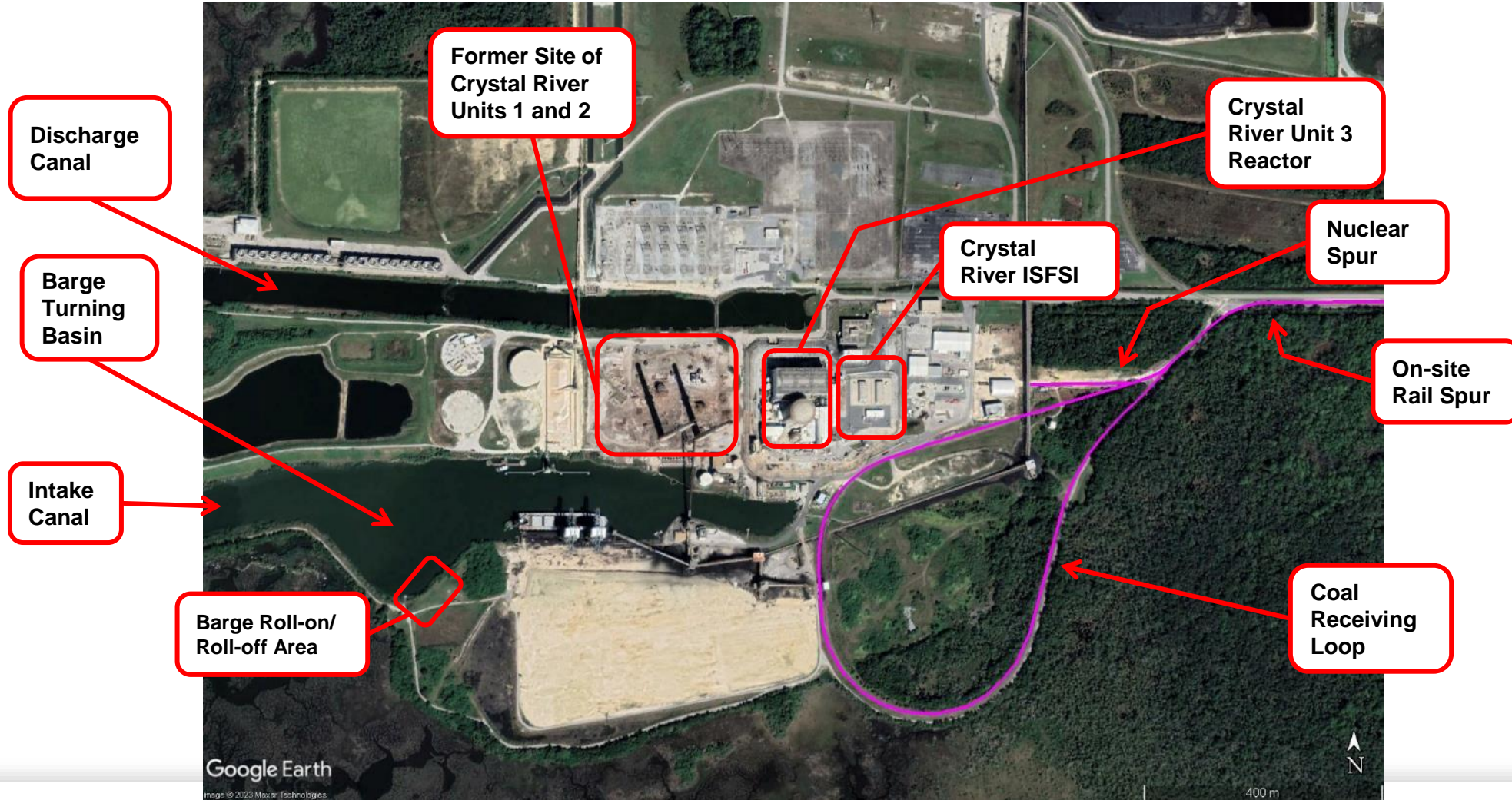


Rail Spur Looking Northwest

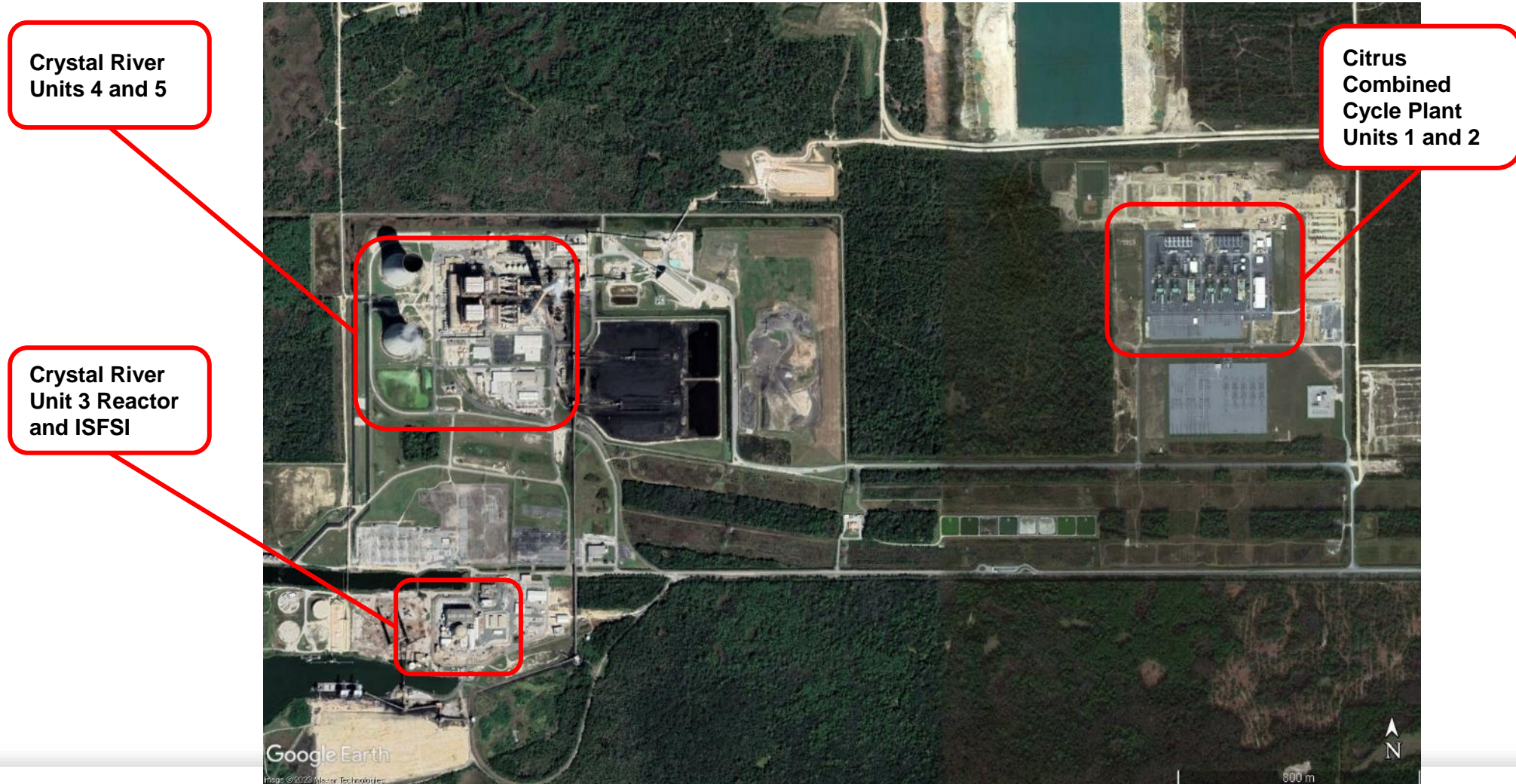
Case Study – Crystal River

- **Crystal River site visit occurred 02/18-02/19/2015**
- **Crystal River was a 2609 MWt/860 MWe pressurized water reactor**
 - Located about 70 miles north of Tampa and 46 miles south-southwest of Gainesville on the Gulf Coast
 - Reactor operated 1977-2009
 - Two decommissioned coal-fired units at site
 - Two operating 700 MW coal-fired units at site
 - Two operating 820 MW gas fueled combined cycle units adjacent to site
- **1244 PWR assemblies in dry storage (582.2 MTHM)**
 - 428 high burnup assemblies
 - Does not include 76 assemblies that were loaded in the core for restart but not brought to critical
- **Dry storage in Standardized NUHOMS System (Docket No. 72-1004) using 32PTH1 canisters**
 - 39 canisters in dry storage
 - 5 canisters of GTCC waste estimated
 - MP197HB transportation cask certified to ship the 32PTH1 canisters
- **Crystal River served by the Florida Northern Railroad (FNOR) and has barge access**

Crystal River Site Layout



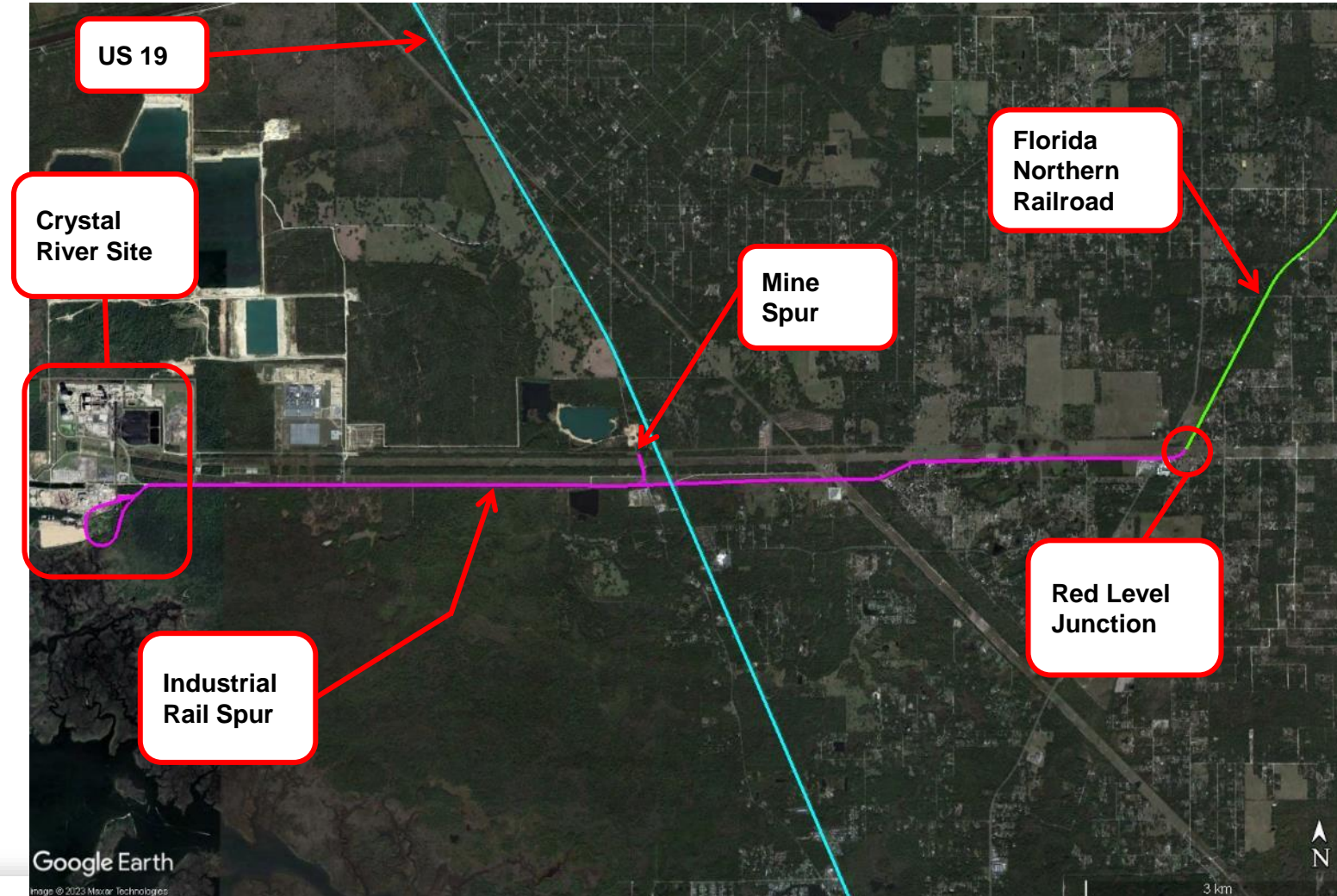
Crystal River Site Layout (Continued)



Crystal River Independent Spent Fuel Storage Installation (ISFSI)



Industrial Rail Spur to FNOR Railroad (About 7 miles)



Crystal River Onsite Rail in Front of ISFSI



Onsite Rail
Facing East



Onsite Rail
Facing West

Crystal River Has Shipped and Received Large Components by Rail



Four Moisture Separator Reheaters (MSRs)
300,000 lb. (each)
51' long x 14' diameter
(July 2009)

Generator Rotor
395,000 lb.
50' long x 8'
diameter
(October 2009)



Crystal River Has Shipped and Received Large Components by Rail (cont.)



Shipping old
MSRs offsite
(June 2011)

Unloading
Generator
Rotor



CSX
locomotive
picking up old
MSRs (June
2011)

Unloading
New MSRs



Receipt of Horizontal Storage Modules by Rail in 2015



Received 12 horizontal storage modules
Each horizontal storage module weighed 189,000 lb.

Two Horizontal Storage
Modules Loaded onto
Railcars

Horizontal Storage module
Staged for Unloading



Receipt of Horizontal Storage Modules by Rail (cont.)



Horizontal Storage Module Being Unloaded from Railcar

Horizontal Storage Modules Staged at Nuclear Spur after Unloading



Hi-Railing of Industrial Spur and FNOR Track

- **Crystal River regularly receives shipments of coal by rail**
 - One train per week (2022)
 - 100-110 tons per car
 - 100 car coal trains
- **During Crystal River site visit, the Site Evaluation Team rode with FNOR staff during their weekly track inspection**
- **Started on Crystal River industrial spur and ended in Newberry, Florida, a distance of about 65 miles**
 - The industrial spur is not normally part of the FNOR inspection, but we were allowed access so we could photograph the entire route

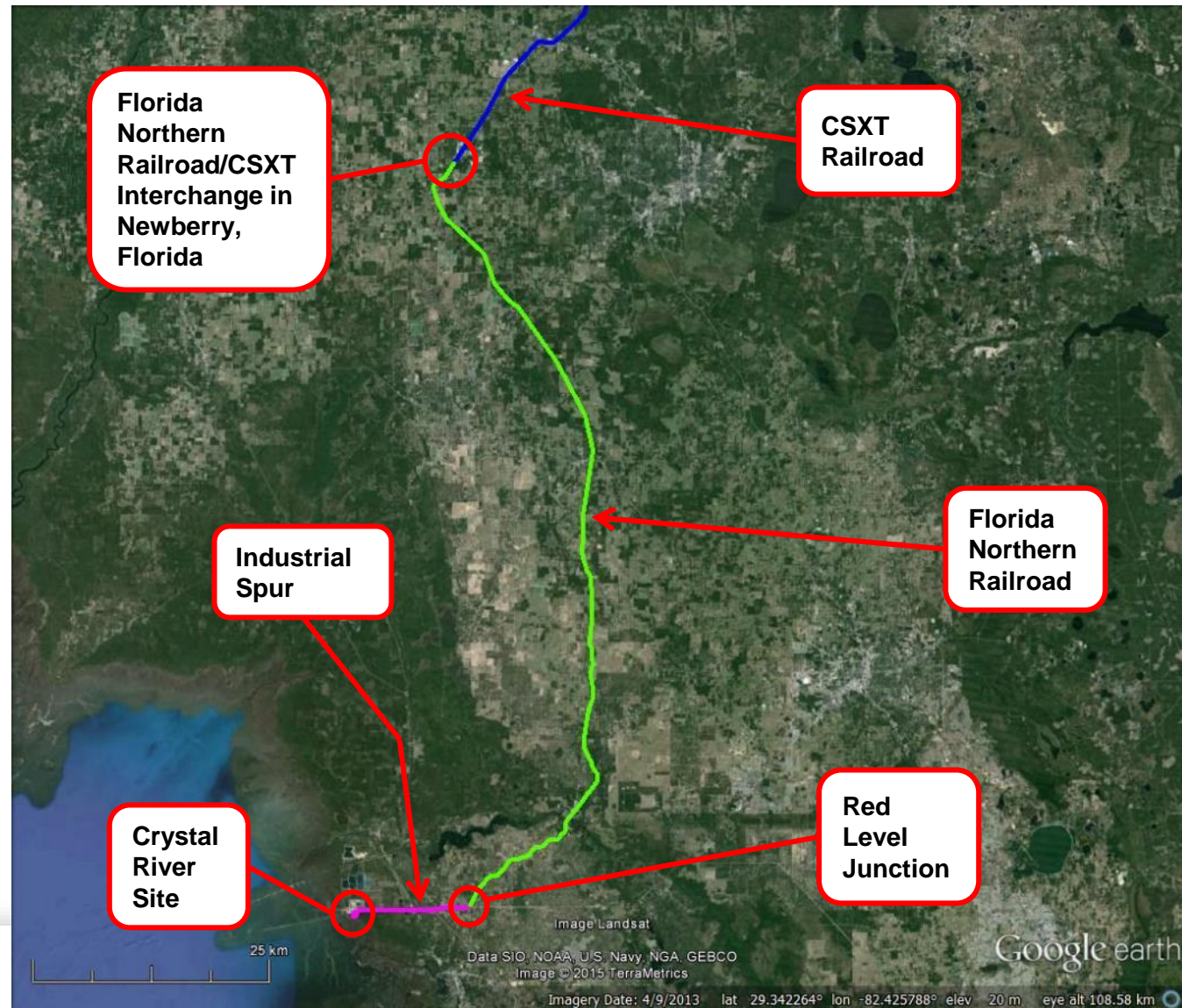


Track Maintenance Equipment Staged at Mine Spur



Hi-Rail Vehicle Used for Track Inspections

FNOR to CSX in Newberry, Florida (About 58 miles)



Defect Detectors on FNOR



Wheel Detectors
(count # of axles,
determine speed,
open shutter for
hot bearing
detector)



Hot Bearing
Detector



115 lb. Rail



Dragging
Equipment
Detector

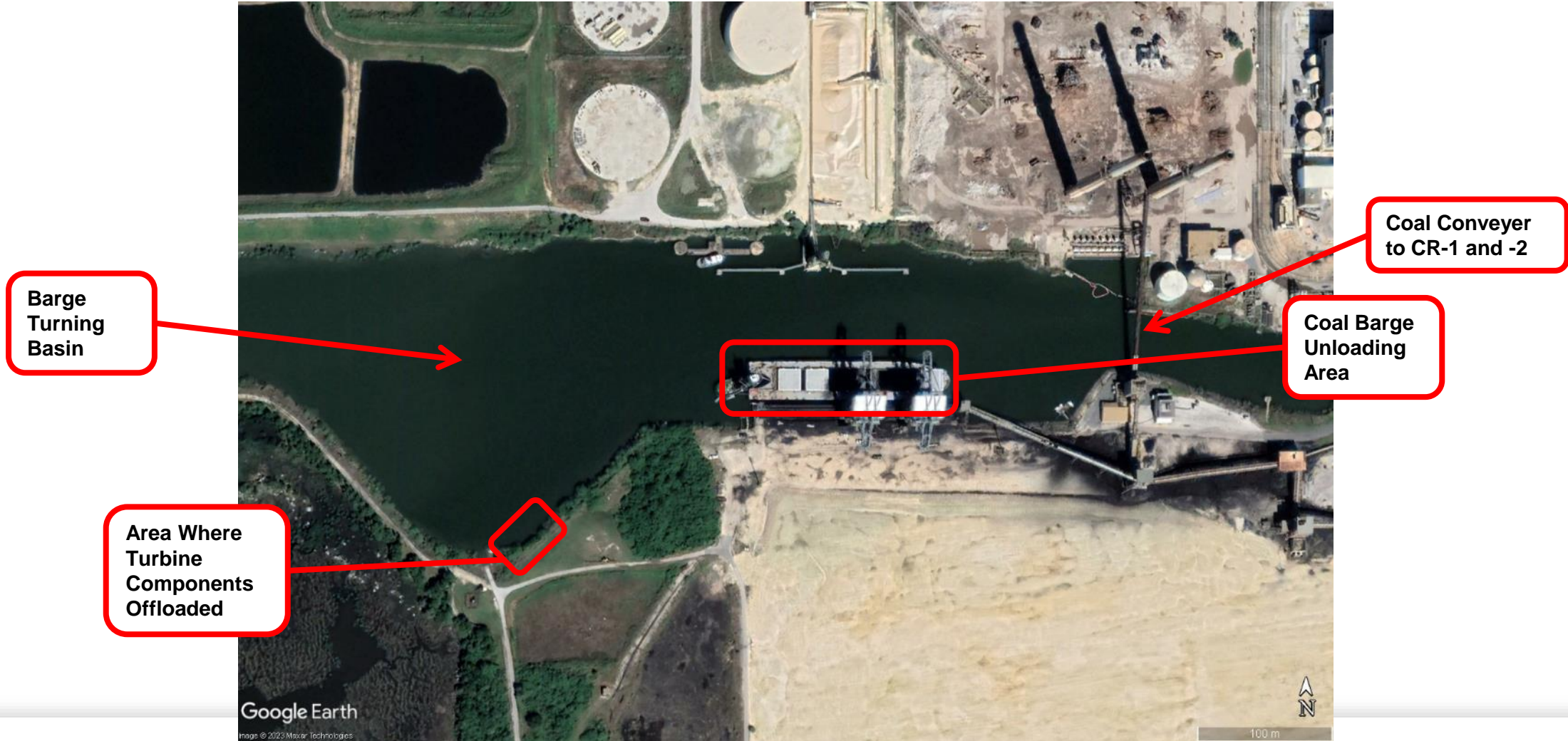
Crystal River Barge

- **Crystal River routinely receives coal in 20,000 ton barges**
 - One coal barge per week
- **This coal is unloaded at a specialized barge area**
- **Crystal River also received turbine components by barge in June 2012, but constructed a specially prepared area in the barge turning basin to receive these components using rollon/rolloff ramps**



Two low pressure rotors 353,000 lb. (each)
Two low pressure upper casings 117,000 lb. (each)
Two low pressure lower casings 200,000 lb. (each)

Crystal River Barge Area



Crystal River Barging (cont.)

Barge with Turbine Components Approaching Ramp



Docking Barge with Turbine Components



Barge with Turbine Components Grounded at Ramp



Turbine Components Being Unloaded Using Self-Propelled Modular Transporter (SPMT)



Crystal River Heavy Haul Truck Transport



**High Pressure
Turbine Delivered
to Crystal River by
Heavy Haul Truck**

**High Pressure
Turbine weighed
150,000 lb.**

Crystal River Public Meeting – October 10, 2019

- Attended public meeting at Crystal River regarding the establishment and operation of community advisory boards (CABs)
- No CAB at Crystal River
- Attendance: ≈ 50 participants
 - 2 Congressional staff
 - 10 local government representatives
 - 10 Duke representatives
 - 30 public
- NRC Meeting Summary available at <https://www.nrc.gov/docs/ML1932/ML19323F826.pdf>



Transportation Mode Options

SITE	TRANSPORTATION MODE OPTIONS	
Maine Yankee	 DIRECT RAIL	 →  BARGE to RAIL
Yankee Rowe	 →  HEAVY HAUL TRUCK to RAIL	
Connecticut Yankee	 →  BARGE to RAIL	 →  HEAVY HAUL TRUCK to RAIL
Humboldt Bay	 →  HEAVY HAUL TRUCK to RAIL	 →  →  HEAVY HAUL TRUCK to BARGE to RAIL
Big Rock Point	 →  HEAVY HAUL TRUCK to RAIL	 →  BARGE to RAIL
Rancho Seco	 DIRECT RAIL	
Trojan	 DIRECT RAIL	 →  BARGE to RAIL
La Crosse	 DIRECT RAIL	 →  BARGE to RAIL
Zion	 DIRECT RAIL	 →  BARGE to RAIL
Crystal River	 DIRECT RAIL	 →  BARGE to RAIL
Kewaunee	 →  HEAVY HAUL TRUCK to RAIL	 →  →  HEAVY HAUL TRUCK to BARGE to RAIL
San Onofre	 DIRECT RAIL	 →  →  HEAVY HAUL TRUCK to BARGE to RAIL
Vermont Yankee	 DIRECT RAIL	
Fort Calhoun	 DIRECT RAIL	 →  BARGE to RAIL
Oyster Creek	 →  BARGE to RAIL	 →  HEAVY HAUL TRUCK to RAIL
Pilgrim	 →  BARGE to RAIL	 →  HEAVY HAUL TRUCK to RAIL
Morris	 DIRECT RAIL	 →  →  HEAVY HAUL TRUCK to BARGE to RAIL
Dresden	 DIRECT RAIL	 →  BARGE to RAIL
Indian Point	 →  HEAVY HAUL TRUCK to RAIL	 →  BARGE to RAIL
Palisades	 →  HEAVY HAUL TRUCK to RAIL	 →  BARGE to RAIL

Lessons Learned During Site Evaluations

- Each site has at least one option for removing SNF and GTCC waste from the site
- Contacts established with the sites has been key to the site evaluations – dialogue continues after the site evaluation
- Dialogue with the sites has brought to the forefront the need to preserve transportation infrastructure
- Including Tribes, States, State Regional Groups, the FRA, and other agencies has also been key to the site evaluations
- Meeting with community engagement or advisory panels have provided unique opportunities for external engagement
- The inventory, onsite infrastructure, and near-site transportation infrastructure is evaluated for all sites – but the emphasis placed on these areas depends on the characteristics of the site being evaluated – case-by-case
- Sharing of data collected during site evaluations has benefited UNF-ST&DARDS and systems modeling efforts

Future Work – Nuclear Power Plant Site Evaluations

- April 2021 update of the NPP site evaluation report posted on DOE-NE website (<https://www.energy.gov/ne/articles/nuclear-power-plant-infrastructure-evaluations-removal-spent-nuclear-fuel>)
 - Includes 16 site evaluations through Oyster Creek (15) and Pilgrim (16)
- COVID-19 pandemic put in-person site evaluations on hold for over two years
- Conducted site evaluations of Morris (17) and Dresden (18) in May 2022, Indian Point (19) in July 2022, and Palisades (20) in October 2022
- Updated report due Spring 2023
- Continue to collect data on conditions at the sites
- DOE intends to continue conducting site evaluations of additional NPP sites and plans to eventually conduct evaluations for all NPP sites
 - TMI and Duane Arnold – shutdown sites
 - Nine Mile Point and Ginna – operating sites early in oldest fuel first (OFF) order

Facility Interface Data Sheet		Three Mile Island 1	
General Information			
Site:	Three Mile Island Station	Unit:	1 Docket Number: 50-289
Site Status:	<input checked="" type="checkbox"/> Operating <input type="checkbox"/> Permanent Shutdown <input type="checkbox"/> Decommissioned	Contact Name:	Matthew L. Eyré
Address:	Route 441 South Middletown, PA 17057	Organization/Position:	
Site Operator:	Amergen Energy Co., LLC	Phone Number:	(610) 765-5025
NSSS Vendor:	Rebozok & Wilcox	Fax Number:	
Unit Type:	<input checked="" type="checkbox"/> PWR <input type="checkbox"/> BWR <input type="checkbox"/> Other		
DCGS:	No spent fuel currently in dry storage.		
Site/Plant Cask Handling Information			
Roads			
Best Truck Route to Nearest Interstate:	SR-441/Ann St/ SR-202 (Airport Connector/ SR-283/283 (8 miles from plant)	Weight Limits:	Permit @ 80,000 lbs to 120,000 lbs
Bridges:	2	Weight Limits:	
Underpasses:		Height:	
Description:	Off-site road dimension limits: 40'-0" long trailer X 8'-0" wide. On-site roads are capable of supporting heavy haul transporters.		
Rail			
Access to Site:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Servicing Railroad Company:	CSXT
On Site Rail:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Last Use:	1990
Length of Rail Inside Protected Area:	3000'-0"	Road Distance to Off-Site Rail Head:	NA
Description:	0.8 miles total of on-site track. No ways. There is a storage track that could serve as a passing track. On-site switches are in protected area.		
Water			
Water Way:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Name:	Susquehanna River
Darge Access:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Last Use:	NA
Road Distance to Off-Site Darge Terminal:			
Description:	Susquehanna River de Class		
Crane			
Capacity:	110 tons		
Rating:	110 tons		
Point of Hook to Highest Obstruction:			
Description:	Slider hook.		

Facility Interface Data Sheet		Duane Arnold	
General Information			
Site:	Duane Arnold Energy Center	Unit:	Docket Number: 50-351, 72-60632
Site Status:	<input checked="" type="checkbox"/> Operating <input type="checkbox"/> Permanent Shutdown <input type="checkbox"/> Decommissioned	Contact Name:	Blain Voss
Address:	3277 DAEC Road Palo, Iowa 52224	Organization/Position:	Nuclear & I&FS Program Manager
Site Operator:	Nuclear Management Co	Phone Number:	319-851-7054
NSSS Vendor:	General Electric	Fax Number:	319-851-7325
Unit Type:	<input type="checkbox"/> PWR <input checked="" type="checkbox"/> BWR <input type="checkbox"/> Other		
DCGS:	Currently: 10 Transnuclear NUHOMS-0 (BT) loaded (610 assemblies), 12FSI constructed for 80 storage units. Support post installed for 30 units. 12 NUHOMS storage modules in place. 70 loaded and 2 empty.		
Site/Plant Cask Handling Information			
Roads			
Best Truck Route to Nearest Interstate:	Palo Marsh Rd/ Quarry Rd/ Edgewood Rd/ I-100 (10 miles from plant)/ 380 (11 miles from plant)	Weight Limits:	Permit @ 80,000 lbs to 80,000 lbs
Bridges:	5	Weight Limits:	Permit @ 80,000 lbs
Underpasses:	0	Height:	NA
Description:	On-site roads were proven capable of handling NUHOMS heavy haul transport equipment with 100 ton cask load in 2003. Security gate is 12'-1" wide.		
Rail			
Access to Site:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Servicing Railroad Company:	Cedar Rapids & Iowa City Railroad
On Site Rail:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Last Use:	2003
Length of Rail Inside Protected Area:	100'-0"	Road Distance to Off-Site Rail Head:	NA
Description:	There is approx. 3000 feet of rail track on site, plus 300 feet of rail track siding. Tracks used in 2003 for delivery of dry spent fuel storage units to the site, but did not include use of tracks into Reactor Building receiving area. Receiving area rail was used in 1980 and is maintained.		
Water			
Water Way:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Name:	Cedar River
Darge Access:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Last Use:	NA
Road Distance to Off-Site Darge Terminal:	100 miles		
Description:	The Cedar River is not navigable at the site location, the nearest barge access is at the Mississippi River in Davernport, IA.		
Crane			
Capacity:	100 tons	Single Failure Proof:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Rating:	100 tons	Submergible Hook:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Point of Hook to Highest Obstruction:	24'-4"		
Description:	Crane hoist speed is 3 feet/minute.		
Cask Receiving Area Information			

Questions?

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