

» Creating the future together

nwmo

NUCLEAR WASTE
MANAGEMENT
ORGANIZATION

SOCIÉTÉ DE GESTION
DES DÉCHETS
NUCLÉAIRES





» Land acknowledgment



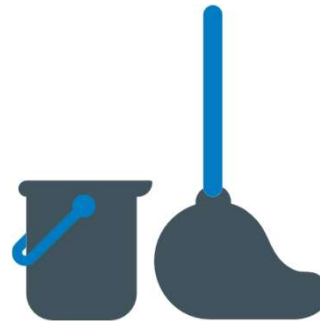
» We are the
Nuclear Waste
Management
Organization.

nwmo

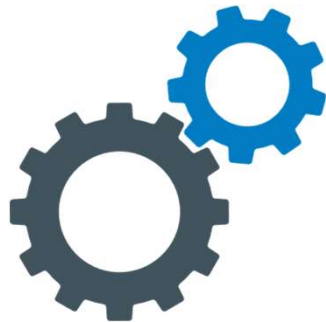
Types of waste



Used nuclear fuel



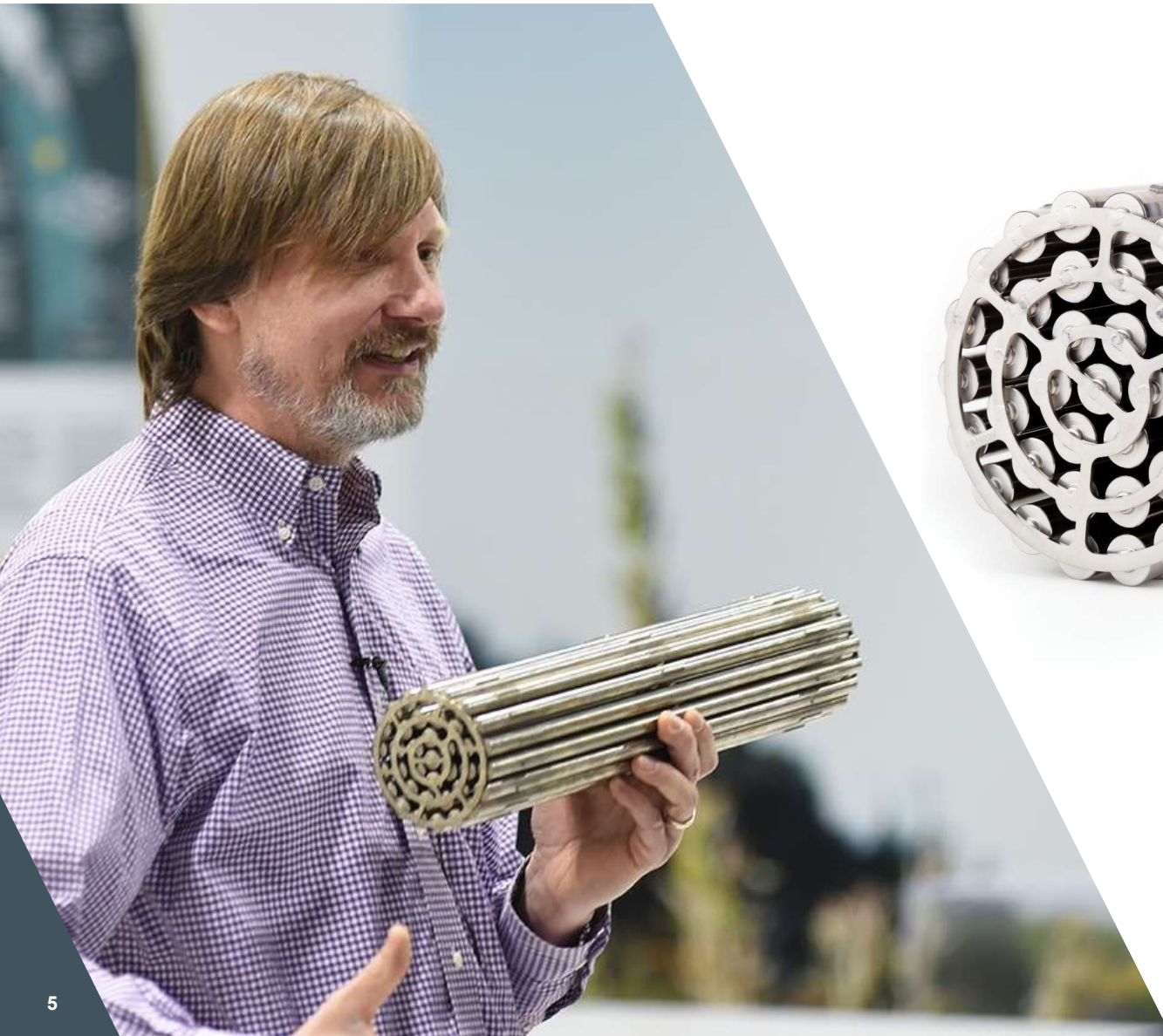
Low-level waste



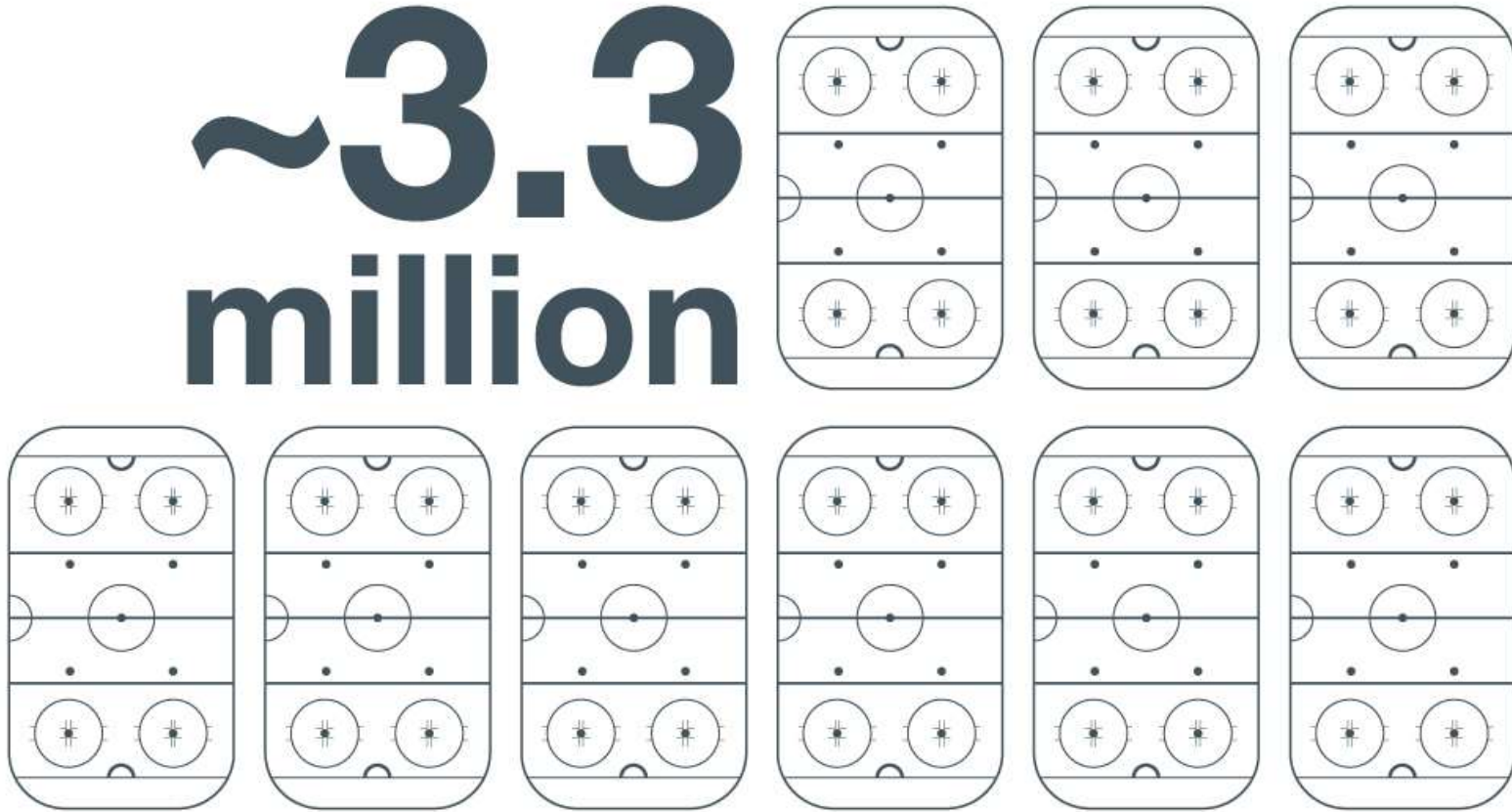
Intermediate-level waste



Non-fuel high-level waste

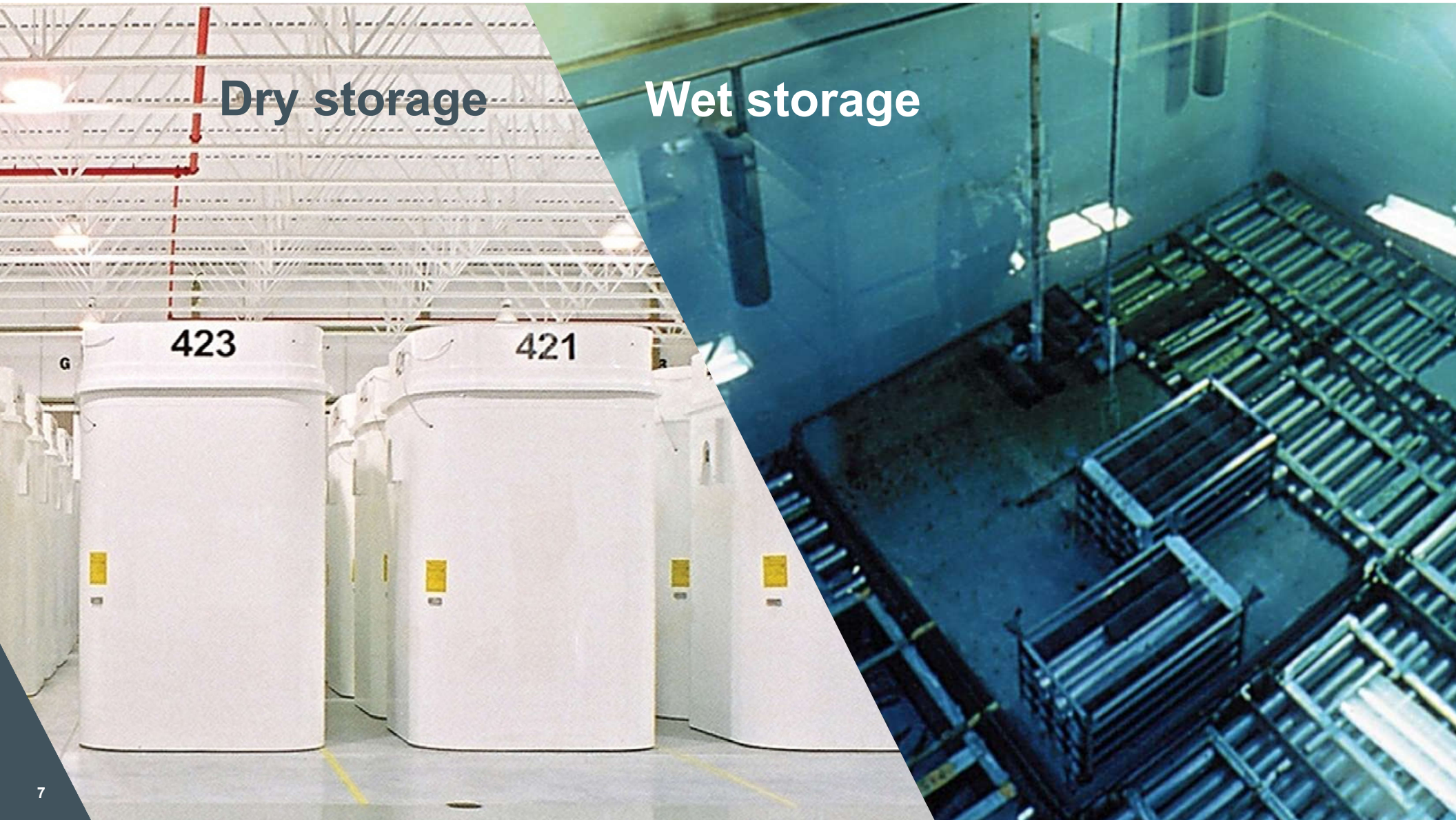


**~3.3
million**

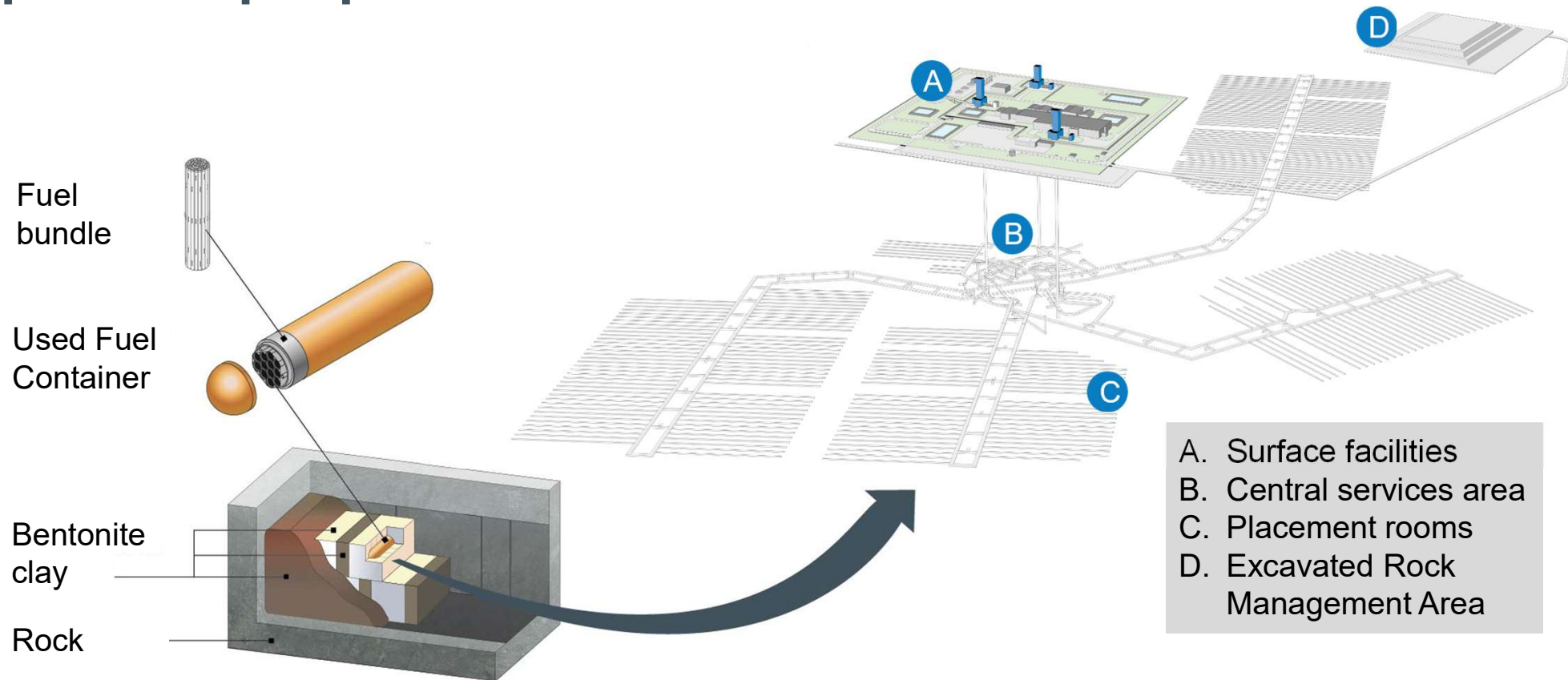


Dry storage

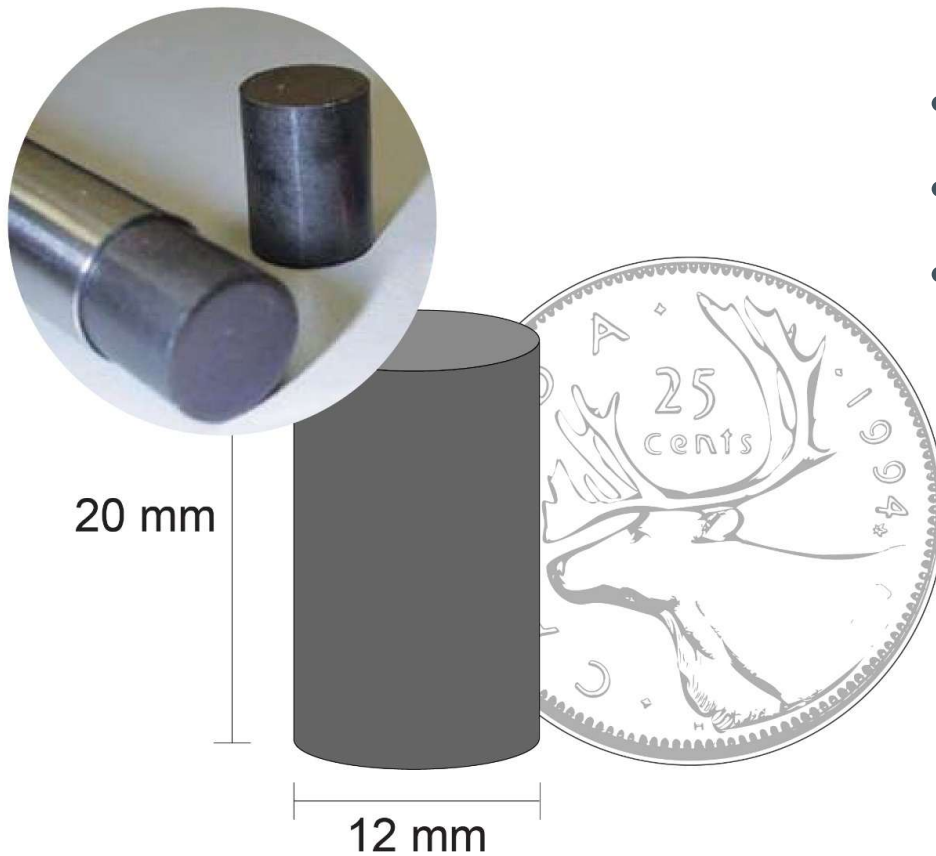
Wet storage



How a deep geological repository protects people and the environment



Barrier #1: Fuel pellet

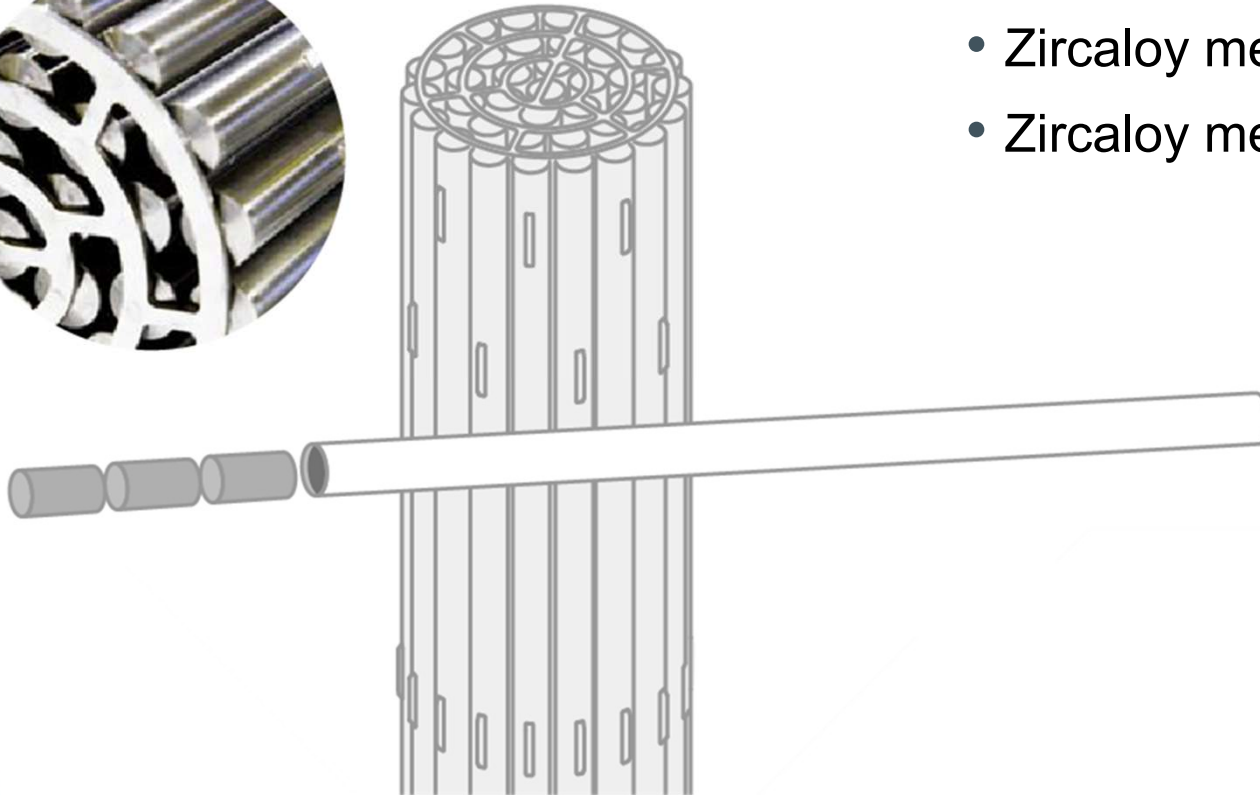


- High-density ceramic
- Extremely durable
- Does not readily dissolve

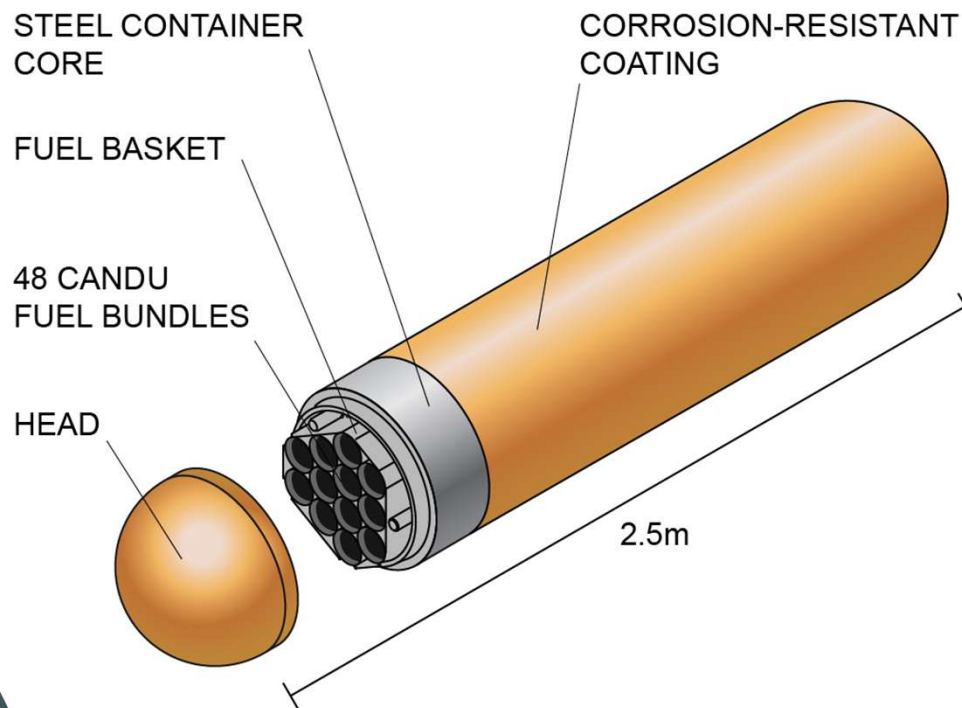
Barrier #2: Fuel bundle



- Used fuel pellets are held in sealed tubes
- Zircaloy metal is extremely strong
- Zircaloy metal is corrosion-resistant

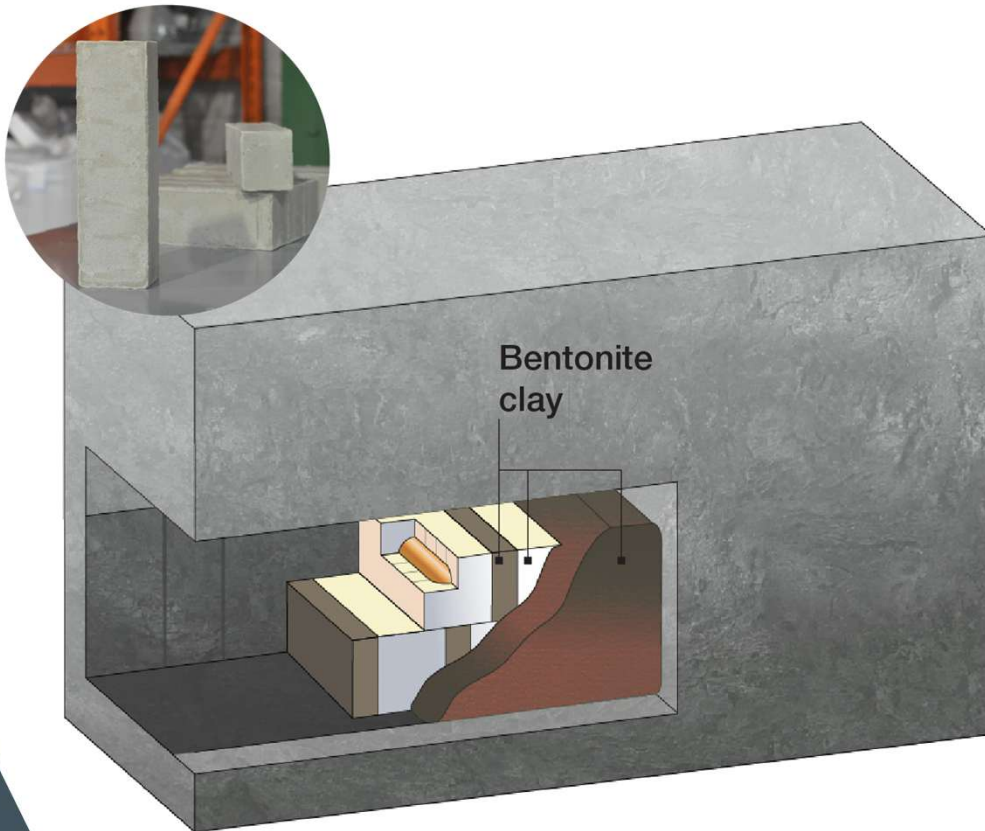


Barrier #3: Used Fuel Container



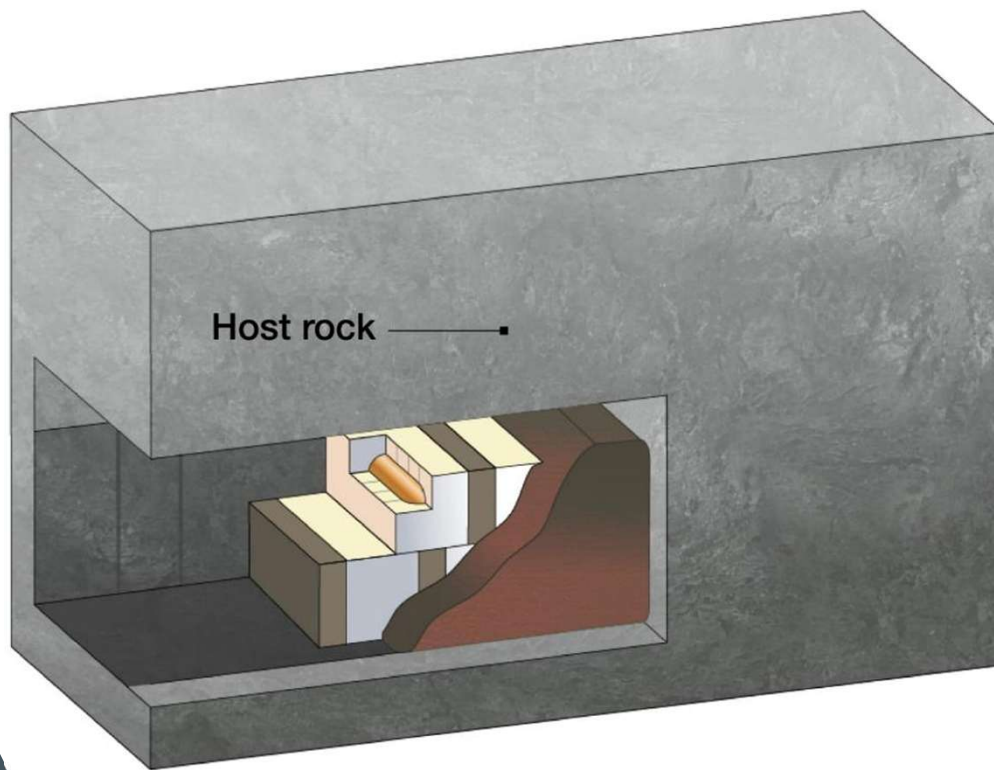
- Durable and long-lived deep underground
- Strong steel core
- Corrosion-resistant copper coating

Barrier #4: Bentonite clay

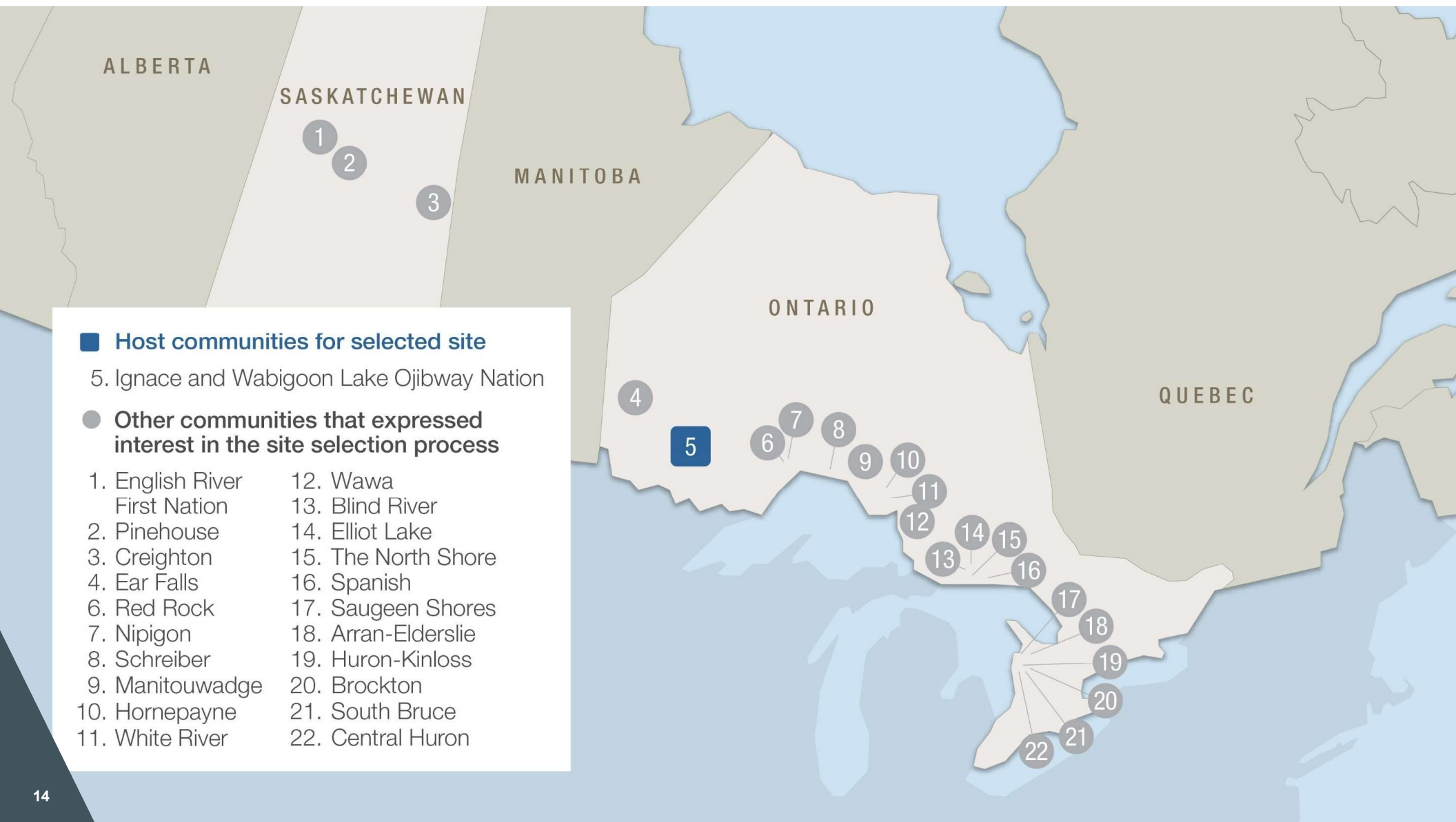


- Formed millions of years ago
- Natural swelling clay material, fills void spaces
- Reduces minute flow of groundwater
- If container fails, clay minerals act like a sponge

Barrier #5: Geosphere (host rock)

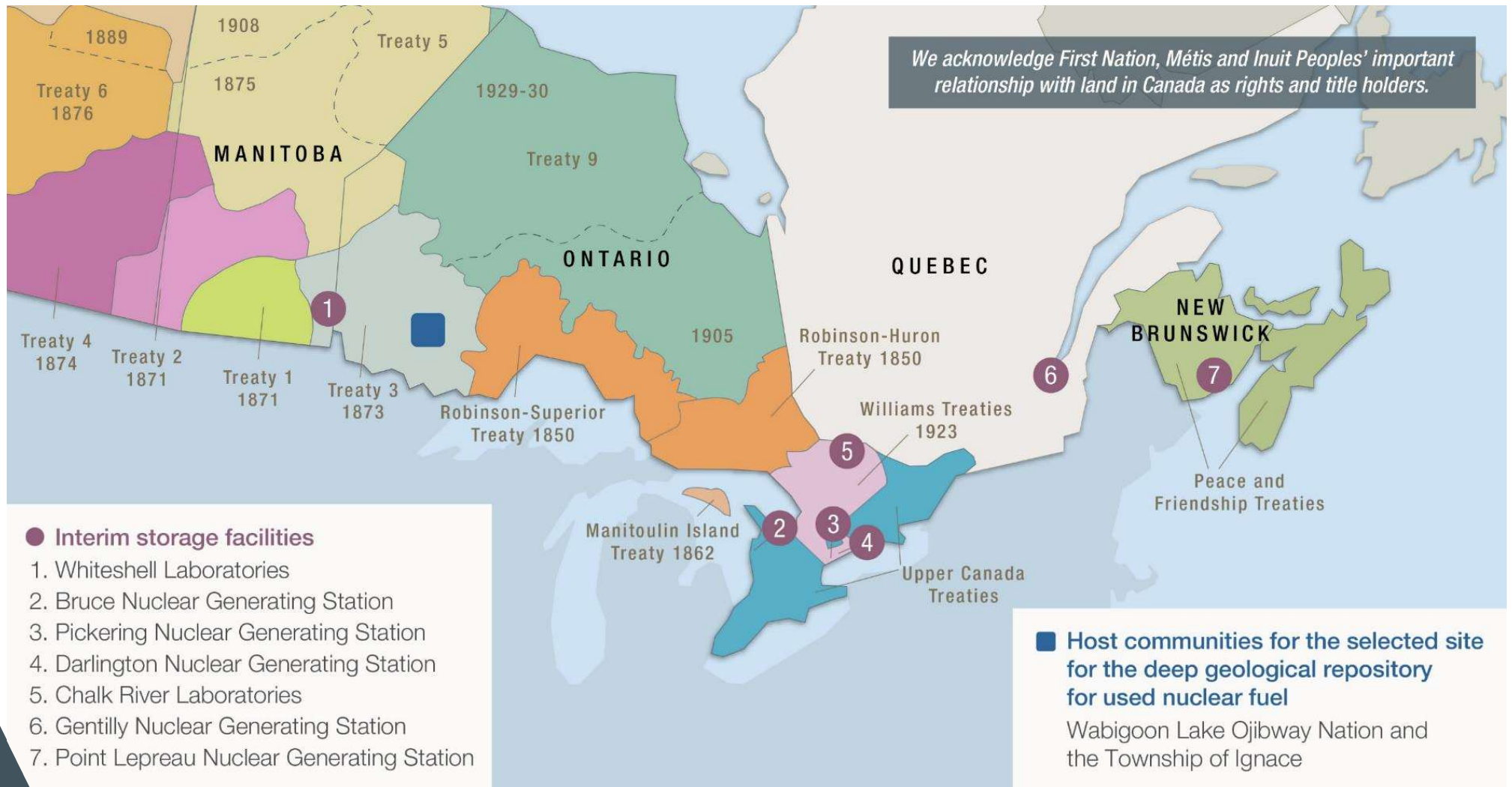


- Natural barrier
- Protects repository from surface events (natural and human)
- Isolates used fuel for very long times

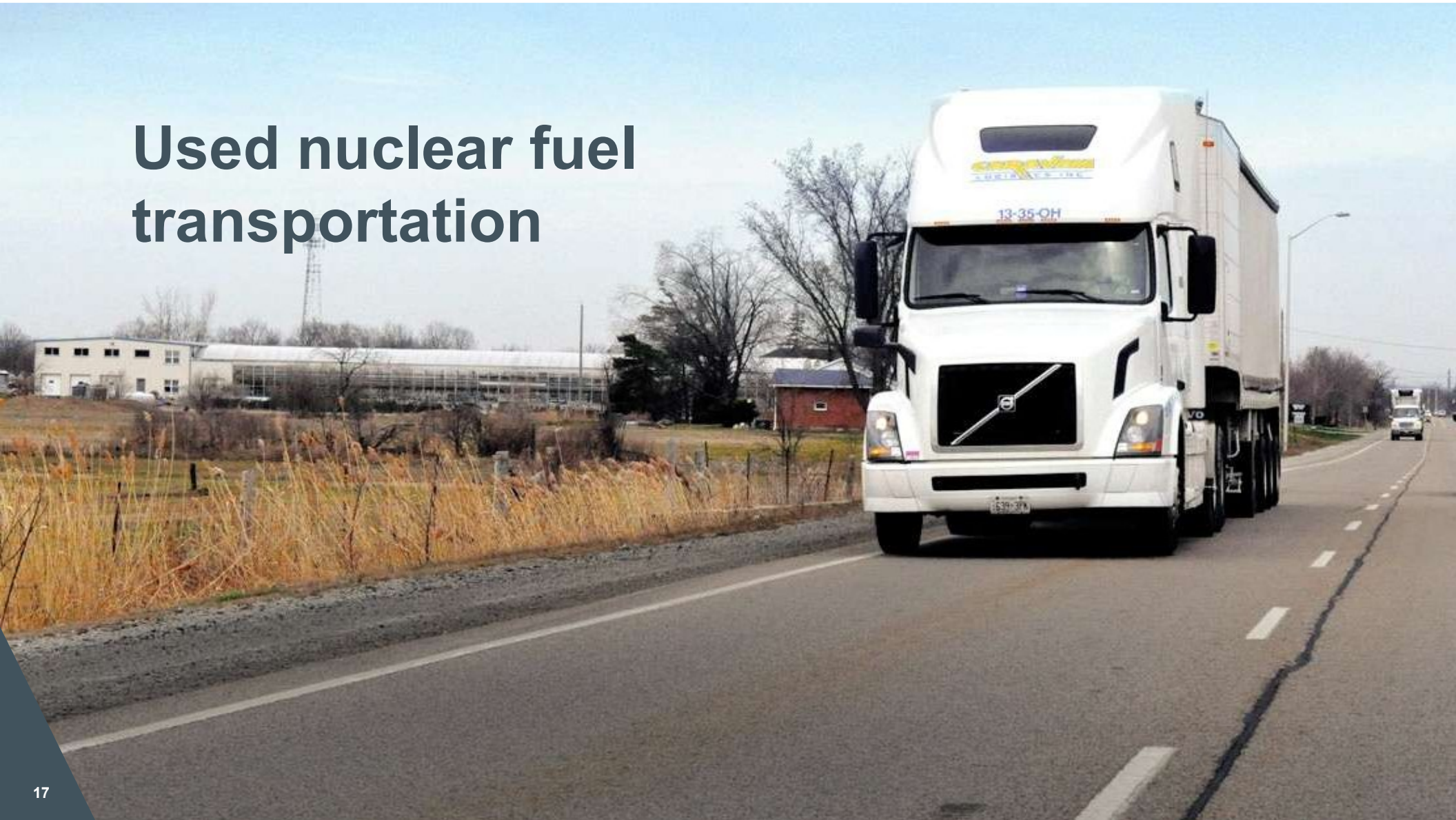


Selected site





Used nuclear fuel transportation



Option 1: All road (reference case)

All interim
storage sites

Conventional road

Ignace area

Option 2: Road/rail combination

Pickering
Darlington

Rail

Bruce

Road
superload

Intermodal
facility

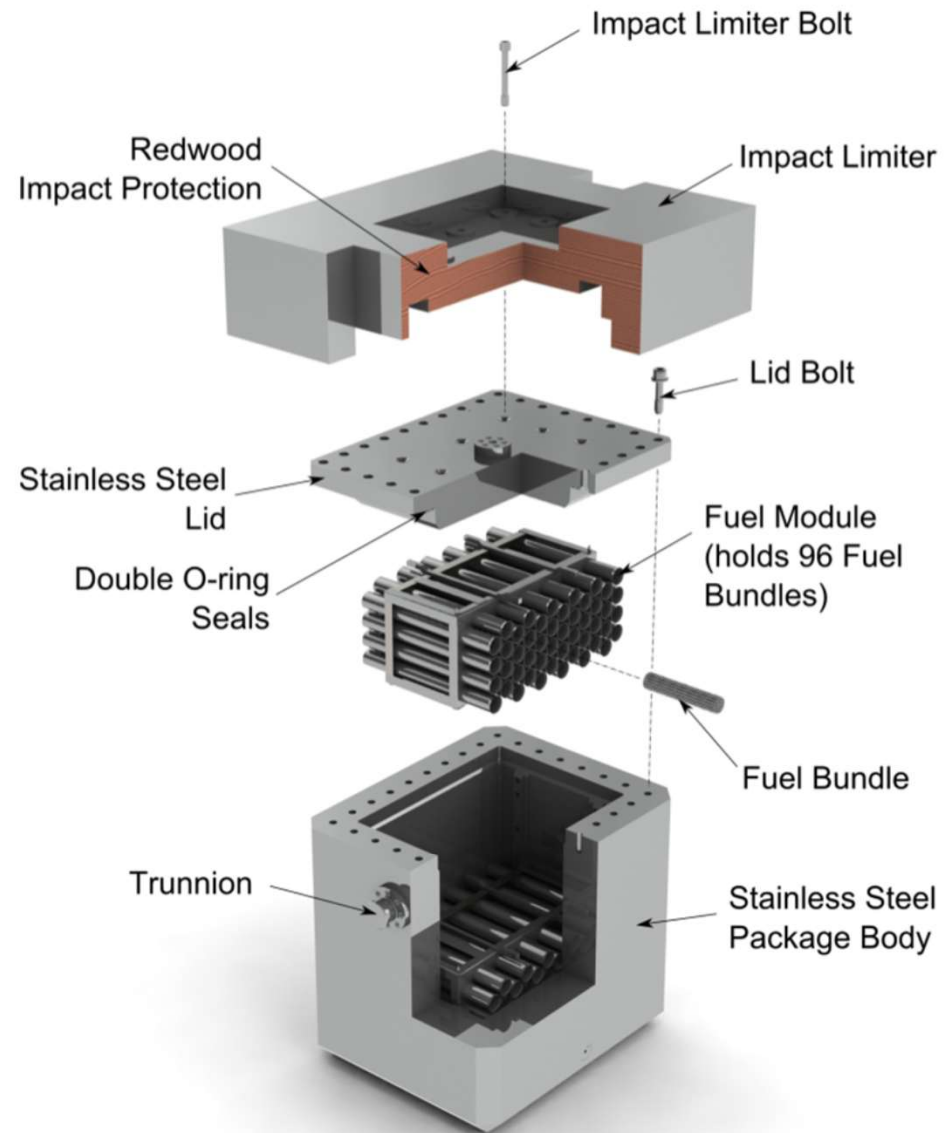
Rail

Ignace area

All other interim
storage sites

Road
conventional

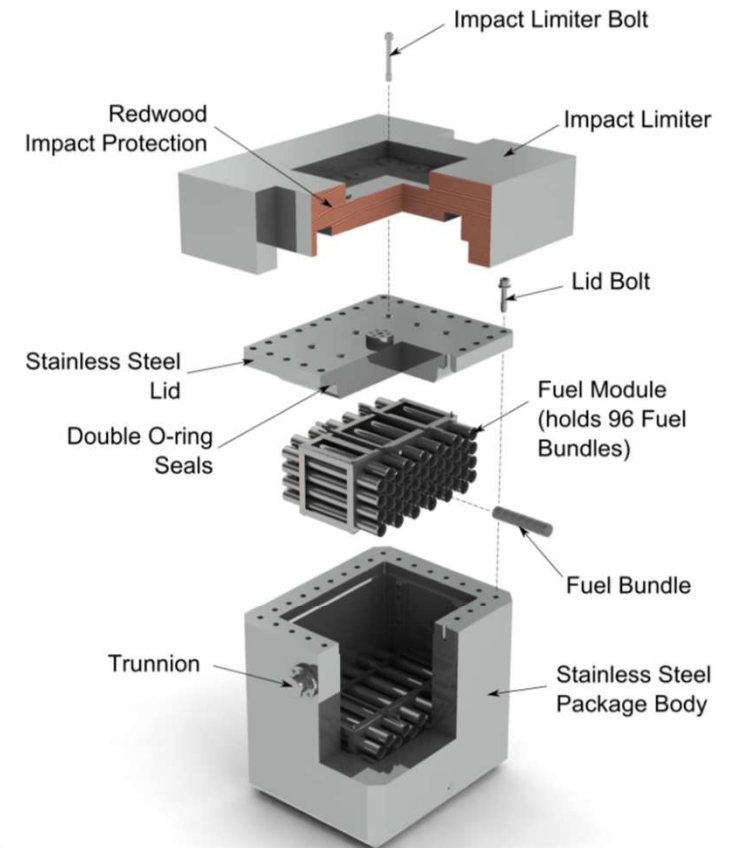
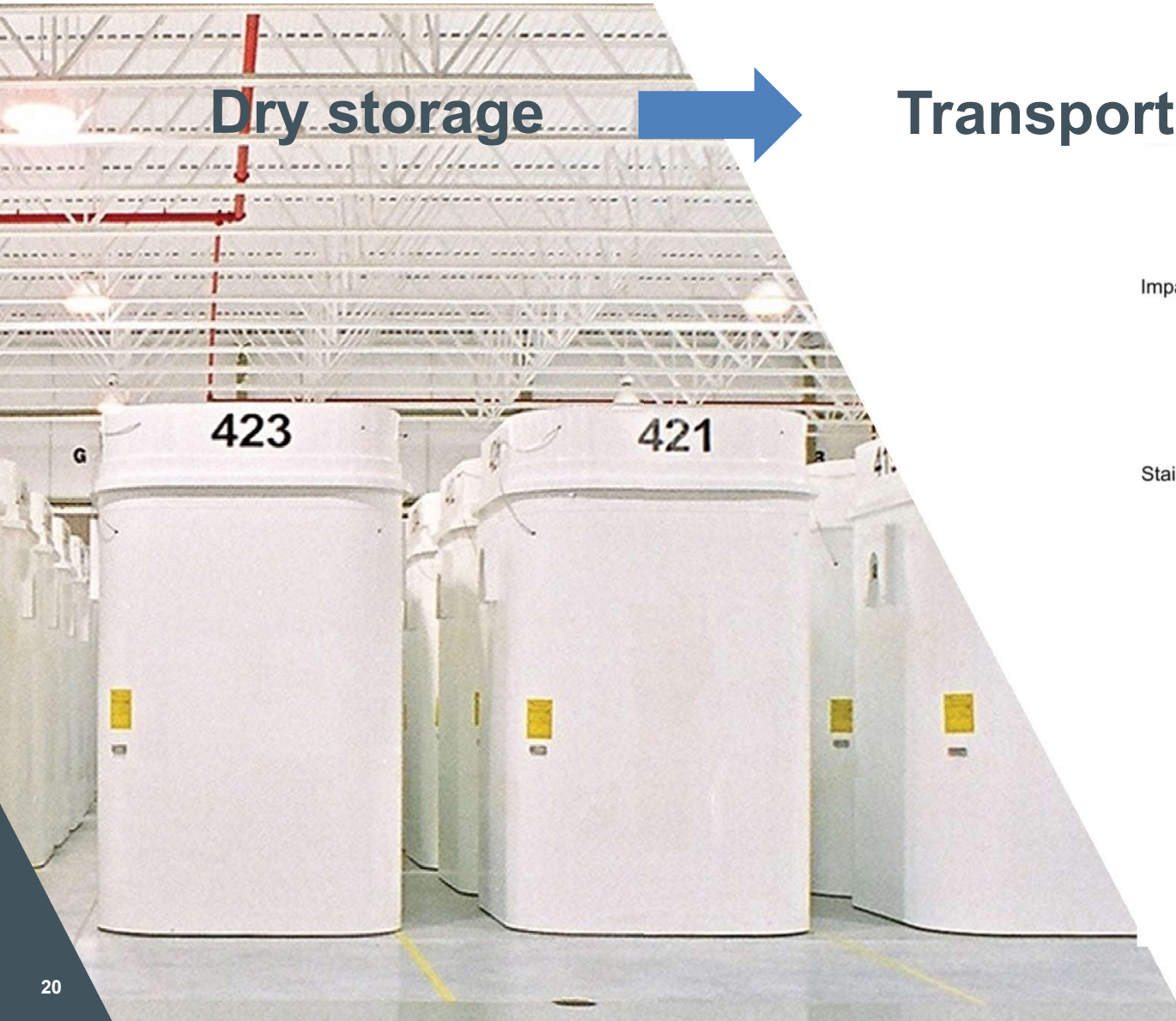
Used Fuel Transportation Package



Dry storage



Transportation Package



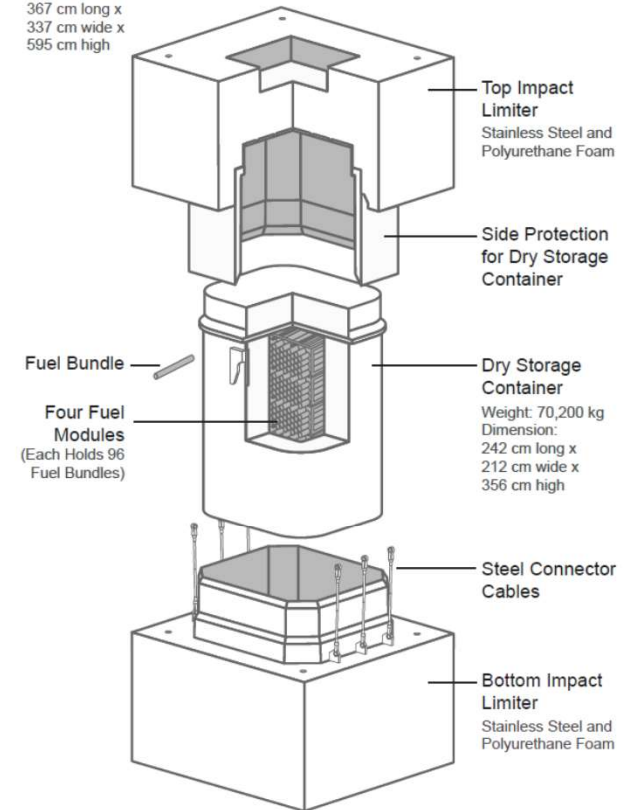
Dry storage



Transportation Overpack?

Dry Storage Container
Transportation Package

Weight: 100,300 kg
Dimension:
367 cm long x
337 cm wide x
595 cm high



nwmO

Option 1: All road (reference case)

All interim
storage sites

Conventional road

Ignace area

Option 2: Road/rail combination

Pickering
Darlington

Rail

Bruce

Road
superload

Intermodal
facility

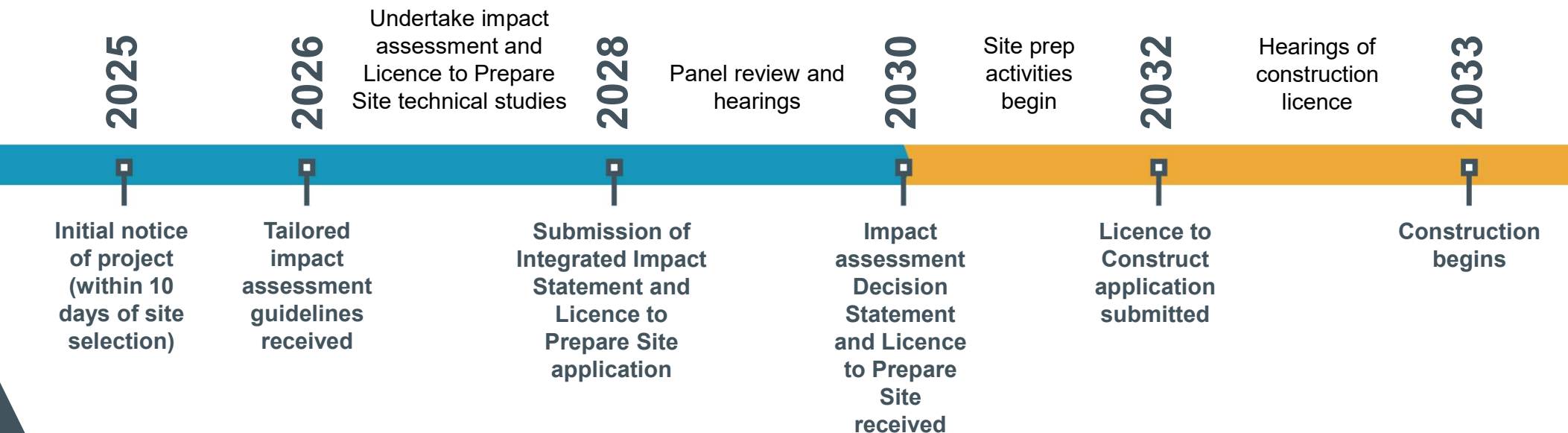
Rail

Ignace area

All other interim
storage sites

Road
conventional

Anticipated timelines for the NWMO's regulatory decision-making process



The image shows three spent nuclear fuel assemblies standing upright on a metal surface. Each assembly consists of a cylindrical upper section with a hexagonal top and a narrower lower section. The background is blurred, showing more of these assemblies in a facility.

Used nuclear fuel transportation

More than 50 years of
uncompromised safety