Idaho Cleanup Project

The Process for Receipt of Test, Research and Training Reactor Spent Nuclear Fuel (SNF)

Dale E. Luke, Advisory Engineer

K. Alan Robb, Fuel Receipt Engineer

Steven D. Wahnschaffe, Principal Engineer

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Restructuring of the INL

- **The Idaho National Laboratory (INL) managed by Battelle Energy Alliance (BEA) contains the laboratory and R&D functions.**
  - INL is A DOE-Nuclear Energy (DOE-NE) entity
  - INL is DOE-NE's first national laboratory
- **The Idaho Completion Project (ICP) Managed by CH2M-WG Idaho (CWI)**
  - Is responsible for the remediation and cleanup of the INL (non-lab facilities)
  - Is responsible for the receipt of SNF and the storage, packaging, and shipment of SNF and HLW to the repository
  - ICP is the DOE-Environmental Management (DOE-EM) entity

CH2M-WG Idaho (CWI) contract

- Seven year contract for cleanup
- Offsite receipts are currently being negotiated into contract

Foreign Research Reactor Location with TRIGA Spent Nuclear Fuel (Participating with the INL)

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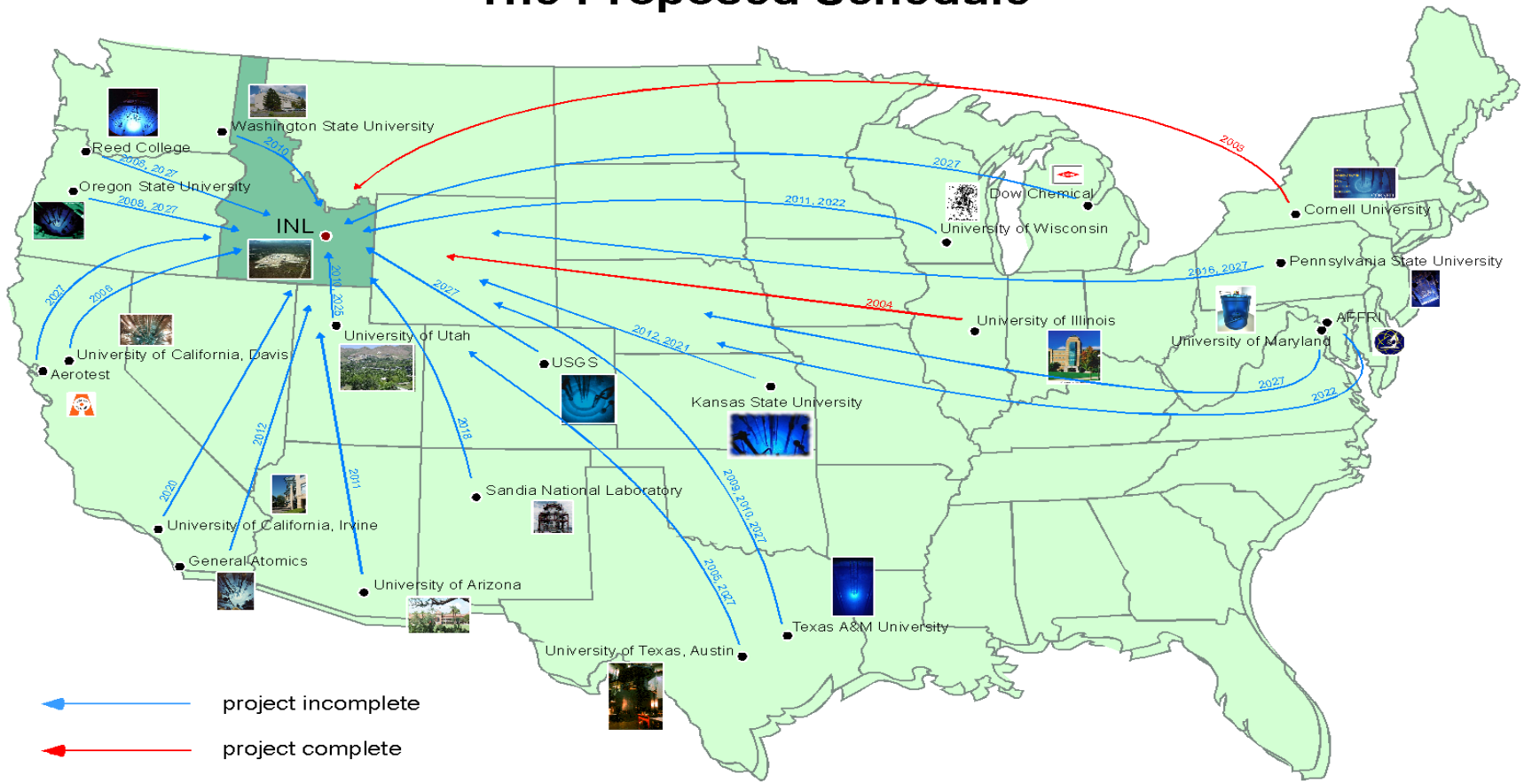
Domestic TRIGA Reactors Participating with the INL
The Proposed Schedule



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Recent TRIGA SNF Receipts at the INL - Foreign Receipts

- Korea – three casks
- Germany – one cask
- Italy – one cask
- Romania – one cask
- Slovenia – two casks
- England – one cask
- Germany – three casks
- Japan – one cask
- Indonesia – two casks

Recent SNF Receipts at the INL - Domestic Receipts

- West Valley – PWR and BWR fuel, two casks
- Oak Ridge – miscellaneous fuel, five casks
- General Atomics - miscellaneous fuel, one cask
- Cornell University – TRIGA fuel – one cask
- University of Illinois – TRIGA fuel – two casks

Status of Ongoing and Near-term SNF Receipts at the INL

- **State University of New York (SUNY)-Buffalo**
  - Fall 2005
  - PULSTAR fuel
  - preparations are well underway
- **University of Texas A&M**
  - Late 2005
  - TRIGA fuel
- **Out-year: domestic and foreign shipments are in negotiation.**

INL Receipt Process

- **Shipper notify DOE-ID**
- **Shipper and DOE-ID determine how SNF will be transported** (CWI can currently receive the NAC-LWT & 18.5 T casks with TRIGA SNF)
- **Shipper determine condition of SNF**
- **Shipper provide fuel and packaging data**
- **CWI reviews/approves data. Verifies fuel can be stored.**
- **Consult with DOE-ID for shipping time frame**
- **Load and ship SNF (CWI verifies loading)**

Major Lessons Learned

- Early communication and accurate fuel data are vital.
- Notify DOE-Idaho Operations Office (DOE-ID) of the intent to ship as soon as you foresee a need to ship
- Provide a complete draft of the Required Shipper's Data form in a timely manner

CWI Equipment and Resource Capablities

Fuel Examination/Loading

- Equipment
  1. Underwater video camera systems consisting of camera head with zoom, focus, and pan-and-tilt capability, radiation hardened lens, and integral underwater lights
  2. Video monitors and high definition recorders
- Pre-defined acceptance criteria
- Trained personnel

CWI Equipment

Equipment used for inspections/loading of fuel

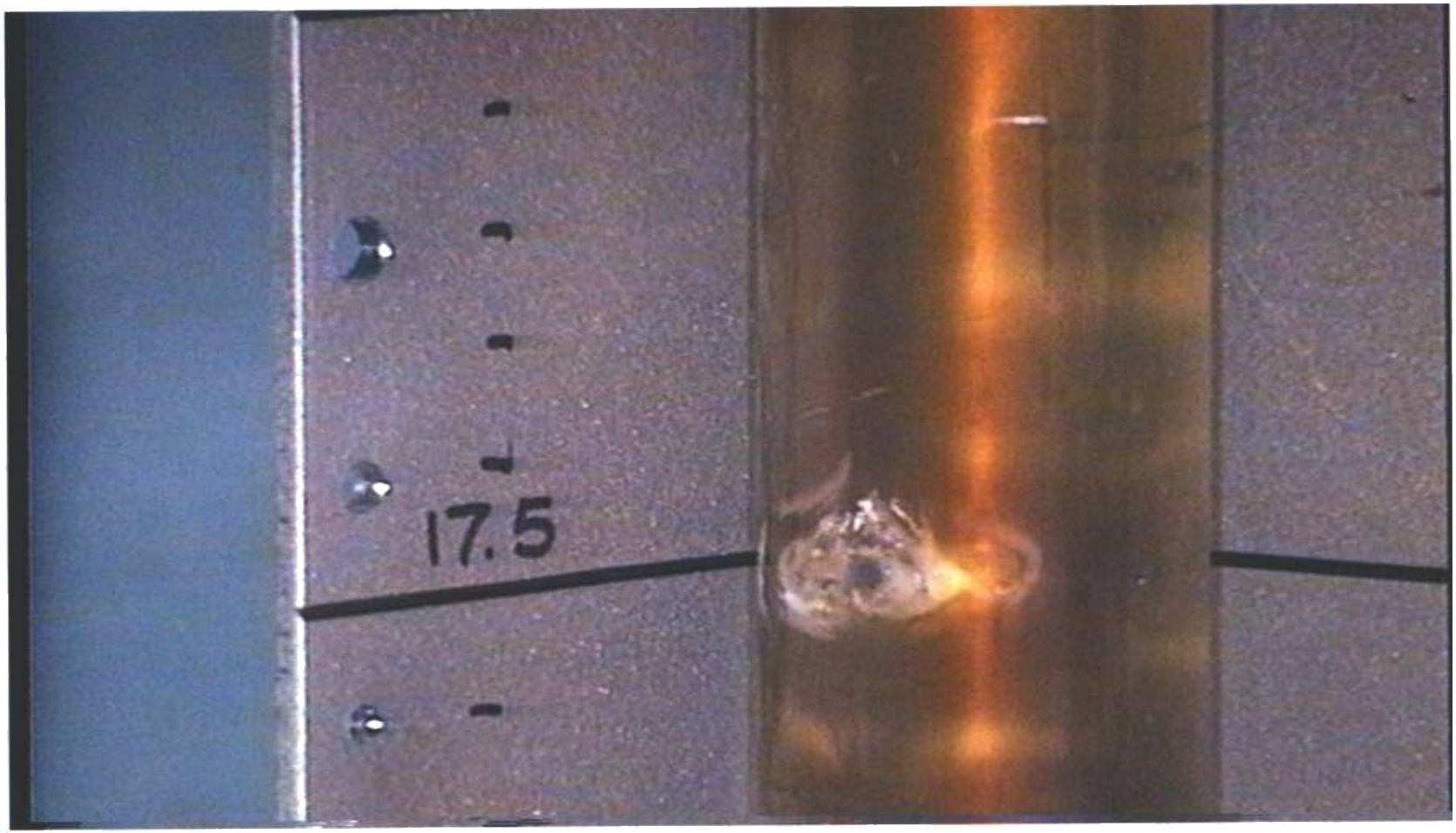
High resolution camera with radiation hardened lens.

Sample Findings of Fuel Examinations

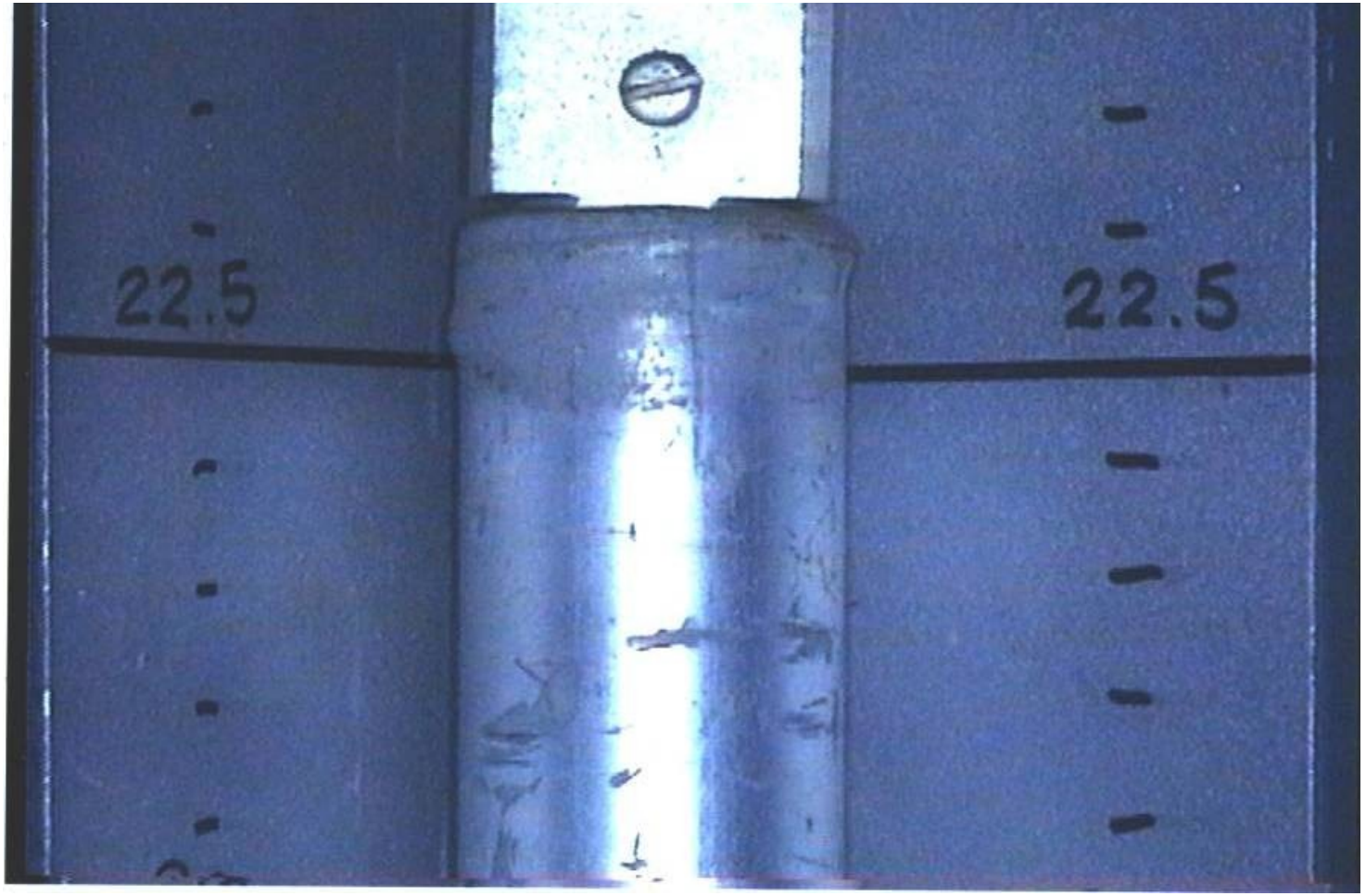
Modified AL clad TRIGA fuel element

Damaged SS clad element (collapsed)

Damaged SS clad element (pitted)



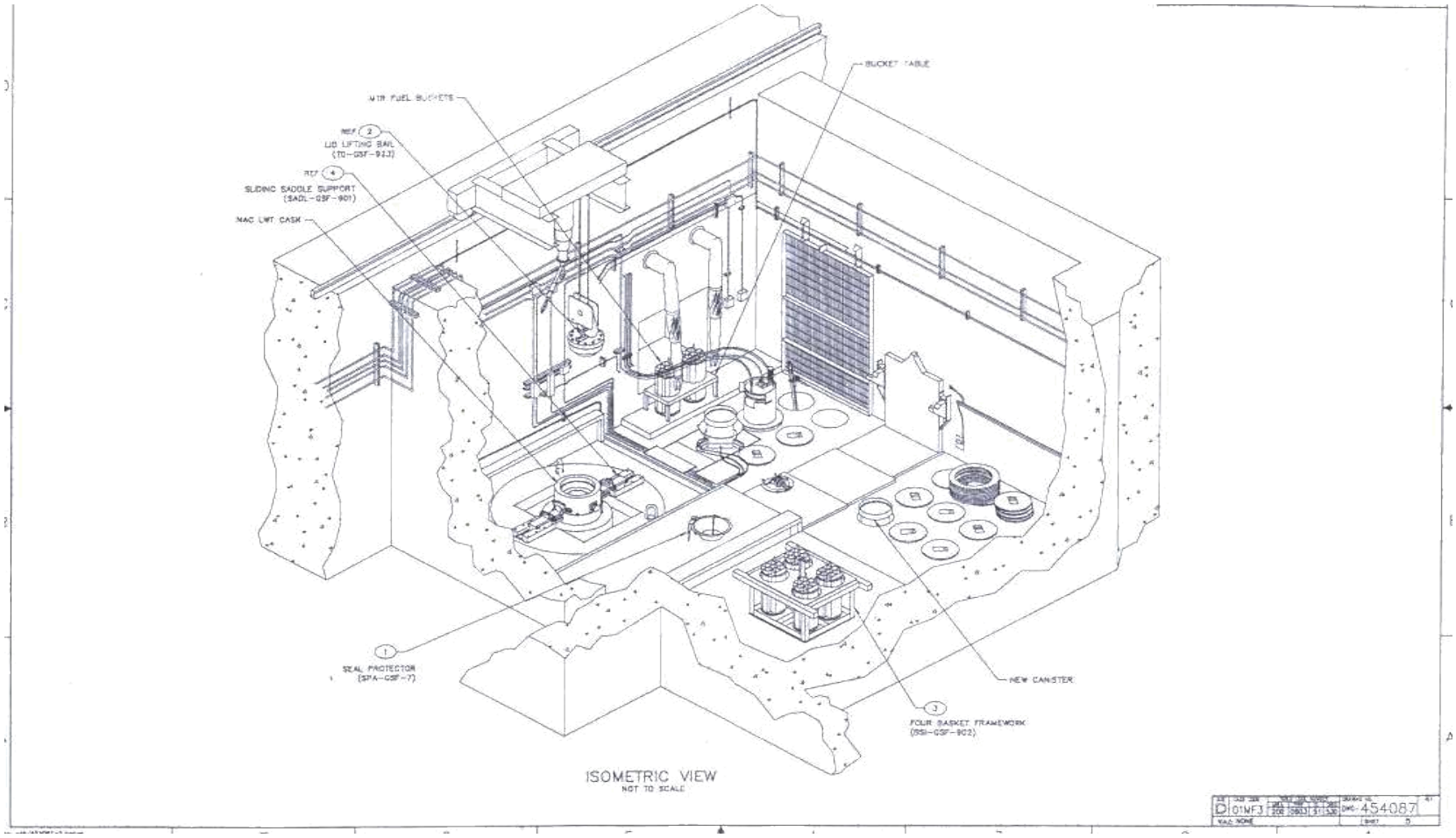
Damaged Al clad element (bulged)



Damaged Al clad element (ripped)

INL/CWI Dry Storage Facilities

Dry Storage Fuel Handling Cave



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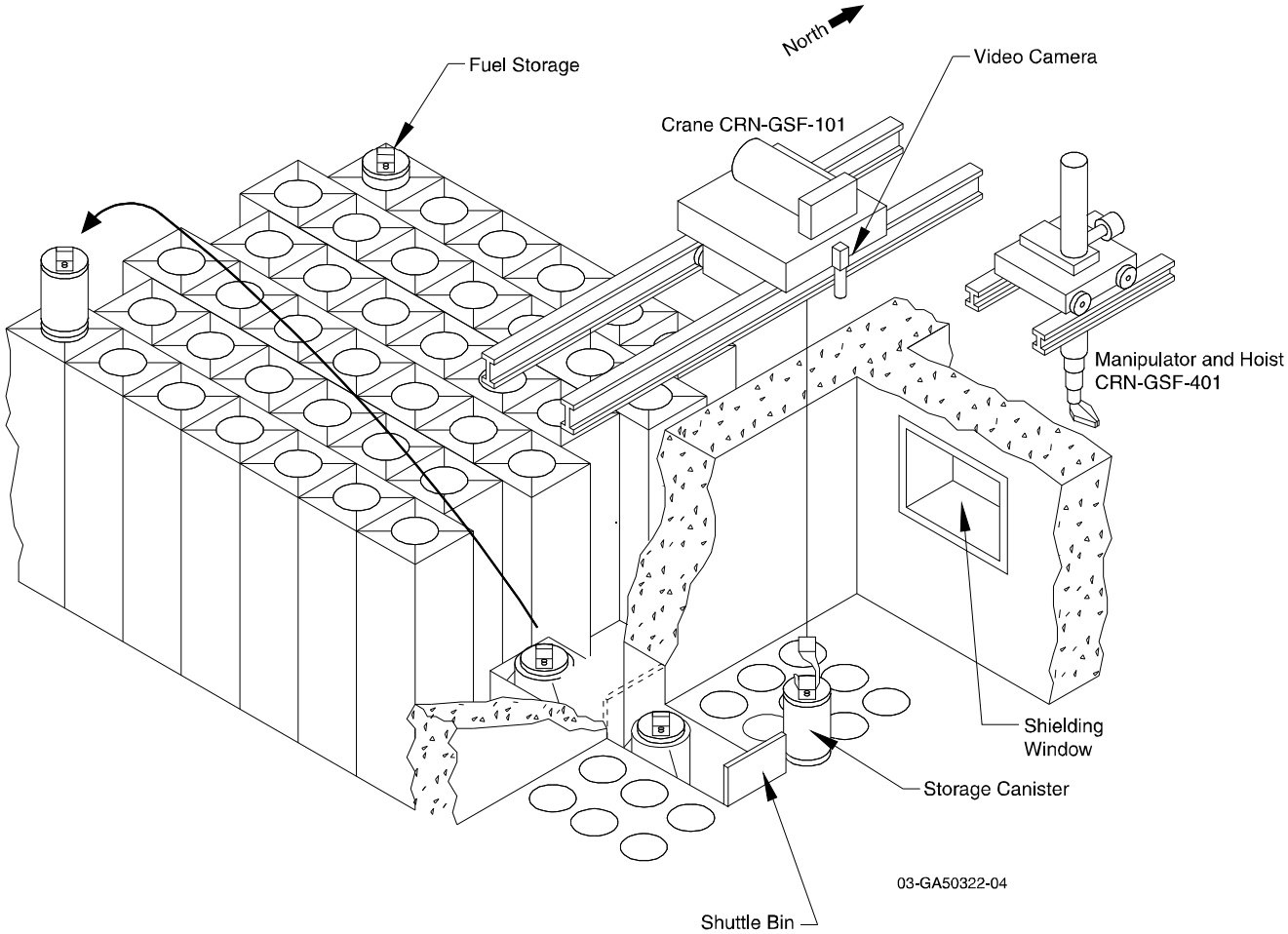
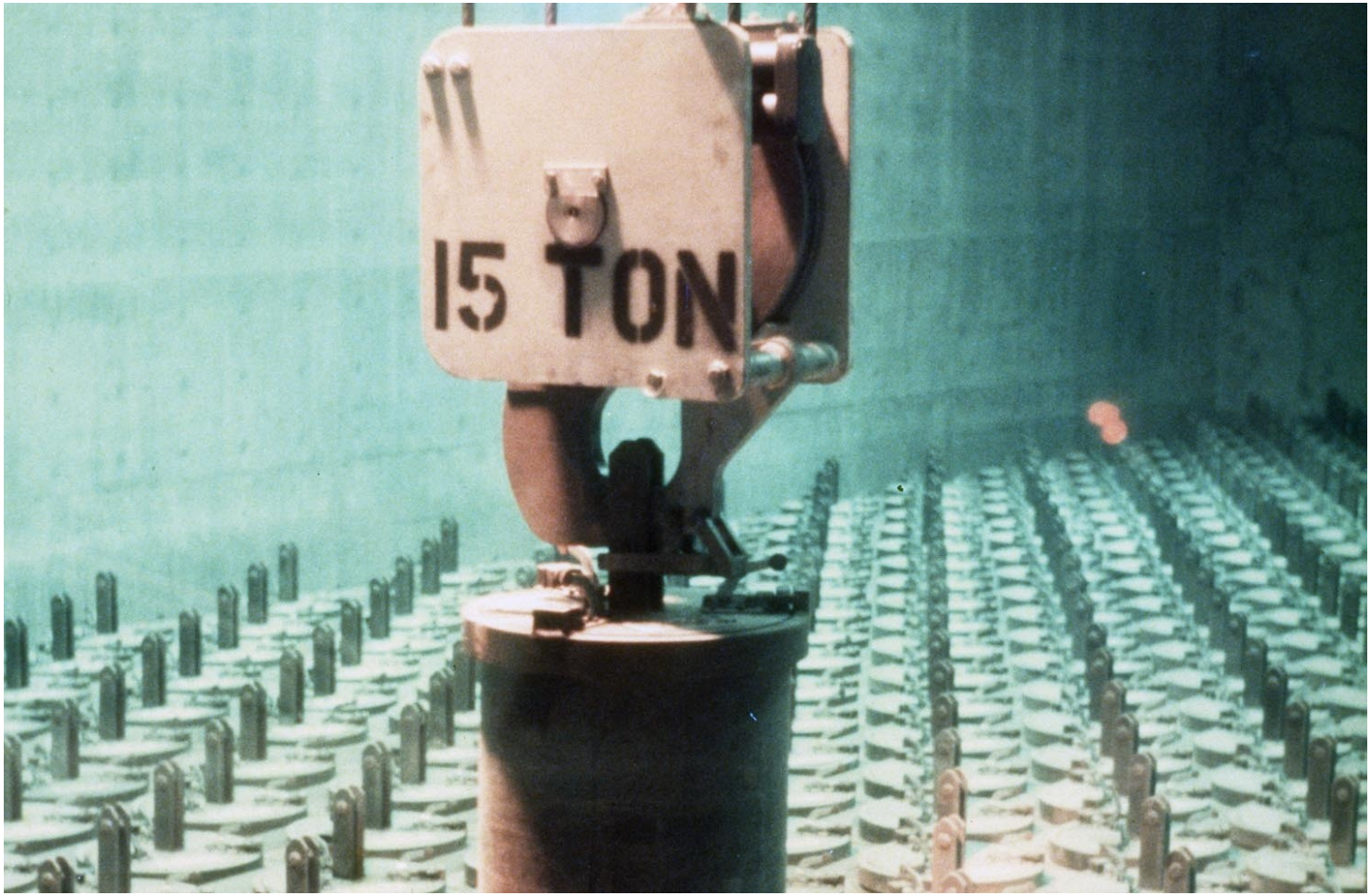
Dry Storage Fuel Handling Cave

Dry Storage Fuel Storage Area



How Fuel is Stored in the Dry Fuel Storage Area



Questions and Discussion