Department of Energy Action to Support a Demonstration

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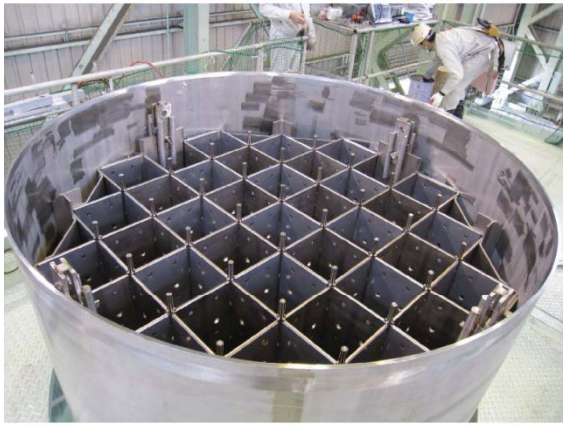
DOE Action Introduction

- The DOE has placed a procurement with the INL to execute the "High Burn-Up Fuel Storage and Transportation Confirmatory Data" project under the INL master contract.
  - Directs the development of a project execution strategy to detail how a used fuel dry storage demonstration project can be executed and provides the funds for that work.
    - *"The plan will guide the work necessary to determine the effects of long-term dry storage on the condition of high-burnup fuel."*
    - *"The INL will be the lead lab and technical integrator for the plan with input and/or involvement from other labs, industry, NE, EPRI, NRC, and others as may be appropriate."*



Related Actions

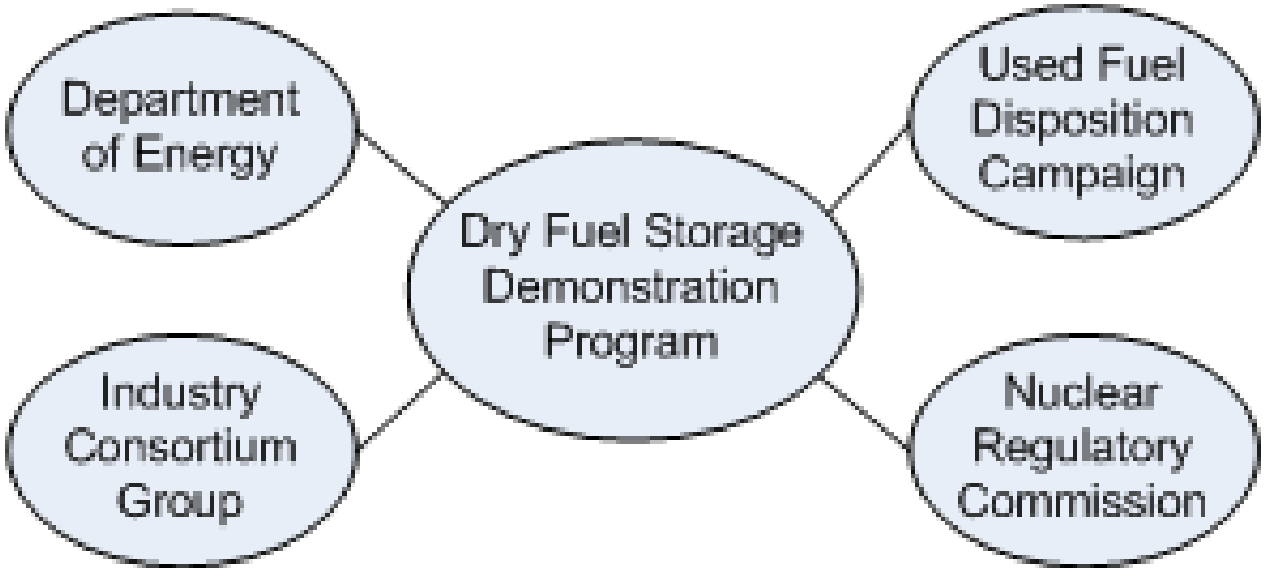
- The Used Fuel Disposition (UFD) Campaign has funded the INL to evaluate the use of an existing facility for the purposes of receiving, opening, and handling fuel from large bolted-lid storage casks.
  - Determine the viability of modifying the facility
  - Establish a cost estimate for the modifications
  - Helps resolve the issue of reuse of facilities versus new construction
- The UFD Campaign has proposed a separate effects test
  - Laboratory scale test conducted in a hot cell
    - Up to 200 pins, representative clad and burnup
    - Mimics large demonstration
    - Provides opportunities to obtain samples and data for other testing

Integration

- These three actions have led the INL to establish the Dry Storage Demonstration Program
  - Integrates all related work
  - Provides consistency of management across sub-projects
    - QA, training, records, planning
  - Applies appropriate level of controls in a graded manner to all program activities
  - Allows consistent management of sub-project complexity and risks
  - Keeps our “eye on the prize”

Program Team

- Execution Team
  - INL, lead
  - Others, tbd
- Key Stakeholders
  - Industry
  - DOE
  - NRC
  - Congress
  - States



Scope Components and Management

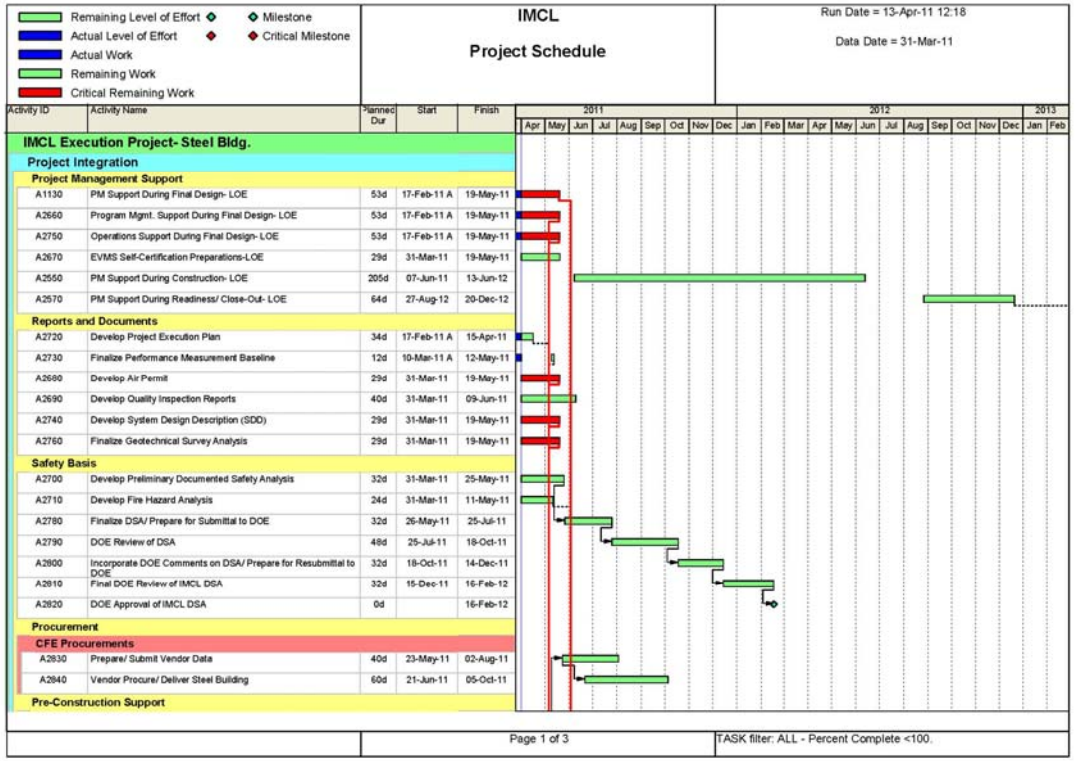
- Two main components
  - Requirements
  - Objectives
- Tightly controlled
  - Change management
  - Under budget and ahead of schedule

Complexity and Risk

- Nuclear Quality Assurance will be mandatory
  - Data will be used in licensing support (10 CFR 71, 10 CFR 72).
  - Need to design/build/modify nuclear facility(ies)
- Nuclear facility modification invokes rigorous DOE Orders and Standards
- Complicated financial strategy
  - Funding sources
  - Competitive bid vs. sole source procurement
- Complicated relationships
- Highly visible program with implications for Congress, DOE, NRC, the INL, the industry, and the public.

Work Breakdown Structure (WBS) Considerations

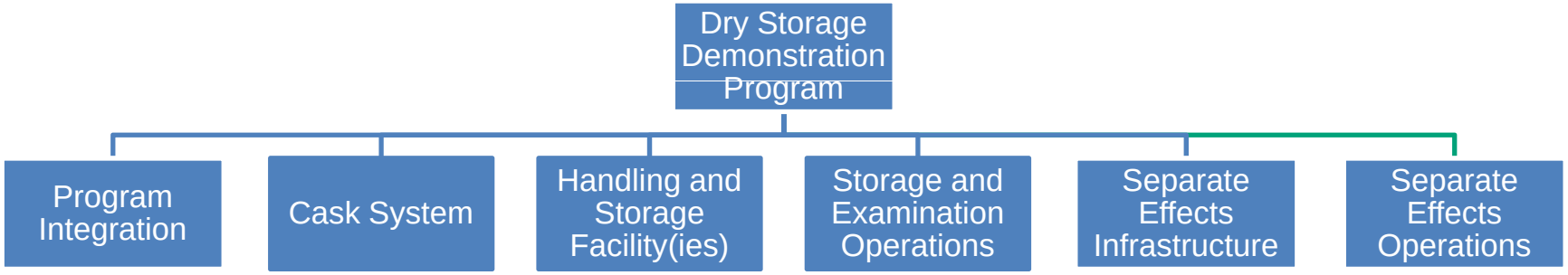
- Scope
- Performing organizations
- Schedule
- Funding sources (color of money)



Additional WBS Issues

- Challenges
  - Multiple performers
  - Construction, research, and operations
  - Public and private entity participation
    - Funding
    - Contracts
- Need for transparency
  - Viability of nuclear power
  - Public
  - Licensing
  - Congressional responsibility
- **The program complexity and risks, coupled with our challenges and need for transparency drive the need for a robust WBS.**

Program WBS


Dry Storage Demonstration Program
Program Integration
Cask System
Handling and Storage Facility(ies)
Storage and Examination Operations
Separate Effects Infrastructure
Separate Effects Operations

Project WBS (continued)

Program Integration

- Preliminary Program Execution Plan
- Program Management
- Procurement
- Regulatory, Permits, and Licenses
- Program Quality Assurance
- Fuel Acquisition Plan

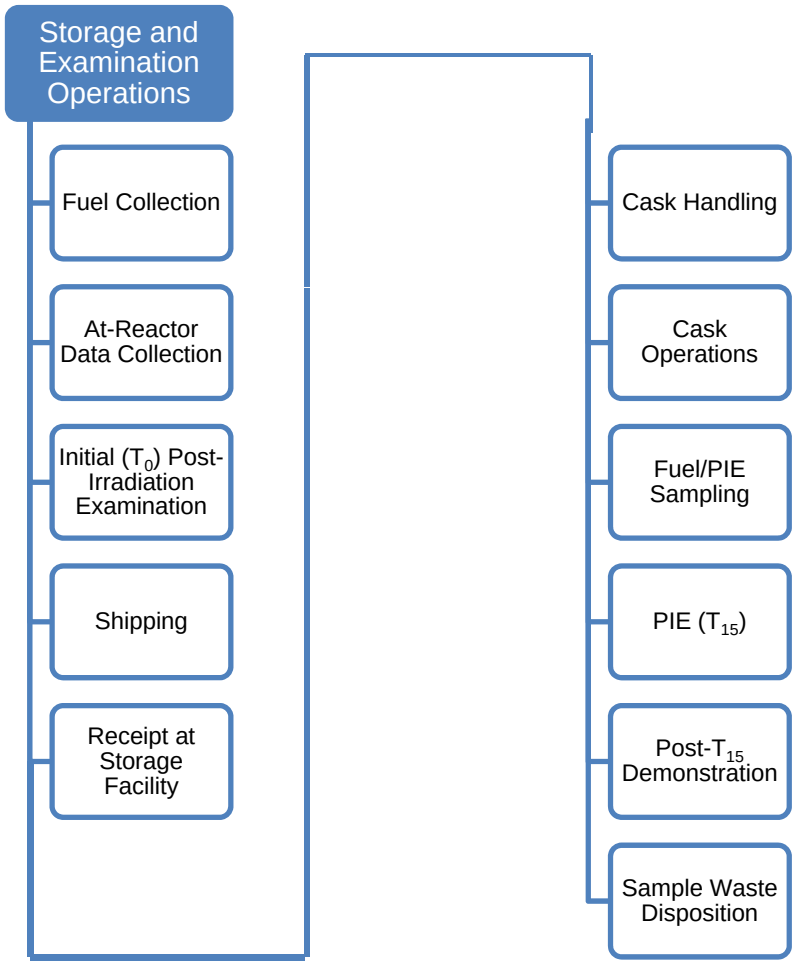
Cask System

- Project Integration
- Conceptual Design
- Instrumentation
- Cask Modification
- Lid

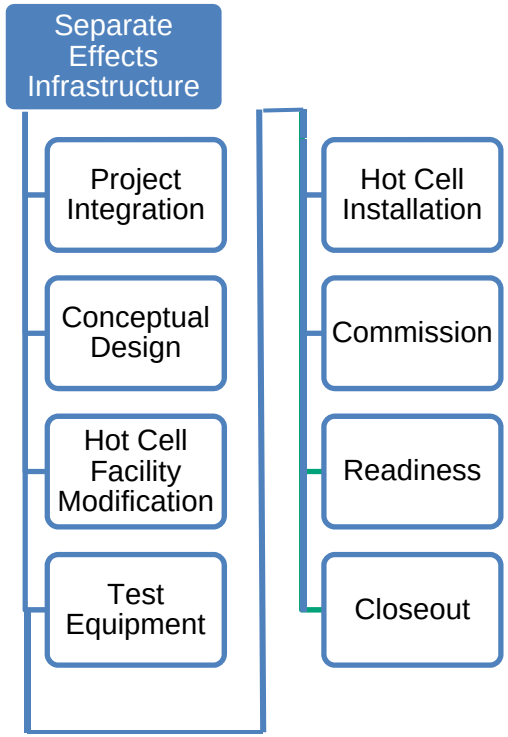
Handling and Storage Facility(ies)

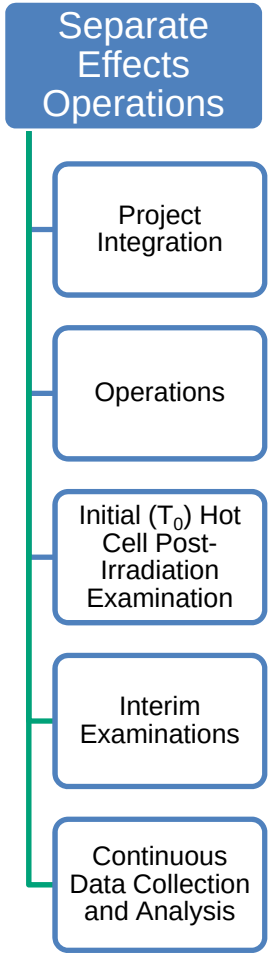
- Project Integration
- Conceptual Design
- Cask Receiving System
- Material Recovery System
- Sample Preparation System
- Construction [WBS depends on alternative selected]

Project WBS (continued)



Project WBS (continued)





Conclusion

- Deliverables
  - PPEP draft for comment by January 31
  - Viability of 603 to handle large bolted-lid storage casks by mid-November
- Future funding
  - Dependent on quality and acceptance of the PPEP by DOE and industry to execute