U.S. DEPARTMENT OF ENERGY | OFFICE OF ENVIRONMENTAL MANAGEMENT

Glass Waste Storage Project
Defense Waste Processing Facility

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Waste Management Committee
October 7, 2014

Purpose

- Satisfy 2014 Waste Management Committee Work Plan requirement.
- Describe the scope of the project which is NOT another Glass Waste Storage Building.

Acronyms/Definitions

CD-0 – Approve Mission Need for a construction project with a conceptual scope and cost range
CD-1 – Approve Design Scope and Project Cost and Schedule Ranges (Project will re-affirm CD-1 based on a newly selected alternative.)
CD-2 – Approve Project Performance Baseline
CD-3 – Approve Start of Construction
CD-4 – Approve Start of Operations or Project Closeout

ALARA As Low As Reasonably Achievable
BOP Balance of Plant
CDR Conceptual Design Report
CTS Canister Transfer Station
DWPF Defense Waste Processing Facility
GWSB Glass Waste Storage Building
HQ Headquarters
RFP Request For Proposal

- Alternative Study: Reviewed DOE complex wide canister storage options and Commercial Spent Nuclear Fuel. Brainstormed new approach. Grading criteria included initial cost, life cycle cost, safety/ALARA, technical approach, constructability, and operability.
- Optimization Study: Reviewed Canister Interim Storage Project conceptual design and added transportation capability.

Agenda

- Introductions /Background
- Schedule Activities, Funding Profile, Issues
- Canister Production Chart
- Support Information

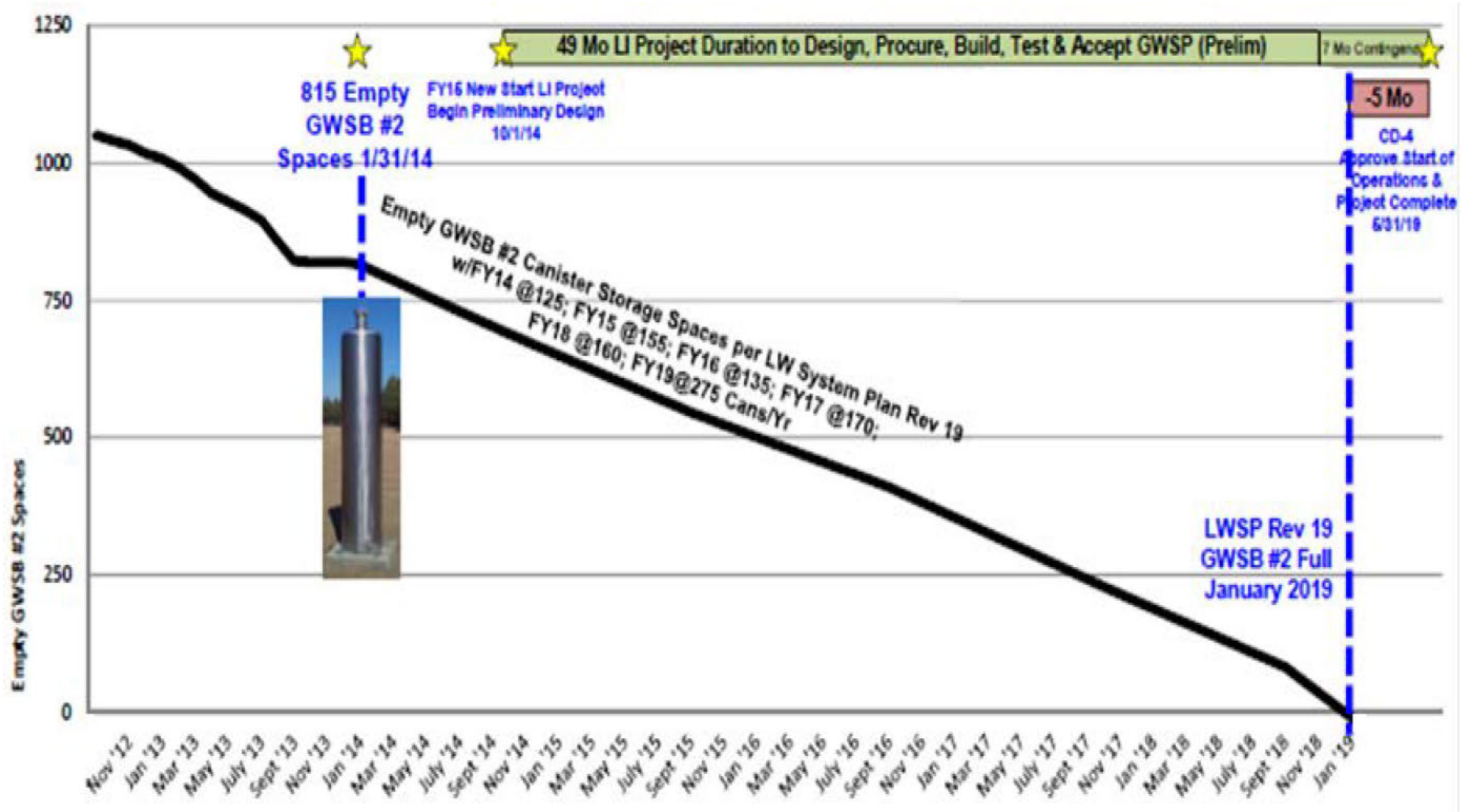
Proposed Canister Storage

Glass Waste Storage Building

Proposed Project Location at DWPF

Proposed Storage Containers

Canister Production versus Storage Space



Project Background

- Critical Decision (CD)-1 for GWSB #3 approved March 10, 2010;
- Due to flat lining of EM budget, alternative study conducted, less than GWSB #3;
- Project cost range of $40M to $64M, GWSB #3 $140M;
- Conceptual Design Report (CDR) issued February 2013 for Glass Waste Storage Project;
- FY14 Initiated Optimization Study to fine - tune CDR for CD-1 and;
- Seeking re-affirmation of the alternative selected.

Schedule Activities

- **FY14** Optimization Study: Complete in November 2014
- **FY15** Re-Affirm CD-1, Prelim. Design, prep Request For Proposals (RFP),
- **FY16** Issue RFP/evaluate container, carrier, cart, power, site prep, complete design
- **FY17** Achieve CD-2 and CD-3, begin fabricate container, carrier, start site prep, power, start construction
- **FY18** Continue construction transfer station, storage pad, road, fire water
- **FY19** Complete Transfer Station, Storage Pad/ Road, Start Up test, Readiness Assessment, achieve CD-4

Issues:

- Funding for FY15.

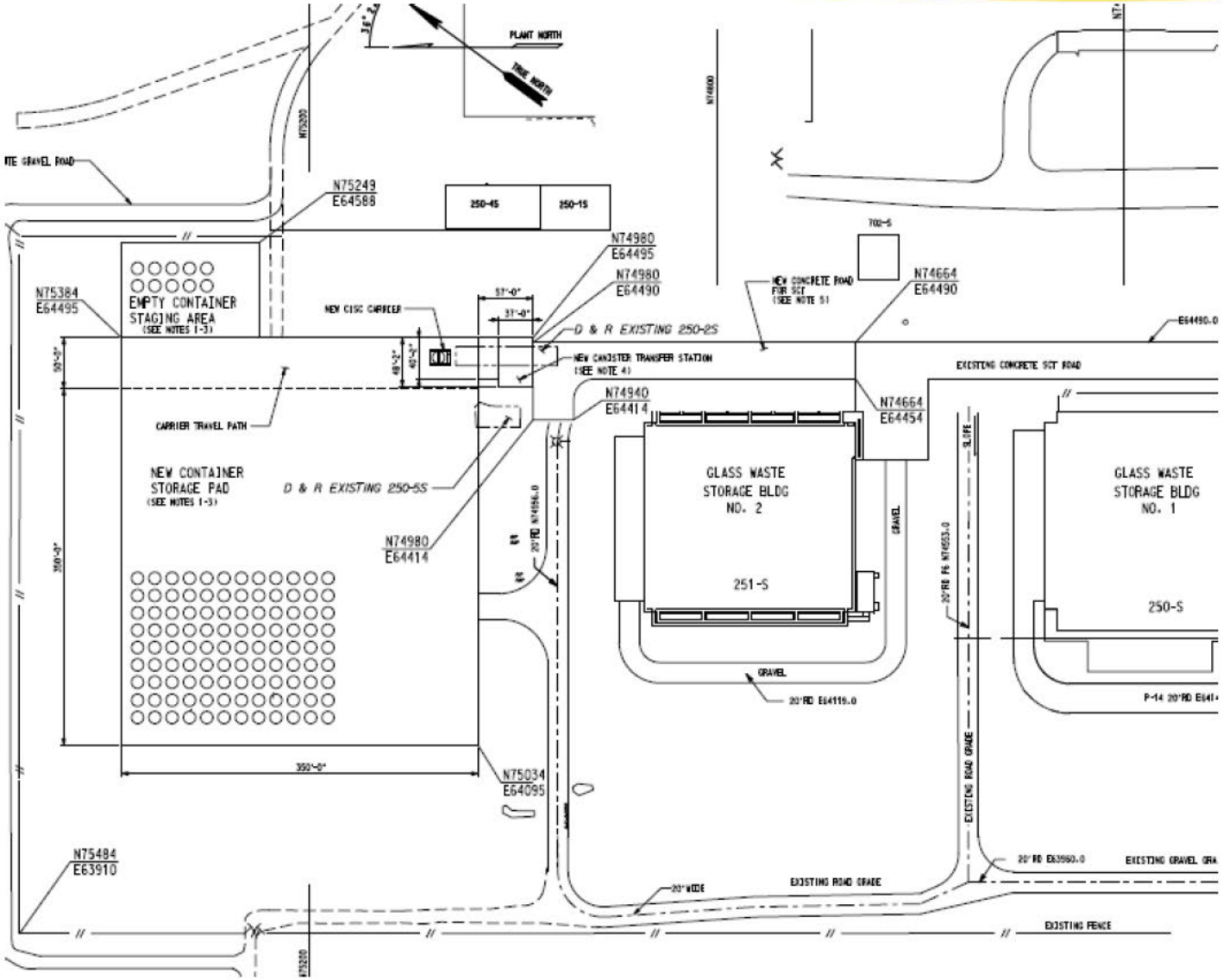
Project Detail Supporting Information

- Scope of Project
- Site Plan
- Container Description
- Container Transfer Station and Transfer Process
- Canister Transfer Equipment

Scope of Project

- Relocate Utilities: Relocate 13.8KV & Fire- Water Line;
- Temporary Constr. Power; GWSB2 Fence; Remove Buildings 250-1S, 2S, 4S & 5S;
- Replace 250-4S Pad;
- Site Preparation: Clear & Grub, Grading, Storm Water and Detention Basin;
- Construct Canister Transfer Station (CTS), Storage Pad (570), Container Staging Area, Carrier Garage, Fence, and Container Fab Area;
- Construct Balance of Plant (BOP) and Utility Tie-Ins: Install Transfer Car, Operator Console and Tie-in Electrical Power, Phone, and Public Address System;
- Engineered Equipment: Containers (2), Transfer Car, Underhung Trolley & Hoist, Container Carrier, Operator Console, Cameras and;
- Transportation Capability will be installed in phase 2 of project, many years out;

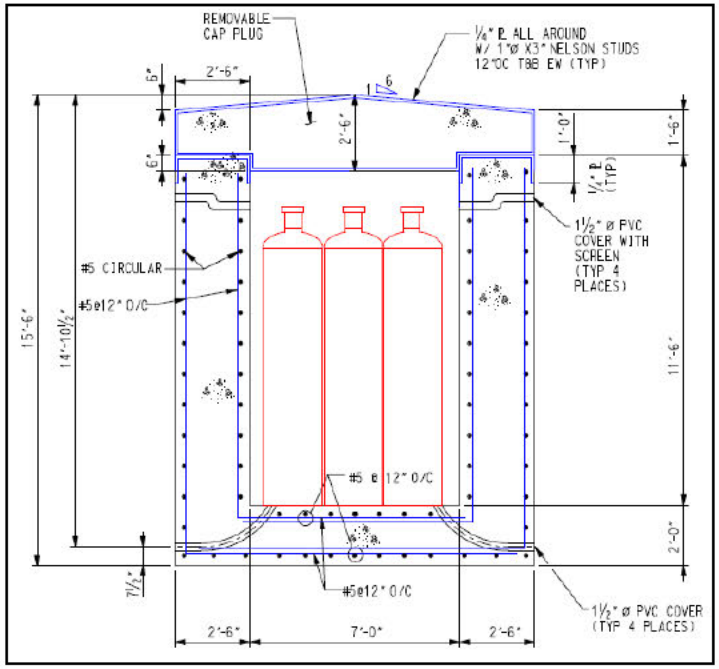
Site Plan


PLANT NORTH
TRUE NORTH
N75249
E64588
250-4S
250-1S
N74980
E64495
N74980
E64490
N74664
E64490
N75384
E64495
EMPTY CONTAINER
STAGING AREA
(SEE NOTES 1-3)
NEW CISC CARRIER
D & R EXISTING 250-2S
NEW CANISTER TRANSFER STATION
(SEE NOTE 4)
NEW CONCRETE ROAD
FOR SCT
(SEE NOTE 5)
EXISTING CONCRETE SCT ROAD
CARRIER TRAVEL PATH
N74940
E64414
N74664
E64454
NEW CONTAINER
STORAGE PAD
(SEE NOTES 1-3)
D & R EXISTING 250-5S
N74980
E64414
GLASS WASTE
STORAGE BLDG
NO. 2
251-S
GLASS WASTE
STORAGE BLDG
NO. 1
250-S
GRAVEL
N75034
E64095
N75484
E63910
EXISTING ROAD GRADE
EXISTING FENCE

Container Description

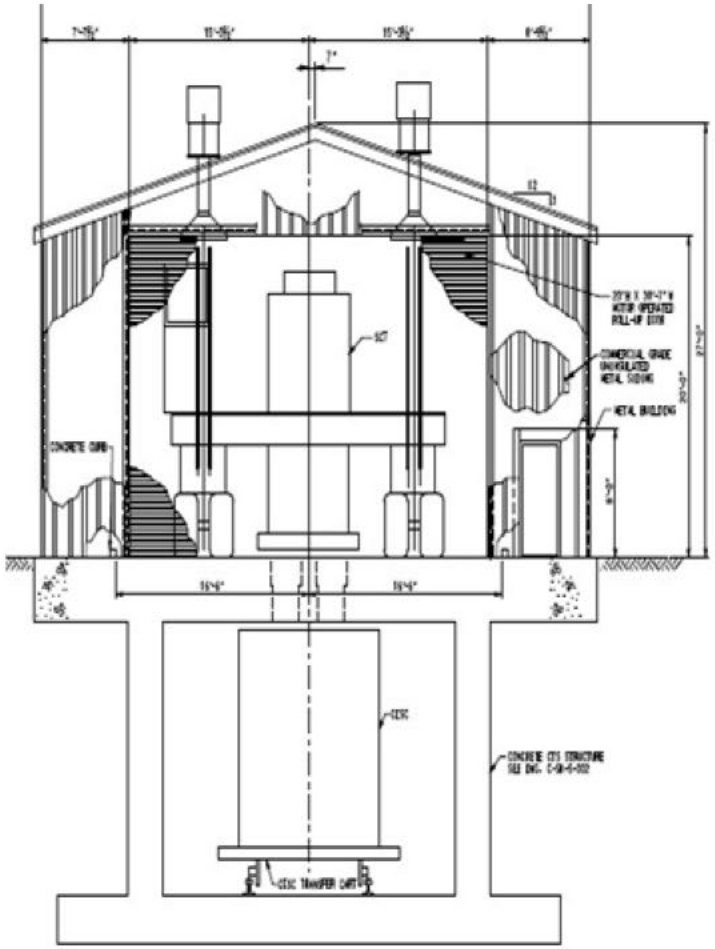
Container (Canister Storage Container):

- Concrete-reinforced with 30" wall x 12' diameter x 15.5' high;
- 106 tons empty; 126 tons loaded w/7 canisters;
- Preliminary Consolidated Hazards Analysis indicated due to the mass:
  - Low center of gravity due to height-to-diameter ratio
  - Container will not tip during high winds or a tornado
- Not licensed for shipment: Storage container, not a Nuclear Regulatory Commission transportation cask



Container Transfer Station and Transfer Process

- Remove canisters from GWSBs as required to support production;
- Shielded Canister Transporter removes canister from GWSB, moves to Transfer Station;
- Places canister in position in container on the Transfer Cart using cameras and guides;
- Operator will remove and replace container lid remotely using cameras;
- Transfer Cart moves container out of Transfer Station; and
- Carrier picks up full container (7 canisters), moves to storage pad.



Canister Transfer Equipment

Transfer Cart

Container Carrier

Shielded Canister Transporter

Summary

Risks:

- Completion of project before Glass Waste Storage Building #2 storage space expires;

Opportunities:

- Multi-purpose Project: Storage and shipping considered in design;
- Provides for canister storage for life of liquid waste campaign.