

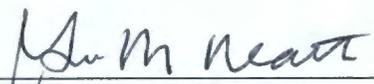
## Meeting Minutes Transmittal

## Immobilized Waste Part B Permit Application Kickoff Meeting

2440 Stevens/ Room 2200  
Richland, WashingtonAugust 23, 2001  
3:30 p.m. - 4:30 p.m.RECEIVED  
OCT 03 2001

EDMC

The undersigned indicate by their signatures that these meeting minutes reflect the actual occurrences of the above dated Immobilized Waste Part B Permit Application Kickoff Meeting.

  
G. M. Neath, DOE-ORP

Date: 09/12/2001

  
T. C. McKarns, DOE-RL

Date: 9/13/2001

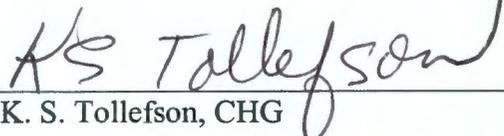
  
G. P. Davis, Washington State Department of Ecology

Date: 9-12-01

CHG Concurrence:

  
G. L. Parsons, CHG

Date: 9-12-01

  
K. S. Tollefson, CHG

Date: 9/12/01

Purpose: Immobilized Waste Part B Permit Application Kickoff Meeting

Attachment 1: Agenda &amp; Action Item List

Attachment 2: Meeting Minutes

Attachment 3: Attendee List

Attachment 4: Distribution List

**Attachment 1**

**Immobilized Waste Part B Permit Application Kickoff Meeting  
2440 Stevens/ Room 2200  
Richland, Washington**

**August 23, 2001  
3:30 p.m. – 4:30 p.m.**

1. Introductions
2. IHLW Project Scope and Status Presentation – Greg Parsons
3. ILAW Project Scope and Status Presentation – Greg Parsons
4. Establish Meeting Time for Follow On Meeting

Next Meeting is September 10, Place TBD, 2:30 – 3:30 p.m.



**Attachment 2**  
**Summary of Discussion and Commitments/A greements**

**Immobilized Waste Part B Permit Application Kickoff Meeting**  
**2440 Stevens/ Room 2200**  
**Richland, Washington**

**August 23, 2001**  
**3:30 p.m. – 4:30 p.m.**

**ADMINISTRATIVE ISSUES**

Greta Davis requested that meeting minutes and handouts be sent to Administrative Records.

**IMMOBILIZED WASTE PROJECT SCOPE AND STATUS OVERVIEW**

Greg Parsons – Provided an Immobilized Waste scope/status presentation and discussed projects W-464 (IHLW) and W-520 (ILAW).

Greta Davis - Indicated she would determine who in Ecology received the IHLW Part A Permit Application.

CHG committed to providing drafts of the ILAW SEPA checklist and NOI to Greta Davis prior to her vacation beginning September 13, 2001.

**NEW TOPICS**

None

**CASK TRAILER**



# Purpose

- The purpose of the meeting is to initiate discussion between Ecology and DOE-ORP/DOE-RL Immobilized Waste Team preparing Part B Permits for Project W-464 Immobilized High-Level Waste (IHLW) and Project W-520 Immobilized Low-Activity Waste (ILAW)
- Agenda
  - Introductions
  - Project Scope
  - Project Status
  - Establish Agenda and Confirm Time For Follow On Meeting

# W-464 Project Scope

- Project W-464 will utilize vaults 2 and 3 of the Spent Nuclear Fuels (SNF) Canister Storage Building (CSB) located in the 200 East Area for the interim storage of the IHLW.
- Building upgrades include:
  - Installation of 440 tubes, bellows and plugs
  - Installation of intake and exhaust stacks for vaults 2 and 3
  - Design/construct building annex to receive and unload IHLW canisters

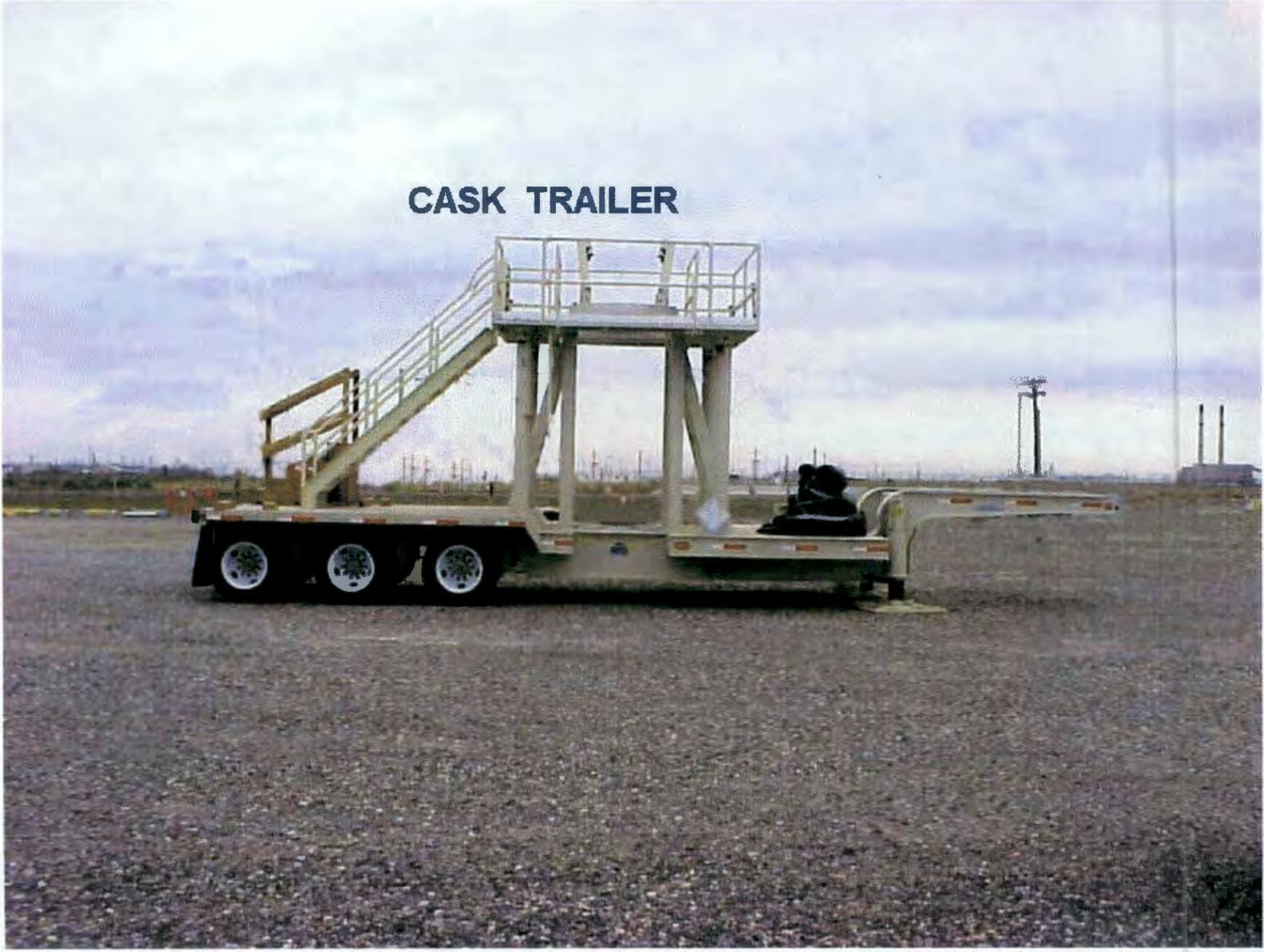
## **W-464 Project Scope (cont.)**

- Design and procurement of transporter vehicle(s) and shielded transport cask(s) to transport the IHLW from the Waste Treatment Facility to the Canister Storage Building
- Design and procurement of Shielded Canister Transporter (SCT) to emplace IHLW into the storage tubes in the canister storage building
- Safety, permitting and operational readiness



**Tube Assemblies  
in the  
Canister Storage  
Building**

**CASK TRAILER**



# W-464 Regulatory Drivers

M-90-12	Submit Part A Permit to WDOE (Complete)	6/99
M-20-56	Submit Part B Permit to WDOE	6/02
M-90-11	Construction Complete	2/07

## **W-464 Schedule**

Initiate Preliminary Design	6/01
Submit Part B Permit to WDOE	6/02
Complete Preliminary Design	9/02
Complete Detailed Design	8/04
Initiate Construction Activities (Bid and Award)	8/04
Finalize Part B Permit Application	TBD
Expected First IHLW Canister Delivery	2009

## Project W-464 Immobilized High Level Waste (IHLW) Fact Sheet

### **Canister**

Cylindrical, stainless steel, 4.5 m (14.8 ft) long, 0.610 m (2 ft) diameter, 0.953 cm (0.38 inch) wall thickness, 708 kg (1560 lb) shell weight  
Maximum Surface Dose Rate                      gamma:  $10^3$  Sv/h ( $10^8$  mrem/h)                      neutron: 0.1 Sv/h ( $10^4$  mrem/h)  
Maximum Removable Surface Contamination    alpha: 3670 Bq/m<sup>2</sup> ( $9.29 \times 10^{-9}$  Ci/ft<sup>2</sup>)                      beta-gamma: 36700 Bq/m<sup>2</sup> ( $9.29 \times 10^{-8}$  Ci/ft<sup>2</sup>)

### **IHLW Glass**

Volume 1.150 m<sup>3</sup> (40.6 ft<sup>3</sup>), 2660 kg/m<sup>3</sup> density, 2973 kg (6548 lb) weight, 95% fill minimum  
Nominal Decay Heat = 300 W (0.284 BTU/s)    Maximum Decay Heat = 1500 W (1.42 BTU/s)    Maximum Centerline Temperature = 400°C (752 °F)

### **Canister Storage Building (CSB)**

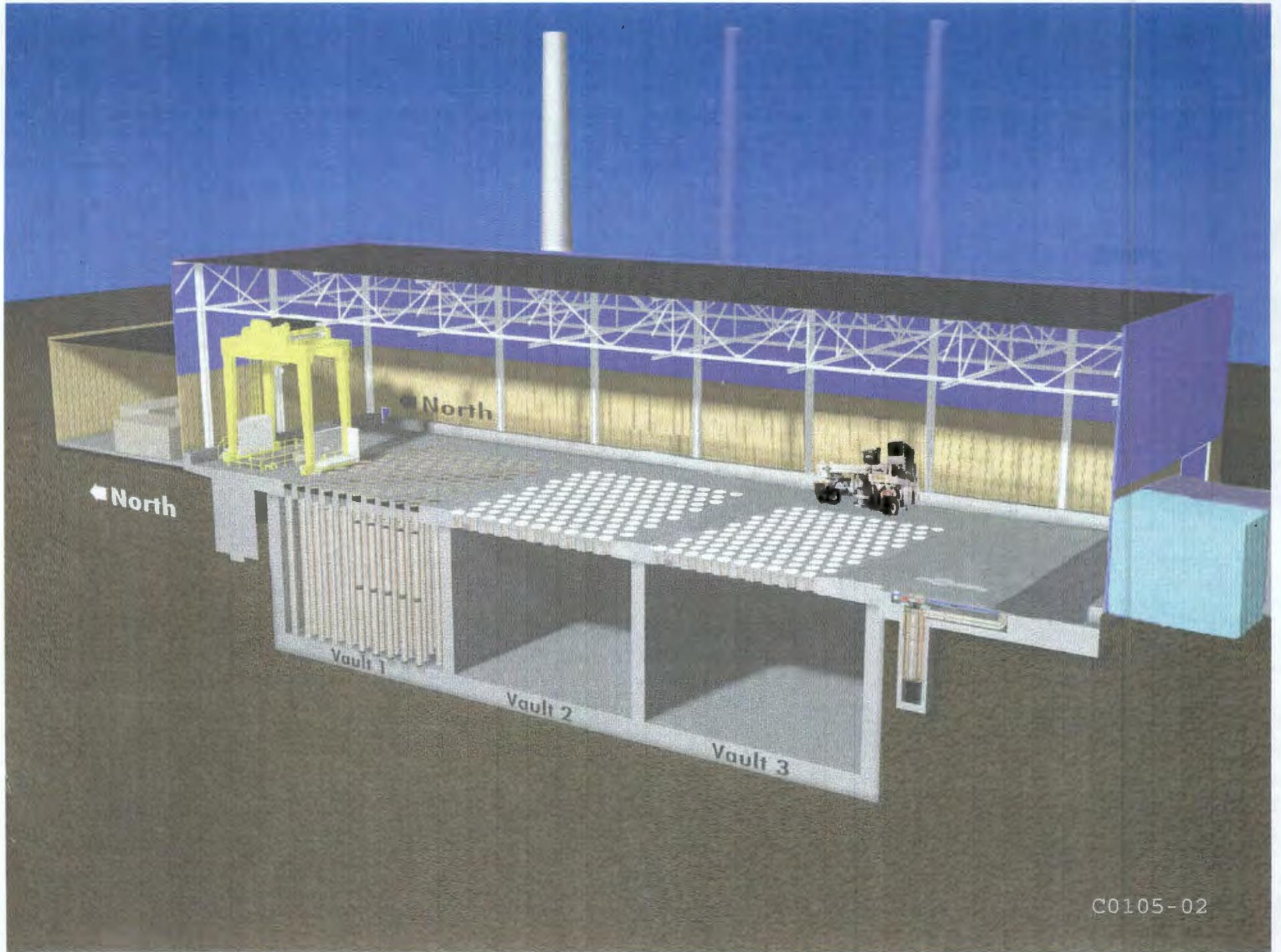
Operating Area 41.86 m (137.3 ft) wide by 68.81 m (225.8 ft) by 12.5 m (41 ft) belowgrade  
Three vaults: vault 1 used by SNF, vaults 2 and 3 used by W-464  
Storage tube matrix of 22 rows by 10 columns = 220 carbon steel tubes/vault                      6 columns of overpack storage tubes  
Storage tube 12.8 m (42.1 ft) vertical space with 0.68 m (2.2 ft) inner diameter  
Each storage tube holds two IHLW packages, a lower and center impact absorber, and shielded plug for a total of 880 IHLW packages  
Cooled by natural convection. Each vault has individual intake and exhaust stacks. Plenums are concrete and stacks are steel.  
60 Ton Gantry crane for cask unloading, steel superstructure, and transfer pit operations  
10 Ton Bridge crane for remote removal of cask lid  
SCT – Shielded Canister Transporter for placement of IHLW canister in storage tube  
CSB facility system capable of canister receipt/retrieval at peak rate of one canister per day

### **CSB Annex**

Approximately 3000 ft<sup>2</sup> connecting to south wall of Operations Area of the CSB  
South wall will have double swinging exterior doors 6.01 m (20 ft) wide by 7.3 m (24 ft) high providing access for entry -transport trailer delivering cask  
Main level provides a cask receiving area and a HLW cask transfer pit

### **Cask and Trailer**

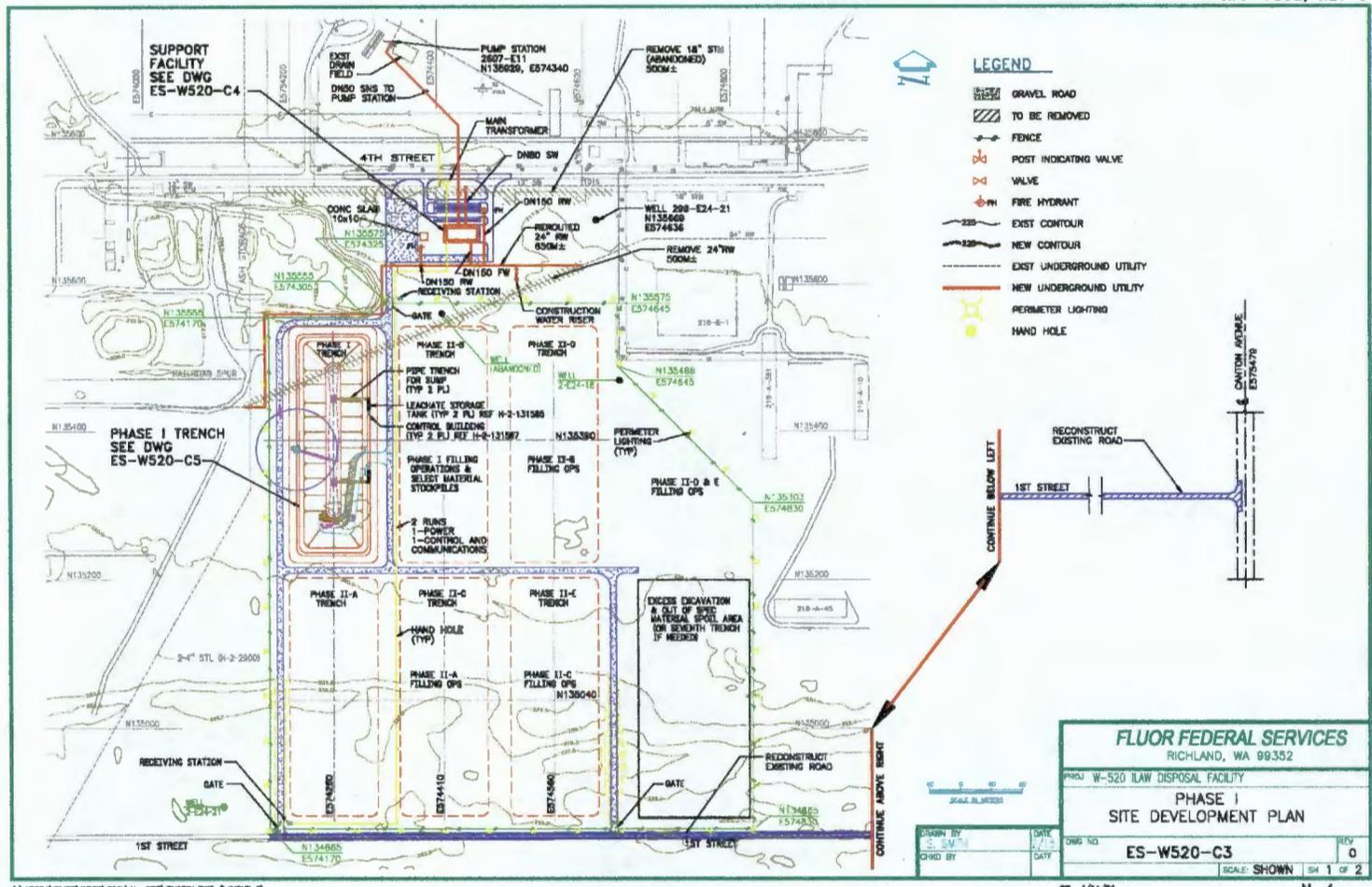
Cask constructed of 27.9 cm (11 inch) thick stainless steel, approximately 1.52 m (5 ft) diameter by 6.2 m (20.3) high  
Maximum weight of loaded cask ~ 40.8 MT (45 tons)  
Tractor/lowboy trailer 16 m (52.5 ft) overall length, 6.66 m (21.9 ft) height, and 80 MT (88 tons) maximum weight  
Maximum Dose Rates of package inside cask:  
100000 rem/hr at canister surface                      200 mrem/hr at cask surface  
10 mrem/hr at 2m (6.6 ft) from cask                      2 mrem/hr to tractor driver



C0105-02

# **W-520 Project Scope**

- Project W-520 will provide a disposal facility for accommodating Phase I Immobilized Low Activity Waste (ILAW) packages (approximately 13,500) and the infrastructure for supporting all of Phase II ILAW production
- Disposal facility will be in the 200 East Area and include a disposal trench, support facility, transportation equipment, connections to site utilities, equipment for placing packages in trench and equipment for backfilling trench.



\\LAP004\BHP\W520\CAD\New\DWG\PHASE1.DWG (LAYOUT 3)

DATE 4/1/01

N-4

## **W-520 Project Scope (cont.)**

- Site work includes clearing and grubbing 19 hectares (47 acres) of land, construction of single trench, construction of service roads, perimeter fencing, access control stations, and lighting to support Phase II disposal projects.
- Support facility will be permanent, modular type pre-engineered structure approximately 773m<sup>2</sup> (8,300 ft<sup>2</sup>)
  - Office areas
  - Control room
  - Change room
  - Conference/training room
  - Lunchroom

## **W-520 Project Scope (cont.)**

- Design and procurement of transporter vehicles (3) and transport casks with trailers (5) to move ILAW packages from Waste Treatment Facility to the Disposal Facility
- Design and construction of double lined RCRA compliant disposal trench with leachate collection system with equipment to transfer leachate to existing Effluent Treatment Facility
- Design and procurement of crane and associated equipment to off load ILAW packages and to place in disposal trench

## **W-520 Project Scope (cont.)**

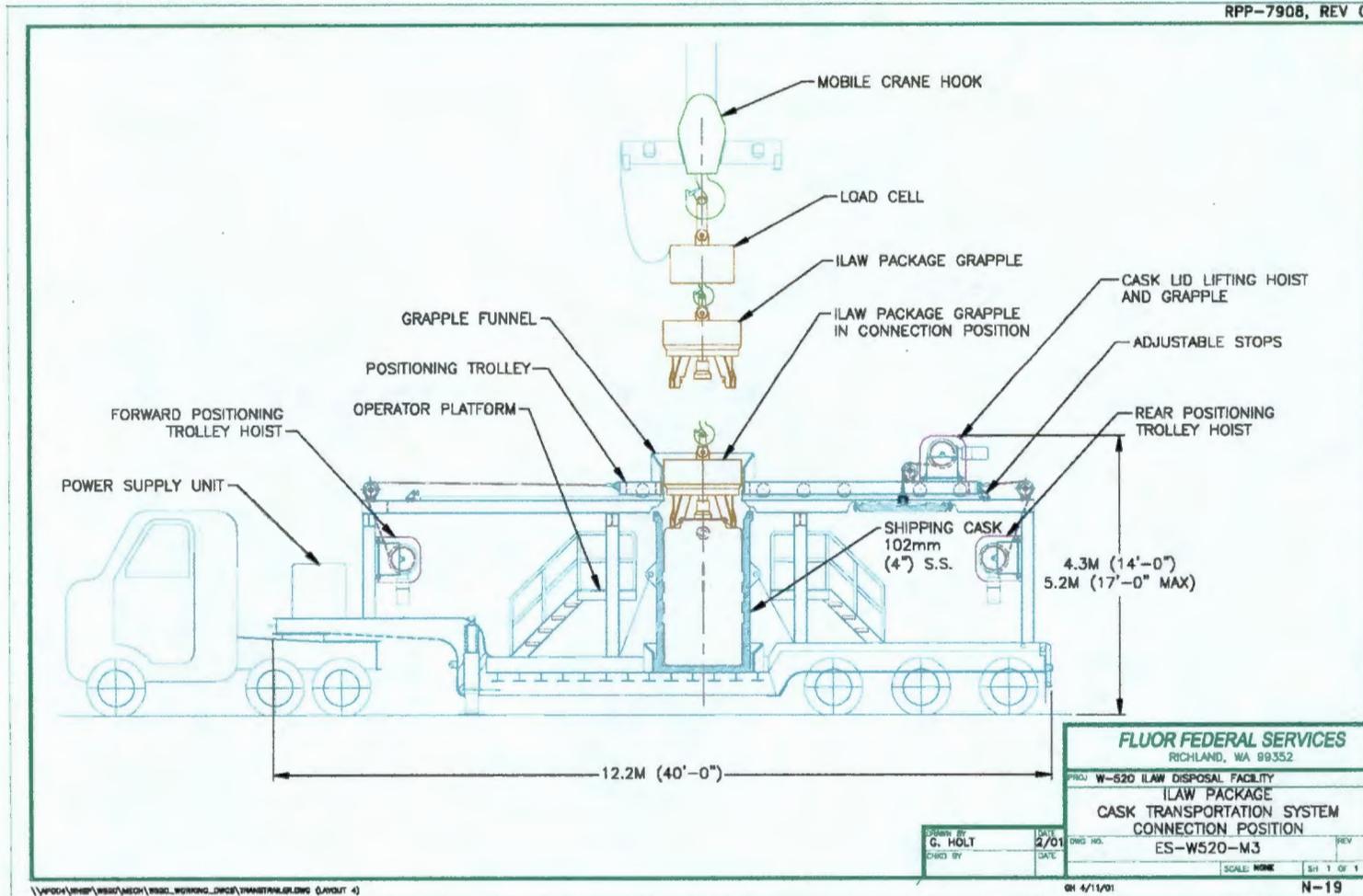
- Design and procurement of equipment to fill voids between ILAW packages and for backfilling and compacting between layers of ILAW packages
- Instrumentation and controls for recording individual ILAW package placement and inventory control
  - Closed circuit television to enhance remote crane operation
  - Waste package identification
  - Global positioning system for recording package location
  - Computerized inventory control system

## **W-520 Project Scope (cont.)**

- Design of closure cover for disposal trenches
- Safety, permitting and operational readiness

# W-520 Cask Trailer

RPP-7908, REV 0



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# W-520 Regulatory Drivers

M-20-57	Submit Part B Permit to WDOE	8/02
M-90-09-T01	Complete Detailed Design	3/04
M-90-08	Initiate Construction	7/04
M-90-10	Initiate Placement of ILAW In Disposal Facility	1/07

## **W-520 Schedule**

Submit Part B Permit to WDOE M-20-56	8/02
Complete Conceptual Design	5/01
Initiate Preliminary Design	10/02
Expected First ILAW Canister Delivery	2008

Project W-520 Immobilized Low Activity Waste (ILAW) Fact Sheet

**Canister**

Cylindrical, stainless steel, 2.3 m (7.5 ft) long, 1.22 m (4.0 ft) diameter, 2.55 m<sup>3</sup> (90.02 ft<sup>3</sup>) external package volume

Maximum Removable Surface Contamination:                      alpha: 367 Bq/m<sup>2</sup>                      (9.29 10<sup>-10</sup> Ci/ft<sup>2</sup>)                      beta-gamma: 3670 Bq/m<sup>2</sup> (9.29x10<sup>-9</sup> Ci/ft<sup>2</sup>)

**ILAW Glass**

Volume 2.51 m<sup>3</sup> (88.60 ft<sup>3</sup>), 2660 kg/m<sup>3</sup> density, 6 MT weight, 90% fill minimum

Maximum External Temperature = 50°C (122 °F)

**ILAW Disposal Trench**

Phase 1: 13500 packages

Phase 2: 67500 packages

Total: 81000 packages

Phase 1: builds one trench: 280 m (918 ft) long, 80 m (262 ft) wide, 10 m (32.8 ft) deep    Phase 2: builds 5 additional trenches

Side slopes and bottom of trench are lined with double liner system of geomembranes to contain and collect leachate generated during filling and post closure operations

Two flexible membrane liners: primary and secondary to provide moisture barriers

Primary leachate detection, collection, and removal system (LDCRS) to collect liquids entering the trench is located above primary liner system

Secondary LDCRS is located between primary and secondary liners to collect liquids that penetrate the primary liner

Collected liquids will be pumped from sumps to collection tanks for sampling and transported to the Effluent Treatment Facility (ETF) for processing and disposal

2 m (6.56 ft) berm around perimeter of trench serves as liner anchor, prevents storm water from running into trench, and provides shielding for above trench operations

Three layers of ILAW packages separated vertically by 1 m (3.28 ft) of soil to provide shielding during package placement

Each layer contains multiple cells or package arrays spanning the length of the trench

7 m (23 ft) wide ramp at 8% slope will be constructed on the side slope of the trench for earth filling operations on the first two layers of packages

Modified Resource Conservation Recovery Act Subtitle C Barrier design concept (employing a fine soil capillary break) cover will be constructed as a separate project

Normal operations: receipt of 5 packages per day

Maximum operation: receipt of 7 packages per day

Crane operating radius of 30 m (98 ft) to 103 m (338 ft) with the ability to reach and place 11930 kg (26246 lb) load at a distance of 103 m (338 ft)

Manitowoc Model 2250 Crane is mobile and will move around the trench perimeter under its own power

Hook block equipped with CCTV cameras, lights, and GPS receiver, and a character recognition device to read package serial numbers

Support facility: 773 m<sup>2</sup> (8317 ft<sup>2</sup>) building includes office areas, control room, conference/training room, change/locker rooms, restrooms, lunch room, fire riser room, and storage

**Cask and Trailer**

Cask constructed of 4 inch thick stainless steel, internal dimensions approximately 1.27 m (4.16 ft) diameter by 2.4 m (7.87 ft) high

3 tractors and 5 trailer/transporter systems

Approximate weight of empty cask: 11655 kg (25641 lb)

Maximum weight of loaded cask: 21655 kg (47641 lb)

Lowboy trailer 12.2 m (40.0 ft) overall length, 5.2 m (17 ft) height, and 9100 kg (20000 lb) maximum transporter axle weight

Maximum Dose Rates of package inside cask:

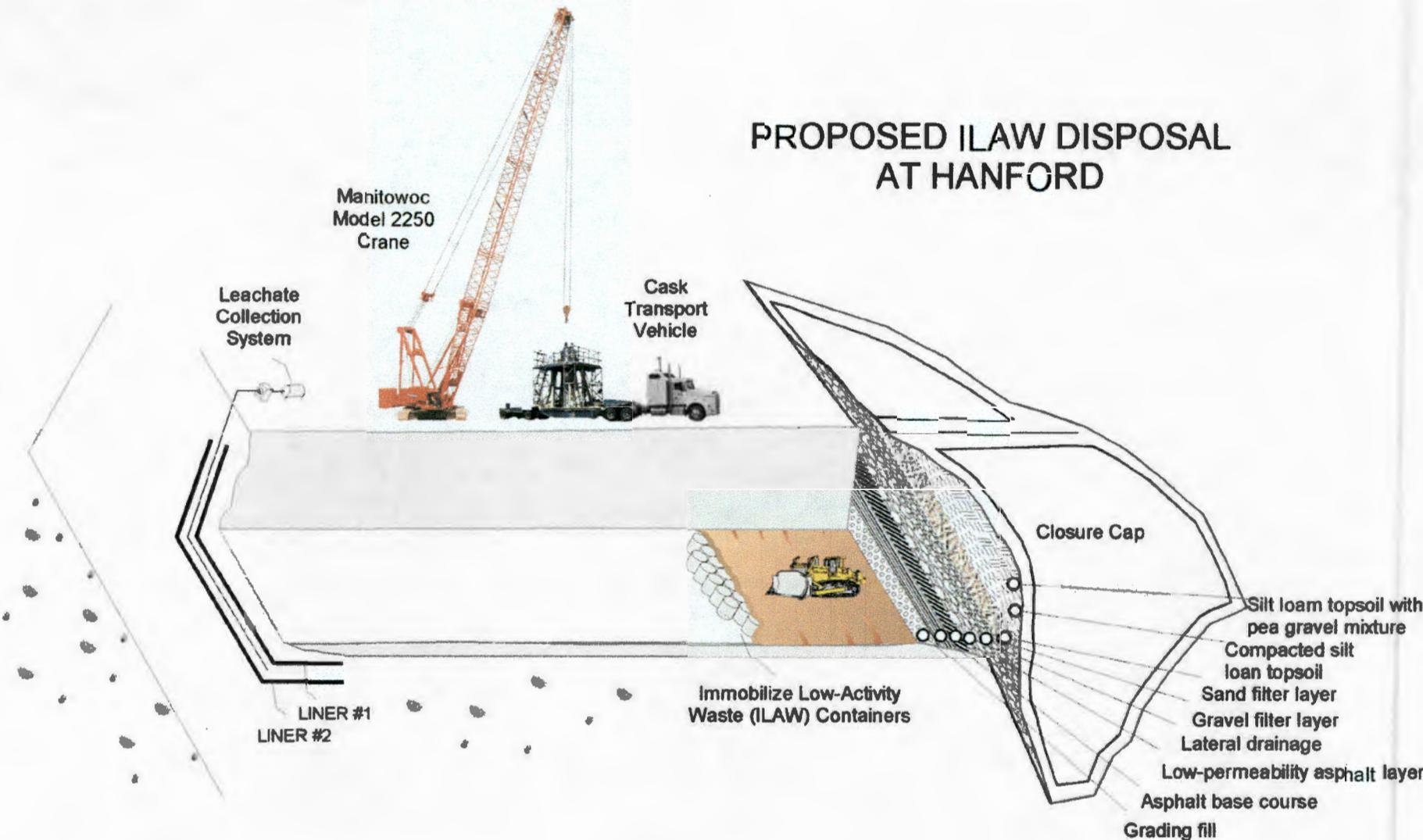
1000 mrem/hr at canister surface

200 mrem/hr at cask surface

10 mrem/hr at 2m from cask (horizontal plane)

2 mrem/hr to tractor driver

# PROPOSED ILAW DISPOSAL AT HANFORD



C0002-06e.C.V5  
5/23/01

**Attachment 3  
Attendance List**

Meeting Title: Immobilized Waste Part B Permit Application Kickoff Meeting

Date: August 23, 2001

Original included in hard copy

<b>Name</b>	<b>Company</b>	<b>Phone Number</b>
Carol Babel	DOE-ORP	373-9281
Heather Baune	CHG	372-3393
Greta Davis	Ecology	736-3025
Tony McKarns	DOE-RL	376-8981
Gae Neath	DOE-ORP	376-7828
Greg Parsons	CHG	372-3387
Kathy Tollefson	CHG	373-9120
Ted Wooley	CHG	372-1617



**Distribution:**

C. A. Babel	ORP	H6-60
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G. M. Neath	ORP	H6-60
G. L. Parsons	CHG	L6-75
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K. S. Tollefson	CHG	R1-51
T. A. Wooley	CHG	R1-51

ADMINISTRATIVE RECORD (two copies): A1-14

Debbie Isom (two copies): H6-08

Please send comments on distribution list to Heather. L. Baune (L6-75), 509-372-3393