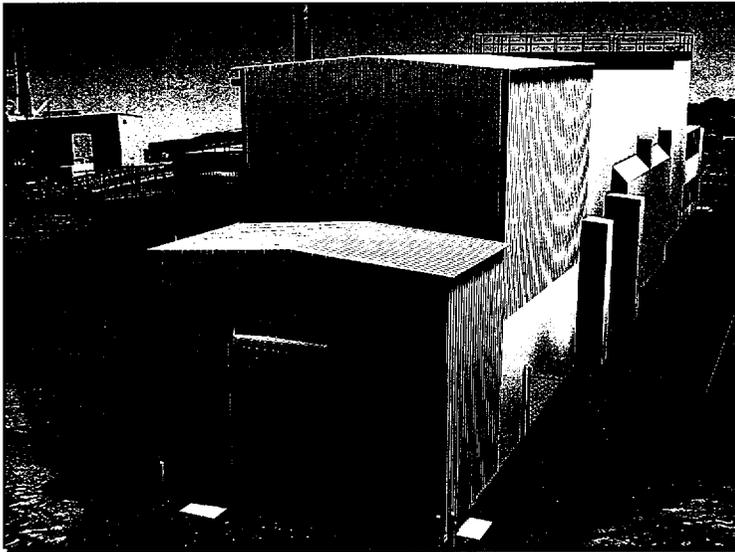




Remote-Handled Waste Facility Preliminary Safety Analysis Report



Status of the Remote-Handled Waste Facility at the West Valley Demonstration Project (WVDP)



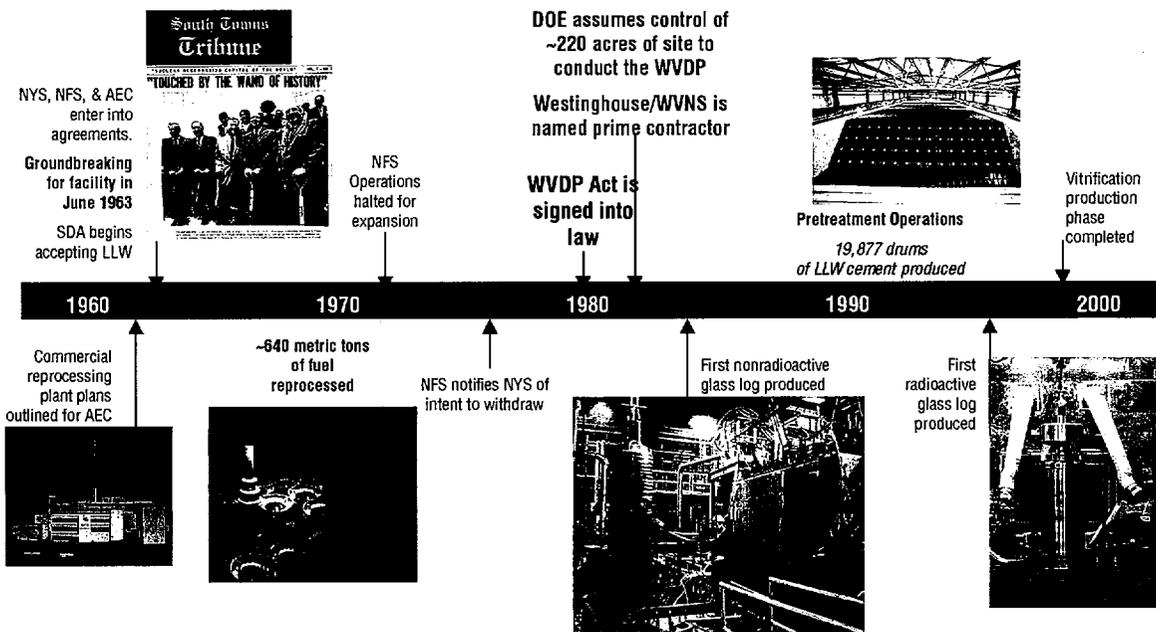
Tom Vero
Department of Energy
RHWF Project Manager
716-942-2772
e-mail - verot@wv.doe.gov

David K. Ploetz
Westinghouse
West Valley Nuclear Services
RHWF Project Manager
716-942-4276
e-mail - ploetzdk@wv.doe.gov

Remote-Handled Waste Facility Preliminary Safety Analysis Report



Project History





**Remote-Handled Waste Facility
Preliminary Safety Analysis Report**



**Remote-Handled Waste Facility (RHWF) Project
Schedule**

- ❑ Completed Conceptual Design - June 1999
- ❑ Complete Civil Structural Design - August 2000
- ❑ DOE Approves PSAR - September 2000
- ❑ Begin Construction - October 2000
- ❑ Complete Final Design - May 2001
- ❑ DOE Approves FSAR - April 2003
- ❑ Ready to Begin Operations - October 2003

3_9910.ppt



**Remote-Handled Waste Facility
Preliminary Safety Analysis Report**



PSARs ... serve as the principal safety basis for the DOE decision to authorize construction and preoperational testing.

[DOE Order 5480.23, 4f(8)(a)1]

Proposed PSAR Schedule

- ❑ DOE reviewed PSAR to NRC - May 2000
- ❑ Receive NRC request for additional information- June 29, 2000
- ❑ Resolve NRC comments - July 21, 2000
- ❑ DOE issues DOE Safety Analysis Report and approves PSAR - September 25, 2000

4_9910.ppt

Remote-Handled Waste Facility Preliminary Safety Analysis Report



PSAR Facts

- ❑ The PSAR was prepared by experienced safety analysts familiar with the WVDP
- ❑ Multiple, in-depth reviews were performed prior to the PSAR being submitted to DOE
- ❑ Analyzed accidents are within the WVDP Evaluation Guidelines
- ❑ The analyses demonstrate that the RHWF poses a low risk
- ❑ There are no safety-class or safety-significant systems, structures, or components
- ❑ DOE approval releases WVNS for procurement, fabrication and construction. Separate approval of the FSAR is required prior to the start of operations.

5_9910.ppt

Remote-Handled Waste Facility Preliminary Safety Analysis Report



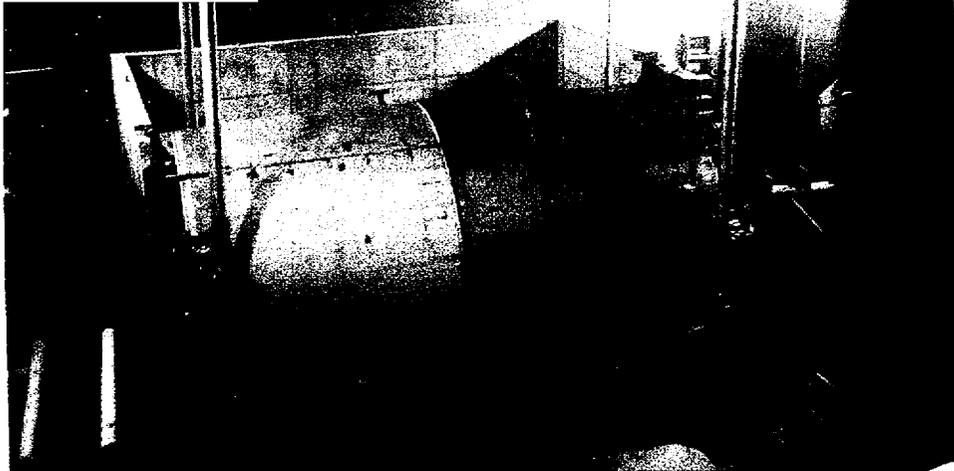
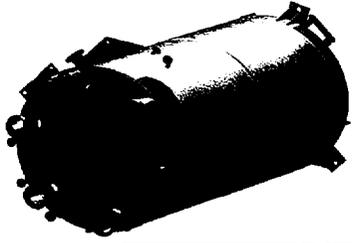
Solid Waste that will be processed in the RHWF includes equipment from decontamination and decommissioning activities.



Chemical Process Cell (CPC) before and after decon and as it is presently configured for storing vitrified HLW.

6_9910.ppt

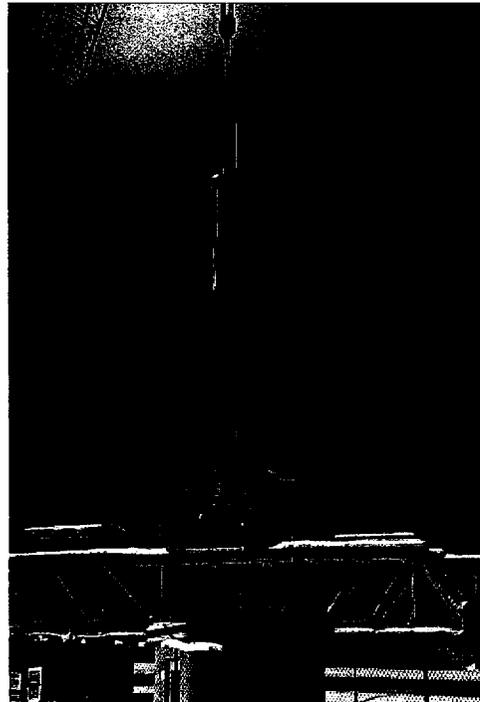
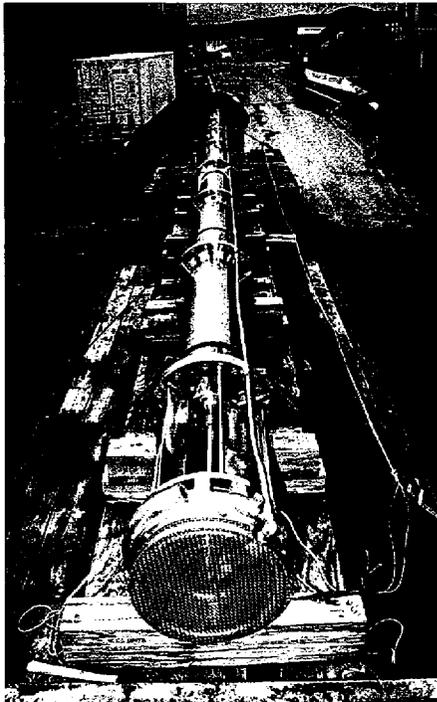
**Remote-Handled Waste Facility
Preliminary Safety Analysis Report**



Dissolver Tank from the Chemical Process Cell

7_9910.ppt

**Remote-Handled Waste Facility
Preliminary Safety Analysis Report**



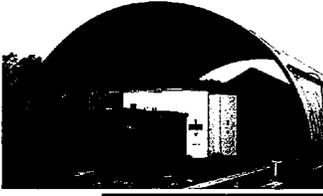
Waste Tank Farm Pump

8_9910.ppt

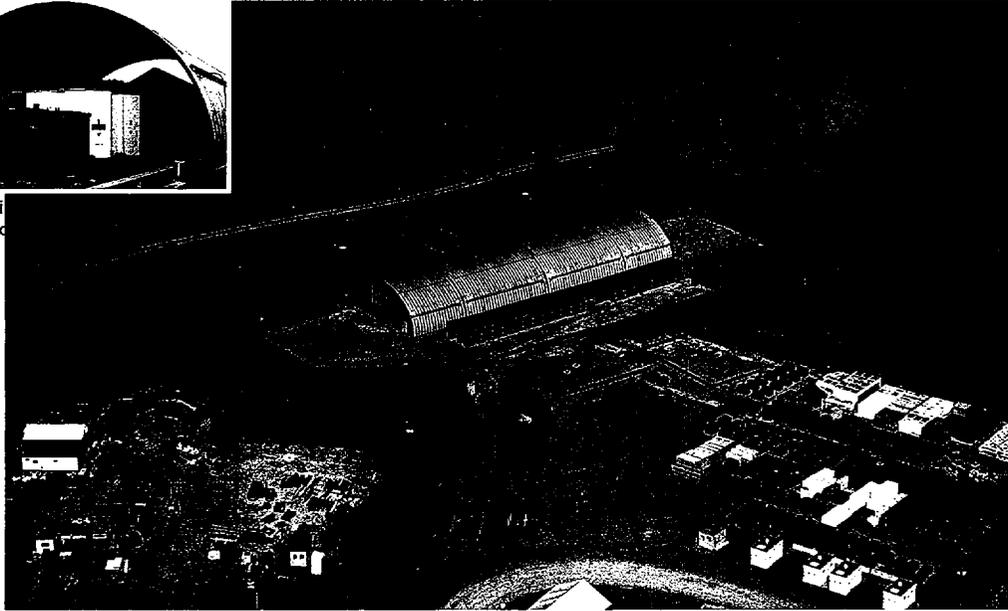
**Remote-Handled Waste Facility
Preliminary Safety Analysis Report**



**Present Configuration of
Chemical Process Cell-Waste Storage Area**

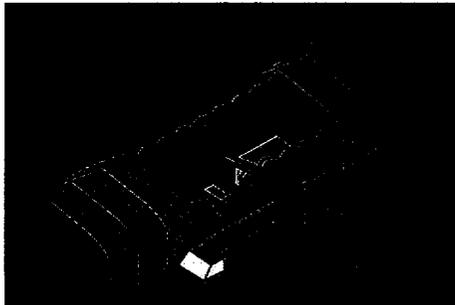


Constructi
Chemical

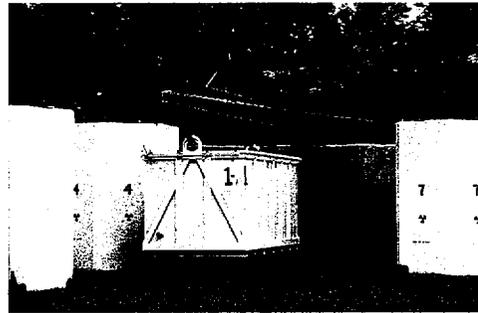


9_9910.ppt

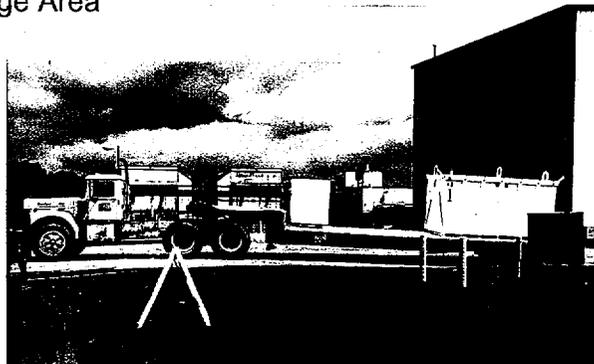
**Remote-Handled Waste Facility
Preliminary Safety Analysis Report**



Chemical Process Cell-
Waste Storage Area



Lifting a Waste Container



On-site Waste Transport

10_9910.ppt

**Remote-Handled Waste Facility
Preliminary Safety Analysis Report**

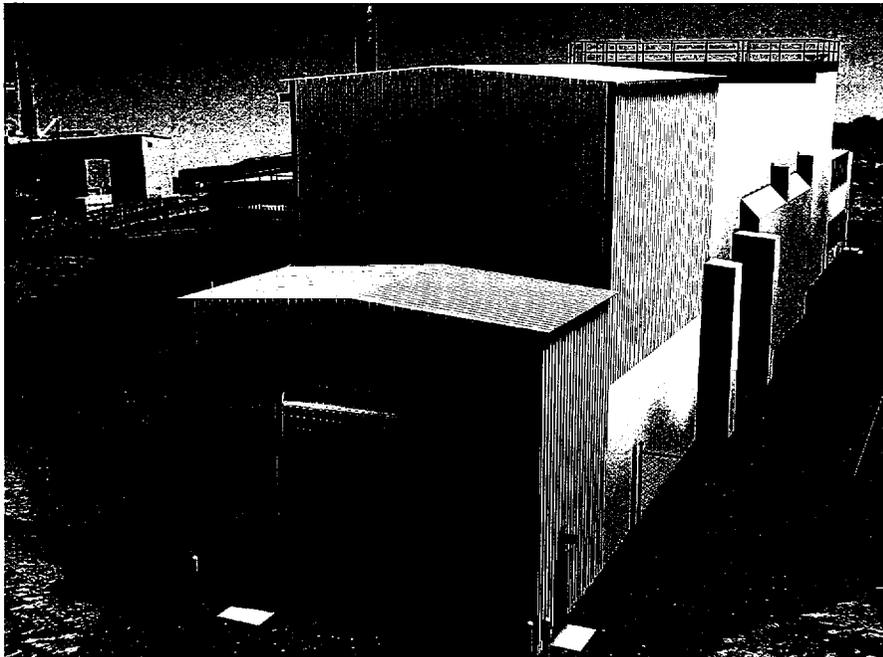


**Future Remote-Handled Waste Facility
Construction Site at the WVDP**



11_9910.ppt

**Remote-Handled Waste Facility
Preliminary Safety Analysis Report**

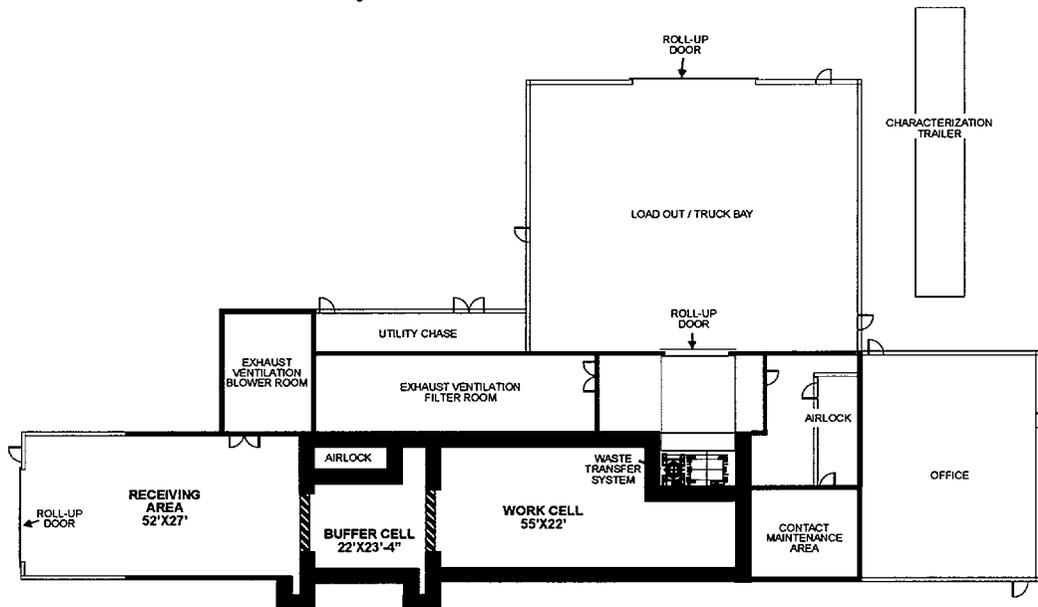


View of Proposed Remote-Handled
Waste Facility Looking South-East
(Artist's Rendering)

12_9910.ppt

Remote-Handled Waste Facility Preliminary Safety Analysis Report

June 1999 Conceptual Design of the
Remote-Handled Waste Facility at the WVDP



13_9910.ppt

Remote-Handled Waste Facility Preliminary Safety Analysis Report

**Animated video presentation showing
processing dissolver tank in RHWF**



Dissolver vessel being cut up
(Artist's Rendering)

14_9910.ppt



Remote-Handled Waste Facility Preliminary Safety Analysis Report



WVNS uses a modular approach to prepare SARs:

WVNS-SAR-001	WVNS-SAR-002	WVNS-SAR-003	WVNS-SAR-012	WVNS SAR-023
Project Overview and General Information	Low-Level Waste Processing and Support Activities	Vitrification Operations and HLW Interim Storage	Fuel Receiving and Storage Facility	Remote-Handled Waste Facility

Format and Content:

- ▣ RHWF PSAR follows Reg Guide 3.26 format and the general guidance of 3.26 for contents.

15_9910.ppt



Remote-Handled Waste Facility Preliminary Safety Analysis Report



RHWF PSAR Process Hazards Analysis

- ▣ Process Hazards Analysis based on potential initiators, such as:

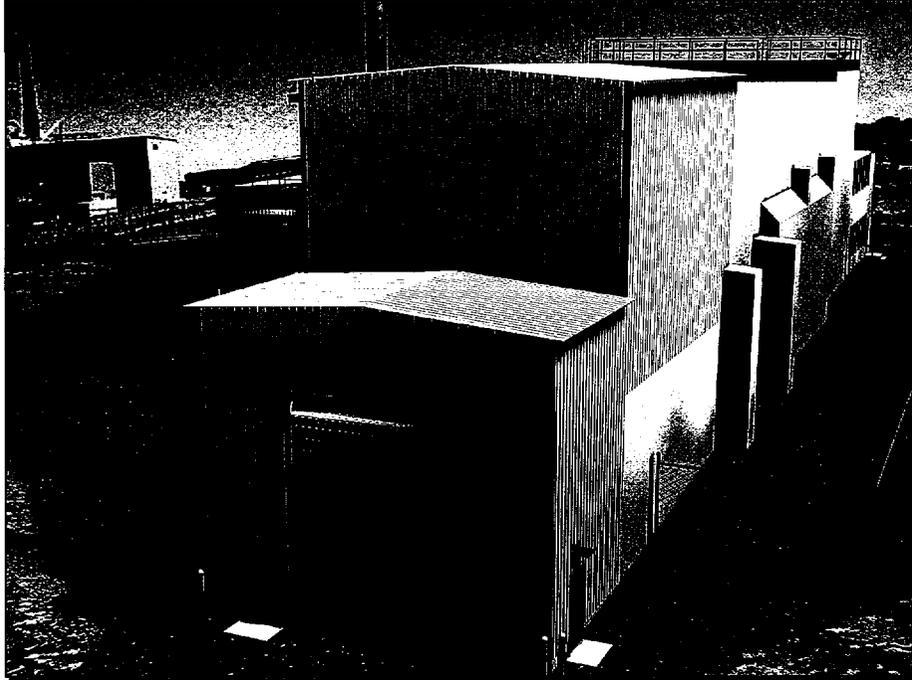
Container Rupture
 Seismic Event
 Fire
 Explosion (natural gas)
 Water Inundation
 Direct Radiation Exposure

Inadvertent Criticality
 Airborne Dispersal
 Chemical Reaction
 HEPA Filter Failure
 Vehicle Accident
 Waste Container Breach

- ▣ Risk factors prepared
- ▣ Representative, bounding accidents quantitatively analyzed.

16_9910.ppt

Remote-Handled Waste Facility Preliminary Safety Analysis Report



View of Proposed Remote-Handled Waste Facility
(Artist's Rendering)

17_9910.ppt

Remote-Handled Waste Facility Preliminary Safety Analysis Report



Select Facility Design Features

- Robust construction [reinforced concrete-shielded walls with stainless steel liner]
- Low energy source in Work Cell
- Primary and secondary HEPA filtration outside of the Work Cell
- Redundant HEPA filter systems
- Back-up power provided to HVAC system
- Cell decontamination capability

18_9910.ppt

**Remote-Handled Waste Facility
Preliminary Safety Analysis Report**



HEPA Filters in Work Cell



19_9910.ppt

**Remote-Handled Waste Facility
Preliminary Safety Analysis Report**



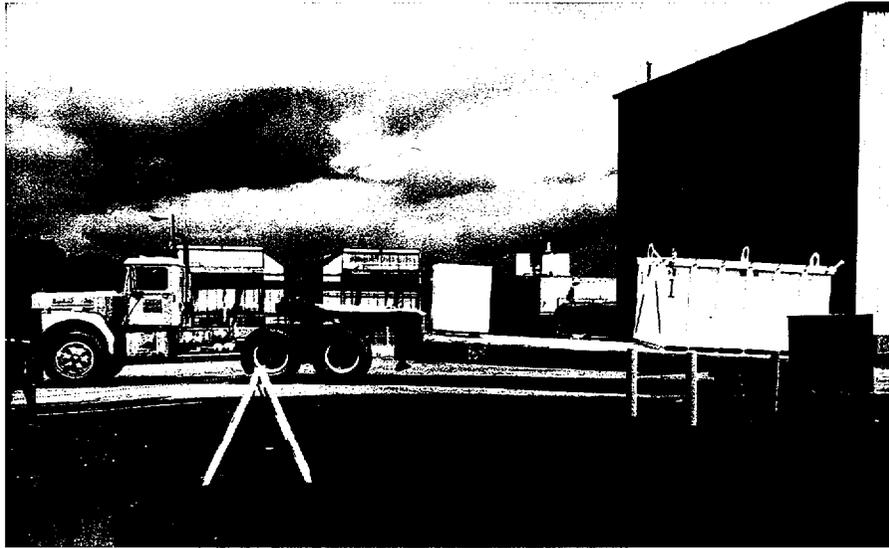
Select Facility Design Features

HEPA Filters:

- ❑ Protective cover over Work Cell filters
- ❑ Filter design will allow retention of particulate matter, even when damaged
- ❑ Two sets of HEPA filters in series outside of Work Cell
- ❑ Monitored and alarmed differential pressure gauges across the filters
- ❑ HEPA filters outside Work Cell will be leak tested periodically
- ❑ 100% redundancy in the filter trains
- ❑ Emissions from the stack will be monitored

20_9910.ppt

Remote-Handled Waste Facility Preliminary Safety Analysis Report



On-site Transport of Waste Containers

21_9910.ppt

Remote-Handled Waste Facility Preliminary Safety Analysis Report



Select Facility Design Features

Fire:

- ▣ Fire detection and suppression systems in RHWF
- ▣ Supply fan shut off and damper closure
- ▣ Administrative controls on the amount of exposed combustible materials
- ▣ Flooring in Load Out sloped away from waste staged there

22_9910.ppt

**Remote-Handled Waste Facility
Preliminary Safety Analysis Report**



Schedule

DOE Approval of PSAR is on Schedule Critical Path:

- | | |
|-------------------------------------|--------------------|
| ▣ RHWF PSAR to NRC | May 18, 2000 |
| ▣ Proposed Date for
NRC Response | June 29, 2000 |
| ▣ DOE Approves PSAR | September 25, 2000 |
| ▣ Start RHWF Construction | October 2, 2000 |