

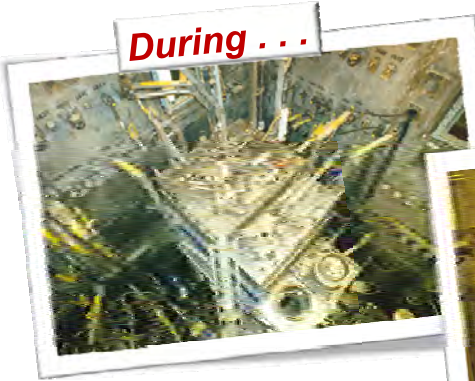
 West Valley Environmental Services	<h1>West Valley Demonstration Project</h1>
<h2>Waste Incidental to Reprocessing Draft Evaluation for WVDP Melter</h2> <p><b>Laurene Rowell, Manager</b> Project Integration, Strategy &amp; Communications</p> <p>20934_1</p>	

 WVES LLC	<h2>Waste Incidental to Reprocessing Process</h2>
<ul style="list-style-type: none"><li>◆ <b>Criteria</b> in DOE Manual 435.1-1, Radioactive Waste Management:<ul style="list-style-type: none"><li>— Removed key radionuclides to the maximum extent that is technically and economically practical</li><li>— Managed to meet safety requirements comparable to performance objectives of 10 CFR 61, Subpart C</li><li>— Meets Class C concentration limits and will be managed as LLW</li></ul></li><li>◆ <b>Process</b> consists of<ul style="list-style-type: none"><li>— <b>Technical Evaluation</b> <ul style="list-style-type: none"><li>• Documentation of technical analyses against three criteria</li><li>• NRC consultation</li><li>• State and public comment process</li></ul></li><li>— <b>Determination</b><ul style="list-style-type: none"><li>• Determination occurs after consideration of results from evaluation</li></ul></li></ul></li></ul> <p>20934_2</p>	



# Vitrification Melter



Used to solidify 600,000 gallons of liquid radioactive waste into glass by vitrification process (1996–2002) per the WVDP Act



Electrodes removed, melter removed from Vitrification Cell, packaged and placed on hardstand – ready for shipment



# Vitrification Melter (cont)

## Unpackaged Melter

- ◆ 10' x 10' x 10'
- ◆ Inconel shell filled with refractory brick with stainless steel cooling jacket
- ◆ Flushed with chemicals and glass formers before shut down
  - Two evacuated canisters used to remove glass before shut down



## Packaged Melter

- ◆ 14' x 13' x 13' carbon steel box (IP-2 container)
- ◆ ~159 tons packaged
- ◆ ~4,570 curies, primarily Cs-137
- ◆ Max contact dose rate 5 mR/hr on contact
- ◆ Stored on site with two other vitrification vessels



## Packaged Melter Movement



Melter transported on a 12-axle trailer to south plateau for staging while awaiting shipment



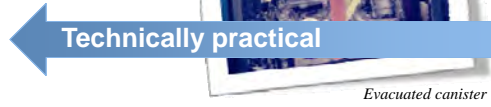
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## Demonstrating Criterion 1

◆ Criterion 1: Remove key radionuclides to maximum extent technically and economically practical (10 CFR 61.55, tables 1 and 2)

— Technically practical options

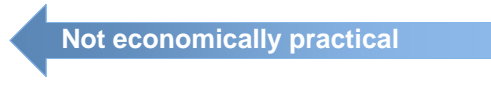
- Additional flushing
- Evacuated Canister System
- Dismantlement



*Evacuated canister*

— Economically practical options

- Additional flushing
- Dismantlement



— Assessment demonstrated that further efforts to remove key radionuclides would have increased worker radiation dose without resulting benefits

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## Demonstrating Criterion 2

- ◆ Criterion 2: Meet safety requirements comparable to 10 CFR 61, Subpart C, Performance Objectives for Land Disposal Facilities
  - Melter waste package will meet waste acceptance criteria for
    - Nevada National Security Site (NNSS)
    - Waste Control Specialists (WCS) Low-Level Waste Disposal Area in Texas



Waste Acceptance Criteria for these disposal facilities are comparable to performance objectives of 10 CFR 61, Subpart C

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## Demonstrating Criterion 3

- ◆ Criterion 3: Meets LLW concentration limits and managed in accordance with DOE requirements
  - Melter does not exceed Class C concentration limits
  - Melter waste package will be in solid physical form and grouted for stability
  - Melter waste package will be managed and disposed at offsite low-level radioactive waste disposal facility in accordance with applicable requirements for low-level waste

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## WIR Process Timeline

WVES LLC

- ◆ Draft WIR Evaluation issued March 14, 2011, to facilitate consultation with NRC and State and public review and comment

2011

March 14

- Federal Register Notice
- 45-day review period begins

April 28

- 45-day review period ends

July 30

- Comment resolution complete

August 31

- Final DOE decision

- ◆ Copies available

- <http://apps.em.doe.gov/wvdp/>
- DOE Public Reading Room  
1000 Independence Ave SW  
Washington, DC 20585
- DOE Public Reading Room  
Town of Concord Hulbert Library  
18 Chapel St  
Springville, NY 14141

- ◆ Comments submitted by April 28

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