

# **PANEL CLOSURE MEETING WITH THE NEW MEXICO ENVIRONMENT DEPARTMENT**

**U.S. Department Of Energy  
Carlsbad Field Office**

**and**

**Westinghouse TRU Solutions – Management  
and Operations Contractor**



**September 5, 2002**



020902



# **PRESENTATION OVERVIEW**

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- Panel Closure System (PCS) - Option D Status
- Revised Panel Closure System
- Permit Modification Request (PMR)
- Hazardous Waste Facility Permit (HWFP) Requirements
- Options for Modifying the Closure Plan

# **OPTION D STATUS**

**(12-ft explosion wall and 26-ft concrete monolith)**

- Construction Procurement in Progress
- Fletcher Cutter for DRZ Removal Due for October Delivery
- SMC Test Program
  - Bench and Field Scale Tests
  - Complex to Prepare
  - Aggregates are Difficult to Obtain and Expensive
  - 30-yd Pour – September 2002

## Summary of Salado Mass Concrete (SMC) Tests

*compressive strength*

ID	Mix Date	Initial slump <i>inches</i>	4 Hour Slump	7 day UCS <i>PSI</i>	28 day UCS <i>PSI</i>
SMC1	19Feb02	9.00	---	---	---
SMC2	26Feb02	7.90	8.40	130	690
SMC3	25Mar02	7.80	7.00	160	890
SMC7	11Apr02	4.75	1.00	940	3790
SMC5	16Apr02	7.50	2.00	1360	5070
SMC6	16Apr02	8.25	1.50	1160	4470
SMC4	17Apr02	8.00	3.25	1150	4750
SMC3/2	07May02	7.75	3.50	910	3720
SMC3.5	08May02	8.25	5.00	1040	4690
SMC3.5Hot	09Jul02	3.25	---	880	3870
5ydbatch	30Jul02	1.5	---	806	3135
1ydbatch	20Aug02	7.5	---	TBD	TBD
30ydbatch	--Sep02				

*cold test (chilled)  
room temp*

28 day Compressive strength = 4500 psi  
Maximum slump at mixing = 10 inches

*requirements*

# OPTION D CHALLENGES

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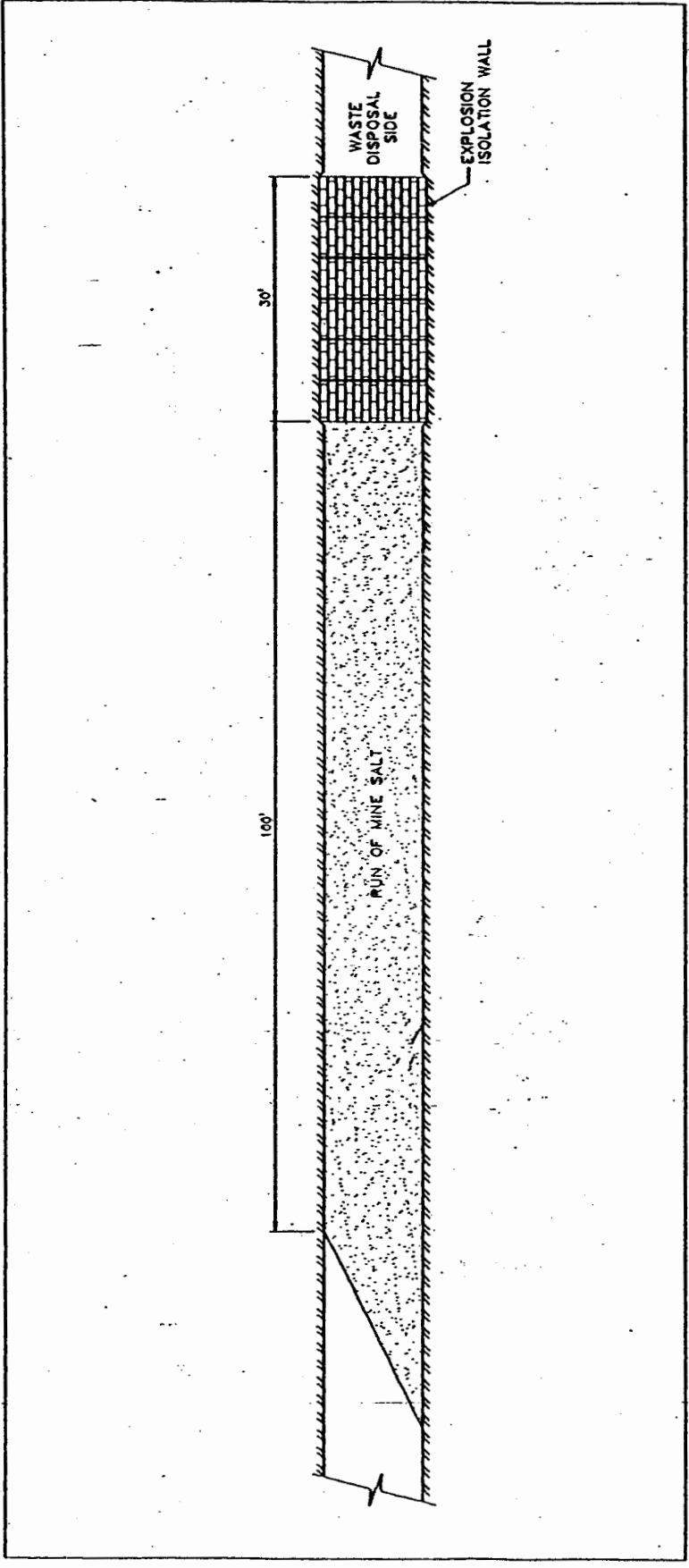
- Panel 1 – First Panel Closure System of *Any* Type
- DRZ Excavation – Unusual Shape
- SMC Never Used As a Bulk Material – Largest Pour to Date is 5 yds
- Integration of Construction Activities into Repository Operations – Handling and Placing Bulk, Wet SMC
- Time to Complete: Up to 14 Months

# **REVISED PANEL CLOSURE SYSTEM**

**(30-ft explosion wall and 100-ft salt backfill)**

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- Meets HWFP Performance Specifications, In Particular:
  - VOC Limits at E300 Monitoring Point
  - Postulated Methane Explosion
- Benefits
  - Simpler to Build
  - Faster to Install (~14 months vs. ~5 months)
  - Less Risk to all Concerned
  - Less Impact to Repository Operations
  - Less Expensive



**Explosion Isolation Wall in Combination with the Run of Mine Salt Backfill**

# PERMIT MODIFICATION REQUEST (PMR)

- Reasoned Arguments Supporting a PMR
  - Less Impact to Facility Operations (Waste Emplacement and Mine Excavation)
    - Significantly Less Time to Install
    - Less Material Transportation to the Site
    - Less Staging of Materials at the Surface
    - Less Use of the Waste Hoist
  - Less Risk – Commonly Accepted That Less Time, Transportation, Handling, and Reduction in Complexity Translates to Lower Risk to Workers
  - Less Expensive – 1/3 the Cost of Option D - Cost Savings of 1.3 Million on Each Panel (Savings of > \$10 Million Over Life of Repository)
  - Reuse of Mined Salt
- Simpler Construction ⇒ Higher Probability of Success With Continued Protection of Human Health and the Environment



# HWFP REQUIREMENTS

- Requirements Allowing Modification of the Closure Plan
  - **WIPP HWFP Attachment I-1e(1) Panel Closure:** “Although the permit application proposed several panel closure design options, depending on the gas generated by wastes and the age of the mined openings, the NMED and EPA determined that only the most robust design option (D) would be approved. **This decision does not prevent the Permittees from continuing to collect data on the behavior of the wastes and mined openings, or proposing a modification to the Closure Plan in the future, using the available data to support a request for reconsideration of one or more of the original design options. If a design different from Option D as defined in Permit Attachment I1 is proposed, the appropriate permit modification will be sought.” (Emphasis added)**
  - **WIPP HWFP Condition II.L.2. Amendment to Closure Plan:** “The Permittees shall amend the Closure Plan, Permit Attachment I, as required by 20.4.1.500 NMAC (incorporating 40 CFR §264.112(c)), whenever necessary.”
  - **20.4.1.500 NMAC [incorporating 40 CFR §264.112(c)]:** “The owner or operator must submit a written notification of or request for a permit modification to authorize a change in operating plans, facility design, or the approved closure plan in accordance with the applicable procedures in Parts 124 and 270. The written notification or request must include a copy of the amended closure plan for review or approval by the Secretary.  
(1) The owner or operator may submit a written notification or request to the Secretary for a permit modification to amend the closure plan at any time prior to the notification of partial or final closure of the facility.” (Emphasis added)

# HWFP REQUIREMENTS (continued)

- Requirements Associated With “Duty to Comply”
  - **WIPP HWFP Condition I.B.1. Permit Modification, Suspension, and Revocation**: “This Permit may be modified, suspended, and/or revoked for cause as specified in Section 74-4-4.2 of the HWA and 20.4.1.900 NMAC (incorporating 40 CFR §§270.41, 270.42, AND 270.43). The filing of a request by the Permittee for a permit modification, ...shall not stay any permit condition. [20.4.1.900 NMAC (incorporating 40 CFR §270.30(f))]” (Emphasis added)
  - **WIPP HWFP Condition I.E.1. Duty to Comply**: “The Permittees shall comply with all conditions of this Permit, except to the extent and for the duration such noncompliance is authorized in an emergency permit...”
  - **WIPP HWFP Condition II.L.4. Time Allowed For Closure**
    - **II.L.4.a. Partial Closure** – “Upon completion of disposal operations in an Underground HWDU, the Permittees shall complete partial closure activities as specified in the Closure Plan...” (Compels start of closure)

# OPTIONS FOR MODIFYING THE CLOSURE PLAN

- Request for Review and Approval As a Class 2 PMR for Panels 1-10
  - The Secretary could approve the PMR pursuant to the timeframes allowed for a Class 2 prior to the requirement to install Option D triggers in January 2003
  - 20.4.1.900 NMAC (incorporating 40 CFR §270.42(d) *Other modifications*  
“(1) In the case of modifications not explicitly listed in Appendix I of this section, the permittee may submit a Class 3 modification request to the Department, or he or she may request a determination by the Secretary that the modification should be reviewed and approved as a Class 1 or 2 modification. If the permittee requests that the modification be classified as a Class 1 or 2 modification, he or she must provide the Department with the necessary information to support the requested classification.  
(2) The Secretary shall make the determination described in paragraph (d)(1) of this section as promptly as practicable. In determining the appropriate class for a specific modification, the Secretary shall consider the similarity of the modification to other modifications codified in Appendix I and the following criteria:
    - (ii) Class 2 modifications apply to changes that are necessary to enable a permittee to respond, in a timely manner, to,
      - (B) Technological advancements
    - (iii) Class 3 modifications substantially alter the facility or its operation.” (Emphasis Added)

# OPTIONS FOR MODIFYING THE CLOSURE PLAN (continued)

- Request for Review and Approval As a Class 2 PMR for Panels 1-10 (continued)
  - **Were the Reasoned Arguments Compelling? Is It Reasonable That the Permittees Should Be Able to Respond in a Timely Manner? (Class 2)**
  - **Consider The Similarity of the Modification to Other Modifications Codified in Appendix I:**
    - “D.1.e. Changes in approved closure plan resulting from unexpected events occurring during partial or final closure, unless otherwise specified in this Appendix” (Class 2)
    - “D.2. Creation of a new landfill unit as part of closure” (Class 3)
  - **Or Does the Modification Substantially Alter the Facility or Its Operation (Class 3)**
- 40 CFR 264.113(b) Provides for Extensions to Partial Closure Periods If It Is Demonstrated That “The partial closure activities will, of necessity, take longer than 180 days to complete...” (Seeking an Extension to Obtain a PMR Doesn't Work)

# OPTIONS FOR MODIFYING THE CLOSURE PLAN (continued)

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- Request for Review and Approval As a Class 3 PMR for Panels 2-10
  - **If We Believe the Modification Is or Will Become a Class 3 Due to Public Interest, and We Do Not Have Time to Obtain Approvals Prior to the Trigger to Compel Closure, We May Be Limited to a Modification for Panels 2-10 ⇒ A Parallel Path of Installing Option D in Panel 1**
  
- Recall Option D Challenges, Particularly With SMC
  - **Could Adjustments Occur During Closure Without the Need for a PMR?**
  - **Realizing Where We Are Today, We May Need to Modify the HWFP Closure Plan to Change PCS Design Specifications (Class 2) and/or the Schedule (Class 1\*) Due to Unexpected Events Prior to or During Closure.**
  - **If This Class 2 Could Go to a Class 3, We Would Prefer to “Redesign”**