



U.S. DEPARTMENT OF
ENERGY

OFFICE OF
ENVIRONMENTAL
MANAGEMENT

WIPP Status Update

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for

Idaho National Lab Citizen's Advisory Board

October 27, 2016

WIPP Progress

Path to Resumption of Waste Emplacement

- ✓ Interim Ventilation System (IVS) - **completed**
- ✓ Management Self Assessment - **completed**
- ✓ Contractor Operational Readiness Review - **completed**
- DOE Operational Readiness Review

Schedule Challenges

- Ground Control – withdrawal from south end
- Waste Handling in a Contaminated Environment

Changes to the National TRU Program

- New WIPP Waste Acceptance Criteria (WAC)
- Enhanced National TRU Program Requirements

Shipping Schedules and Near Term Limitations

- Resumption of Waste Emplacement
- Projected Shipment Numbers
- Status of Idaho Recertification

Future projects for return to normal operations

- Additional Surface Storage at WIPP
- Permanent Ventilation System Status

Interim Ventilation Project

Interim Ventilation System

- The interim ventilation system (IVS) became operational September 9 – air balancing to maximize airflow completed on September 14
- IVS provides an additional 54,000 cubic feet per minute of filtered airflow – doubling existing airflow in the underground
- Supports waste emplacement and allows operation of additional diesel equipment necessary for ground control



Management Self Assessment (MSA)

- Internal review conducted by the M&O Nuclear Waste Partnership (NWP) to confirm operational readiness
- Two weeks of field work - concluded August 26
 - ✓ Reviewed over 950 documents
 - ✓ Conducted 200 interviews
 - ✓ Conducted over 120 performance based field observations
- Identified 5 adverse findings in the areas of configuration management, fire protection, operations and management readiness
- Corrective actions responding to pre-start findings, post-start findings and deficient conditions are in progress

Operational Readiness Reviews

Contractor Operational Readiness Reviews (CORR)

- Conducted by independent team of subject matter experts from across the DOE complex with relevant experience in nuclear operations, engineering, and safety management
- Necessary to confirm the readiness of personnel, equipment, and programs to return to waste emplacement for contact handled waste
- Two weeks of field review and observation – concluded October 14

Operational Readiness Reviews

DOE Operational Readiness Reviews (DORR) – will include:

- Assessment of 17 Core Requirements, as defined in DOE O 425.1D, for the commencement of CH TRU waste emplacement at WIPP
- Assessment of WIPP systems and processes associated with the receipt through emplacement of CH TRU waste in the underground.
- Observation of operational demonstrations of those systems, processes, and procedures using simulated CH TRU payloads
- Verification that Environmental Safety and Health (ES&H) and emergency management programs are adequate to support the waste receipt and emplacement operations
- Verification that sufficient staff is available, trained and qualified (as appropriate) to support all phases of operations

The DOE ORR will begin as soon as corrective actions for all pre-start findings from the CORR have been completed and validated.

Return to Waste Emplacement Operations



Ground Control

Ground control remains a priority but has been made more challenging by –

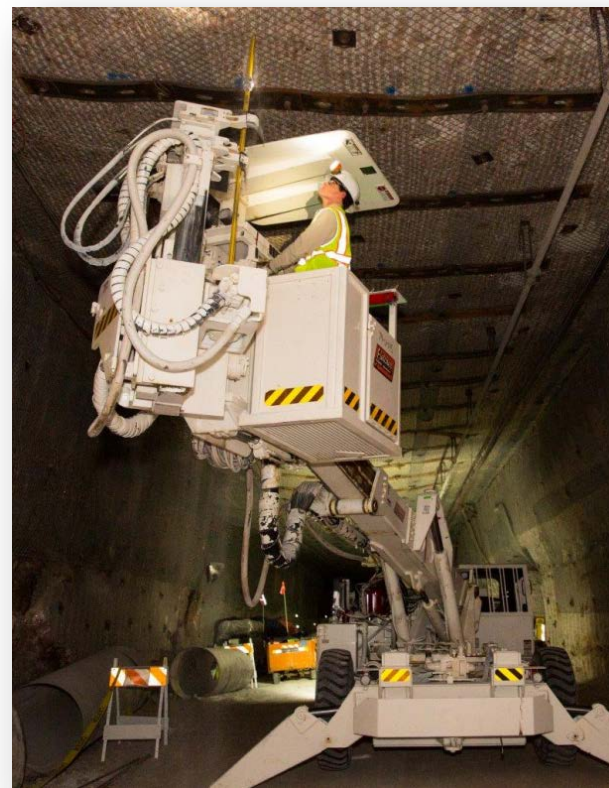
- 9 month hiatus following 2014 events
- Limited ventilation rates
- Working in personal protective equipment and respirators



Broken roof bolts



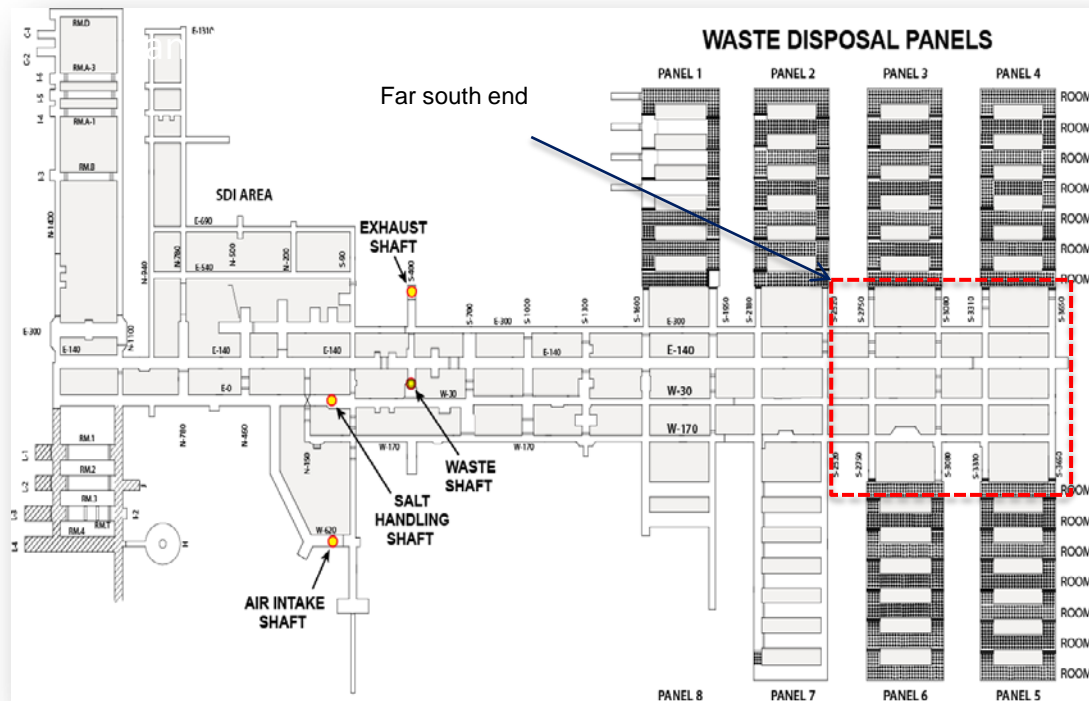
Floor heave



Hybrid bolter

Ground Control

Ground conditions in the south end of the mine have continued to degrade - a recent series of rock falls in prohibited areas influenced the decision to permanently withdrawal from the area -



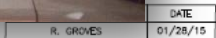
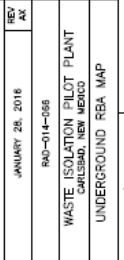
Benefits from closing the south end -

- Reduces potential employee exposure to ground control hazards;
- Reduces potential employee exposure to VOCs;
- Reduces the active area of the underground facility and the resources needed in these areas;
 - Decreases maintenance costs;
 - Allows workforce and resources to focus on ground control in active area;
 - Reduces footprint of the accessible contaminated area (approximately 60% reduction in contaminated area); and,
- Increases available ventilation to Panel 7 and occupied areas of the mine.

Waste emplacement in contaminated environment –

- Will take place in Panel 7 rooms 1-5
- Will require a transition from clean to contaminated zones near the opening of Panel 7
- Waste handling operators will be in personal protective clothing and powered air purifying respirators





1. DRIFT WIDTHS NOT TO SCALE, ENLARGED 2X FOR CLARITY.
2. EXISTING EXCAVATION REFLECTS STATUS AS OF 08/19/14.

National TRU Program Changes

New and Enhanced Federal Oversight of Contractor Activities

- Increased oversight by Carlsbad Field Office and EM/HQ
- Clearer roles and responsibilities
- More direct oversight of the Site Generators



New Waste Acceptance Criteria (WAC)

- WAC Revision 8 issued June 27, 2016 – Effective July 5, 2016
- Includes changes resulting from findings from the Accident Investigation Board
- Incorporates requirements from the recently approved Documented Safety Analysis (DSA) and chemical compatibility studies
- Temporary suspension of waste certification activities at generator sites



New Requirements

- Enhanced Acceptable Knowledge - detailed verification of source documentation for potentially incompatible materials and to ensure the adequate information basis
- Chemical Compatibility Evaluations – identifying the range of possible chemical combinations that could occur in each waste stream using EPA approved methodology



New Requirements

- Basis of Knowledge for Oxidizing Chemicals – waste certification programs to identify and potentially treat waste to avoid effects from oxidizing chemicals
- Generator Site Technical Reviews (GSTR) - performed by CBFO and NWP to ensure waste packaging and treatment activities meet new enhanced WIPP WAC requirements
- Re-certification Audits – required before shipping waste certified under new WAC revision 8

Recertification Schedule -

- CCP and AMWTP procedures are currently in document review
- Recertification Audit for Idaho is scheduled for 4th QTR 2016 – 1 week of field observations with final report due in 30 days
- GSTR for Idaho is scheduled for 1st QTR 2017 – 2 weeks of field work with a final report within 30 days

Previously certified Waste –

- Some waste currently in WHB was ID waste (S3114) and has already been verified to meet the current WAC
- Similar S3114 waste:
 - Containers of homogenous sludge from Rocky Flats repackaged twice
 - No chemical compatibility issues
 - Currently going through the enhanced Acceptable Knowledge with CCP
 - Will be added to Waste Disposal System and, once approved by CBFO, available for shipment

Resumption of Waste Emplacement

When Waste Emplacement Resumes –

- Waste in Waste Handling Building (WHB) at WIPP will be emplaced first – Expected to take 90 days
- Shipments to WIPP will begin after WHB waste is emplaced.
 - New shipments will be based initially on an estimated emplacement rate of up to five shipments per week
- Shipping schedule for the first 6 months of operations is currently being developed



Out Year Shipping Rates

Potential increases -

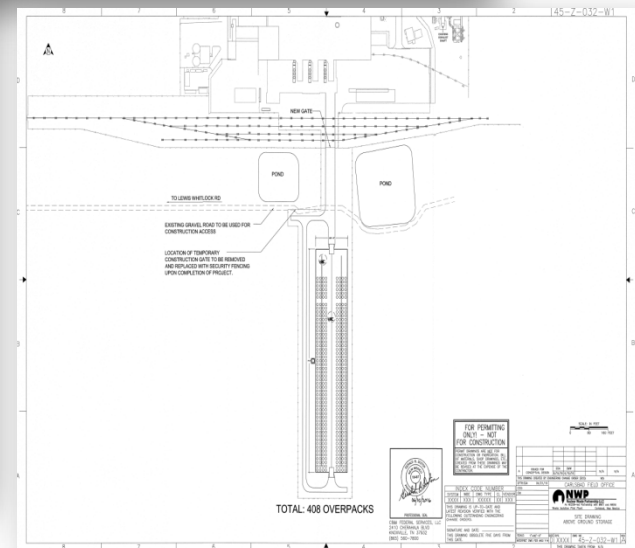
- Ramp up of shipping rates limited by air flow in the underground
 - Air flow will be significantly increase with new Permanent Ventilation System (PVS) to be complete in 2021 or later
- Shipping may be temporarily reduced periodically due to maintenance outages for aging site infrastructure



Engineered Concrete Overpacks – design used at SRS –

- Surface storage capacity for CH waste – 408 containers/136 shipments/8 weeks of capacity @ 17/week
- Storage of any single container not to exceed 1 year
- Increases the available weeks for TRU waste shipments
 - Receipt of shipments can continue during mining operations or during maintenance outages when waste emplacement operations will need to be on hold
- Continue CH TRU waste receipt during normal operational fluctuations and maintenance outages
- Class 3 Permit modification request (PMR) was submitted to NMED in late September
- Public meetings on PMR are being held this week in Carlsbad and Albuquerque

Above Ground Storage Project



Permanent Ventilation System

- New shaft and 55,000 sq. ft. ventilation building located east of the existing exhaust shaft
- Geotechnical Analysis for the building has been completed - data used to determine bearing capacity, seismic design parameters and foundation design
- Will provide enough airflow underground for mining and waste emplacement activities to occur concurrently
- Preparatory work is underway for boring tests for shaft including –
 - Construction of equipment pad
 - Groundwater test wells
 - 4" core down to 2150ft.



Questions

