



U.S. DEPARTMENT OF
ENERGY

OFFICE OF
**ENVIRONMENTAL
MANAGEMENT**

Waste Disposition

Citizens Advisory Board

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Idaho Cleanup Project

June 22, 2017

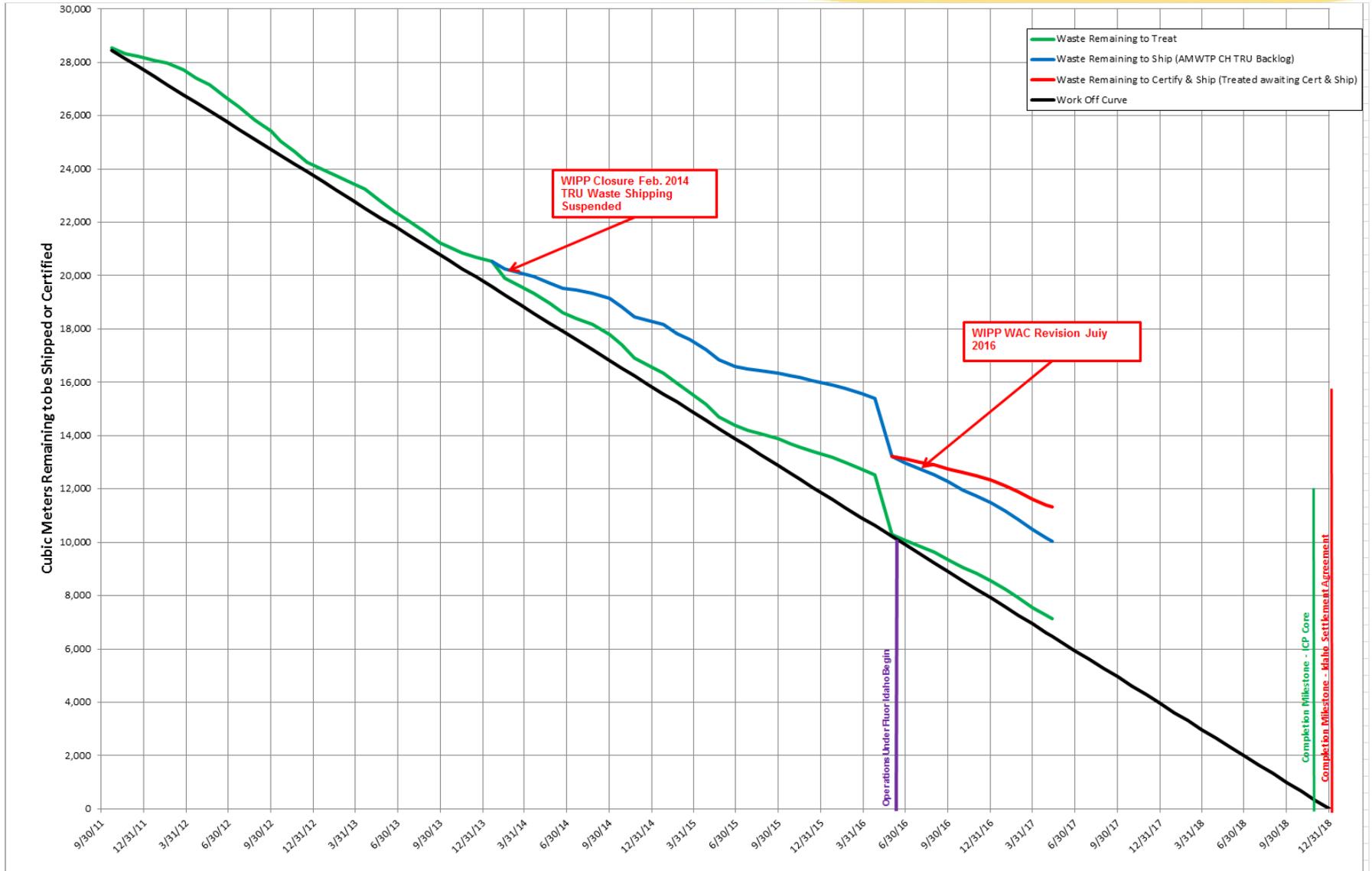
Stored Waste Disposition

- What is the Waste: TRU and MLLW, principally from Rocky Flats, Argonne National Laboratory, Mound, and other smaller generators stored in retrievable configurations at the Transuranic Storage Area and at the Radioactive Scrap and Waste Facility.
- Potential Risks: Waste contains long lived transuranic isotopes which pose a risk to the workers and the environment. Retrieval of the waste and shipment for disposal in a deep geologic repository (i.e. WIPP) ensures that humans and the environment are protected from the waste for the thousands of years that it remains harmful.
- Settlement Agreement: Requires removal of estimated 65,000 cubic meters of stored transuranic waste from the State of Idaho by December 31, 2018.
- How treated/disposed: Repackaged, treated to remove prohibited conditions, characterized and certified to meet waste acceptance criteria for WIPP or MLLW disposal facilities as appropriate.

Stored Waste Disposition (cont.)

- Current Budget: (Annually)
 - AMWTP (Contact-handled TRU waste retrieval, characterization, treatment, certification)
 - ARP Support to AMWTP (Processing sludge waste, large items)
 - ICP MLLW (Processing low-level waste for offsite disposal)
 - RH-TRU (Processing remote-handled transuranic waste)
 - RWMC Infrastructure
 - Total ~ \$185.5M

Idaho Settlement Agreement Work-off Status



Waste Programs Shipping Status

- CH-TRU Certified Backlog: (Prior to June 1, 2016)
 - 820 CH-TRU shipments backlog
 - ✓ 813 CH-TRU shipments remaining in storage (19,985 Containers previously certified)
 - ✓ 4,904 of the 19,985 containers approved to the new WIPP Acceptance Criteria. (234 Shipments ready to go)
 - ✓ 7 (16m³) CH-TRU shipments sent to WIPP Between April 6 and May 20, 2017
 - CH-TRU Processed: (June 1, 2016 to Date)
 - ✓ 360 CH TRU shipments (1,238m³) treated and awaiting certification

	Previously Certified Containers	Shipments
CH-TRU Waste		
Product Drums	3,848*	256
Direct Ship	1,967*	105
SWB's	8	2
SRP Drums	9,902	328
Buried Waste	4,260	122
CH-TRU Total	19,985	813
RH-TRU Waste		
Drums	161	90
* Includes containers in pre-sub certified status that require Flammable Gas Analysis prior to certification.		

90 RH-TRU shipments currently in storage

MLLW Processed: (June 1, 2016 to Date)

- Fluor-Idaho has shipped 1,094 m³ of legacy waste for off-site treatment and disposal.

Upcoming Activities:

Continue 2 shipments per week of CH TRU waste for the foreseeable future.

Continue MLLW shipment of legacy salt, soil, and debris waste offsite for disposal.

CH TRU Treatment In the RCE



Above: Retrieval Containment Enclosure (RCE) completed retrieval of stored waste in Feb, 2016

Below: Unloading drums from M-III/IV bins in the RCE



Key Activities:

- Retrieval Operations in the Retrieval Containment Enclosure (RCE) completed removal of stored waste from the stacks in Feb, 2016.
- Within a couple of weeks started unloading M-III/IV bins.
- Continue removal of soil from the soil berms in the RCE.

Upcoming Activities:

- Complete soil removal in 4th quarter FY 2017.
- Initiate processing of PCB contaminated waste in the RCE during 3rd or 4th quarter of FY 2017.

Sludge Waste Processing in ARP V



Key Activities:

- Sludge waste repackaging continues in ARP V

Upcoming Activities:

- Complete sludge waste repackaging and return facility to CERCLA for D&D.

Waste Repackaging in ARP VII

Key Activities:

- Large Item repackaging continues in ARP VII.

Upcoming Activities:

- Complete waste repackaging and return facility to CERCLA for D&D



Excavator removing large item from waste box.



Crews decontaminate the large items for disposal as M/LLW.



Additional Waste Treatment Areas

Key Activities:

- Assay and absorption of the liquids known as “squeezants” from the super-compactor.

Upcoming Activities:

- Complete squeezant waste repackaging.
- Potential to treat or repackage other waste streams.



Exterior of treatment tent inside of building WMF-635



Glovebox inside of treatment tent in building WMF-635

Waste Treatment in ARP IX



ARP IX Retrieval Enclosure – interior near completion



ARP IX Retrieval Enclosure – exterior near completion

Key Activities:

- After commissioning, “roaster oxide” waste will be treated and repackaged for disposal.

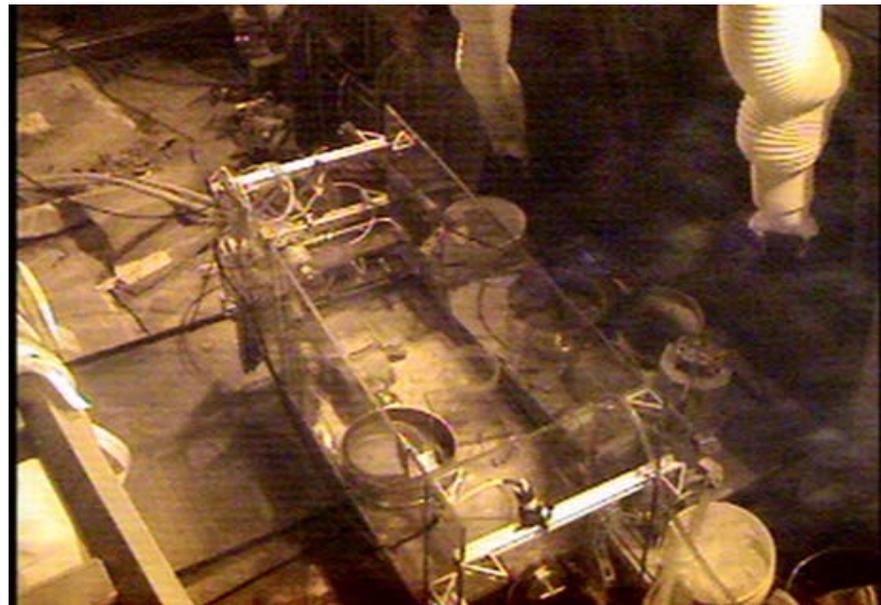
Upcoming Activities:

- Begin and complete “roaster oxide” waste treatment
- Turn over facility to targeted waste exhumation

Remote-Handled Transuranic Waste Disposition

Key Activities/Actions:

- Remote-handled transuranic waste shipments are on hold until WIPP determines path forward.
- Activity Status
 - Continue with repackaging ISA waste.
 - Continue processing waste stream approvals for ISA waste.
 - Continue preparations for Navy waste stream.
- Remaining EM RH-TRU waste to meet Idaho Settlement Agreement:
 - Approximately 25 cubic meters.
 - Six waste streams are submitted and pending CBFO approval.
 - Seven waste stream packages are in development for submittal for review.
 - Waste stream approval by EPA and CBFO is required prior to certification and transport for disposal.

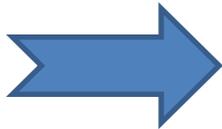


Argon Repackaging Station inside the Hot-Cell

Dashboard Legend



Ahead of schedule, under budget, better than expected.

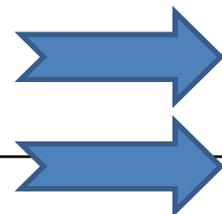


On schedule, on budget, performance as expected.



Behind schedule, over budget, performance less than expected.

Dashboard Summary – Stored Waste Disposal

Key Questions	Dashboard Indicator	Comments
Schedule Performance		WIPP closure and changes to acceptance criteria put ID behind schedule in shipping and certification. Fluor Idaho performing to current contract requirements.
Cost performance		Delays in shipping and certification will increase life-cycle costs. Fluor Idaho performing to current contract requirements.
Impact on employment/economic development		Work is ongoing at AMWTP and INTEC.
Affect on agreements		Closure of WIPP has precluded shipment of 2,000 cubic meter rolling average, places 2018 milestone at risk.
Impact on safety and environment		Waste disposition operations were performed safely and compliantly during the reporting period. Concern over recent weather-related injuries.
Impact on cleanup DOE-wide		No impact on complex wide cleanup.



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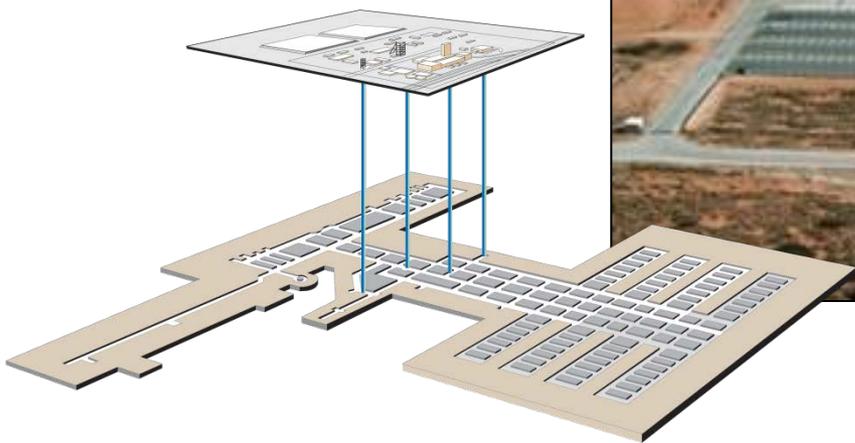
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WIPP Update

**National Transportation Stakeholders Forum
June 6, 2017
Pittsburgh, PA**



WIPP Configuration



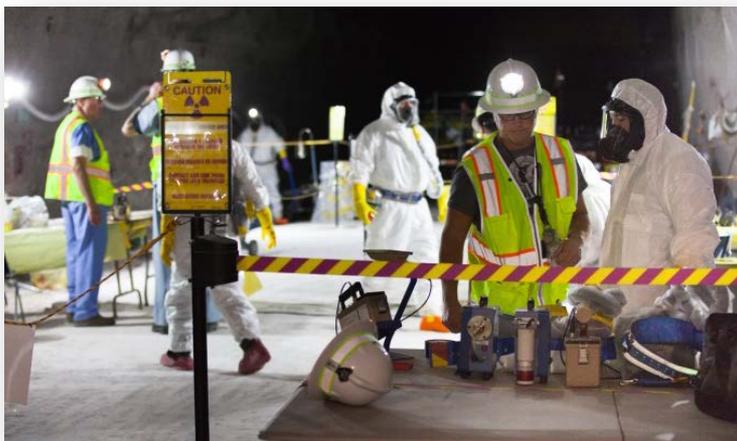
- Prior to 2014: 11,897 shipments from 22 sites around the country
- Shipments made 1999 through 2014
- Waste receipt and emplacement suspended in February 2014 due to two events:
 - Fire on underground vehicle
 - Thermal event in an emplaced drum



- Significant changes to site safety management programs
- Extensive readiness activities performed in 2016
- DOE/State of NM authorized operations in December 2016
- First emplacement in early January 2017
- First shipments received in early April 2017



- With Panel 7 contaminated, emplacement rates are 2-3 a week.
- The goal will be getting to 4-5 emplacements per week next year.
- Panel 7 will take 3-4 years to fill.
- Shipping rates will return to higher rates once emplacement begins in Panel 8 and a new ventilation system is on-line.



- Shipments through 6/20/17
 - Idaho National Laboratory – 17
 - Savannah River Site – 5
 - Waste Control Specialists – 2
- Expected later this year:
 - Oak Ridge National Laboratory
 - Los Alamos National Laboratory
- Additional Sites in the out-years:
 - Lawrence Livermore National Laboratory
 - Sandia National Laboratory
 - Argonne National Laboratory



Projected Shipping Estimates

Site	Projected Shipments (April 2017 to January 2018)
Idaho	61
Los Alamos	24
Oak Ridge	24
Savannah River	8
Waste Control Specialists	11
TOTAL	128

WIPP Routes



Factors Affecting Shipping

Shipping priorities are based on many factors, including:

- Need to mix waste streams from around the complex to avoid concentration of VOC generating waste in one location
- Need to mix waste types to manage curie limits for the Waste Handling Building during processing
- Need to receive packages that can be stacked in a manner that maximizes use of limited disposal area



WIPP is pursuing adding Above Ground Storage Capability

- System is similar to that used at Savannah River Site
- Storage limited to one year
- Would accommodate up to 8 weeks of shipments at 17 shipments per week
- Storage is for operational flexibility, not for storage from other sites



Types of Shipments Anticipated

- All shipments will be in TRUPACT-II's or HalfPACT's in the short term
- TRUPACT-III could be added next year
- All shipment for the next few years will be contact-handled
- No remote-handled shipments expected in the next few years
- Some remote-handled waste expected to be shipped in shielded containers (becomes contact-handled)



Types of Shipments Anticipated



Out-Year Shipments

- Projected shipments in out-years depend on the available weeks for shipment/emplacement and on the weekly emplacement rate.
- Through 2023, approximately 43 weeks per year are expected to be available for shipments. Remaining weeks are devoted to maintenance and equipment upgrades at the WIPP facility.
- The weeks available for shipping are reduced in 2017 (due to shipments beginning in April) and in 2019 (due to replacement of key components in the waste hoist that moves waste containers underground from the surface).
- Emplacement rates (and, therefore shipping rates) are expected to increase once emplacement begins in Panel 8 (2020 or later) and a new permanent ventilation system is on-line (2021 or later).

Questions

