



U.S. DEPARTMENT OF
ENERGY

OFFICE OF
**ENVIRONMENTAL
MANAGEMENT**

Overview of Plan Change Request for the Use of Replacement Panels 11 and 12

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Replacement Panels Planned Change Request

- The DOE is requesting to use replacement Panels 11 and 12 at the WIPP to support uninterrupted disposal operations, thereby ensuring that the DOE's mission of disposing of the nation's defense-generated TRU waste is met, as authorized by the WIPP Land Withdrawal Act.
- The Replacement Panels Planned Change Request (RPPCR) references correspondence between the EPA and DOE outlining the EPA's expectations for the RPPCR.

Waste Disposal Panel Design and TRU Waste Volume Capacity Limit

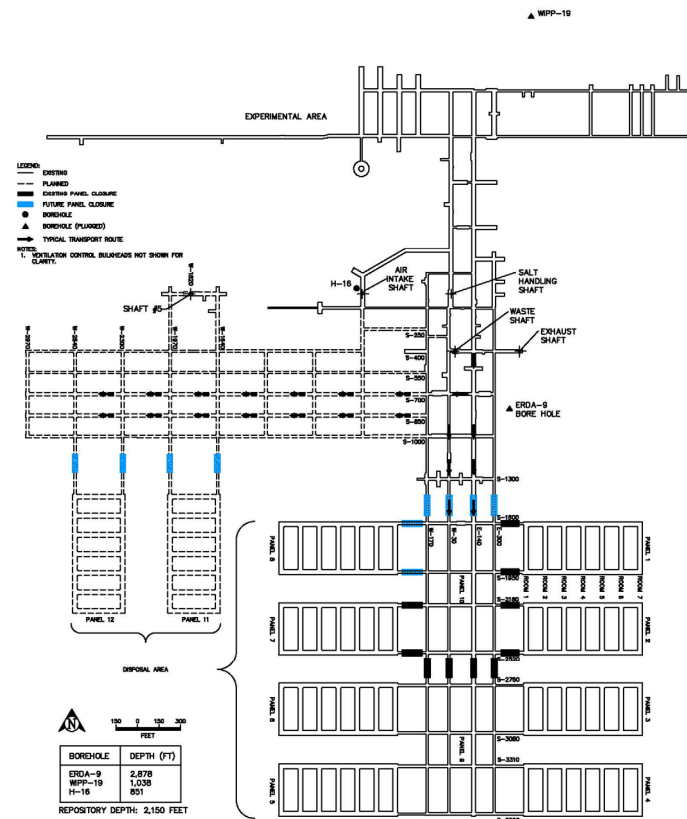
- The original design of the WIPP repository consists of ten panel-equivalents.
- Panels 1 through 8 consist of seven waste disposal rooms, each with an intake and exhaust drift.
- Equivalent Panels 9 and 10 are made up of a portion of the main access drifts and cross-cut drifts, located between Panels 1 through 8.
- The WIPP Land Withdrawal Act established the total TRU waste disposal volume capacity limit of the WIPP facility as 6.2 million ft³.
- The RPPCR does not impact the TRU waste disposal volume capacity limit.

Basis for Planned Change Request

- Replacement Panels 11 and 12 are an interim operational approach to recover lost disposal capacity of approximately two panels.
 - Panel 1 mining was completed in 1988, but waste emplacement did not begin until 1999, resulting in the loss of most of Rooms 4 through 6 due to deteriorated ground conditions.
 - The events of 2014 resulted in the loss of most of Panel 7, Rooms 4, 6, and 7, due to deteriorated ground conditions and/or radiological contamination.
 - Additionally, Equivalent Panel 9 was abandoned after the 2014 events due to worker-safety concerns and engineering judgement, resulting in closure of the south-end of the repository.

General Design for Repository Changes

- Replacement Panels 11 and 12 design is similar to Panels 1 through 8 (i.e., seven disposal rooms per panel).
- Nominal room height will be 14 ft. rather than 13 ft.

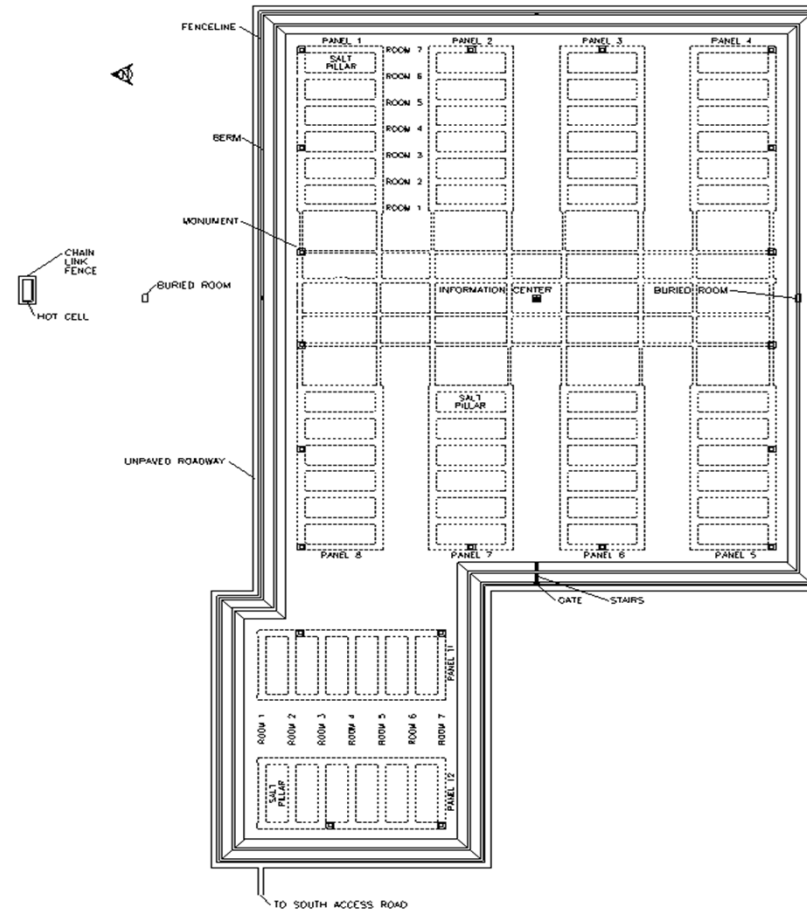


- Evaluation of the data available on brine pockets under the two replacement panels has concluded that the current PBRINE distribution is adequate for a 12-panel representation.
- T-fields have been recalibrated in the RPPCR PA to provide more hydrological data.
- Refinements have been made to the Culebra Transport model to account for differences in releases farther to the west.

- The RPPCR PA is based on the most current documented inventory (2022 ATWIR).
 - ATWIR-2022 is the basis for the 2022 Performance Assessment Inventory Report (PAIR).
 - PAIR includes estimates from resuming production of pits at LANL and SRS.
 - PAIR includes 13.1 MT of surplus plutonium CH TRU waste.
- Any additional surplus plutonium inventory is not included in the PA analysis because waste streams are pending review and subsequent approval for disposal at the WIPP.
- Due to shipping schedules, operational constraints, and various DOE commitments, a single panel highly-loaded with surplus plutonium is not considered to be a plausible scenario.

- The Replacement Panels RPPCR PA has been performed to assess whether the use of replacement Panels 11 and 12 would affect continued compliance with 40 CFR 191.13.
- The RPPCR PA analysis is based upon the anticipated WIPP repository configuration at the time of closure (i.e., 19 panels).
- Since CRA-2019, the following conceptual models have been modified and peer-reviewed:
 - Disposal System Geometry
 - Repository Fluid Flow
 - Direct Brine Releases
- A 2083 final facility closure date has been assumed.

Active and Passive Institutional Controls Footprint



The results from the RPPCR analysis performed for the addition of replacement Panels 11 and 12 demonstrate that the DOE will remain in compliance with the radioactive waste disposal standards of 40 CFR Part 191.