

US EPA ARCHIVE DOCUMENT



Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221

AUG 11 2011

Mr. Jonathan Edwards, Director
U.S. Environmental Protection Agency
Ariel Rios Building, Mail Code: 6608J
1200 Pennsylvania Avenue, N. W.
Washington D.C. 20460

Subject: Notification of Intent to Begin the Salt Disposal Investigations

Dear Mr. Edwards:

The purpose of this correspondence is to provide the Environmental Protection Agency (EPA) notice that the U.S. Department of Energy (DOE) has begun preparatory activities for the Salt Disposal Investigations (SDI) project. SDI project activities will start no sooner than October 1, 2011. The SDI Planned Change Notice (PCN) and the SDI project proposal description are included as Enclosures 1 and 2 to this letter.

The primary objective of the field-scale heater test for SDI is to provide thermal, structural, and hydro geochemical data for high temperature (greater than 160°C) effects in bedded salt. The objectives of the *in situ* heater test include:

- Measure temperatures to confirm heat transfer calculations.
- Monitor salt movement (alcove deformation) to validate salt creep calculations.
- Measure the porosity of reconsolidating salt to validate a salt-reconsolidation model.
- Determine brine and vapor movement for initial information on moisture effects.
- Validate far-field thermal modeling capability by having several interacting alcoves.
- Provide detailed *in situ* test data for three-dimensional computer code validation and benchmarking.
- Evaluate chemical effects on coupons of various materials placed in proximity to canisters and associated changes in the near-field chemistry and environment.

Contingent upon funding levels, mining of the test area is projected to begin in October 2011 and continue for approximately 80 weeks. Upon completion of the mining, power will be installed and test alcove monitoring instrumentation will be emplaced. Again, contingent upon funding levels, heating is planned to begin in 2015 and continue for two years, followed by a cool-down phase and post-test forensics to be completed in fiscal year 2018.

The results of these investigations will fill information gaps in the current knowledge of the thermo mechanical, hydrological, and chemical behavior of salt and wastes disposed in salt and form the technical foundation for design, operation, coupled process modeling, and performance assessment of future salt repositories for heat-generating nuclear waste.

The SDI test area will be located between the N1100 drift and the shaft pillar area. Two access drifts, one from N780 cross-drift and the other at N940, will access the new test area. The test area horizon will be located approximately mid-way between the Waste Isolation Pilot Plant (WIPP) Marker Beds 138 and 139 and will consist of numerous alcoves where the heater tests will be performed.

In accordance with the conditions set forth in a March 11, 2003, letter from Frank Marcinowski, EPA to I. Triay, DOE, enclosed are the results of the Unreviewed Safety Question (USQ) Determination. The USQ determination (Enclosure 3) shows that there will be no negative effects due to:

- Underground ventilation changes,
- New hazards introduced into the underground, and
- The change in the WIPP facility footprint.

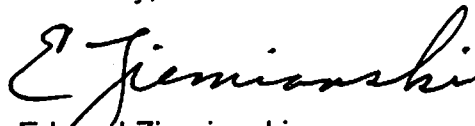
The SDI will not have a significant impact on long-term performance of the disposal system, as demonstrated by a thermal analysis (Enclosure 4) and by an impact assessment (Enclosure 5). In addition, the SDI will not require modification to waste disposal processes and will have no significant impact on waste disposal operations, as discussed in the SDI PCN. Once all testing is complete provisions are in place to remove SDI equipment from the underground.

The DOE has determined that the WIPP facilities and infrastructure can provide support for this project without interfering with the primary mission of the WIPP. SDI status will be included in the Annual Change Report.

The overall management of the SDI experiment will be through the U.S. DOE Carlsbad Field Office (CBFO) with support from Los Alamos National Laboratory – Carlsbad (LANL-C), Sandia National Laboratories – Carlsbad (SNL-C) and Washington TRU Solutions (WTS).

If you have any questions regarding this PCN, please contact George T. Basabilvazo at (575) 234-7488,

Sincerely,



Edward Ziemianski
Interim Manager

Enclosures (5)

Mr. Jonathan Edwards

-3-

AUG 1 1 2011

cc: w/enclosures

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