



Department of Energy
Carlsbad Field Office
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NOV 10 2016

Mr. John E. Kieling, Bureau Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 E. Rodeo Park Drive, Building 1
Santa Fe, NM 87505-6303

Subject: Request for a Temporary Authorization for the Referenced Revised Class 3 Permit Modification to the Waste Isolation Pilot Plant Hazardous Waste Facility Permit, Permit Number: NM4890139088-TSDF

Reference: Permittees' Letter from Todd Shrader, U.S. Department of Energy Carlsbad Field Office, and Philip J. Breidenbach, Nuclear Waste Partnership LLC, to John E. Kieling, Chief, Hazardous Waste Bureau, dated November 10, 2016, Response to the Technical Incompleteness Determination and Revised Class 3 Permit Modification Request, Waste Isolation Pilot Plant, EPA I.D. Number NM4890139088

Dear Mr. Kieling:

Pursuant to 20.4.1.900 New Mexico Administrative Code (NMAC) (incorporating Title 40, Code of Federal Regulations (CFR), Part 270.42(e)(2)), the U.S. Department of Energy Carlsbad Field Office and Nuclear Waste Partnership LLC collectively referred to as the Permittees, are providing you with the following temporary authorization (TA) request.

The Permittees, are requesting a TA pursuant to the requirements in 20.4.1.900 NMAC (incorporating 40 CFR Part 270.42(e)(2)(i)(B)) for the referenced revised Class 3 Permit Modification Request (PMR) entitled "Modifications to the WIPP Panel Closure Plan" submitted to the New Mexico Environment Department (NMED) on November 10, 2016.

Pursuant to 20.4.1.900 NMAC (incorporating 40 CFR Part 270.42(e)(2)(ii)(A)) the activities to be conducted under this TA are described below:

- Install closure bulkheads in order to isolate filled underground Hazardous Waste Disposal Units (HWDUs)
- Discontinue inspections associated with existing closure components and bulkheads in filled underground HWDUs: Panels 1, 2, 3, 4, 5, and 6
- Terminate hydrogen, methane, and ongoing volatile organic compound (VOC) disposal room monitoring in filled panels.

The Permittees are requesting that this TA be effective for 180 days, with a possible additional 180-day extension, to allow the NMED the time necessary to complete the administrative process for the Class 3 PMR. Other than the requested activities, this TA would not affect any other condition or requirement of the Hazardous Waste Facility Permit (Permit). This TA would

not impact the Permittees' continued compliance with the requirements of 20.4.1.500 NMAC, (incorporating 40 CFR Part 264).

The following summarizes relevant portions of the revised PMR associated with this TA and provides an explanation of why the TA is necessary pursuant to 40 CFR Part 270.42(e)(2)(ii)(B).

ITEM 1: Install closure bulkheads for filled underground HWDUs near the intersection of the E-300 drift and access drifts for Panels 1 and 2 and in the mains (W-170, W-30, E-140, E-300) north of Panels 3, 4, 5, and 6

The proposed WIPP Panel Closure (WPC) consists of up to two components; bulkheads and run-of-mine (ROM) salt. A standard bulkhead is placed in an area where it is accessible for maintenance to ensure the bulkhead meets its intended purpose of blocking ventilation to filled areas of the disposal unit. The ROM salt component consists of sufficient ROM salt as an integral part of the closure of Panel 10. The Permittees are not requesting the use of ROM salt for the closures requested in this TA.

The radiological event which occurred in February 2014 led to contamination that has been mitigated. However, it is necessary to minimize traffic and construction in the access drifts, to minimize the generation of dust and particulates that may cause the salt encapsulated radionuclides to become airborne. Airborne dust containing radionuclides may become a hazard to underground workers and lead to clogging of the high efficiency particulate air (HEPA) filters being used continuously to filter ventilation air from the underground facility.

The Permittees have identified the following advantages associated with installation of the proposed WPC design when compared to the current approved Panel Closure System (PCS). These advantages mitigate some of the adverse impacts that would be created by the installation of the PCS due to these changed conditions in the underground as the result of the February 2014 events:

- Less time to install;
- Less material transportation;
- Less staging of materials at the surface;
- Less complex activity in the underground;
- Fewer pieces of diesel equipment operating simultaneously;
- No construction of special forms;
- No placement of bulk, wet Salado Mass Concrete in the underground;
- Reduction of risks to workers;
- Higher certainty of success without reducing protectiveness;
- Less cost;
- Less possibility of re-suspending radioactivity; and
- Less dust generation.

Furthermore, due to ground conditions in the entries to Panels 3 through 5 in the WIPP underground, the Permittees have determined that the safest location for the panel-specific closures will be in the north-south mains outside these panels. In this case, the Permittees

would forego placement of TRU mixed waste in the area designated as Panel 9. The closures would be the same design and construction of those proposed for individual panels. Their performance would be consistent with the designs modelled in the Design Report. Significant personnel safety benefits include:

- Reducing the potential employee exposure to ground control hazards;
- Reducing the potential employee exposure to VOCs in filled portions of the repository;
- Reducing the footprint of the underground, which reduces effort and costs to maintain;
- Reducing the contamination footprint by approximately 60%;
- Reducing the active area of the underground increases the available ventilation to Panel 7 and occupied areas of the mine;
- Reducing the active area of the underground allows workforce to focus on the remaining areas for ground control; and
- Eliminating the requirement to further mine the south end of the mine or emplace run-of-mine salt reduces loading on the ventilation HEPA filters and reduces the costs and frequency of HEPA filter change.

From the standpoint of worker safety, it is commonly accepted that less time, transportation, handling, and reduction in complexity translates to lower risk to workers. In this regard, there are two considerations. First is the comparison between the Panel Closure System (PCS) in the current Permit and the proposed WPC and second is the consideration of WPC locations and the number of closures that are installed. With regard to enhanced worker safety when considering the WPC versus the PCS, three factors are involved in qualitatively estimating the risk reduction associated with installation of the proposed WPC design. One factor is the time the workers spend transporting, handling, and installing materials in the underground. The second factor is the complexity of the construction project. The third factor is the risk due to the extensive mining and milling that is needed to emplace the PCS design. As part of the redesign process, the Permittees compared installation schedules for the PCS and WPC designs. The underground construction activities for the PCS design are estimated to require approximately 14 months due to the numerous complex activities and extensive material handling requirements associated with the PCS. The comparable period for construction of the WPC is less than or equal to 180 days involving everyday material handling and straightforward construction activities. With regard to moving the location of the WPC to the mains for Panels 3 through 6, the panel entries that will be blocked by the closure bulkheads are not safe without significant ground remediation. The panel entries themselves have become prohibited for entry indicating that any need to access panels must be weighed against the complexity of gaining entry versus alternatives which may make entry unnecessary. Placing panel closures in the mains obviates the need to enter the panels. Based on the modeling in the revised PMR, closures in the mains will be just as effective as closures in the panels in meeting the closure performance standards.

There is some urgency in placing the closures. Workers are kept from these areas by erecting postings and non-permanent barriers. The placement of the closure bulkhead will provide an obstacle that will prevent inadvertent entry into these areas. This request is needed pursuant to 20.4.1.900 NMAC (incorporating 40 CFR Part 270.42(e)(3)(ii)(A)) "to facilitate timely implementation of closure or corrective action activities."

This request is also needed pursuant to 20.4.1.900 NMAC (incorporating 40 CFR Part 270.42(e)(3)(ii)(E)) "to facilitate other changes which protect human health and the environment."

ITEM 2: Discontinue inspections of existing bulkheads and explosion isolation walls

As mentioned above, the inability to perform routine bolting led the Permittees to place access restrictions on several areas in the underground. These areas are not considered safe for normal access. Access to many bulkheads and the explosion-isolation walls is not possible and inspections are performed from a safe location. Should repairs be needed, significant remediation would have to be performed to gain access.

Such activities listed above will be very disruptive to the extent that they will require significant amounts of ventilation air and will generate dust. The need for ventilation air impacts waste emplacement and the dust impacts the operation of high efficiency particulate air filters that ensure contamination free air is released to the environment. Authorization to suspend these inspections and place the closure bulkheads removes these impacts, thereby improving the overall condition of the portions of the underground that will remain accessible to workers. The Permittees request that inspections of the existing closure components in Panels 1 through 6 be discontinued as there is more risk than benefit by continuing these inspections. Furthermore, placement of the final closure bulkheads under the TA will make these existing bulkheads and explosion-isolation walls inaccessible.

This request is needed pursuant to 20.4.1.900 NMAC (incorporating 40 CFR Part 270.42(e)(3)(ii)(E)) "to facilitate other changes which protect human health and the environment."

Item 3: Termination of hydrogen, methane, and VOC monitoring in filled panels

Hydrogen and methane monitoring was initiated to establish whether these gases actually accumulate under repository conditions and if so, determine more realistic accumulation rates for filled panels. It was anticipated that more realistic accumulation rates may lead to panel closure designs that are less complex than the PCS. The data obtained were used in development of the WPC. The data from the hydrogen and methane monitoring demonstrated that a postulated deflagration is unlikely to occur during the operational phase. Therefore, the hydrogen and methane monitoring program is no longer required. Ongoing VOC monitoring in filled Panels 3 and 4 is conducted to determine if harmful concentrations of VOC are accumulating in Room 1 of these panels in order to identify needed actions. These actions include placing closures in those panels. Installing bulkheads in the mains mitigates the hazards to underground personnel from VOCs by restricting access to these Panels.

The reason for this item in the TA request is because placing closure bulkheads in the mains will prevent access to the monitoring locations, several of which are in prohibited areas in the underground.

This request is needed pursuant to 20.4.1.900 NMAC (incorporating 40 CFR Part 270.42(e)(3)(ii)(A)) "to facilitate timely implementation of closure or corrective action activities."

For the reasons delineated above, the requirements of 20.4.1.900 NMAC (incorporating 40 CFR Part 270.42(e)) have been met and the Permittees are requesting the issuance of the TA to facilitate timely implementation of closure or corrective action activities and to facilitate other changes which protect human health and the environment.

We certify under penalty of law that this document and all attachments were prepared under our direction or supervision according to a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on our inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of our knowledge and belief, true, accurate, and complete. We are aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

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

Sincerely,



Todd Shrader, Manager
Carlsbad Field Office



Phillip J. Breidenbach, Project Manager
Nuclear Waste Partnership LLC

cc:

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CBFO M&RC

*ED denotes electronic distribution