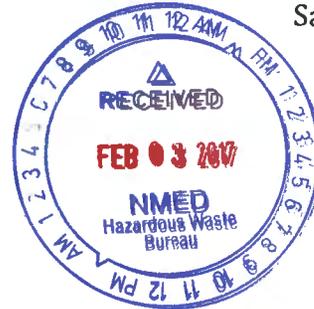


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February 3, 2017

Ricardo,

I am submitting comments on the September 29, 2016 Class 3 permit modification request (**PMR**) submitted by the US Department of Energy Carlsbad Field Office and Nuclear Waste Partnership (**Permittees**) to the New Mexico Environment Department (**NMED**), proposing the addition of a Concrete Overpack Container Storage Unit (**Overpack Unit**) to the Waste Isolation Pilot Plant (**WIPP**) Hazardous Waste Facility Permit (**Permit**). Please consider and provide responses to my comments when you deliberate modifying the permit as requested in the PMR.

The Permittees identify two main modifications in their PMR. These are:

- The ability to store additional contact-handled (**CH**) transuranic (**TRU**) mixed waste (65,280 cubic feet) on the surface of the WIPP facility in an outdoors permitted hazardous waste container storage unit yet to be constructed.
- The ability to store this waste in the proposed permitted hazardous waste container storage unit for up to one year.

In my comments below, I will provide reasons why I oppose this PMR and recommend that it be denied before NMED even contemplates developing a draft permit incorporating their proposals.

1. The need for the proposed modification is inadequately supported

The PMR states (p. 19), "The new [Above Ground Storage Capacity] project will add the capability to store TRU mixed waste on the surface prior to disposal in the underground." This statement is misleading on two counts. First, there already is significant capacity to store TRU mixed waste on the surface at WIPP. The Waste Handling Building Container Storage Unit (**WHB Unit**) currently provides for up to 6,854 ft³ of TRU mixed waste, and the Parking Area Container Storage Unit (**Parking Area Unit**) provides for up to 8,546 ft³ to be stored in shipping containers, for a total of up to 15,400 ft³ of TRU mixed waste. This represents roughly two weeks of inventory in storage, based on calculations using the same assumptions as the PMR calculations supporting the additional storage volume request. Incidentally, these current volumes of waste storage were acceptable to the Permittees



back in 2006 with their support of the 311-RH PMR when their planned throughput was estimated to be approximately 30 shipments of CH waste per week, significantly higher than their current estimate of 17 shipments of CH waste per week (see the 2006 Hearing Officer's Report, page 15 for details).

Second, the additional storage capacity proposed in the PMR is 65,280 ft³ of waste, a 424% increase over the existing storage limit. Taken together, the total proposed storage capacity (WHB Unit, Parking Area Unit, and Overpack Unit) would be 80,680 ft³, roughly equivalent to the disposal capacity of an entire room in an underground panel. The justification for storing this quantity of waste above ground – most of it outside in concrete overpacks – is inadequately supported in the PMR discussion.

There can be little dispute that during the nearly three years that WIPP has been shuttered, existing TRU waste has not only remained at the generator/storage sites, but a potentially significant amount of newly generated TRU waste is also waiting for a disposal path to WIPP. Also, generator/storage sites such as Idaho National Laboratory have agreements with their respective states to ship specific amounts of TRU waste to WIPP by certain deadlines or face enforcement actions. However, excess waste at generator/storage sites or the need to ship by a deadline is not a *WIPP* problem – if anything, it might be a DOE complex-wide problem, especially if regulators in other states are pressuring their DOE sites to get rid of their waste. But again, that is not a *WIPP* problem, and it definitely is not a pressing *WIPP need*.

The PMR states (again, p. 19) that the ability to store this amount of waste for up to a year would, “through the lifetime of [the] WIPP facility... effectively manage and refine operational and support capabilities for TRU mixed waste shipments and disposal operations with the following outcomes:

- “Continued CH TRU mixed waste receipt during normal operational variability including short-term maintenance outages;
- “Allowing for optimization of CH TRU mixed waste emplacement activities;
- “Allowing the storage and management of CH TRU mixed waste for inventory and material at risk considerations.”

These are spurious arguments. Currently, the permit allows continued receipt of waste in surge storage areas under circumstances specified in Permit Attachment A1, Sections A1-1c(1) and A1-1c(2). Although not considered “normal operational variability,” these are well-supported contingencies for continued receipt of waste. The permit also prudently cuts off shipments during off-normal events (Permit Attachment A1, Section A1-1d) when there is an interruption to normal waste handling operations that exceeds three days. I will discuss surge storage and how this could be modified to provide the Permittees with additional flexibility later in my comments.

Likewise, the Permittees have never demonstrated that a serious commitment to optimizing waste emplacement activities is contingent on having an eight-week inventory of stored waste. Even when stringent room-based VOC limits were in effect, the Permittees were able to satisfactorily optimize waste emplacement within the existing limitations on

waste storage capacity at WIPP. There is no reason to believe that after 17 years of operations, the Permittees suddenly need a quadrupling of available storage to accomplish what they've been able to do ever since Permit issuance back in 1999.

2. The magnitude of the proposed additional storage amount is arbitrary and unsupported

The PMR states that the proposed Overpack Unit will be permitted to store up to 408 concrete overpacks, which is 65,280 ft³ of CH waste. This capacity was established by first determining the approximate maximum duration of previously planned maintenance outages at the facility (eight weeks), and then multiplying that by the expected average number of shipments per week (17 shipments, at three contact-handled packages each), assuming each package held the maximum volume of waste (a direct loaded ten-drum overpack, at 160 ft³ each). Thus, the assumption is that during an anticipated two-month closing, WIPP would continue to receive and process 136 shipments and store the contents in concrete overpacks outside, waiting for the opportunity to dispose of this waste after resuming normal disposal operations – even as normal shipments would resume at the same pace. The parameters chosen for this capacity calculation are arbitrary, as they do not reflect historical throughput at WIPP nor the new reality of disposing of waste while wearing the necessary personal protective equipment following resumption of waste emplacement after the 2014 incidents at WIPP.

CH waste storage capacity at WIPP has been changed only one other time following permit issuance in 1999, and at that time there was full justification and agreement for the increase. The 2006 311-RH PMR increased the WHB Unit CH waste volume from 2,718 ft³ (eight loaded pallets, four CH packages at the TRUDOCKS, 1 SWB for derived waste) to 6,466.3 ft³ (18 pallets total [13 normal and five surge], other items unchanged) and the Parking Area Unit CH waste volume increased from 1,591 ft³ (12 CH packages) up to a potential 8,000 ft³ (40 CH packages, including up to 10 more CH packages in surge storage). These increases have been repeatedly demonstrated as adequate for WIPP's throughput of up to 30 shipments per week of CH waste. Increasing CH storage capacity by 424% at a time of inevitably declining inventory and slower shipping rates is unsupported by experience and the administrative record.

3. The use of concrete overpacks introduces an unreasonable risk to the public

Using concrete overpacks will double the number of times waste containers are handled. Under the current Permit, contact-handled packages are brought into the WHB, opened at a TRUDOCK, and the contents are lifted by crane, inspected, and placed on facility pallets, which are then stored in the WHB Unit until ready for disposal.

Under the proposal, contents of some contact-handled packages will instead be transferred to concrete overpacks and moved by forklift outside to the Overpack Unit. Within one year or less, the process will need to be repeated, except this time the concrete overpacks will be brought into the WHB, opened at a TRUDOCK, and the contents are lifted by crane, inspected again, and placed on facility pallets, which are then stored in the WHB Unit until

ready for disposal. The Permittees have not addressed the risks associated with having to handle the waste twice as frequently in their PMR.

Under the current permit, all containers removed from contact-handled packages are stored inside the WHB, which is maintained at negative pressure relative to outside atmosphere, and is subsequently vented through the WHB filtered exhaust. The impermeable floor of the WHB provides secondary containment for any liquid spills. All containers stored outside in the Parking Area Unit are in sealed contact- or remote-handled packages, which also provide secondary containment for any liquid spills. Permit Condition 3.1.2.5 prohibits the opening of these packages while in the Parking Area Unit, which was done to ensure that there would be no inadvertent releases of hazardous or radioactive constituents to the atmosphere if a waste container were breached.

Under the proposal, some containers removed from contact-handled packages could be stored outside in concrete overpacks. The PMR describes these concrete overpacks as being "of robust design... made of steel reinforced concrete with a removable concrete lid... designed to function as the secondary containment barrier when loaded with TRU mixed waste." However, unlike sealed contact- or remote-handled packages that can contain releases of hazardous or radioactive constituents, the concrete overpacks would allow gaseous hazardous constituents and, in the event of a breached waste container, radioactive constituents to be released to the atmosphere. This situation constitutes an unreasonable risk to the public.

4. The length of time proposed for the storage of waste is excessive for waste that will be exempt from inspection

I am aware of only two instances when NMED proposed approving a one-year storage limit for TRU mixed waste, and that was in the original draft permit issued in May 1998 and in the revised draft permit issued in November 1998 that went to public hearing. At that time, NMED proposed a one-year storage time limit for TRU mixed waste containers in the WHB Unit. As a result of public comment received on the revised draft permit, NMED reduced the storage time from one year to 60 days, providing the following rationale for this decision:

The one year time limit for container storage in the Waste Handling Building Unit was an attempt to compromise between the expected flow of waste from receipt to disposal in the underground HWDUs and the need to accumulate derived waste. Permit Condition III.A.1.e. has been modified to reduce the allowable storage time in the WHB Unit from one year to sixty calendar days, with the exception of the Derived Waste Storage Area, where derived waste may be accumulated and stored until the container is full.

Note that 60 days is the storage time limit for waste containers already removed from their shipping containers (i.e., open to the atmosphere) and stored inside of the negative pressure, HEPA-filtered environment of the WHB Unit. The equivalent storage time limit for the Parking Area Unit is 59 days, primarily established to reflect the 60-day limit for a sealed TRUPACT-II shipping container. Thus, although the waste containers are stored

outside, they are contained within a non-vented shipping container with no possibility for release of hazardous or radioactive constituents.

In the WIPP Permit, there are only two situations where inspection of waste containers in storage is specifically not required:

1. The center drum of a 55-gallon seven-pack assembly; and
2. The contents of sealed Contact-Handled or Remote-Handled Packages stored in compliance with the permit

The PMR proposes adding a third situation – not requiring inspection of waste containers stored outdoors in concrete overpacks in the Overpack Unit. Reasons why this is a risky proposal were described in the previous section.

At no time since, until the submittal of this PMR, have the Permittees proposed a longer storage limit that has been approved by NMED. There is no justification in the administrative record for the WIPP Permit for NMED to now approve this longer storage limit for uninspected (and uninspectable) waste containers that will be open to the atmosphere.

5. The primary mission of WIPP is disposal, not storage

According to the *Department of Energy National Security and Military Applications of Nuclear Energy Authorization Act of 1980* (Public Law 96-164), “the Waste Isolation Pilot Plant is authorized as a defense activity of the Department of Energy... for the express purpose of providing a... facility to demonstrate the safe disposal of radioactive wastes resulting from the defense activities and programs of the United States...”

Burdening WIPP with unnecessary, excessive, and potentially risky storage activities is outside the scope of its original authorization and the original hazardous waste permit application. Storage at WIPP was originally conceived and designed to support reasonable, “just-in-time” storage capabilities that matched the disposal rate capacity of the facility. At no time since the permit was issued have the Permittees convinced NMED to provide additional storage capacity beyond the provisions incorporated in the 2006 311-RH modification. Even with the availability of surge storage capacity, WIPP has never fully taken advantage of it beyond what was allowed following the 2014 suspension of disposal operations at WIPP. To request a quadrupling of storage capacity at this stage in WIPP’s operational lifetime – at a time of inevitably declining inventory and slower shipping rates – is irresponsible.

The permit also limited onsite storage times to not exceed 60 days in the WHB Unit specifically to ensure WIPP did not lose sight of its primary function as a disposal facility. To now seek to store unloaded containers outside in concrete overpacks whose contents are proposed to be exempt from inspection – and to do so for up to one year – is also irresponsible.

Finally, although I know NMED does not consider cost when evaluating such proposals as this, the WIPP Info Center responded to my inquiry and stated:

The estimated cost for the Overpack Unit is 9-10 million USD, which includes the cost of the pad (5-6 million USD) and all of the concrete overpacks (4 million USD).

As a taxpayer, I view this proposed project as totally unnecessary and wasteful.

Balancing Storage Capacity and Disposal Rate

There are two broad categories of events that can impact the availability of waste for acceptance for storage and disposal at WIPP:

1. The **availability of waste** from the generator/storage sites, either due to limited quantities of waste certified for disposal at WIPP or the inability to transport certified waste to WIPP due to weather or other shipping issues; and
2. The **ability of WIPP to receive waste** from generator storage sites, either because of Permit requirements preventing or limiting WIPP from receiving waste or due to storage limits already being met.

Generally, limitations associated with the availability of waste are short term (e.g., weather conditions delay receipt of waste until conditions improve) or easily managed by WIPP (increase shipments from other generator/storage sites). The Permittees have not invoked availability as a major justification to increase storage limits.

On the other hand, conditions affecting the ability of WIPP to receive waste are more complex. The permit (Attachment A1, Section A1-1d) prevents WIPP from receiving waste under specific situations, stating,

"Shipments of waste from the generator sites will be stopped in any event which results in an interruption to normal waste handling operations that exceeds three days."

The permit identifies four "off-normal event" categories that interrupt normal waste management operations:

- Waste management system equipment malfunctions
- Waste shipments with unacceptable levels of surface contamination
- Hazardous Waste Manifest discrepancies that are not immediately resolved
- A suspension of emplacement activities for regulatory reasons

The interruption of disposal activities at WIPP from February 2014 until January 2017 obviously met the definition of an off-normal event that prevented additional waste receipt. The Permittees are proposing to change the language in Section A1-1d by eliminating the "stop shipment" provision, and instead allow waste to be stored in the proposed Overpack Unit. I believe it is ill advised to eliminate this provision, particularly for off-normal events such as were experienced with the 2014 incidents.

However, there currently are exceptions to this "stop shipment" requirement for off-normal events that are intended to address specific situations where it would be better to continue to accept shipments already en route from the generator/storage site to the WIPP

facility. The permit defines those situations in Attachment A1, Sections A1-1c(1) [CH Bay Surge Storage Area] and A1-1c(2) [Parking Area Surge Storage]. In both sections of the permit, surge storage is allowed if current maximum capacity is reached and at least one of the following conditions is met:

- Surface or underground waste handling equipment malfunctions prevent the Permittees from moving waste to disposal locations;
- Hoisting or underground ventilation equipment malfunctions prevent the Permittees from moving waste into the underground
- Power outages cause a suspension of waste emplacement activities;
- Inbound shipment delays are imminent because either the Parking Area is full or the Parking Area Container Storage Unit Surge Storage is in use; or
- Onsite or offsite emergencies cause a suspension of waste emplacement activities.

The Permittees were able to take advantage of the CH Bay Surge Storage Area following the 2014 incidents by moving waste from the Parking Area Unit into the WHB Unit. Based upon personal correspondence with the WIPP Info Center, the volume of waste stored in the CH Bay Surge Storage Area following the 2014 incidents was 35.3 m³, or 1246.6 ft³.

Rethinking Surge Storage

The concept of “surge storage” came about during negotiations in 2005 and 2006 during development of the draft permit reflecting the consolidated 311-RH PMR. According to testimony by the Permittees at the public hearing (as summarized in the Hearing Officer’s Report, p 15):

“Increased storage capacity allows operational flexibility to address variations between the scheduled and actual shipping rates; provides more storage capacity during planned and unplanned activities that affect waste handling and hoisting, reduces the need for extended work shifts and employee overtime; and reduces the need to slow or stop shipments en route to the WIPP facility as the result of the lack of storage capacity.”

Note how many of these benefits of surge storage are similar to the outcomes anticipated in the current PMR. However, the use of surge storage is *only* allowed during off-normal events, while the current PMR would also propose receipt of CH waste during planned maintenance outages at the facility.

As currently written, Section A1-1d would not necessarily cut off shipments if the “*event which results in an interruption to normal waste handling operations*” were a “**normal**” event (e.g., planned maintenance), where waste could continue to be received and safely stored within the storage time limitations in anticipation of resumption of emplacement when the interruption ends. To me, it seems odd that the sentence as written does not say, “... will be stopped in any **off-normal** event which results in an interruption to normal waste handling operations...,” since that is the context of the preceding paragraph and bullet list.

A relatively minor (i.e., Class 2) PMR could open up the use of surge storage for planned maintenance outages with some very simple changes:

1. Propose the change suggested above in Attachment 1, Section A1-1d that would clarify that "stop shipment" criteria only apply to any *off-normal* event. Add another sentence following that one stating plainly that planned or scheduled maintenance activities are not off-normal events.
2. In the bullet lists for Attachment A1, Sections A1-1c(1) [CH Bay Surge Storage Area] and A1-1c(2) [Parking Area Surge Storage], add a bullet condition allowing surge storage for planned or scheduled maintenance.

All such stored waste would thus continue to be subject to the current 59- or 60-day storage time limit, and would meet all the other existing requirements for stored TRU waste. There would be no multiple loading and unloading of concrete overpacks, no uninspected containers beyond the current exemptions in the permit, no vast concrete pad roughly the size of two football fields to be constructed, no two- to three-year delay while the Overpack Unit is being constructed and the concrete overpacks are fabricated, no waste of an estimated \$9 to \$10 million price tag.

For these reason, I reiterate my opposition to this PMR and recommend that it be denied before NMED even contemplates developing a draft permit incorporating their proposals. I further suggest that the Permittees withdraw their PMR and submit a Class 2 PMR consistent with my recommendations. If NMED proceeds with a draft permit, I will request a hearing during the public comment period and, if granted, I will file a notice of intent to be a party at such a hearing.

I wish to thank Mr. Wille Most of RES for providing timely answers to my questions regarding the Overpack Unit PMR that I submitted to the WIPP Info Center on November 28, 2016. I have included the questions and answers as part of my submittal so that they may be included in the administrative record.

Please feel free to contact me if you have any questions about my comments.

Sincerely,

A handwritten signature in black ink that reads "Steve Zappe". The signature is written in a cursive, flowing style.

Steve Zappe

Responses to Steve Zappe's Questions on the Above Ground Storage Capability Class 3 PMR

1. What is the estimated cost to construct the complete proposed Overpack Unit?

The estimated cost for the Overpack Unit is 9-10 million USD, which includes the cost of the pad (5-6 million USD) and all of the concrete overpacks (4 million USD).

2. What is the estimated time necessary to construct the Overpack Unit once all regulatory approvals by NMED have been granted?

Estimated construction time for the Overpack Unit is 2-3 years, which includes the manufacturing of the concrete overpacks. The pad will be constructed in parallel with the manufacturing of the overpacks.

3. The proposed capacity of the Overpack Unit is 408 concrete overpacks... recognizing that the Permittees may not procure the full complement, what is the cost to procure a single concrete overpack?

A single overpack is estimated at \$8,000 - \$10,000 USD.

4. Could you please provide WIPP's history of notifying NMED (see Permit Attachment A1, Sections A1-1c(1) and A1-1c(2)) of the need for surge storage in the Waste Handling Building Unit and/or the Parking Area Unit? Include the dates that surge storage was used and the maximum amount of waste stored in each surge storage area in each instance.

The request for surge storage in the WHB was made on February 26, 2014. The link to this letter is http://www.wipp.energy.gov/library/Information_Repository_A/Extensions_of_Time/14-1427.pdf. In the WIPP Permit Information Repository you can find this letter and the subsequent requests for an extension of time for storage of waste in the Waste Handling Building (WHB), including the initial request for Surge Storage in the WHB. The link to the Information Repository is http://www.wipp.energy.gov/library/Information_Repository.htm. There are eight additional requests for Extension of Time for storage, including Surge Storage in the WHB. Surge Storage in the Parking Area Unit (PAU) was never required or requested, just an extension of time for storage.

The information you requested regarding the maximum amount of waste in found in Attachment 2 of the initial, "Weekly Status Report for the February 28, 2014, New Mexico Environment Department Administrative Order Required Information Report for the Initial Reporting period (ending March 9, 2014)." The Information Repository link to this report is http://www.wipp.energy.gov/library/Information_Repository_A/Responses_to_Administrative_Order/14-1437_Redacted.pdf. Attachment 2 is entitled, "TRU Mixed Waste Currently in Storage at the WIPP Facility." No waste was added after the PAU waste was brought into the WHB.

The volume of the waste in surge storage is 35.3 m³