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March 15, 2004

**RE: GENERAL RESPONSE TO COMMENTS, CLASS 2 MODIFICATION REQUESTS
WIPP HAZARDOUS WASTE FACILITY PERMIT
EPA I.D. NUMBER NM4890139088**

Dear Citizen:

On September 11, 2003, the New Mexico Environment Department (**NMED**) took final administrative action on several Class 2 permit modification requests (**PMRs**) to the Waste Isolation Pilot Plant (**WIPP**) Hazardous Waste Facility Permit. The Department of Energy Carlsbad Field Office and Washington TRU Solutions LLC (**the Permittees**) submitted the PMRs to the Hazardous Waste Bureau in the following documents:

- Request for Class 2 Permit Modification (Combined PMR), Letter Dated 5/13/03, Rec'd 5/14/03
- Request for Class 2 Permit Modification (PCBs), Letter Dated 5/21/03, Rec'd 5/23/03

The Permittees identified six (6) separate items in their PMR submittals:

1. Packaging-Specific Drum Age Criteria (**DAC**) for New Approved Waste Containers
2. Removal of Underground Booster Fans
3. LANL Sealed Sources Waste Streams Headspace Gas Sampling and Analysis Requirements
4. Remove Formaldehyde as a Required Analytical Parameter for LANL
5. Addition of New Hazardous Waste Numbers
6. Revise Polychlorinated Biphenyl (**PCB**) Prohibition

NMED has approved Items 2, 4, 5, and 6 as submitted and denied Items and 3 for the reasons specified in the attached response to comments.

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The PMRs listed above were evaluated and processed by NMED in accordance with the requirements specified in 20.4.1.900 NMAC (incorporating 40 CFR §270.42(b)). They were subject to a sixty (60) day public comment period, which ran from May 16 through July 14, 2003 for the Combined PMR and from May 28 through July 28, 2003 for the PCB PMR. NMED received written comments from a total of twelve individuals and organizations during the public comment period on the Combined PMR and from a total of ten individuals and organizations during the public comment period on the PCB PMR. NMED's general responses to the comments based on the submitted PMRs are summarized in the attachment to this letter.

Further information on this administrative action may be found on the NMED WIPP Information Page at <<http://www.nmenv.state.nm.us/wipp/>>. Please contact Steve Zappe at (505) 428-2517 or via e-mail at <steve_zappe@nmenv.state.nm.us> if you have further questions or need additional information.

Sincerely,

John E. Kieling
Manager
Permits Management Program

Attachment

cc: Sandra Martin, HWB
Steve Zappe, HWB
R. Paul Detwiler, DOE/CBFO
Steven Warren, Washington TRU Solutions LLC

**NMED GENERAL RESPONSE TO COMMENTS ON CLASS 2 AND PCB PERMIT MODIFICATIONS
TO WIPP HAZARDOUS WASTE FACILITY PERMIT (WIPP PERMIT)
SUBMITTED MAY 2003**

Item 1. Packaging-Specific Drum Age Criteria (DAC) for New Approved Waste Containers

Background: The existing WIPP permit establishes a drum age criteria (DAC) that must be implemented by the generator/storage sites (sites). The purpose of the DAC is to ensure that the gas sample collected within the uppermost void space in a waste container (called a “headspace gas sample”) is representative of all gases found throughout the container. The headspace gas sample is then analyzed to identify any hazardous volatile organic compounds (VOCs) associated with the waste in the container. On November 25, 2002, the New Mexico Environment Department (NMED) approved an earlier permit modification request (PMR) allowing WIPP to dispose of transuranic (TRU) waste in direct loaded 85-gallon drums, 100-gallon drums, and direct-loaded ten-drum overpacks (TDOP). At the time of the approval, NMED specified that DAC values for the new containers must be established prior to their use. This PMR proposed to establish packaging-specific and default DAC values for the new containers.

The DAC methodology proposed in the PMR for 85-gallon drums, 100-gallon drums, and direct-loaded TDOPs is based on the same methodology used to calculate the DAC values for other approved containers currently in the permit, with no additional empirical testing proposed.

Comments: In general, there were many comments stating that the PMR should undergo the more extensive Class 3 modification process rather than the Class 2 process, based on criteria found in the regulations at 40 CFR §270.42. In general, there were public concerns about the assumptions made for DAC values assigned to 85 and 100-gallon drums, and that these assumptions were not justified in the PMR. For example, comments on the nature of data used to justify the DAC values, including concerns that the modeled values are calculated using a 55-gallon drum volume and not from 85- or 100-gallon drum volumes. Commentors questioned other assumptions or variables used in the computer model, such as type, number, and material of construction of the container lids and liners, layers of confinement, and the diffusivity and adsorption/de-absorption of VOCs in the container. Also of concern was how the generator sites would determine the number and thickness of the liners for waste that was already packaged. Many commentors expressed concern regarding compacted drums and that these drums should have separate DAC values for various reasons, including sorption capability of other liners in the compacted drums. Most commentors indicated that experimental tests on compacted drums with known VOC concentrations should be performed to verify the assumption that headspace gas in a compacted drum will reach steady-state. Many commentors stated that the Permittees did not provide justification for why the void space volumes in 85 and 100-gallon drums would be the same as a 55-gallon drum.

Response: NMED denied this PMR because the numerous assumptions used to assign the DAC values for 85 and 100-gallon drums and various packaging configurations were not technically addressed to support the conclusion(s). Other serious questions remain concerning the technical validity of the PMR. NMED believes that further testing and/or

justification may be necessary to support the PMR. Please note that the Permittees submitted a revised PMR on this item to NMED on January 8, 2004.

Item 2. Removal of Underground Booster Fans

Background: This PMR proposes the removal of ventilation booster fans located in one section of the underground mine. The fans were originally installed to provide ventilation air during construction of the repository, as well as to be used in the event of a fire to control the spreading of fire, smoke, and toxic gases by reversing airflow and allowing the safe evacuation of personnel. However, additional upgrades to the WIPP ventilation system occurred during later construction that negates the need for underground booster fans. The PMR proposed to eliminate all references to booster fans and airflow reversal modes of operation in the underground ventilation system and thus allow removal of the underground booster fans, which present a significant operation and maintenance problem if left in place. The Permittees also included a report from an expert ventilation contractor and a report from the Mine Safety and Health Administration, Mine Safety Investigation Section, which indicated that the presence of the fans were no longer needed due to the upgrades, and that the fans would not meet current regulatory criteria.

Comments: Most comments supported this PMR, and indicated that the removal of the booster fans improves safety and health considerations at the WIPP site. A few commentors expressed concern that the Permittees had not indicated how the space would be used after the fans are removed and suggested that the equipment simply be left in place in case a failure should occur in the present ventilation system.

Response: NMED approved this PMR. NMED believes that the concerns that had been raised during the previous Class 1* PMR have been sufficiently addressed. There is no reason to leave equipment in place when it will not be used or needed anymore. It is NMED's position that the PMR is in the best interest of human health and the environment.

Item 3. LANL Sealed Sources Waste Streams Headspace Gas Sampling and Analysis Requirements

Background: Los Alamos National Laboratory (LANL) has been tasked with collecting "sealed sources" from around the country via DOE's Off-Site Source Recovery Project. DOE and predecessor agencies used sealed sources, which are nuclear materials encased in capsules designed to prevent leakage or escape of such material, in applications that require high surface dose rates. Sealed sources are used, for example, to calibrate radiological equipment and to provide standards in the laboratory for analytical samples that are being tested for radiation. This PMR would waive existing permit requirements for headspace gas (HSG) sampling and analysis for sealed source waste streams at LANL, and instead would substitute sampling of surrogate drums (i.e., drums with packaging materials but no waste) and assign the analytical results for VOCs to all containers in the waste stream. The PMR would also include additional acceptable knowledge (AK) and visual examination (VE) requirements to ensure continued compliance with the Permit. Under the existing Permit,

those sources would be required to undergo the same characterization activities as other contact handled transuranic mixed waste, including HSG sampling for every waste container.

Comments: Many commentors believe that this Class 2 PMR was not properly classified, and should be processed as a Class 3 modification based on the magnitude of the changes requested. Other commentors were concerned that the sealed sources were not defense waste that can legally be disposed of at the WIPP site. There were various concerns about the proposed testing of surrogate drums and the elimination of HSG sampling for VOCs. Others indicated that while the PMR called for VE at the time of packaging, this characterization did not include AK verification. Commentors also indicated that the surface wipe test to determine if a leak was present wasn't quantitative. Other comments indicated that there was no information provided on the different types, sources (e.g., 239 PuBe, 241 AmBe, 241 AmLi, etc.), and quantities (amount) that would be disposed of at the WIPP site. A commentor also indicated that the non-radioactive constituents that have the potential to exhibit the hazardous characteristics of reactivity, toxicity, corrosivity, etc., should be specified.

Response: NMED denied this PMR. NMED believes in all likelihood that the sealed sources described in this PMR do not contain hazardous constituents; however, such unilaterally supportable or defensible information was not provided in this PMR. To properly address comments and evaluate the PMR, NMED must be provided sufficient information. NMED also believes that identifying a single, limited category of waste that is exempt from HSG sampling and analysis adds an unnecessary degree of complexity to the permit. NMED believes that until a broad PMR addresses elimination of HSG sampling and analysis for all TRU mixed waste containers, the Permittees should submit a PMR to the previously approved permit condition regarding reduced sampling requirements for wastes with no VOC-related hazardous waste codes. Please note that the Permittees submitted a revised PMR on this item to NMED on November 13, 2003.

Item 4. Removal of Formaldehyde as a Required Analytical Parameter for Los Alamos National Laboratory (LANL)

Background: This PMR proposed the removal of formaldehyde as a required target analyte for LANL homogeneous solidified TRU waste. The permit currently requires that homogeneous solidified waste streams at both LANL and the Savannah River Site be analyzed for formaldehyde, based upon information stating that formaldehyde might be present in these wastes contained in the original permit application. A review of the AK documents at LANL indicated that formaldehyde was not managed in a manner that would cause it to appear in TRU waste generated at the facility.

Comments: A major concern from commentors was that DOE should be required to delist formaldehyde as a waste stream under specific EPA provisions contained in 40 CFR §260.22 with specific waste removal provisions that require DOE to sample the waste in accordance with the EPA Toxicity Characteristic Leaching Procedure (TCLP). Another commentor questioned whether there was sufficient AK information provided in the PMR to support removing formaldehyde from the analytical target list for LANL.

Response: NMED approved this PMR. NMED did not concur that the PMR is subject to delisting procedures under the regulations. The Permittees were only seeking to modify an overly conservative inventory of LANL wastes in order to remove formaldehyde from their VOC and HSG analyses target list. NMED also believes sufficient AK information was provided to justify the removal of formaldehyde from LANL target list.

Item 5. Addition of New Hazardous Waste Numbers

Background: The existing WIPP permit limits the types of hazardous chemicals acceptable for disposal at WIPP by identifying the appropriate EPA-designated “hazardous waste numbers” on an approved list. This PMR proposed adding new hazardous waste numbers to the approved list, which would allow WIPP to receive and dispose of waste containing newly identified chemical constituents. The proposed chemicals and their hazardous waste numbers were Hexachlorobutadiene (D033), Cyanides (soluble cyanide salts) not otherwise specified (P033), Potassium Cyanide (P098) Potassium Silver Cyanide (P099), Sodium Cyanide (P106), Acetonitrile (U003), Dimethyl Sulfate (U103) and 1,4-Dioxane (U108).

Comments: Some commentors objected to the use of a Class 2 permit modification procedure for adding additional hazardous waste numbers to the permit, and expressed further concern regarding the volume of waste from Rocky Flats (approximately 14%) associated with hexachlorobutadiene. Other comments were concerned that the PMR had not provided sufficient information regarding the compatibility of hexachlorobutadiene with other wastes, container materials, panel materials in the WIPP disposal rooms, or regarding the toxicity of hexachlorobutadiene. Several comments suggested that NMED should consider adding hexachlorobutadiene to the disposal room VOC limits, as well as add it to the target analyte list for volatile and semi-volatile organic compounds.

There were some additional comments regarding the assertion in the PMR that certain hazardous waste numbers covered by the modification would be treated to Land Disposal Restriction (**LDR**) standards. One concern was that the modification did not clearly indicate that cyanide compounds would be treated by ultraviolet oxidation and/or alkaline chlorination. The other LDR issue was a concern that all new hazardous waste numbers covered by the PMR, regardless of the DOE site from which they originate, must be treated to the LDR standard, or the PMR must limit these new hazardous waste numbers to Rocky Flats waste only.

Response: NMED approved this PMR. NMED does not concur that this PMR should be subject to Class 3 modification procedures, because other PMRs seeking to add hazardous waste numbers have also been processed under Class 2 procedures. The volumes of waste provided in the PMR were a conservative estimate and not intended to provide an accurate accounting of waste volume, especially considering that the volume was attributed equally among all newly added hazardous waste numbers. Regarding compatibility of hexachlorobutadiene with other wastes, NMED notes that this chemical was included in the chemical list for halogenated organics and evaluated for compatibility in the original permit application, and that all subsequently approved chemicals have been evaluated for

compatibility with hexachlorobutadiene. NMED decided not to add hexachlorobutadiene to disposal room VOC limits or target analyte lists because the permit already has a mechanism for identifying “tentatively identified compounds” (TICs) that ensure such constituents would be regulated appropriately. Concerns expressed by commentors regarding treatment of waste to LDR standards are misplaced, because WIPP has been congressionally exempted from requiring that waste meet LDR treatment standards, and the decision to treat any waste is left to the generator site and their regulator. Of course, waste must meet all WIPP waste acceptance criteria specified in the permit prior to acceptance for disposal.

Item 6. Revise Polychlorinated Biphenyl (PCB) Prohibition

Background: The existing permit prohibits WIPP from accepting and disposing of waste that contains polychlorinated biphenyls (PCBs) in concentrations greater than 50 parts per million. However, PCBs are actually regulated under a different program by the U.S. Environmental Protection Agency (EPA), referred to the Toxic Substances Control Act (TSCA). On May 13, 2003, EPA approved DOE’s application to store and dispose of PCB-contaminated TRU waste at WIPP under TSCA. This PMR removes the restrictions against PCB waste currently contained within the WIPP permit, allowing EPA to regulate storage and disposal of PCB-contaminated TRU waste at WIPP through their TSCA conditions of approval.

Comments: A commentor expressed concern that TRU waste containing PCBs could be accepted at the WIPP site in concentrations greater than 50 ppm, since the TSCA approval did not establish an upper limit or level for the concentration of PCBs in the waste. One commentor provided specific language that could be inserted in the WIPP permit to address this issue. Another commentor indicated that the TSCA approval had not demonstrated that the PCB TRU mixed waste in concentrations greater than 50 ppm would be comparable with all other waste, backfill, seals and panel closure materials or containers disposed of at the WIPP site. Some commentors believe that a firm PCB concentration limit should be established in the WIPP permit if there wasn’t one in the TSCA approval. Commentors were generally concerned about the analytical testing procedures specified in the TSCA approval; one commentor thought the analytical procedures in the TSCA approval were insufficient, while another believed that the PCB analytical procedure in the WIPP permit should be replaced with the TSCA regulations. Some commentors wondered how communication between the EPA and NMED would occur with regard to the amount of PCB TRU mixed waste disposed of at WIPP and the location of containers of PCB TRU waste in the WIPP underground. The same commentor was concerned that this may be an issue in an emergency. The commentor suggested that the WIPP Waste Information System (WWIS) continue to be used for PCB TRU mixed waste. Another commentor also expressed concerns about the communication between NMED and EPA with regard to future modification of one or the other permit/approval that might unexpectedly impact each other.

Comments supporting the modification indicated that the underground WIPP site was an excellent location to dispose of PCB TRU-mixed waste. Another commentor supporting the permit modification expressed a strong opinion contesting the fact that NMED considered this a Class 2 modification. This commentor also indicated that the modification should have

been handled more quickly as an administrative (i.e., Class 1) modification, without the benefit of public comment, and that NMED was wasting taxpayer money and time.

Response: NMED approved this PMR. The issuance of a TSCA PCB/TRU-mixed waste condition of approval requires the involvement of the EPA Region 6 TSCA program in the WIPP site operations. All PCB/TRU-mixed waste issues will be regulated under EPA's TSCA authority and not NMED. It is NMED's position that there is no technical or regulatory reason or authority to duplicate regulatory authority now that the facility has obtained a valid approval under the appropriate regulatory program for PCB/TRU-mixed waste. NMED does not believe that the EPA regulations are contradictory to the NMED regulations; therefore, it is NMED's position that this PMR should be approved. Although requirements to maintain PCB information in the WWIS is removed from the WIPP permit, the WWIS database will still maintain this information under the TSCA approval, and NMED has full access to such information.

Legal and regulatory requirements determined the actions taken by NMED. A Class 2 permit modification was identified as the appropriate modification mechanism for this type of revision; however, NMED does not have the legal authority or option to simply administratively modify the permit based on this submittal. EPA Region 6 supported NMED's authority in determining the appropriate classification of this PMR.