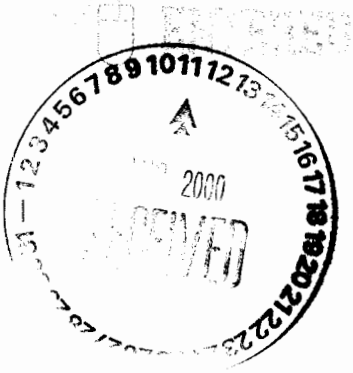
Department of Energy
Carlsbad Area Office
P. O. Box 3090
Carlsbad, New Mexico 88221

August 9, 2000



Mr. Steve Zappe, WIPP Project Leader
Hazardous Waste Permits Program
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
P. O. Box 26110
Santa Fe, NM 87505

Subject: Notice of Class 1 Permit Modifications to the Hazardous Waste Facility Permit, Permit Number: NM4890139088-TSDF

Dear Mr. Zappe:

The purpose of this letter is to submit this notice of a Class 1 modification to the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit, Number: NM4890139088-TSDF, pursuant to 20.4.1.900 New Mexico Administrative Code (NMAC) (incorporating 40 CFR 270.41 and 270.42). This modification establishes room-based emission rates for Volatile Organic Compounds (VOCs) in lieu of container-based emission rates. Also enclosed is a resubmittal of a Class 1 modification originally sent on November 15, 1999, (Item 4 of that submittal) which addresses the number of filters on containers.

These changes do not substantially alter the permit conditions or reduce the capacity of the facility to protect human health or the environment.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to be the best of my knowledge and belief, true, accurate, and complete. I am 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 regarding this permit modification notice, .please contact Mr. Jody Plum at (505) 234-7462

Sincerely,

Dr. Inés R. Triay, Manager
Carlsbad Area Office

J. L. Epstein, General Manager
Westinghouse Waste Isolation Division

000819

Enclosure

cc w/enclosure:
J. Bearzi, NMED
J. Kieling, NMED
C. Walker, Techlaw

CAO:ORC:JP 00-1020
UFC 5486

Notice of RCRA Permit Modification in Accordance with 20 4.1.900 NMAC (40 CFR Part 270)

Waste Isolation Pilot Plant
Carlsbad, New Mexico

August 8, 2000

Notice of RCRA Permit Modification
in Accordance with 20 4.1.900 NMAC (40 CFR Part 270)

Consistent with requirements of 20 4.1.900 New Mexico Administrative Code (NMAC) (incorporating 40 CFR Part 270 or Section 270.XX), the U.S. Department of Energy, Carlsbad Area Office (CAO) is submitting to the New Mexico Environment Department (NMED) a notice of class 1 modifications to the Resource Conservation and Recovery Act (RCRA) operating permit (#NM4890139088-TSDF) for the Waste Isolation Pilot Plant (WIPP). Specifically, this information is provided to comply with the requirements of 20.4.1.900 NMAC incorporating 40 CFR § 270.42(a)(i).

The requested modifications are listed in Table 1. The listed information includes a reference to the applicable section of the permit, a brief description of the item and the relevant permit modification category as identified in Appendix I. More complete descriptions of the class 1 modifications are provided in Attachment 1.

All of the identified changes are minor in nature and serve to keep the permit current with facility operations. The changes do not substantially alter the permit conditions or reduce the capacity of the facility to protect human health or the environment and the modified permit is no less stringent than the current permit. This submittal does not contain class 1 modifications requiring approval prior to implementation.

Table 1. Class 1 RCRA Permit Modification

No.	Affected Permit Section	Item	Category	Attachment 1 Page #
1.	a. Module IV b. Attach. B c. Attach. M1	Replace the existing VOC emissions with the calculated room based emission rate limits	A.1	A-1
2.	a. Attach. M1	Change to Attachment M1 to avoid confusion regarding the use of filter vents	A.1	A-5

Attachment 1

Descriptions of RCRA Permit Modification

Item 1

Class 1 Modification
Addition of VOC Room-Based Emission Rate Limits

Description:

Replace the existing reliance on the existing VOC emissions modeling assumptions with the requirement to meet calculated VOC room-based emission rate limits.

Basis:

The Permit currently requires that containers be fitted with a filter that is equivalent to or better than the filter used in the VOC emission modeling. This requirement is based on the assumptions made during the VOC emissions modeling that included container-specific VOC concentration limits. In the final Permit, the NMED imposed equivalent room-based VOC concentration limits in lieu of container-specific concentration limits. Likewise, it is possible and appropriate, to also use room-based emission rates in lieu of container-based emission rates.

Discussion:

Permit Attachment M1, Section M1-1b requires that all container be fitted with a filter vent that meets the requirements of Section M1-1d(1). Permit Attachment M1, Section M1-1d(1) requires that:

> The filter media can be any material (e.g., composite carbon, sintered metal) as long as the filter VOC diffusion characteristics are equivalent to (or better than) those used in the VOC emission modeling.

Filters are required for radiation protection in order to preclude internal pressurization due to radiolysis. The VOC emission modeling that is referred to is the modeling presented in Appendix D9 of the WIPP RCRA Part B Permit Application (Permit Application). At the time the modeling in Appendix D9 was being conducted, there were established drum-based VOC concentration limits. Currently, the Permit has established room-based VOC concentration limits in lieu of the drum-based limits. This allows the Permittees to handle any VOC concentration in a drum as long as the overall room-based concentration limits are not exceeded. This condition is further ensured by the requirement for VOC monitoring.

The VOC monitoring requirements establish a VOC concentration of concern for VOC monitoring station A in Table IV.F.2.c that, if exceeded, results in the corrective action specified in Module IV, Section IV.F.2.d. The concentrations specified in Table IV.F.2.c establish a condition to ensure that any VOC emissions are at levels that do not adversely impact human health and the environment. In addition, the Permit establishes a condition regarding VOC diffusion that maintains an additional level of protection of human health and the environment based on the analyses presented in Appendix D9.

At the time the VOC emission modeling calculations presented in Appendix D9 were conducted, the VOC limits were applied on a per drum basis rather than the existing room average basis (i.e., Permit Table IV.D.1). The filter diffusivity value specified in the original calculations was necessary to demonstrate that a room full of drums at the maximum allowable headspace gas concentration would result in emissions that are below the regulatory limits. Changing the emission rate from a container-specific rate to a room-based rate results in an equivalent condition for protecting human health and the environment.

A bounding VOC room-based emission rate limit based on maintaining compliance with existing Permit conditions was calculated (i.e., emission rates necessary to meet the Permit VOC concentrations of concern in Permit Table IV.F.2.c).

It should be noted that this request will allow for multiple filters on a single container, because the diffusivity of the filters is additive. In other words, having two filters of a known diffusivity is equivalent to having one filter with the simple sum of those two known diffusivities. In addition, this change allows generators to use a large variety of filters in order to assure that containers are properly vented for radiation protection purposes.

Revised Permit Text:

a. Module IV.D

IV.D. VOLATILE ORGANIC COMPOUND ~~CONCENTRATION~~ LIMITS

The Permittees shall limit releases to the air of volatile organic compound waste constituents (**VOCs**) as specified by the following conditions, as required by 20. 4.1.500 NMAC (incorporating 40 CFR §264.601(c)):

IV.D.1 Room-Based Limits

The average measured concentration of VOCs in the headspace gas of all containers and the average calculated emission rate of VOCs from the headspace gas of all containers in any single room within an Underground HWDU shall not exceed the limits specified in Table IV.D.1 below:

Table IV.D.1- VOC Room-Based Limits		
Compound	**VOC Room-Based Concentration Limit (PPMV)**	**VOC Room-Based Emission Rate Limit (mole/room/year)**
Carbon Tetrachloride	9625	4250
Chlorobenzene	13000	5500
Chloroform	9930	4860
1,1-Dichloroethene	5490	2800
1,2-Dichloroethane	2400	1160
Methylene Chloride	100000	53650
1,1,2,2-Tetrachloroethane	2960	1300
Toluene	11000	4780
1,1,1-Trichloroethane	33700	14880

There are no maximum concentration or emission rate limits for other VOCs.

IV.D.2 Determination of VOC Room-Based Limits ~~Concentrations~~

The Permittees shall ~~determine~~ confirm the ~~concentrations of the~~ VOCs concentration and emission rate limits identified in Permit Condition IV.D.1 using the following procedures.

IV.D.2.a VOC Confirmatory Monitoring - the Permittees shall conduct confirmatory monitoring of VOCs as specified in Permit Condition IV.F.2.

IV.D.2.b WIPP Waste Information System (**WWIS**) Report - the Secretary shall have the capability of generating a report from the WWIS database, or equivalent, for identifying the average concentrations and total emission rates of the VOCs specified in Table IV.D.1 on a room and panel basis, based upon the actual waste containers disposed,~~and~~ the VOC headspace gas sampling data for those containers, and the filter diffusion characteristics for those containers.

b. Attachment B-1c

Containers are vented through ~~individual~~ carbon composite particulate filters or filters with equivalent VOC dispersion characteristics, allowing any gases that are generated by radiolytic and microbial

processes within a waste container to escape, thereby preventing over pressurization or development of conditions within the container that would lead to the development of ignitable, corrosive, reactive, or other characteristic wastes.

c. Attachment M1-1d(1)

The Safety Analysis Report (DOE 1997b) for packaging requires the lids of TRU mixed waste containers to be vented through high efficiency particulate air (**HEPA**)-grade filters to preclude container pressurization caused by gas generation and to prevent particulate material from escaping. Filtered vents used in CH TRU mixed waste containers (55-gal (208-L) drums, 85-gal (321 L) drums, 100 gallon drums, TDOPs, and SWBs) have an orifice approximately 0.375-in. (9.53-millimeters) in diameter through which internally generated gas may pass. The filter media can be any material (e.g., composite carbon, sintered metal) ~~as long as the filter VOC diffusion characteristics are equivalent to (or better than) those used in the VOC emission modeling~~.

Item - 2

Description:

Revise description of filters for containers in Attachment M1 of the permit.

Basis:

This change to the permit provides for a consistent reference to section M1-1d(1) of the permit. Previous language in the permit may have been interpreted to limit the use of filter vents and limited placement of filter vents. Where appropriate, multiple filter vents should be allowed and placement should not be restricted to the drum lid.

Discussion:

The items above are Class 1 permit modifications under Section 270.42, Appendix I, A.1. These changes to the permit are most appropriately classified as administrative and informational changes. They are minor changes to the permit necessary to keep it current with facility operations. The changes neither substantially alter the permit conditions or reduce the capacity of the facility to protect human health or the environment.

Revised Permit Text:

Section M1, Page M1-2

Standard 55-Gallon Drums

Standard 55-gal (208-L) drums meet the requirements for U.S. Department of Transportation (**DOT**) specification 7A regulations.

A standard 55-gal (208-L) drum has a gross internal volume of 7.4 cubic feet (ft^3) (0.210 cubic meters (m^3)). Figure M1-3 shows a standard TRU mixed waste drum. One or more~~A~~ filtered vents (as described in Section M1-1d(1)) will be installed in the drum lid or body to prevent the escape of any radioactive particulates and to eliminate any potential of pressurization.

Standard 55-gal (208-L) drums are constructed of mild steel and may also contain rigid, molded polyethylene (or other compatible material) liners. These liners are procured to a specification describing the functional requirements of fitting inside the drum, material thickness and tolerances, and quality controls and required testing. A quality assurance surveillance program is applied to all procurements to verify that the liners meet the specification.

Standard 55-gal (208-L) drums may be used to collect derived waste.

Standard Waste Boxes

The SWBs meet all the requirements of DOT specification 7A regulations.

~~The SWBs will be fitted at the generator sites with a filter vent (as described in Section M1-1d(1)) as required for shipment in a Transuranic Package Transporter, Type II (**TRUPACT-II**) and for safety during TRU mixed waste storage.~~One or more filtered vents (as described in Section M1-1d(1)) will be installed in the standard waste box lid or body to prevent the escape of any radioactive particulates and to eliminate any potential of pressurization. They have an internal volume of 66.3 ft^3 (1.88 m^3). Figure M1-4 shows a SWB.

The SWB is the largest container that may be used to collect derived waste.

Ten-Drum Overpack

The TDOP is a metal container, similar to a SWB, that meets DOT specification 7A and is certified to be noncombustible and to meet all applicable requirements for Type A packaging. The TDOP is a welded-steel, right circular cylinder, approximately 74 inches (in.) (1.9 meters (m)) high and 71 in. (1.8 m) in diameter (Figure M1-5). The maximum loaded weight of a TDOP is 6,700 pounds (lbs) (3,040 kilograms (kg)). A bolted lid on one end is removable; sealing is accomplished by clamping a neoprene gasket between the lid and the body. Filter ports are located near the top of the TDOP. ~~Each TDOP will contain filter vents as described in Section M1-1d(1).storage.~~One or more filtered vents (as described in Section M1-1d(1)) will be installed in the ten-drum overpack lid or body to prevent the escape of any radioactive particulates and to eliminate any potential of pressurization. A TDOP may contain up to ten standard 55-gal (208-L) drums or one SWB. TDOPs may be used to overpack drums or SWBs containing CH TRU mixed waste. The TDOP may also be direct loaded with waste items (other than derived) that are to large to fit into either the standard 55-gal (208-L) drum or the SWB.

Eighty-Five Gallon Drum Overpack

The 85-gal (321-L) drums meet the requirements for DOT specification 7A regulations. ~~These drums will also be equipped with filter vents (as described in Section M1-1d(1)).storage.~~One or more filtered vents (as described in Section M1-1d(1)) will be installed in the eighty-five gallon drum overpack lid or body to prevent the escape of any radioactive particulates and to eliminate any potential of pressurization.