

PCB/TRU WASTE A WIPP SOLUTION

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ABSTRACT

The issuance of the hazardous waste facility permit to the Waste Isolation Pilot Plant (WIPP) in October 1999 provided a waste management solution for a significant portion of the TRU waste inventory. However, transuranic (TRU) waste containing polychlorinated biphenyls (PCBs) in concentrations greater than 50 ppm (PCB/TRU waste) was specifically prohibited from disposal at WIPP under the permit.

Even before the permit was issued; options for the management of PCB/TRU waste were being sought. In the spring of 2001, agreement was reached between the regulators and the project participants to pursue a "Chemical Waste Landfill" authorization under Title 40 of the Code of Federal Regulations (CFR) Section 761.75. It took nearly a year to develop the initial report requesting authorization for submittal to the Environmental Protection Agency (EPA), Region VI on March 22, 2002. The initial report, which is tantamount to a permit application, incorporated the modeling studies performed for the WIPP hazardous waste facility permit and the EPA's Certification of Compliance to the disposal standards of 40 CFR § 191.

Public comments on EPA's proposed approval were minimal, allowing EPA to issue a disposal authorization for PCB/TRU waste on May 15, 2003. Attention was then turned to the prohibition for the disposal of PCB/TRU waste in the permit. A Class 1' permit modification submitted on May 16th. Stakeholder interest led to it's denial as a Class 1' on May 20th. A Class 2 permit modification was submitted on May 21st. The paper will discuss the outcome and issues raised through the Class 2 process.

The elimination of the prohibition from the hazardous waste facility permit will be followed by a change to the WIPP Waste Acceptance Criteria, thereby enabling sites to ship non-liquid TRU/PCB waste to WIPP for disposal.

INTRODUCTION

Government officials and scientists initiated the WIPP site selection process in the 1950s. At that time, the National Academy of Sciences conducted a nationwide search for stable geological formations to contain wastes for thousands of years. In 1955, after extensive study, salt deposits were recommended as a promising medium for the disposal of radioactive waste.

In 1979, Congress authorized the construction of WIPP, and the Department of Energy (DOE) constructed the facility during the 1980s. The WIPP is a unique facility located in the remote Chihuahuan Desert of Southeastern New Mexico. The WIPP repository consists of mined disposal rooms 2,150 feet (655 meters) underground in a 2,000-foot (610 meter) thick salt formation that has been stable for more than 200 million years. The regulatory structures under the Resource Conservation and Recovery Act, the New Mexico Hazardous Waste Act, and the Toxic Substances Control Act (TSCA) were written based on standardized commercial processes and do not address the unique nature of the WIPP. On December 10, 1987, EPA revised its regulations under 40 CFR §§ 264 and 265 to allow for the permitting of new treatment, storage, and disposal technologies (Subpart X)^a. The WIPP repository is permitted pursuant to this Subpart. However, the TSCA regulations have not been revised to provide similar flexibility.

In the 1990s, DOE sought the necessary licenses and permits to dispose of TRU waste at WIPP. With the passage of the Land Withdrawal Act in 1996 and EPA Certification in 1998, the WIPP became the world's first underground repository licensed to safely and permanently dispose of TRU waste left from the research and production of nuclear weapons. The WIPP began operations on March 26, 1999 with its first receipt of non-mixed TRU waste.

On October 27, 1999, the New Mexico Environment Department (NMED) issued a Hazardous Waste Facility Permit (HWFP) that recognized the uniqueness of the WIPP underground repository. The WIPP HWFP included a specific prohibition on the storage, management, and disposal of TRU and TRU mixed waste containing PCBs at a concentration greater than 50 parts per million. During the draft permit comment periods, DOE provided comments requesting that this prohibition be removed from the final HWFP. NMED denied the request, because the HWFP application had identified the prohibition. The prohibition in the HWFP application was based in part upon the original No Migration Variance Petition and in part on the lack of a PCB disposal authorization under TSCA.

EPA PCB DISPOSAL APPROVAL

Even before the issuance of the WIPP HWFP, the DOE had entered into discussions with the EPA to evaluate options for the disposal of the TRU waste containing PCBs at the WIPP. The two regulatory options included a performance-based approach (i.e., chemical waste landfill) under 40 CFR § 761.75, and a risk-based approach under 40 CFR § 761.77. In April 2001, the DOE and the EPA agreed to pursue the performance-based approach.

In May 2001, the DOE met with the EPA to discuss the content of a Chemical Waste Landfill Initial Report and the level of detail to be provided in support of waivers to the regulations as provided in 40 CFR § 761.75(c)(4). With the initial drafting of the Chemical Waste Landfill Initial Report, several issues were identified, including the need to obtain specific waivers from chemical waste landfill technical requirements^b, planned changes at the WIPP (e.g., remote handled wastes, central confirmation of waste, and proposed storage increases), and the applicability of exception reporting requirements. These issues were discussed with the EPA in August 2001. Based upon input from the EPA, the Initial Report was revised several times during the fall of 2001.

The final draft Initial Report was issued on December 27, 2001 and incorporated technical descriptions of the WIPP from the Compliance Certification Application submitted to the EPA in 1996 and the WIPP HWFP issued by NMED. In order to ensure the Initial Report met regulatory requirements, an independent Peer Review was conducted by the Institute for Regulatory Science (RSI). On March 20, 2002, RSI issued its recommendation to submit the Initial Report without changes. The final Initial Report was submitted to EPA Region VI on March 22, 2002.

The EPA Region VI issued a notice of intent to approve the disposal of PCB/TRU waste at WIPP on November 13, 2002. A public notice in the Carlsbad Current Argus, the Albuquerque Journal, and the Santa Fe New Mexican on December 10th marked the opening of the 45-day public comment period. With the close of the Public Comment Period, only the Environmental Evaluation Group (EEG) and Southwest Research Information Center (SRIC) had provided comments to the EPA.

EEG comments

The EEG issued a comment in support of the waiver from 40 CFR § 761.75(b) requirements. In addition, they questioned a generic reference to 40 CFR § 761.65 and the need for a "date removed from service." As a result, the EPA revised this condition to reference specific sections of 40 CFR § 761.65. The EEG also provided comments on the format, generic references to aisle space, and three separate references to training requirements. In response, the EPA moved several conditions to more appropriate locations and combined the training requirements to eliminate redundancy.

SRIC comments

The SRIC comments dealt with the EPA public comment process and perceived inconsistencies between the Proposed Approval and the HWFP. In seeking public input, the EPA Region VI had followed their policy guidance for obtaining public input into the permitting and approval process. The SRIC questioned the definition of "TRU waste", the definition of the WIPP database, the storage time limits for PCB Items, the container requirements, the omission of a reference to specific section of the HWFP, and the "conditional approvals". The EPA provided responses to each of the comments. Most of the responses provided clarifications or provided minor editorial changes to the Proposed Approval. The storage time limits were revised to limit PCB/TRU waste storage to 60 days total on the surface at the WIPP. The DOE had sought 90-days based on TSCA policy citing that the HWFP allowed 59-days for venting of the Shipping Package and 60-days inside the Waste Handling Building. The EPA also removed the Conditional Approvals for remote handled waste, central confirmation facility, and storage increase citing that DOE would need to submit a request to change the Approval at a later time and that EPA would work with NMED to ensure adequate public comments on these changes.

The SRIC had also provided comments to the Inside EPA's Superfund Report published on January 6, 2003 (EPA Grants DOE Waiver from TSCA for PCB Disposal at WIPP Facility). In this article, they indicated that state activists feared it would open the door for disposal of other

types of waste. They also indicated that the NMED process "is a more public-friendly process" than the EPA process.

HWFP MODIFICATION REQUEST

None of the commenters requested a hearing; therefore the EPA determined there was not sufficient public interest to conduct a hearing. The EPA Region VI issued the final PCB Disposal Approval and Conditions of Approval on May 15, 2003. Based upon the anticipation of an approval, a HWFP modification request was drafted as a Class 1' citing 40 CFR § 270.42, Appendix I, Item A.8. This HWFP modification request was submitted to the NMED on May 16, 2003.

NMED subsequently rejected the Class 1' HWFP modification on May 20, 2003 based on input from stakeholders that cited inadequate public comment and review under the Class 1' permit modification process. The stakeholder and NMED further cited that the justification used by the DOE for the Classification as a Class 1' permit modification (40 CFR § 270.42, Appendix I, Item A.8) had not yet been incorporated into the New Mexico Administrative Code. The HWFP modification was resubmitted as a Class 2 citing 40 CFR § 270.42, Appendix I, Item B.1.d, on May 22, 2003.

During the public comment period for the permit modification request from May 28th to July 28th, the NMED received numerous comments from the New Mexico Attorney General's Office, EEG, SRIC, Citizens Concerned for Nuclear Safety, John Heaton (New Mexico House of Representatives), Carlsbad Department of Development, Carlsbad Field Office, and several private citizens. Most commenters were concerned that changes made by the EPA Region VI to the approval could eliminate compliance requirements with the WIPP HWFP. The PCB disposal approval issued by the EPA Region contained a condition requiring compliance with the HWFP. Other commenters were concerned about the removal of PCB analytical requirements. TSCA requirements under 40 CFR § 761.50(a)(4) allows generators to assume a concentration greater than 500 parts per million if sampling/analysis is not performed. On July 28th, the DOE provided responses to each of the comments that had been submitted prior to July 27th.

The NMED approved the Class 2 HWFP modification on September 11, 2003, and issued a revised HWFP incorporating each of the requested changes.

READINESS REVIEW/OTHER ACTIVITIES

Concurrent with the HWFP modification process, the Permittee's began modifying procedures and training in an effort to prepare for the receipt of PCB/TRU waste. A readiness review meeting on September 18, 2003 indicated that the remaining activities included revisions to a couple of emergency response procedures and the issuance of a revision to the Waste Acceptance Criteria. The changes to the Waste Acceptance Criteria were on hold pending the issuance of a National Environmental Policy Act (NEPA) Record of Decision. This revised Record of Decision would update a previous decision that prohibits the disposal of TRU waste containing PCB's at a concentration greater than 50 ppm.

An annual change notice was issued to the EPA Office of Radiation and Indoor Air in November 2003 indicating that the EPA Region VI and NMED permit modification approvals had been received and that the WIPP was prepared to receive TRU and TRU mixed waste containing PCBs at a concentration greater than 50 parts per million.

The DOE has issued a Supplement Environmental Impact Statement in accordance with the NEPA and is currently waiting on DOE Headquarters to issue a Record of Decision.

STATUS

Upon issuance of the Record of Decision under the NEPA, the WIPP will have met the regulatory requirements necessary to allow the receipt and disposal of PCB/TRU waste. In addition, the WIPP will have modified procedures and training including waste handling and emergency response necessary to ensure compliance with each of the requirements of the WIPP PCB Disposal Approval and the WIPP HWFP.

REFERENCES

- 1 Environmental Protection Agency, "Chemical Waste Landfills", (40 CFR § 761.75), U.S. Government Printing Office (2001).
- 2 Environmental Protection Agency Office of Radiation and Indoor Air, "Criteria for Certification and Recertification of the Waste Isolation Pilot Plant's Compliance with the Disposal Regulations", Final Rule 40 CFR 194, 63 FR 27354-27406, U.S. Government Printing Office (1998).
- 3 New Mexico Environment Department, "Waste Isolation Pilot Plant Hazardous Waste Facility Permit", NM4890139088-TSDF, New Mexico Environment Department (1999).
- 4 Carlsbad Field Office, "Waste Isolation Pilot Plant Initial Report for PCB Disposal Authorization (40 CFR § 761.75[c])", Department of Energy (2002).
- 5 U.S. Congress, "Waste Isolation Pilot Plant Land Withdrawal Act", Public Law 102-579, As amended by Public Law 104-201, U.S. Government Printing Office (1992, 1996).

FOOTNOTES

^a Federal Register Volume 52, Issue 237, Page 46946 (52 FR 46946).

^b 40 CFR § 761.75(b)