

Case Study 3:



Disposal Requirements for the Waste Isolation Pilot Plant (WIPP)

Meeting the RCRA Challenge



RCRA is one of the principal regulatory statutes of concern to EM managers because it regulates the mixed waste found at many facilities . . . its dual regulation by the Resource Conservation and Recovery Act (RCRA) and the Atomic Energy Act cause some challenges in its management.

Meeting the RCRA Challenge

- **Land disposal restrictions (LDRs) require waste to be treated to certain standards before disposal**
- **Treatment capacity for mixed waste is limited**



Meeting the RCRA Challenge

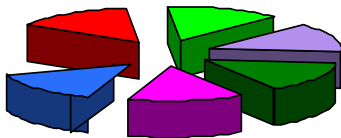
Considerable difficulties occur in the attempt to implement RCRA at EM sites:

- **According to RCRA standards, considerable amounts of mixed waste cannot be:**
 - **Treated**
 - **Stored, or**
 - **Disposed of**



EM Guiding Principles

- **Safety First**
- **Risk Reduction**
- **Scientific Orientation**
- **Management Accountability**
- **Decision Transparency**
- **Stewardship**



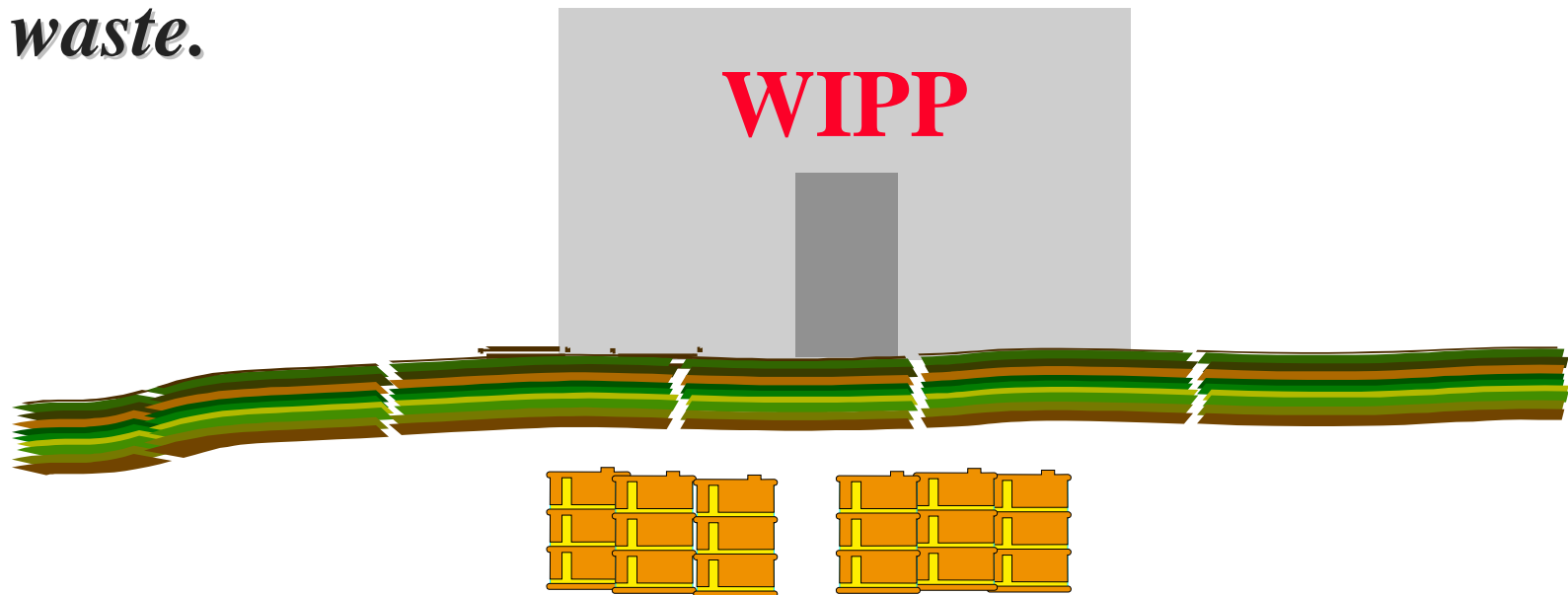
Case Study Introduction

Disposal Requirements for the Waste Isolation Pilot Plant (WIPP) explores:

- **Applying for the first No-Migration Variance (NMV) ever submitted in the history of the Environmental Protection Agency (EPA)**
- **Demonstrating regulatory compliance for a transuranic (TRU) waste repository**

The WIPP

The WIPP is an underground geologic repository for the permanent disposal of TRU waste.



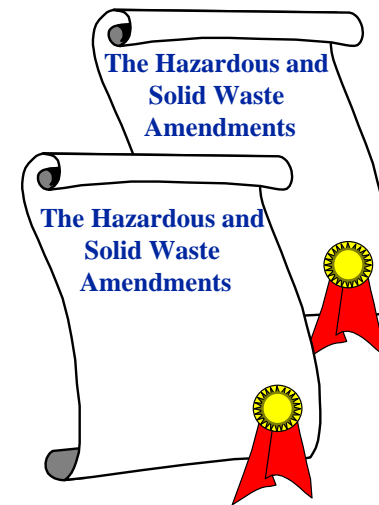
WIPP Facility



The WIPP

In 1984, Congress enacted the Hazardous and Solid Waste Amendments prohibiting land disposal of hazardous waste unless:

- **Waste is treated to meet EPA requirements**
- **The EPA determines that the LDRs are not applicable**



The WIPP



For the EPA to determine that the LDRs are not applicable, it must be demonstrated to a “reasonable degree of certainty that there will be no migration of hazardous constituents from the disposal unit for as long the waste remains hazardous.”

The WIPP

Under the NMV, the EPA must consider:

- **Long-term land disposal**
- **Management of the hazardous waste**
- **Persistence, toxicity, mobility, and bioaccumulative potential of the waste**



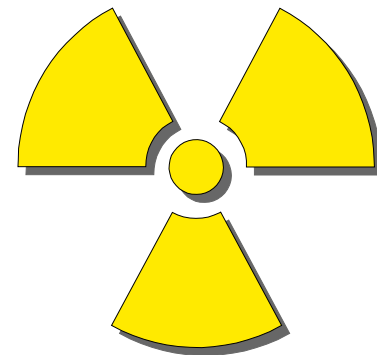
RH-TRU & CH-TRU Disposal Room in WIPP



The WIPP

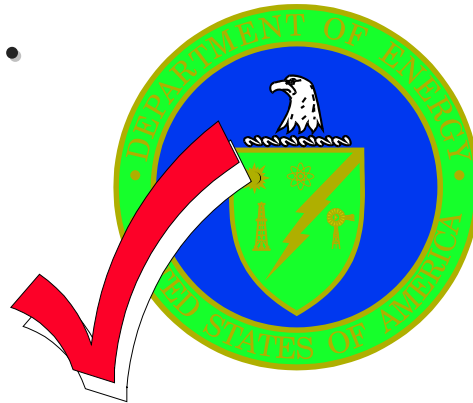
A NMV was required because the wastes shipped to the facility will be radioactive mixed wastes that contain:

- **Transuranic radioisotopes**
- **RCRA-listed or -identified chemical constituents**



The WIPP

On November 14, 1990, the EPA's NMD concluded . . . that the DOE had demonstrated . . . that hazardous constituents will not migrate from the WIPP disposal unit during the Test Phase



WIPP and New Mexico Regulations



- **In 1996, DOE submitted a RCRA Part B Permit to the State of New Mexico**
- **In 1998, New Mexico issued a revised Draft RCRA Part B permit**

WIPP and the NMV



- **In 1993, DOE's approach for the test phase changed and the NMV issued by EPA in 1990 became immaterial**
- **In June 1996, DOE submitted a new NMV to EPA**
- **In September 1996, Congress amended the WIPP Land Withdrawal Act deleting the need for NMV**

The WIPP

This case study illustrates the regulatory process for WIPP, which culminated in the first shipment of waste to the site on March 26, 1999



Review Question

WIPP did not have to obtain a “No Migration Variance” to begin operation because:

- a. The “No Migration Determination” received from EPA for the test phase also addressed the operation of the facility.**
- b. Congress removed the requirement to obtain a “No Migration Determination” in the FY 1997 Defense Authorization Bill.**
- c. As a deep geologic repository, WIPP is not considered land disposal, and therefore RCRA does not apply.**