

**DEPARTMENT OF ENERGY****Record of Decision for the Department of Energy's Waste Isolation Pilot Plant Disposal Phase**

**AGENCY:** U.S. Department of Energy.

**ACTION:** Record of decision.

**SUMMARY:** The Department of Energy (DOE or Department) is issuing this record of its decision to dispose of transuranic (TRU) waste at the Waste Isolation Pilot Plant (WIPP), a mined repository located 2,100 feet below the surface in an ancient salt deposit near Carlsbad, New Mexico. Under this decision, DOE will dispose of up to 175,600 cubic meters (6.2 million cubic feet) of TRU waste generated by defense activities at WIPP after preparation (i.e., treatment, as necessary, including packaging) to meet WIPP's waste acceptance criteria. This waste includes TRU waste accumulated in aboveground storage since 1970 and TRU waste to be generated over approximately the next 35 years. This waste does not include TRU waste commingled with polychlorinated biphenyls in concentrations greater than or equal to 50 parts per million. Transportation of waste to WIPP will initially be by truck, although the Department reserves the option to use commercial rail transportation in the future. DOE will comply with the requirements and waste limits in the WIPP Land Withdrawal Act, as amended, and the Consultation and Cooperation Agreement between New Mexico and the Department of Energy. DOE has applied for a permit from the New Mexico Environment Department under the Resource Conservation and Recovery Act concerning mixed TRU waste (TRU waste containing radioactive and hazardous constituents); such a permit is not needed for disposal of other TRU waste at WIPP.

Implementation of this decision is contingent upon obtaining a Compliance Certification from the United States Environmental Protection Agency (EPA). EPA recently proposed to certify that WIPP complies with applicable EPA requirements for TRU waste disposal (62 FR 58792, October 30, 1997).

This Record of Decision documents the Department's decision to implement the Preferred Alternative, as analyzed in the "Waste Isolation Pilot Plant Disposal Phase Final Supplemental Environmental Impact Statement" (DOE/EIS-0026-FS2, September 1997) (SEIS-II). This Record of Decision is being issued in coordination with the preparation of the Record of Decision on

the treatment and storage of TRU waste, which is based on the "Waste Management Programmatic Environmental Impact Statement" (DOE/EIS-0200, May 1997) (WM PEIS). The WM PEIS Record of Decision will specify the DOE sites at which TRU waste will be prepared and stored before disposal.

**FOR FURTHER INFORMATION CONTACT:**

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For further information on the DOE National Environmental Policy Act (NEPA) process, contact: Carol M. Borgstrom, Director, Office of NEPA Policy and Assistance (EH-42), U.S. Department of Energy, 1000 Independence Avenue, S.W., Washington, D.C. 20585, Telephone: 202-586-4600 or leave a message at 1-800-472-2756.

**SUPPLEMENTARY INFORMATION:****Background**

Since the mid-1940s, DOE's research and development, nuclear weapons production, and nuclear fuel reprocessing activities have produced transuranic (TRU) waste. TRU waste is waste that contains alpha particle-emitting radionuclides with atomic numbers greater than that of uranium (92) and half-lives greater than 20 years in concentrations greater than 100 nanocuries per gram of waste.

TRU waste is classified according to the radiation dose rate at a package surface. Contact-handled (CH) TRU waste has a radiation dose rate at a package surface of 200 millirem per hour or less; this waste can safely be handled directly by personnel. Remote-handled (RH) TRU waste has a radiation dose rate at a package surface greater than 200 millirem per hour, and must be handled remotely (e.g., with machinery designed to shield workers from radiation).

TRU waste that has both radioactive and hazardous constituents is known as mixed TRU waste. The hazardous component of mixed TRU waste is regulated under the Resource Conservation and Recovery Act (RCRA). DOE estimates that approximately 60 percent of TRU waste is mixed TRU waste. In addition, some TRU waste is commingled with polychlorinated biphenyls (PCBs) in concentrations greater than or equal to 50 parts per

million and is known as PCB commingled TRU waste. Disposal of PCBs is regulated under the Toxic Substances Control Act.

Before 1970, TRU waste was disposed of in shallow land burial sites. Since 1970, TRU waste has been retrievably stored in aboveground facilities at DOE sites. Plutonium stabilization and management activities, environmental restoration (which could include remediation of sites where TRU waste was buried before 1970), decontamination and decommissioning, waste management, and defense testing and research are expected to generate additional TRU waste.

The Department began examining the environmental impacts of TRU waste disposal under the National Environmental Policy Act (NEPA) in the late 1970s. After issuing the "Final Environmental Impact Statement for the Waste Isolation Pilot Plant" (DOE/EIS-0026, October 1980), the Department decided in a 1981 Record of Decision to begin phased development of WIPP to demonstrate the safe disposal of TRU waste in bedded salt. Consequently, the Department has, since 1981, been preparing to dispose of and isolate TRU waste by emplacing it in the Waste Isolation Pilot Plant (WIPP), a mined repository located 2,100 feet below the surface in an ancient salt deposit near Carlsbad, New Mexico. The major construction activities at WIPP have been completed. WIPP consists of the Waste Handling Building where waste would be received and inspected, an underground disposal area, and a waste handling shaft for transfer of waste from the surface to the disposal area. WIPP was designed for a total capacity of 175,600 cubic meters (6.2 million cubic feet) of TRU waste.

In 1990, after issuing the "Final Supplemental Environmental Impact Statement for the Waste Isolation Pilot Plant" (DOE/EIS-0026-FS, January 1990), DOE issued a Record of Decision that continued the phased development of WIPP by instituting an experimental program to further examine WIPP's suitability as a TRU waste repository. In September 1997, DOE issued the "Waste Isolation Pilot Plant Disposal Phase Final Supplemental Environmental Impact Statement" (DOE/EIS-0026-FS2) (SEIS-II), which analyzes the environmental impacts of proposed disposal operations at WIPP. The Department has prepared this Record of Decision pursuant to the Council on Environmental Quality Regulations for implementing the provisions of NEPA (40 CFR parts 1500-1508) and the Department of Energy regulations implementing NEPA (10 CFR part 1021).

While SEIS-II was prepared to inform DOE's decision on whether to open WIPP for the disposal of TRU waste, the "Waste Management Programmatic Environmental Impact Statement" (DOE/EIS-0200, May 1997) (WM PEIS) was prepared to inform DOE's decision on where to treat (which includes packaging) and store TRU waste prior to disposal. In the WM PEIS, DOE examined several TRU waste treatment and storage site consolidation strategies (i.e., whether to treat and store TRU waste at the DOE sites where it is generated, at a few regional DOE sites, or at a centralized DOE site). In coordination with this WIPP Record of Decision, DOE is separately preparing a Record of Decision, supported by the WM PEIS, that specifies whether, and if so, where, to consolidate TRU waste for preparation and storage pending disposal.

#### **Purpose and Need for Agency Action**

The Department needs to safely dispose of the TRU waste that has accumulated at DOE sites and to provide for the disposal of additional TRU waste to be generated over approximately the next 35 years (through approximately 2033) in a manner that protects public health and the environment. DOE prepared SEIS-II in order to help DOE make the following decisions:

- Whether to open and operate WIPP for the disposal of TRU waste, and, if so,
- Which portions of the TRU waste inventory would be disposed of,
- To what minimum level TRU waste must be treated for disposal, and
- What mode of transportation would be used to transport TRU waste to WIPP.

#### *WIPP Operation*

With respect to the decision on whether to open WIPP, SEIS-II examines the environmental impacts of four alternatives that involve operating the facility (the Proposed Action and other Action Alternatives) and the impacts of two alternatives that involve dismantling and closing WIPP and continuing storage of TRU waste at the generating sites (the No Action Alternatives).

#### *Waste Inventories*

SEIS-II uses the most recent inventory data available for its analysis, including data from "The National Transuranic Waste Management Plan," (DOE/NTP-96-1204, Revision 0, September 1996) (TRU Waste Management Plan). Using these data, SEIS-II examines the environmental impacts of disposing of different inventories of TRU waste. For purposes

of analysis in SEIS-II, the DOE TRU waste inventory is divided into a Basic Inventory and an Additional Inventory. The Basic Inventory consists of (1) TRU waste generated by defense activities (defense waste) that has been placed in retrievable storage since 1970 and (2) defense TRU waste that would continue to be generated over approximately the next 35 years as a result of plutonium stabilization and management activities, environmental restoration (including remediation of some sites where defense TRU waste was buried before 1970), decontamination and decommissioning, waste management, and defense testing and research. The Basic Inventory volume (per recent estimates analyzed in SEIS-II) is approximately 170,000 cubic meters (6 million cubic feet). The Additional Inventory consists of commercial and non-defense waste (waste for which DOE has responsibility and which was generated by activities other than defense activities), PCB commingled TRU waste, and waste that was buried before 1970 that is not included in the Basic Inventory (because, for example, DOE does not expect remediation activities to occur within approximately the next 35 years, or because the extent of remediation has not been determined). The Additional Inventory also includes non-defense and commercial waste that DOE believes could be generated over approximately the next 35 years. The Additional Inventory volume (per recent estimates analyzed in SEIS-II) is approximately 142,500 cubic meters (5 million cubic feet).

The WIPP Land Withdrawal Act, as amended in 1996, limits the capacity of WIPP to 175,600 cubic meters (6.2 million cubic feet). The Act also specifies that only defense TRU waste may be disposed of at WIPP. In addition, the Consultation and Cooperation (C&C) Agreement between DOE and the State of New Mexico limits the volume of RH-TRU waste to 7,080 cubic meters (250,000 cubic feet). Using the volume estimates analyzed in SEIS-II, disposal of the Basic Inventory would be within these limits, and disposal of the Additional Inventory would exceed these limits.

#### *Waste Treatment Levels*

SEIS-II examines treatment of TRU waste to three different levels before disposal: treatment to meet the planning basis WIPP waste acceptance criteria (WIPP WAC), thermal treatment to meet RCRA land disposal restriction (LDR) levels, and treatment by shred and grout. The planning basis WIPP WAC is that level of treatment and packaging in

WIPP WAC Revision 5, with anticipated revisions as analyzed in SEIS-II. Treatment to planning basis WIPP WAC would require repackaging of TRU waste to meet transportation and disposal regulations and DOE policies. Treatment to LDR levels would use a thermal process that would substantially condense the waste and yield a vitrified or metal ingot waste form. Such treatment would also remove any organic hazardous constituents and immobilize any hazardous metals in mixed TRU waste and PCB commingled TRU waste. Treatment by shredding the waste and sealing it in grout would reduce gas generation, but would create a much larger waste volume. As set forth in this WIPP Record of Decision, DOE has concluded that waste destined for WIPP should at a minimum be prepared (i.e., treated as needed, and packaged) according to the planning basis WIPP WAC. As noted previously, in coordination with this WIPP Record of Decision, DOE is preparing a Record of Decision, based on the WM PEIS, that will specify whether, where, and to what extent to consolidate TRU waste for preparation and storage pending disposal.

#### *Transportation Modes*

SEIS-II analyzes the transport of TRU waste by truck, by regular rail and truck (truck transportation from those sites that do not have rail access), and by dedicated rail and truck. Regular rail refers to use of commercial rail lines, with TRU waste being included on trains that are also carrying other types of freight. Dedicated rail would also use commercial rail lines, with trains composed exclusively of rail cars carrying TRU waste.

The Department has investigated and continues to investigate the possibility of using rail transportation, but considers it less reasonable than truck transportation at this time. The primary factors that make rail transportation less reasonable are (1) limited interest of rail carriers in handling shipments of TRU waste, (2) the higher cost of dedicated rail transportation as compared to truck transportation, (3) the initial cost of acquiring additional transport containers needed for rail transportation (because three times as many containers are needed for each shipment), and (4) DOE's inability to obtain rail carrier assurance that TRU waste container transit will enable DOE to unseal the containers within 60 days of loading, as required by Nuclear Regulatory Commission regulations. Regular rail transportation, because of its lower public health impacts and cost, is still

considered a desirable option for some waste transportation in the future, provided that the factors that make it currently less reasonable can be mitigated.

### Alternatives Considered

SEIS-II examines the environmental impacts of the Proposed Action, three other reasonable Action Alternatives, and two No Action Alternatives that involve the waste inventories and treatment levels described above.

#### 1. Proposed Action (Preferred Alternative)

Under the Proposed Action, DOE would open WIPP and dispose of 175,600 cubic meters (6.2 million cubic feet) of post-1970 defense TRU waste (except PCB commingled TRU waste), which is the Basic Inventory of TRU waste adjusted up to the capacity limits specified in the WIPP Land Withdrawal Act and the C&C Agreement. The waste would be treated as necessary to meet the planning basis WIPP WAC. Based on the inventory volume and the anticipated emplacement rate, TRU waste would be disposed of at WIPP over a 35-year period. Transportation would be by truck.

The Department identified the Proposed Action as its Preferred Alternative in the final SEIS-II. Under the Preferred Alternative, TRU waste transportation would initially be by truck; however, the Department reserves the option to use commercial rail transportation of TRU waste in the future.

The Proposed Action (and Preferred Alternative) would isolate TRU waste for more than 10,000 years and would comply with the WIPP Land Withdrawal Act and the C&C Agreement. However, this alternative would not dispose of the Additional Inventory.

#### 2. Action Alternative 1

Under Action Alternative 1, the Department would dispose of the Basic and Additional Inventories of TRU waste (except PCB commingled TRU waste) at WIPP, after treating the waste to meet the planning basis WIPP WAC. SEIS-II analyzes the disposal of TRU waste over the 160-year period needed for emplacement of this amount of waste at the anticipated emplacement rate. SEIS-II also analyzes the environmental impacts associated with the modifications to WIPP facilities and operations that would be needed to increase the emplacement rate and reduce the disposal time (for this alternative, to 60 years). SEIS-II analyzes transportation by truck and

transportation by rail (regular commercial and dedicated trains).

Action Alternative 1 would isolate TRU waste for more than 10,000 years, and would dispose of defense, non-defense, and commercial TRU waste and TRU waste that was buried before 1970. DOE could not implement Action Alternative 1 unless the WIPP Land Withdrawal Act and the C&C Agreement were modified accordingly. In addition, under Action Alternative 1, DOE would not dispose of PCB commingled TRU waste at WIPP.

#### 3. Action Alternative 2

Under Action Alternative 2, the Department would dispose of the Basic and Additional Inventories of TRU waste (including PCB commingled TRU waste) at WIPP after treating the waste thermally to LDR levels. SEIS-II analyzes the disposal of waste over the 150-year period needed for emplacement of this volume given thermal loading constraints and anticipated emplacement rate. SEIS-II also analyzes the environmental impacts associated with the modifications to WIPP facilities and operations that would be needed to increase the emplacement rate and reduce the disposal time (for this alternative, to 70 years). SEIS-II analyzes three subalternatives (Alternatives 2A, 2B, and 2C) that examine consolidated thermal treatment at DOE sites.

Action Alternative 2 would isolate TRU waste for more than 10,000 years, and would dispose of defense, non-defense, and commercial TRU waste, PCB commingled TRU waste, and TRU waste that was buried before 1970. DOE could not implement this alternative unless the WIPP Land Withdrawal Act and the C&C Agreement were modified accordingly.

#### 4. Action Alternative 3

Under Action Alternative 3, DOE would dispose of the Basic and Additional Inventories of TRU waste (except PCB commingled TRU waste) at WIPP after treatment by a shred and grout process. SEIS-II analyzes the disposal of waste over the 190-year period needed for emplacement of this volume at the anticipated emplacement rate. SEIS-II also analyzes the environmental impacts associated with the modifications to WIPP facilities and operations that would be needed to increase the emplacement rate and reduce the disposal time (for this alternative, to 75 years). The impacts of both truck and rail transportation are analyzed.

Action Alternative 3 would isolate TRU waste for more than 10,000 years,

and would dispose of defense, non-defense, and commercial TRU wastes and TRU waste that was buried before 1970. DOE could not implement Action Alternative 3 unless the WIPP Land Withdrawal Act and the C&C Agreement were modified accordingly. The treatment method under this alternative would increase the volume of the waste to be disposed of, thus increasing transportation. In addition, under Action Alternative 3, DOE would not dispose of PCB commingled TRU waste at WIPP.

#### 5. No Action Alternative 1

Under No Action Alternative 1, the Department would thermally treat the Basic and Additional Inventories of TRU waste and store the waste indefinitely in newly constructed monitored retrievable storage facilities. SEIS-II analyzes two subalternatives that examine the impacts of thermal treatment. The impacts of transporting TRU waste to treatment sites by both truck and rail transportation are analyzed. WIPP would be dismantled and closed under this alternative.

No Action Alternative 1 would treat TRU waste to RCRA LDR levels and indefinitely store the treated waste. Treatment to LDR levels would reduce human health impacts in the event of a release of the stored waste. This alternative would not offer the isolation afforded by deep geologic disposal, would require periodic maintenance of storage facilities and waste repackaging, and could not be implemented without modification of agreements that DOE has reached with several states regarding the offsite disposition of TRU waste. No Action Alternative 1 would require the use of effective institutional controls for the indefinite future.

#### 6. No Action Alternative 2

Under No Action Alternative 2, DOE would continue to store newly generated TRU waste at generator sites in existing or planned storage facilities. The newly generated waste would be treated to meet the planning basis WIPP WAC to facilitate safe storage; however, the waste form would not protect human health if the waste were released. No transportation is analyzed for this alternative, because the waste is assumed to remain indefinitely where it was generated. WIPP would be dismantled and closed under this alternative.

This alternative would not involve impacts to workers and the public associated with thermal or shred and grout treatment or with transportation. However, this alternative would not offer the isolation afforded by deep

geologic disposal, would require periodic maintenance of storage facilities and waste repackaging for the indefinite future, and could not be implemented without modification of agreements that DOE has reached with several states regarding the offsite disposition of TRU waste.

#### **Environmentally Preferable Alternative**

In identifying its environmental preference among alternatives for the long-term management of TRU waste, DOE considered both near-term and long-term (through and beyond 10,000 years) human health and environmental impacts. There are alternatives that would result in low near-term impacts but relatively high long-term impacts, and identifying the environmentally preferable alternative(s) requires judgment concerning these impacts and sensitivity concerning the uncertainties of some of the near-term and long-term impacts.

SEIS-II estimates that some potential near-term fatalities, mainly among workers as a result of industrial accidents from waste treatment operations, would occur under all alternatives. The largest number of potential fatalities would occur as a result of thermal treatment under Action Alternative 2 (up to approximately 14 fatalities) and No Action Alternative 1 (up to approximately 13 fatalities), and the smallest under No Action Alternative 2 (approximately 1 fatality), under which only newly generated waste would be treated. Thermal treatment may result in air quality exceedances for radionuclides, offsite treatment impacts (including fatalities), and, for thermal treatment at WIPP (Action Alternative 2C), potentially disproportionately high and adverse impacts to minority and low income populations near WIPP.

Some potential near-term fatalities also could occur from storage operations under all of the alternatives; a larger number of fatalities could occur as a result of a natural disaster, such as an earthquake with a small annual probability of occurring damaging an aboveground TRU waste storage facility. For the No Action Alternatives, however, the associated risks would continue for the indefinite future. Long-term storage risks would also occur for the Additional Inventory that would not be disposed of under the Proposed Action and for PCB commingled TRU waste that would not be disposed of under Action Alternatives 1 and 3.

Transportation for treatment and for disposal are estimated to cause more fatalities (mainly involving the general public) than other near-term waste

management operations. The largest number of fatalities are estimated to occur under the three Action Alternatives, in which the most waste would be sent to WIPP. The analysis shows, however, that regular commercial rail service would have lower potential fatalities than transportation by either dedicated rail service or by truck. The consequences of low probability accidents would be similar for all transportation options. In contrast, the No Action Alternatives would pose little to no transportation risk, depending on the alternative, but would not dispose of the waste.

Thus, SEIS-II analyses show that, in the near term, No Action Alternative 2 would be environmentally preferable. For the long term, however, disposal of as much of DOE's TRU waste as possible at WIPP is environmentally preferable to indefinite storage, because disposal isolates the waste and avoids the long-term need to protect the public and workers from exposure to stored waste, a protection that cannot be assured over the long periods of time that TRU waste poses a health hazard to the public. The long-term impacts of indefinite storage of TRU waste under No Action Alternative 2 and, to a lesser extent, No Action Alternative 1, would result primarily from future exposures to stored waste should DOE lose institutional control of the storage facilities in the future. Over the long term, there would also be an increasing probability of adverse impacts from a natural disaster. Such impacts could be exacerbated by future population growth near DOE sites. SEIS-II analyses show that there is virtually no benefit to long-term repository performance from thermal or shred and grout treatment of waste as compared to treatment to meet the planning basis WIPP WAC.

Considering both near-term and long-term impacts, therefore, Action Alternative 1 is the environmentally preferable alternative, with transportation of waste by regular commercial rail service to the maximum extent possible to lessen near-term impacts. Action Alternative 1 would dispose of defense, non-defense, and commercial TRU waste (with the exception of PCB commingled TRU waste) and TRU waste that was buried prior to 1970, after treatment as necessary to meet the planning basis WIPP WAC. This alternative would dispose of a greater amount of TRU waste than the Proposed Action.

#### **Comments on SEIS-II and Agency Responses**

SEIS-II was initiated by a notice of intent published in the **Federal Register**

on August 18, 1995. A draft SEIS-II was issued in November 1996, and public hearings were held in January 1997. Approximately 4,000 comments were received from individuals, organizations, states, tribes, and Federal agencies during the 90-day comment period. Many of the comments received on the draft SEIS-II expressed strong opinions in favor of or against disposal at WIPP, or suggested revisions to SEIS-II. The final SEIS-II, issued in September 1997, incorporated many changes in response to public comments and internal review, including updating of waste volumes, TRU waste locations, and the long-term performance assessment.

The Department received four letters on the final SEIS-II. The Environmental Protection Agency (EPA) Region 6 letter stated that the agency had completed its review and had no further comments on the final SEIS-II. The State of Tennessee's Department of Environment and Conservation, the State of Idaho Oversight Program, and the Southwest Research and Information Center submitted comments which the Department has considered.

In its comments, the DOE Oversight Division of the Tennessee Department of Environment and Conservation requested clarification of responses provided in SEIS-II regarding: (1) Consolidation of TRU waste at sites prior to being shipped to WIPP, (2) management of "special case" waste, (3) management of the excess inventory of RH-TRU waste if WIPP's capacity is reached, and (4) plans and schedules for transporting TRU waste to WIPP. In addition, the State asked DOE to provide assurance in the Record of Decision that RH-TRU waste will be removed from DOE's Oak Ridge site in accordance with the Oak Ridge Reservation Site Treatment Plan.

Decisions regarding consolidation of TRU waste for preparation and storage pending disposal will be made in the Record of Decision for the WM PEIS. With regard to what the commenter referred to as "special case" waste, such waste that is classified as post-1970 defense TRU waste is included in the SEIS-II analysis as CH-TRU waste as part of the Basic Inventory, and under this Record of Decision upon preparation to meet the planning basis WIPP WAC would be disposed of at WIPP. Materials cited by the commenter that are not classified as TRU waste could not be disposed of at WIPP and are beyond the scope of SEIS-II and this Record of Decision. Regarding the comment about the excess inventory of RH-TRU waste, DOE expects that there will be sufficient capacity at WIPP to

dispose of all RH-TRU waste currently in storage and to be generated over approximately the next 35 years, based on the most recent estimates contained in the TRU Waste Management Plan. DOE's proposed plans and schedule for transporting waste from particular sites to WIPP are contained in the TRU Waste Management Plan. Finally, as stated in SEIS-II, DOE intends to meet its obligations with regard to the disposition of TRU waste as set forth in the agreements (including Site Treatment Plans) that it has reached with states and in related court orders.

The State of Idaho Oversight Program requested that the ROD be consistent with the agreements made with the State with regard to transuranic waste that will be disposed of at WIPP. As noted above, the Department intends to fulfill its obligations with regard to the disposition of TRU waste as set forth in its agreements with states and in related court orders.

In its comments on the final SEIS-II, the Southwest Research and Information Center stated that disposal of TRU waste in a high-level waste repository is a reasonable alternative that was not examined in SEIS-II or the WM PEIS. This commenter also stated that, because all of the estimated TRU waste inventory would not be disposed of at WIPP, DOE will be required to consider additional disposal sites, and that such other sites were not considered in SEIS-II or the WM PEIS. Further, the commenter stated that DOE should prepare a comprehensive NEPA analysis of storage and disposal options for all of DOE's nuclear waste, including all TRU waste, before issuing a Record of Decision on TRU waste disposal at WIPP. Finally, the commenter asked for clarification of DOE's position regarding the opening of WIPP without a RCRA permit from the New Mexico Environment Department.

The Department has examined all reasonable TRU waste disposal alternatives in SEIS-II and the preceding environmental impact statements, including disposal in a high-level waste repository and disposal at sites other than WIPP. DOE decided in 1981 to develop WIPP for the disposal of TRU waste, and SEIS-II confirms that WIPP is an effective disposal facility for TRU waste. The most recent waste volume estimates contained in the TRU Waste Management Plan indicate that DOE would be able to dispose of all of the TRU waste currently in storage, and waste to be generated by DOE over approximately the next 35 years. In SEIS-II, DOE analyzes the disposal at WIPP of all defense, non-defense, and commercial TRU waste and TRU waste

that was buried prior to 1970. The WM PEIS comprehensively analyzes the management of all of DOE's radioactive and hazardous waste types. With regard to the RCRA permit issue, DOE has applied for a RCRA permit from the New Mexico Environment Department for mixed TRU waste. Such a permit is not needed for disposal of other TRU waste at WIPP.

#### Decision

The Department will dispose of up to 175,600 cubic meters (6.2 million cubic feet) of defense TRU waste (except PCB commingled TRU waste) at WIPP. Transportation of waste to WIPP will initially be by truck, although the Department reserves the option to use commercial rail transportation in the future. DOE will prepare (including treatment, as necessary, and packaging) the wastes to be disposed of to meet the WIPP WAC (WIPP WAC Revision 5, including any future revisions as analyzed in SEIS-II, such as pipe overpacks used in waste packaging). This decision establishes only the minimum waste acceptance requirements that must be met for disposal of waste at WIPP. DOE has treated in the past (and based on site-specific circumstances, may decide to treat in the future) TRU waste at some sites more extensively than is required under the WIPP WAC. WIPP may accept for disposal grouted TRU waste, thermally treated TRU waste, or TRU waste treated by any other process that meets the WIPP WAC.

Under this decision, the wastes to be disposed of include both CH and RH defense TRU waste (except PCB commingled TRU waste) placed in retrievable storage after 1970, and TRU waste generated for approximately the next 35 years by plutonium stabilization and management activities, environmental restoration (including defense TRU waste from future remediation of sites where TRU waste was buried before 1970), decontamination and decommissioning, waste management, and defense testing and research. The amount of TRU waste that will be disposed of at WIPP will not exceed limits established by the WIPP Land Withdrawal Act and the C&C Agreement. Impacts of disposal at WIPP of this volume of defense TRU waste are analyzed in the SEIS-II under the Proposed Action (Preferred Alternative).

TRU waste will be transported to WIPP in containers certified by the Nuclear Regulatory Commission, as required by the WIPP Land Withdrawal Act. DOE will initially use trucks to transport waste. However, DOE reserves the option to use commercial rail

service for TRU waste transportation in the future, because SEIS-II analyses show that, under normal operations, regular rail transportation would cause fewer fatalities and would cost less than truck transportation (although consequences of a low probability accident would be similar for all transportation options). In contrast, SEIS-II analyses show that dedicated rail shipments would cause the largest number of fatalities and would be the most costly transportation mode.

#### Basis for Decision

The decision described above minimizes, to the extent possible under current statutory restrictions contained in the WIPP Land Withdrawal Act, the impacts and costs of continued TRU waste management activities at DOE sites. Disposal of TRU waste at WIPP would effectively isolate the waste from human contact for more than 10,000 years if the repository remains undisturbed, and, under the Preferred Alternative, is not expected to adversely impact human health even if the repository were to be breached by drilling. For example, based on analyses in the WIPP SEIS-II, the probability that a member of a drilling crew that breached the repository would die of cancer from exposure to the waste is 4 in 10,000. If an intrusion occurred, radionuclides and heavy metals could reach the Culebra Dolomite (the principal water-bearing unit overlying WIPP). However, impacts would be negligible.

The Department has taken into consideration irreversible and irretrievable commitments of resources, impacts from retrieval of waste from the repository, and cumulative impacts in making this decision. There would be irreversible and irretrievable commitment of resources associated with the use of the WIPP site resulting from residual salt that remains after remediation of the salt storage pile. Although DOE has no plans to retrieve waste from WIPP, if the waste were retrieved prior to repository closure, the impacts would be the same as from emplacing the waste. If the waste were required to be recovered after repository closure, there could be several worker fatalities from recovering waste and any contaminated salt. The impacts from transporting waste back to the treatment sites would be higher than from transporting it to WIPP because of the additional volume of contaminated salt. In considering cumulative impacts, DOE recognizes that for all alternatives involving transportation of TRU waste, there would be cumulative impacts from past, present and reasonable foreseeable

future activities involving transportation of other waste types (hazardous, low-level, low-level mixed, and high level waste). There would also be cumulative impacts at some of the treatment sites as a result of past, present, and reasonably foreseeable future activities.

DOE did not select the No Action Alternatives because they would not isolate TRU waste from humans and the environment, and could cause public harm if long-term institutional control were to be lost. (Although no deaths would be expected based on current population densities and distributions under No Action Alternative 1, intruders could receive doses that greatly exceed current regulatory limits; up to 800 deaths could occur over 10,000 years under No Action Alternative 2). Maintaining such controls indefinitely would require future generations to incur risks and costs that can be avoided by disposing of the waste in WIPP now. In addition, the No Action Alternatives could not be implemented without modification of agreements that DOE has reached with several states regarding the offsite disposition of TRU waste.

DOE did not select the Action Alternatives because disposal of the volumes and waste types involved in these alternatives would require modification of the WIPP Land Withdrawal Act and the C&C Agreement. DOE did not select either thermal or shred and grout treatment because the SEIS-II analyses show that these treatments do not materially improve the repository's performance, and also have greater costs and near-term impacts across the DOE complex.

This decision is consistent with the intent of Congress, as expressed in the WIPP Land Withdrawal Act, that DOE commence disposal operations at WIPP once all applicable health and safety standards and laws have been met. The decision will enable the Department to comply with the agreements that DOE has entered into with several states, particularly those agreements that set a schedule for removal of TRU waste from DOE sites.

Implementation of the decision to dispose of TRU waste at WIPP is contingent on obtaining a Compliance Certification from EPA. EPA recently proposed to certify compliance, subject to certain conditions (62 FR 58792, October 30, 1997). DOE has applied for a RCRA permit from the New Mexico Environment Department for disposal of mixed TRU waste; such a permit is not needed for disposal of other TRU waste at WIPP.

### Mitigation Measures

DOE has a Mitigation Action Plan in effect for WIPP to reduce possible adverse environmental effects. DOE will continue to implement those actions and provide information on their status in its annual mitigation action reports.

DOE will comply with applicable Department of Transportation and Nuclear Regulatory Commission regulations governing the shipment of TRU waste. As described in SEIS-II, DOE will transport TRU waste to WIPP in such a manner as to alleviate, to the maximum extent possible, potential impacts from transportation of TRU waste over the highways. These measures include tracking shipments with the TRANSCOM satellite tracking system and maintaining constant communication with the driver to provide notice of adverse weather or road conditions along the route. Equipment will be inspected at the beginning of each shipment and periodically every 100 miles or every two hours while on route. If shipments are delayed on route, drivers will park at designated DOE or Department of Defense sites, or State designated parking areas if possible. If no such sites are available, drivers will park in areas away from population concentrations and notify the State Police of the shipment's location.

In addition to maintaining its own emergency response capabilities, DOE offers emergency response training to police, fire, and medical personnel located along the WIPP transportation routes. In the event of an accident involving a WIPP shipment, the driver would notify emergency responders by cellular phone and also the WIPP Central Monitoring Room using the TRANSCOM system. A DOE official would be dispatched to assist at the accident site. DOE resources would be available to support mitigation of the accident, including but not limited to package recovery and site cleanup.

The United States Department of the Interior suggested in comments on the draft SEIS-II that DOE should develop a spill contingency plan to address the potential impacts of a diesel fuel spill on fish and wildlife and their habitats. DOE already has plans in place to address the potential impacts of a truck accident; these plans address potential releases of TRU waste and other materials. Remediation efforts may include excavation and disposal of contaminated environmental media as appropriate.

A copy of SEIS-II and this Record of Decision are available from the Center for Environmental Management

Information, telephone: 1-800-7EM-DATA (1-800-736-3282) (in Washington, D.C., call 202-863-5084).

Issued in Washington, D.C., this 16th day of January, 1998.

**Elizabeth A. Moler,**

*Deputy Secretary of Energy.*

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## DEPARTMENT OF ENERGY

### Record of Decision for the Department of Energy's Waste Management Program: Treatment and Storage of Transuranic Waste

**AGENCY:** Department of Energy.

**ACTION:** Record of decision.

**SUMMARY:** The Department of Energy (DOE) is issuing this Record of Decision on where, i.e., at which DOE sites, the Department will prepare and store its transuranic (TRU) waste prior to disposal. Each of the Department's sites that currently has or will generate TRU waste will prepare and store its TRU waste on site, except that the Sandia National Laboratory in New Mexico (SNL-NM) will transfer its TRU waste to the Los Alamos National Laboratory (LANL) in New Mexico. LANL will have facilities, not available or anticipated at SNL-NM, to prepare and store this waste prior to disposal.

DOE made this decision based on analyses in the Department of Energy Final Programmatic Waste Management Environmental Impact Statement (WM PEIS) (May 1997) and other information. This decision differs slightly from the Preferred Alternative in the WM PEIS. The Appendix to this Record of Decision lists the sites for which DOE analyzed the potential impacts of treating (which includes packaging) and storing TRU waste in the WM PEIS. The potential health and environmental impacts of this decision were identified and evaluated in the Decentralized Alternative of the WM PEIS.

In the future, the Department may decide to ship TRU wastes from sites where it may be impractical to prepare them for disposal to sites where DOE has or will have the necessary capability. The sites that could receive such shipments of TRU waste are the Idaho National Engineering and Environmental Laboratory (INEEL), the Oak Ridge Reservation (ORR), the Savannah River Site (SRS) and the Hanford Site. However, any future decisions regarding transfers of TRU wastes would be subject to appropriate review under the National Environmental Policy Act (NEPA), and