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NUCLEAR WASTE

Issues Affecting Land Withdrawal of  
DOE's Waste Isolation Pilot Project

*Statement of*  
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*Before the*  
Subcommittee on Energy and the  
Environment  
Committee on Interior and Insular Affairs  
House of Representatives



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Mr. Chairman and Members of the Subcommittee:

We appreciate the opportunity to discuss our work on the Department of Energy's (DOE) Waste Isolation Pilot Plant (WIPP). As you know, DOE is seeking legislation permanently withdrawing the WIPP site, located on federal land near Carlsbad, New Mexico, from public use. Because DOE wants to begin storing a limited amount of nuclear waste in WIPP for tests, action on land withdrawal--either through legislation or administrative action by the Secretary of the Interior--is necessary to authorize such storage.

In our earlier report on WIPP storage issues, we favored congressional, rather than administrative, action on land withdrawal because of the national significance of this policy decision.<sup>1</sup> We also concluded that the Congress, in order to act on land withdrawal, needed certain information on DOE's plans for storing nuclear waste in WIPP during a planned, 5-year demonstration period. In my testimony today I will discuss

- DOE's progress towards making final determinations that disposal of waste in WIPP will comply with federal disposal regulations,
- why the Congress, rather than the Department of the Interior, should decide on land withdrawal, and
- information the Congress needs to decide whether DOE should be allowed to store waste in WIPP before the facility has met all requirements for use as a repository.

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<sup>1</sup>Nuclear Waste: Storage Issues at DOE's Waste Isolation Pilot Plant in New Mexico (GAO/RCED-90-1, Dec. 8, 1989).

DOE'S PROGRESS IN COMPLYING  
WITH WASTE DISPOSAL REGULATIONS

DOE has essentially completed constructing surface facilities and shafts that would permit it to dispose of over 6 million cubic feet of transuranic (TRU) waste over the expected 25-year operating life of the WIPP facility.<sup>2</sup> In addition, it has mined the first of eight planned series of waste storage rooms. Project costs to date, according to DOE, total about \$1 billion.

Before DOE can begin using WIPP for permanent disposal of TRU waste, determinations must be made that the repository complies with Environmental Protection Agency's (EPA) standards for disposal of TRU waste in repositories and regulations implementing the Resource Conservation and Recovery Act (RCRA). DOE now plans to determine whether WIPP meets the disposal standards by 1997. It also intends to obtain a variance from the RCRA requirements by then.

EPA issued its disposal standards in draft and final form in 1982 and 1985, respectively. However, the standards were vacated by an appeals court in 1987 because of unexplained differences the court found between the standards and a provision of EPA's drinking water standards. The court directed EPA to either reconcile the two sets of standards or explain the differences. At this time, EPA does not have a firm schedule for issuing new repository standards.

DOE must also comply with RCRA. Because WIPP would receive TRU waste that is also contaminated with chemicals identified as hazardous wastes under that act, DOE must comply with its

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<sup>2</sup>Transuranic waste is any material that is contaminated with man-made radioactive elements, such as plutonium, having atomic numbers greater than uranium.

requirements. RCRA provides for cradle-to-grave regulation by EPA, or by states authorized by EPA, of hazardous wastes covered by RCRA and EPA's implementing regulations. EPA prohibits land disposal of many hazardous wastes that are included in DOE's TRU wastes. Although WIPP is considered a land disposal facility, a variance, or exception, from this prohibition is possible. To obtain such a variance, DOE must demonstrate to EPA that the hazardous wastes would not migrate beyond the boundary of WIPP for as long as they remain hazardous.

DOE Has Changed Short-Term  
Emphasis of WIPP

In 1983 DOE designated the first 5 years of WIPP operations as a research and development phase for the purpose of demonstrating the safe disposal of TRU waste at near full-scale waste receipt rates. However, DOE has postponed plans to demonstrate waste handling and storage operations until it has determined, with a high level of confidence, that WIPP will comply with EPA's disposal standards. Until then, DOE has shifted its emphasis to scientific experiments involving storage of TRU waste in the facility.

DOE had originally planned to start receiving TRU waste at WIPP in October 1988. It intended to store up to 15 percent of the repository's design capacity--about 125,000 55-gallon steel drums of TRU waste--during the 5-year period. Of this amount, DOE planned to use 100,000 drums to demonstrate safe and effective waste handling, transport, and emplacement in WIPP. DOE also planned to use up to 25,000 drums, or 3 percent of capacity, for experiments designed to gather technical information for use in assessing WIPP's long-term performance as a repository. The performance assessment is necessary for DOE to determine if the facility complies with EPA's standards for disposal of TRU waste in the repository.

In 1988, the National Academy of Science's WIPP Panel, New Mexico's Environmental Evaluation Group, and others expressed concerns about storing large quantities of TRU waste in WIPP before DOE demonstrates compliance with EPA's standards.<sup>3</sup> As a result, DOE has reduced the quantity of waste it plans to store in WIPP until compliance determinations have been made to the amount it considers necessary for scientific experiments. In fact, DOE has postponed plans to demonstrate large-scale waste handling and storage operations until it has determined, with a high level of confidence, that WIPP will comply with EPA's standards.

Amount of Waste to be Stored Before  
Compliance Determination Is Uncertain

The exact quantity of waste to be stored in WIPP before a compliance determination has been made is uncertain. In April 1990 DOE issued a test plan that reduced the proposed amount of waste to about one-half of 1 percent of facility capacity, or 4,500 drums of waste. Of this amount, DOE said it would use about 600 drums to conduct experiments in 124 instrumented bins. On a larger scale, DOE intended to store the remaining 3,900 drums of waste in six alcoves, or small rooms, mined in the repository. All of these experiments would address questions about the types and quantities of gases that would be generated from TRU waste stored in a repository environment characterized by the presence of brine (salt-water).

DOE added that other experiments in WIPP using TRU waste might be identified as the test program proceeds. EPA, in granting DOE a temporary variance from its land disposal prohibition, set a limit of 8,500 drums, or 1 percent of the facility's capacity.

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<sup>3</sup>Under a cooperative agreement with New Mexico, DOE funds the independent WIPP review activities of the state's Environmental Evaluation Group. The Group was established in 1978 for the expressed purpose of monitoring the WIPP Project.

Subsequently, technical complexities associated with these experiments caused DOE to again revise its estimates for storing TRU waste in WIPP. For example, DOE has not yet developed an effective method to seal the alcoves to permit accurate measurements of gases generated. As a result, DOE has postponed beginning these experiments until the end of 1993. DOE also found that some of the bin experiments involving brine injected into the bins could not be safely performed in the repository because of the risk of contamination in the event of an accident. Consequently, only bin experiments using "dry" waste received from waste generating facilities would be conducted in WIPP beginning later this year. DOE estimates that the amount of waste required for these experiments is 86 bins, or the equivalent of 516 drums of TRU waste.

DOE now plans to conduct the bin tests involving TRU waste mixed with brine above ground, but it has not decided where these experiments will be conducted. For example, DOE is considering doing some of these experiments using 60 bins, or 360 drums of waste, on the surface at WIPP or at some other DOE facility. Still other "wet" bin tests are planned at a facility other than WIPP, but DOE has not yet provided details on the location or how much TRU waste the tests will require.

There are other uncertainties that also could affect DOE's test plans. For example, by agreement with New Mexico, DOE has based its performance assessment program on demonstrating compliance with the 1985 EPA disposal standards that were vacated by the court. If the new standards, when issued, differ substantially from the vacated standards, additional testing and analysis could be required to demonstrate compliance with the new standards. Also, even if the new standards do not change appreciably, DOE's assessment of WIPP's performance and comparison of the assessment results to the standards could indicate that DOE might have to modify either the waste or the repository's design to

meet the standards. DOE has formed a task force to study the cost, feasibility, and safety of waste form or facility modifications in case it needs to pursue one of these options.

DOE currently plans to determine whether WIPP complies with EPA's disposal standards and obtain a permanent variance from EPA's RCRA regulations prohibiting land disposal of hazardous wastes by the end of 1997. At that point, DOE could begin full-scale TRU waste disposal operations.

THE CONGRESS SHOULD DECIDE  
ON LAND WITHDRAWAL

In our previous report on WIPP storage issues, we favored congressional action, rather than administrative action by the Interior Department, on WIPP land withdrawal. It was, and continues to be, our view that the nature and significance of this policy decision warrants congressional input and direction. Specifically, DOE is using up its temporary TRU waste storage capacity at its nuclear weapons facilities. Furthermore, continued temporary storage of TRU waste at these facilities has become a politically contentious issue between DOE and the host states. There is risk, however, in beginning to store waste in WIPP before compliance with EPA's disposal requirements has been determined. Thus, deciding when, and under what conditions, DOE should be permitted to begin storing TRU wastes in WIPP involves a tradeoff between

-- the importance, from a federal-state relations standpoint, of removing the waste from temporary storage at DOE's defense facilities and

-- the risk that DOE might eventually determine that WIPP is either unsuitable as a repository or that additional waste

or facility modifications will be required to comply with EPA's new disposal standards.

Some states--particularly Idaho and Colorado--are vigorously opposing additional temporary storage of DOE's nuclear wastes and are making every effort to get DOE to remove existing wastes from within their boundaries. For example, an agreement between Colorado and DOE limits the volume of nuclear waste that DOE can temporarily store at its Rocky Flats Plant in that state. From this point of view, therefore, it may be important to begin shipping TRU waste from DOE's nuclear facilities as early as possible.

However, if DOE later determined that WIPP did not comply with EPA's nuclear waste disposal standards, it might have to remove the stored wastes for some other disposition or to make additional waste or facility modifications to make WIPP comply with the standards. Furthermore, before DOE can use WIPP as a repository, it must demonstrate to EPA that a variance from the latter agency's prohibition on land disposal of hazardous wastes is in order.

DOE is requesting the Congress to enact legislation that would permanently withdraw WIPP land from public use, transfer administration of the land from the Secretary of the Interior to the Secretary of Energy, and authorize DOE to begin storing TRU waste in WIPP for scientific experiments such as those I have discussed. Although DOE favored, and continues to favor, congressional action on land withdrawal, it also sought an amendment to its existing administrative withdrawal of the land from the Secretary of the Interior that would authorize it to store TRU waste in WIPP for test purposes. DOE sought the amendment out of concern that the Congress might not act on land withdrawal legislation consistent with DOE's schedule for WIPP.



DOE's request for administrative land withdrawal has been granted; however, the House Committee on Interior and Insular Affairs subsequently passed a resolution to block this administrative action. At this time, the Secretary of the Interior has agreed to prohibit the emplacement of waste in WIPP until the end of June 1991, but has also left open the possibility of challenging the Committee's resolution in court.

#### INFORMATION THE CONGRESS NEEDS

In our earlier report, we stated that the central land withdrawal issue facing the Congress is whether to authorize DOE to store TRU wastes in WIPP before determinations have been made that the facility complies with EPA's environmental requirements. In addressing this issue, we said the Congress had alternative courses of action ranging from authorizing waste storage in WIPP without restriction to deferring action on land withdrawal legislation until DOE determines that WIPP complies with EPA's requirements. Now, however, the circumstances have changed. DOE's proposed test program is more modest, it has deferred the large-scale demonstration, and EPA has limited the scope of authorized waste storage in WIPP.

Nevertheless, the Congress still needs the benefit of certain information from DOE in order to weigh and consider both the importance, from a federal-state relations perspective, of beginning to remove TRU waste from temporary storage at DOE facilities and the risk that DOE might eventually determine, after storing TRU waste in WIPP, that the facility is unsuitable for a repository. That information is (1) DOE's test plans, (2) specific information on alternative actions that might be required if WIPP does not meet EPA's disposal standards, and (3) information on available alternatives for continued interim storage of TRU waste.

Since we issued our earlier report, DOE has completed its test plan; however, as I have discussed, technical complications have caused DOE to revise its plans such that it remains uncertain just how much TRU waste, if any, that DOE would actually need to store in WIPP to obtain information that is essential for determining if the facility complies with EPA's requirements.

Also, DOE has issued a plan for the retrieval of wastes stored in WIPP, if retrieval became necessary, describing the decision-making process it would follow to decide where to store the waste. In our view, this plan is incomplete because it does not identify the specific locations where retrieved wastes would be stored. This issue is essentially political in nature; that is, current state opposition to continued storage of DOE's nuclear wastes indicates that DOE could also expect states to oppose receiving wastes that DOE retrieved from WIPP if that became necessary. In our view, however, it is better to address this issue now--before storing TRU waste in WIPP--than to have to deal with the issue at a later time when the waste may need to be retrieved and stored elsewhere.

Regarding options for continued temporary storage of TRU waste at DOE's nuclear facilities--time and events have favored DOE. Specifically, DOE's Rocky Flats Plant, where about one-half of its TRU waste is generated, has been shut down for almost 2 years. DOE currently expects to reach the limit of waste storage no earlier than November 1993, assuming the facility restarts production, a compactor becomes operational in May 1991, and the TRU waste experiments in WIPP begin as scheduled. In the meantime, DOE is studying options for additional temporary storage at its own, Department of Defense, and private facilities.

Finally, as we suggested in our earlier report, the Congress, in considering land withdrawal legislation, may wish to (1) specify how much waste DOE can store in WIPP before determining that the

facility complies with EPA's requirements and (2) make permanent land withdrawal conditional upon a positive determination of compliance.

Mr. Chairman, this concludes my prepared remarks. I would be pleased to answer any questions that you or Members of the Subcommittee may have.