TRUpress

A Publication of the U.S. Department of Energy's Carlsbad Area Office

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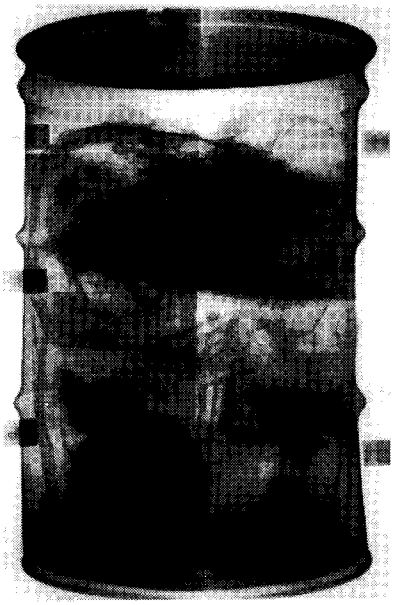
WIPP, Nuclear Waste Disposal and the National Need

Transuranic waste has been produced in the United States since the 1940s as part of the nuclear weapons research and production activities of the federal government. DOE's initial waste management effort involves holding the waste in temporary, retrievable storage at DOE facilities across the country.

Recognizing a national need for permanent disposal of defense-related nuclear wastes, Congress approved establishment of the WIPP in 1980, as a nuclear waste research and development facility.

The idea was to explore the feasibility of using a centralized geologic disposal system for defense-related transuranic wastes generated after 1970. To be accepted at the disposal facility, the wastes had to meet certain criteria that would be established. These criteria deal with the maximum allowable radioactivity in the waste, liquids contained in the stored wastes, and composition of the waste itself.



Once a decision is made to open the WIPP for permanent waste disposal, barrels containing nuclear waste generated from weapons production will be shipped to the facility in southeastern New Mexico. Here, real-time radiography (RTR) uses x-rays to inspect waste drum contents to ensure packaging integrity and absence of prohibited items such as free liquids and pressurized containers.

Today, the Carlsbad Area Office has responsibility for meeting requirements for opening and operating WIPP near Carlsbad, New Mexico. The Carlsbad Area Office also coordinates and integrates the management of transuranic waste in cooperation with 10 major and 13 small quantity DOE generator/storage sites across the country through its National Transuranic Program Office.

Carlsbad Area Office and the WIPP Facility

The Carlsbad Area Office's mission is to protect human health and the environment by opening and operating the WIPP for safe disposal of transuranic waste and by establishing an effective system for management and disposal of transuranic waste from generation to disposal.

In opening and operating the WIPP, the Carlsbad Area Office must protect human health and the environment from harmful effects of both the radioactive materials and the hazardous chemicals in the waste. Its efforts are regulated by the U.S. Environmental Protection Agency,

The Department of Energy's (DOE) Carlsbad Area Office manages the Waste Isolation Pilot Plant (WIPP), a proposed disposal site for defense-generated, plutonium-contaminated waste, which is classified as transuranic (TRU) waste. Located 26 miles east of Carlsbad, project facilities include more than nine miles of excavated rooms and access tunnels 2,150 feet below the Earth's surface in ancient salt formations where the waste will be buried.

The National Transuranic Program, also managed by the Carlsbad Area Office, coordinates all activities related to the characterization, storage, treatment, packaging, transportation and disposal of transuranic waste now in temporary storage at 10 major DOE facilities nationwide.

The Carlsbad Area Office encourages your participation in its programs, planning and policy-making activities. To find out how you can get involved, call the* WIPP Information Center *toll free at* 800-336-WIPP *(800-336-9477).

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George E. Dials

Message From the Manager

Welcome to TRU Progress, a publication of DOE's Carlsbad Area Office. DOE is committed to maintaining on-going dialogue with stakeholders. We believe this dialogue is essential to making the best possible decisions about the WIPP and about future management of transuranic waste.

This publication, which you will receive about four times a year, is a key part of that dialogue. It is dedicated to providing stakeholders with timely information they seek about the WIPP and the National Transuranic Program.

We are focusing our efforts on three things that will influence the Secretary of Energy's decision to open the WIPP:

- **compliance with all applicable laws;**
- **a thorough evaluation of total repository and system performance; and**
- **maintenance of a productive dialogue with stakeholders that enhances the decisions we make.**

These activities will lead to our long-term goal for the disposal of *all* defense-related transuranic waste. The bottom line is we want to move transuranic waste out of *temporary* storage all around the country to final, safe disposal.

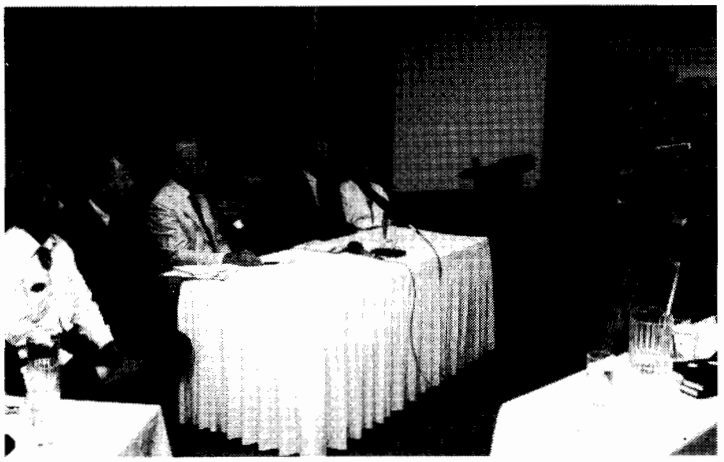
In future editions of TRU Progress, you will find discussions of issues and topics as they relate to different aspects of the Carlsbad Area Office mission—experimental programs, waste inventory, operations, technology transfer, and economic development.

You will also find my "Ask the Manager" column. I encourage you to write to me with your questions about WIPP or DOE's transuranic waste program. My address is P.O. Box 3090, Carlsbad, NM, 88221.

If you have any other comments or ideas regarding this publication, the WIPP or Carlsbad Area Office operations, please call the WIPP Information Center at 800-336-WIPP (800-336-9477).

George E. Dials

George Dials
Manager



WIPP stakeholders and DOE officials participate in a joint news conference following a stakeholder forum in which DOE received stakeholder input on waste treatment, regulatory compliance standards, and WIPP scientific and experimental programs.

Ask the Manager

Q: Who is in charge of making sure the WIPP complies with the law?

A: Numerous regulators and agencies will ensure that public health and safety are protected in waste transportation and operation of the WIPP. These regulators and the areas they cover include:

U.S. Environmental Protection Agency — radioactive waste and hazardous constituents disposal standards and regulations;

U.S. Nuclear Regulatory Commission — waste shipping containers (TRUPACT-II);

U.S. Department of Transportation — safety and safe management of cargo and carrier on interstate highways;

U.S. Department of the Interior — land use management;

U.S. Department of Labor (Occupational Safety and Health Administration) — protection of employees in the work place, emergency response training;

National Institute of Occupational Safety and Health — standards for occupational exposures, protective equipment and clothing standards, emergency response training;

Mine Safety and Health Administration — adherence to safe mining practices in the WIPP underground;

Bureau of Mines — research on roof-fall hazards and other safety issues regarding the constructed underground facility; and

State of New Mexico Environment Department — compliance with laws governing the handling and management of hazardous materials.

WIPP Focuses on Protection of Health and Environment

The Carlsbad Area Office has an aggressive strategy for compliance with applicable laws and regulations. The approach includes submitting draft applications in phases before the final documents are submitted to the Environmental Protection Agency in October 1996. This strategy was chosen because it facilitates regular, meaningful dialogue with regulators.

WIPP-bound waste is defined as mixed waste because it contains both hazardous and radioactive constituents. Regulations governing both types of waste are applicable. The three primary regulatory requirements follow.

The Resource Conservation and Recovery Act prohibits the land disposal of hazardous waste unless it is demonstrated that hazardous constituents will not migrate from where they are disposed as long as they remain hazardous.

DOE has used national laboratories to perform tests that demonstrate the hazardous waste will not migrate. This information was compiled and submitted to the Environmental Protection Agency in May 1995 in a draft No-Migration Variance Petition. A final petition will be submitted in June 1996, and the Environmental Protection Agency is expected to issue a determination in June 1997.

Once the issue of migration has been resolved and a determination made that there will be no migration of hazardous constituents beyond its boundaries, the WIPP will need an operating permit from the state of New Mexico, called the Resource Conservation and Act Recovery Part B. This permit governs the facility's daily procedures and operations when handling hazardous waste at the site. DOE submitted an application for the permit in May 1995, and a ruling is expected to be issued by the state Environment Department no later than August 1996.

The WIPP, with assistance from the national laboratories, must demonstrate that it complies with strict radiation protection regulations. DOE submitted Part I of its draft compliance certification application to the Environmental Protection Agency in March 1995, and Part II was submitted in July 1995. The Environmental Protection Agency is expected to rule on final certification in October 1997. (See graphic next page.)

Second WIPP SEIS Begins

The Carlsbad Area Office is preparing a second Supplemental Environmental Impact Statement (SEIS-II) to comply with requirements of the WIPP Land Withdrawal Act and to fulfill a commitment made in the WIPP's first SEIS, issued in 1990. The SEIS examines possible environmental and socio-economic effects of disposing of waste at the WIPP.

The draft SEIS-II is scheduled to be completed in Spring 1996, with public hearings to be held in May and June 1996. The 17-month effort will be completed when a Record of Decision is issued by DOE in March 1997. The Record of Decision will be one key factor used by the Secretary of Energy when making the decision in 1998 whether to use the WIPP as a disposal facility.

Six scoping meetings were held at five locations: Carlsbad, Albuquerque, and Santa Fe, New Mexico; Denver, Colorado; and Boise, Idaho. About 100 stakeholders participated in the meetings, including Idaho Governor Phil Batt and State Police Director Dave Rich, who attended the Boise meeting. Governor Batt said he supports the WIPP mission and opening the facility.

Two scoping meetings were held in the Denver area. Several stakeholder groups notified DOE they would not attend the September 19 meeting because of scheduling conflicts with other DOE-related meetings. In response, DOE held a second scoping meeting in the metropolitan Denver area on October 11.

Stakeholders identified numerous topics of concern which they said should be included in the SEIS scope. Some of these issues follow:

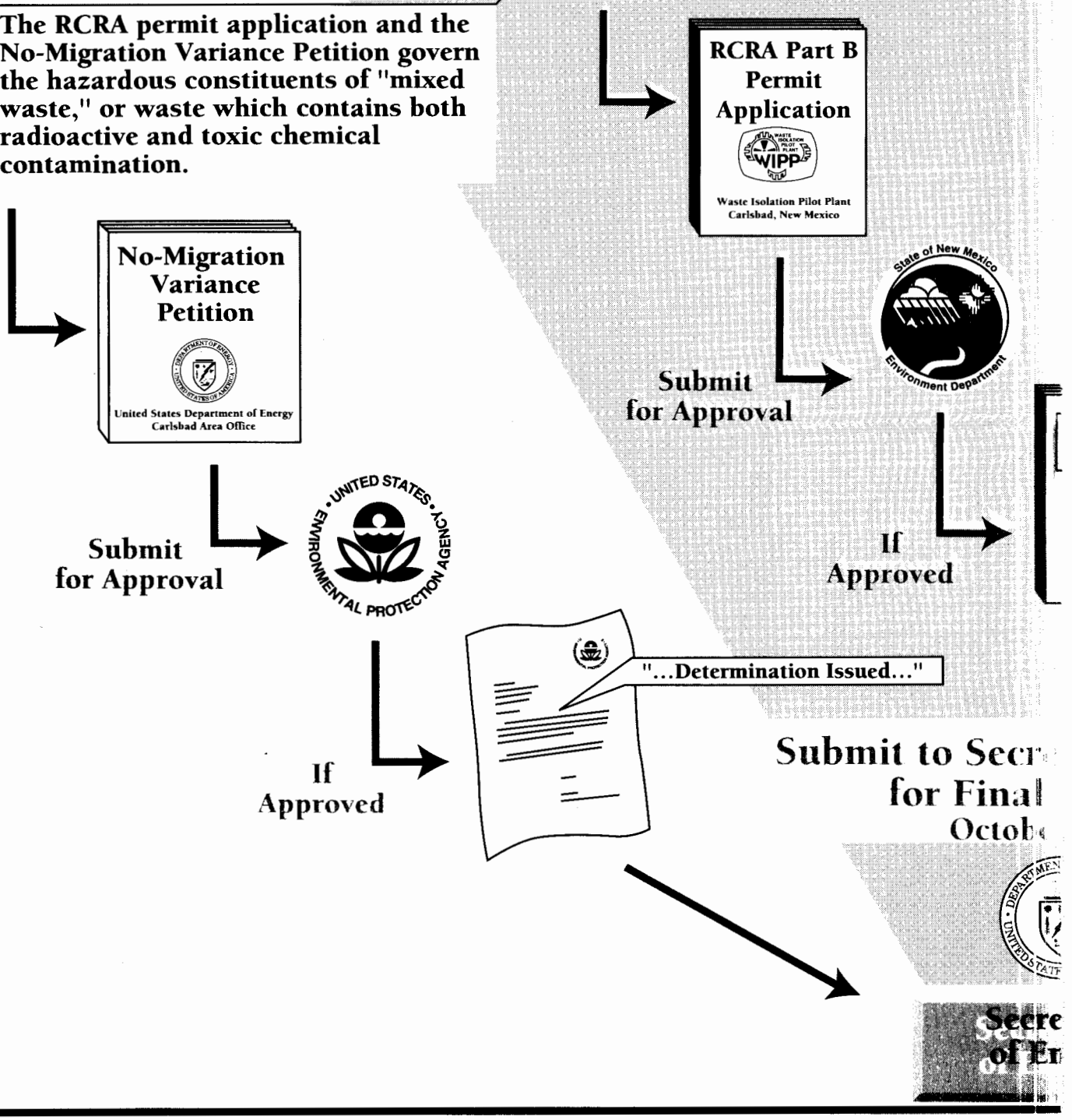
- Include and evaluate emergency preparedness at all localities along transportation routes.
- Discuss the load management plan describing what to do with waste as it is characterized.
- Include what methods are reliable and safe for obtaining accurate volume and curie content estimates for remote-handled transuranic waste.
- The SEIS should consider the full range of engineered alternatives, including cementation, shredding, supercompaction, incineration, vitrification, improved waste containers, grout and bentonite backfill, and others.
- The mission may be changed since no new weapons are being produced or planned; address these changes and examine whether the WIPP would have to be used or have to change.
- Take passive institutional controls for granted; do not use them to justify any reduction in the anticipated drilling rate.

These and the nearly 250 other written and verbal comments will be considered when writing the SEIS-II Implementation Plan. Disposition of all comments will be documented in the plan. Stakeholders will be notified when it is available.

Mixed and Radioactive W
and the WIPP D

Hazardous Constituents

The RCRA permit application and the No-Migration Variance Petition govern the hazardous constituents of "mixed waste," or waste which contains both radioactive and toxic chemical contamination.



aste Disposal Regulations
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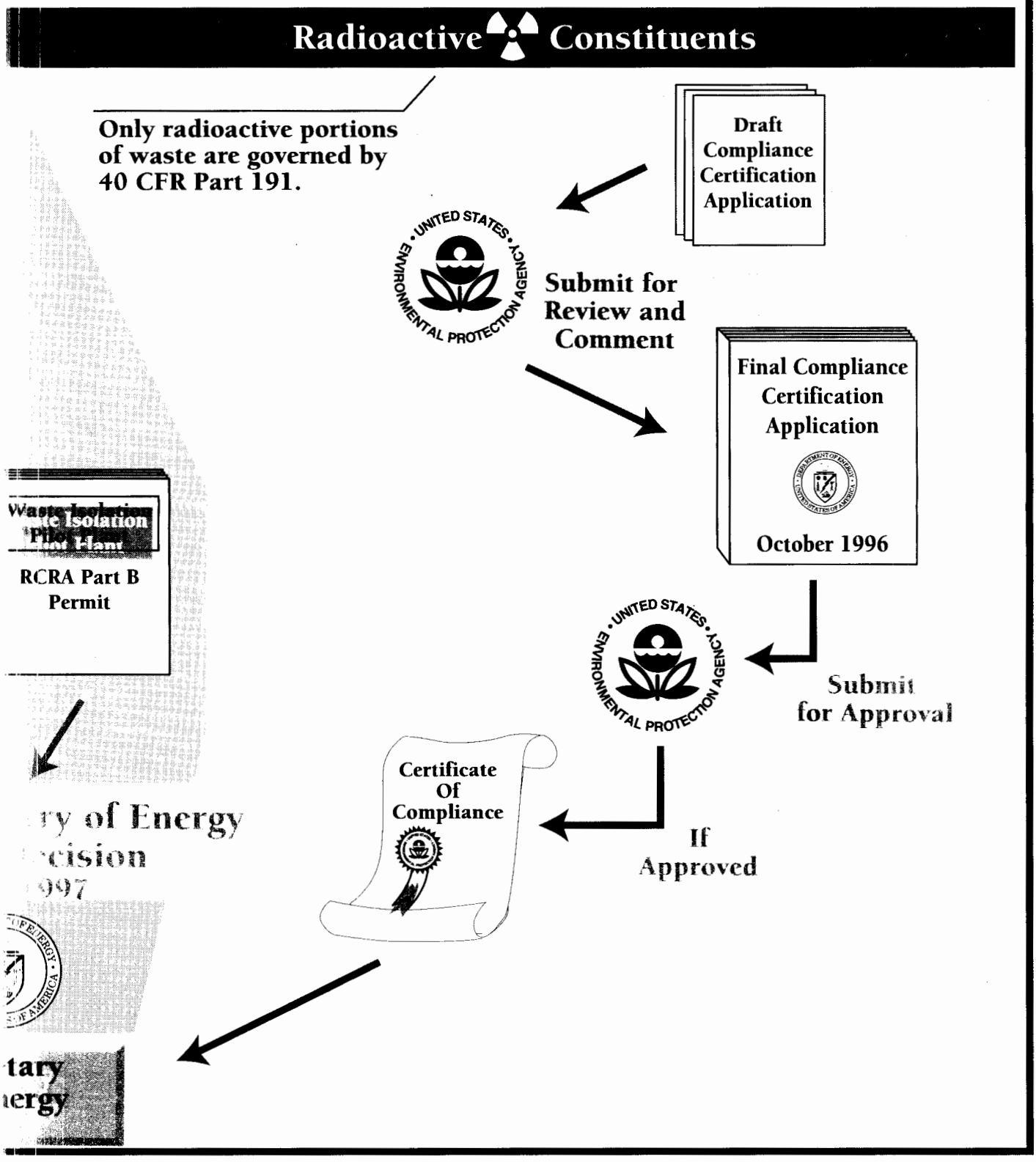

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which has delegated part of its responsibility for hazardous chemicals to the New Mexico Environment Department. (See related story, page 3.)

Following certification by both regulators that DOE has met the environmental requirements, the Secretary of Energy will issue a disposal decision in 1997 to use the WIPP as a permanent disposal facility for transuranic waste. In addition to demonstrated regulatory compliance, the decision to use the facility will be based on a thorough evaluation of total repository and system performance (including operational safety, transportation, packaging, and waste characterization and certification); and public and stakeholder participation.

National Transuranic Program

Another of the Carlsbad Area Office's responsibilities is to coordinate and integrate DOE's transuranic waste management across the nation. In the first step of transuranic waste management, DOE develops a complete description of the chemical and physical content of the waste (a process referred to as "waste characterization").

DOE must also develop, evaluate and initiate methods to treat, package for shipping, store, transport, and dispose of transuranic waste.

By law, the WIPP's storage capacity is limited to 6.2 million cubic feet. About one third of WIPP-destined waste has been generated and is in temporary storage at the 10 major facilities and several smaller sites throughout the country. DOE expects to generate the other two-thirds as it cleans up and decommissions its nuclear weapons plants.

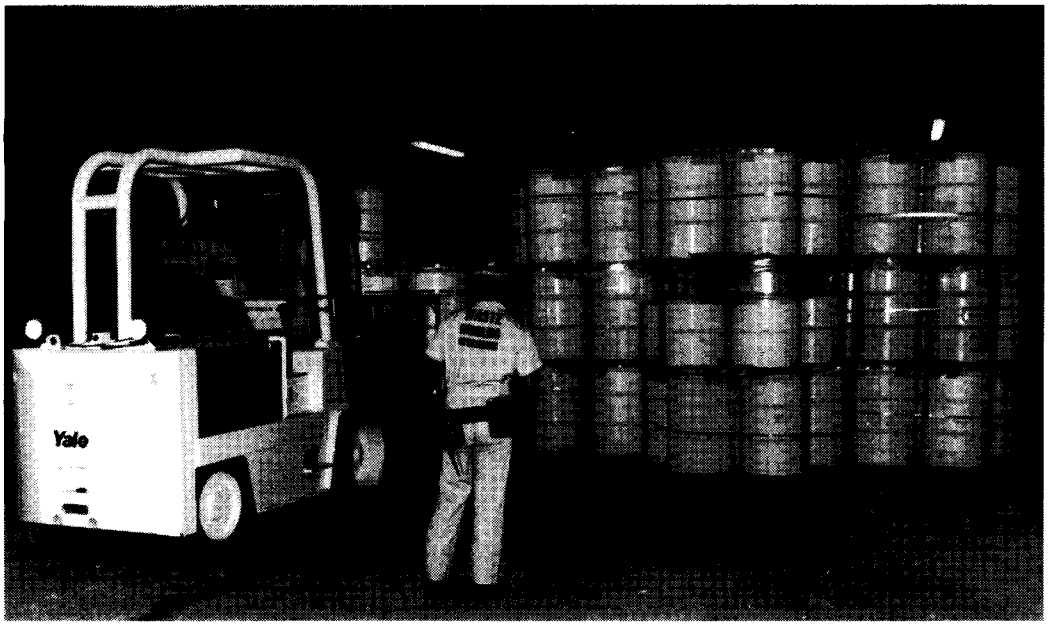
Five types of DOE operations can generate transuranic waste:

- Nuclear weapons development and manufacturing;
- Plutonium recovery;
- Research and development;
- Environmental restoration (cleanup);
- Decontamination and decommissioning activities.

Representatives of the primary transuranic waste generator sites meet every three months. This organization, called the Transuranic Waste Steering Committee, has integrated various waste management processes performed by generator sites.

One initiative is a new program to build a computer "model" of the entire transuranic waste system. Undertaken by DOE's Idaho National Engineering Laboratory, the model covers the full range of transuranic waste management activities, from waste characterization through-put (or the amount of waste that can be characterized in a given year) to processes involved in removing waste from storage and preparing it for shipping.

Other projects underway include a program to examine how small quantity generators (such as the Energy Technology Engineering Center in California or the West Valley Demonstration Plant in New York) can transfer all their transuranic waste to major generator/storage sites for interim storage.



WIPP workers demonstrate how waste will be handled and stored at WIPP. Barrels of waste housed in "overpacks" will be moved into 13 x 33 x 300 foot rooms excavated into salt over 2,150 feet below the Earth's surface. Each room will contain approximately 6,000 barrels of waste. The salt walls will eventually collapse and completely encapsulate the waste, helping isolate it from the environment.

WIPP Words

Transuranic:

Elements heavier than uranium that remain radioactive, therefore potentially harmful for a very long time – some for thousands of years. The radioactivity – primarily alpha particles – have half-lives greater than 20 years and concentrations greater than 100 nanocuries per gram at time of assay. Although alpha particles cannot penetrate even a sheet of paper, if sufficient quantities are ingested into the body, either in food, water or the air we breathe, the radioactivity could be harmful. The abbreviation for transuranic is TRU.

Where is the Waste Now?

Transuranic waste is in temporary storage in 10 major and 13 minor sites across the United States. The sites, which are all DOE related, include DOE research and production facilities, national laboratories, and university laboratories.

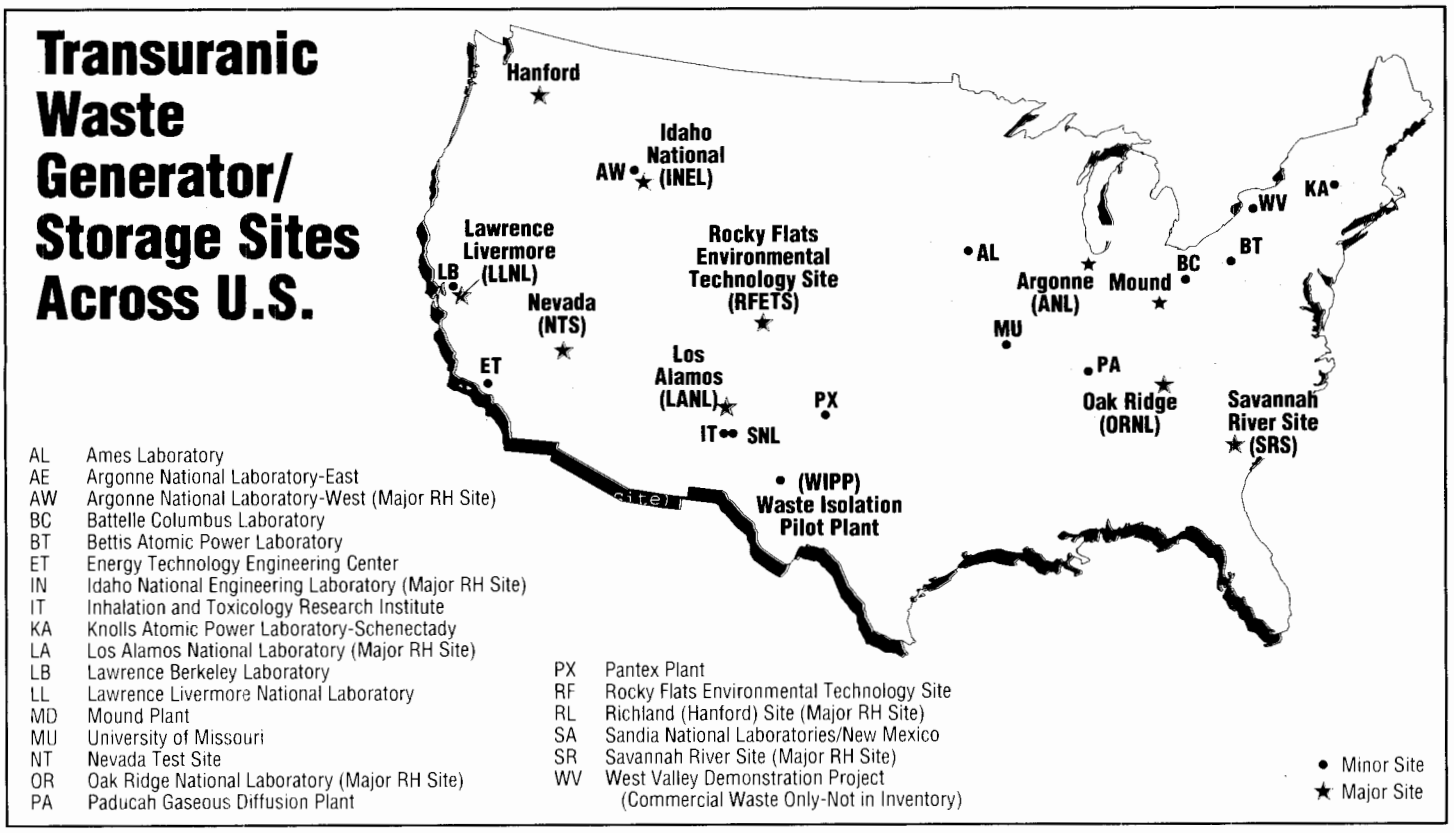
Current plans call for hauling the waste by tractor-trailers in specially designed shipping containers called TRUPACT-II.

of classifying radioactive wastes and determined that transuranic waste should be treated in a separate category because of its long decay time (thousands of years).

Consequently, wastes produced since 1970 have been stored so they can be easily retrieved and shipped to a permanent repository. Waste is stored in metal drums or corrugated metal boxes, stacked on asphalt pads or wooden pallets, and covered with a removable layer of soil or housed in temporary storage buildings.

Office is revising its disposal Waste Acceptance Criteria after considering 1) transportation and safety requirements; 2) expected behavior of wastes in the WIPP over the long term; and 3) final regulatory requirements.

The disposal Waste Acceptance Criteria will be applicable to currently stored wastes, which may require treatment or processing prior to being certified for acceptance in the WIPP. For future wastes, Waste Acceptance Criteria (Revision 5) will provide guidance so that wastes will be generated and packaged in ways to ensure their acceptability at the WIPP. Revision 5 of the WIPP Waste Acceptance Criteria is scheduled to be published in January 1996.



Most transuranic waste consists of metal tools, rubber gloves, cloth lab coats, shoe covers, rags and other items contaminated during weapons production and laboratory operations. In 1970, the government began its current system

The wastes earmarked for the WIPP must meet specific requirements to be transferred there. The Carlsbad Area

WIPP Disposal Decision Now October 1997

The Secretary of Energy's decision to operate the WIPP as a disposal facility for transuranic waste has been moved forward three months — from January 1998 to October 1997, Carlsbad Area Office Manager George Dials announced. Dials said the schedule change responds to an in-depth review of processes and activities associated with the submittal of the Compliance Certification Application (CCA) to the Environmental Protection Agency. Process improvements and parallel activities accelerated the final CCA submittal by two months.

"During my testimony before the Energy and Power subcommittee, Chairman Schaefer asked if there was any way we could expedite the opening of the facility. We looked at the schedule and found a few areas in our experimental and performance assessment programs that we could compress.

"We're pleased to be able to work with Congress in moving the schedule forward and beginning our mission of opening and operating the WIPP for safe disposal of radioactive wastes," Dials said.

For copies of WIPP's updated Disposal Decision Plan, call the WIPP Information Center at 800-336-WIPP (800-336-9477).

Access to WIPP Information/ Events Streamlined

Want to find out about upcoming WIPP meetings and participation opportunities? Bring a concern to our attention?

The Carlsbad Area Office has expanded opportunities for stakeholders to learn about programs and activities and to participate in the decision making process regarding WIPP programmatic direction. The CAO has opened two new communication channels: the WIPP calendar of events and WIPP toll-free information line.

The WIPP calendar is sent monthly to all WIPP stakeholders. If you or a colleague are not on our mailing list and would like to receive our calendar or newsletter, please write Ms. Pat Kilgore, Carlsbad Area Office, U.S. Department of Energy, P.O. Box 3090, Carlsbad, New Mexico 88221.

Or if you would like to call us, we can be reached at **800-336-WIPP** (800-336-9477) between 7:30 a.m. and 4:30 p.m. mountain time, Monday through Friday. At other times, please leave a message and we will return your call.

TRU Progress

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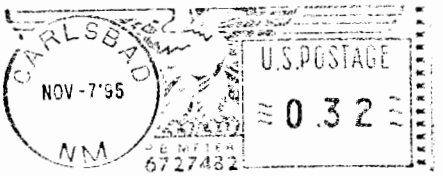
Carlsbad, New Mexico 88221



Highlights

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