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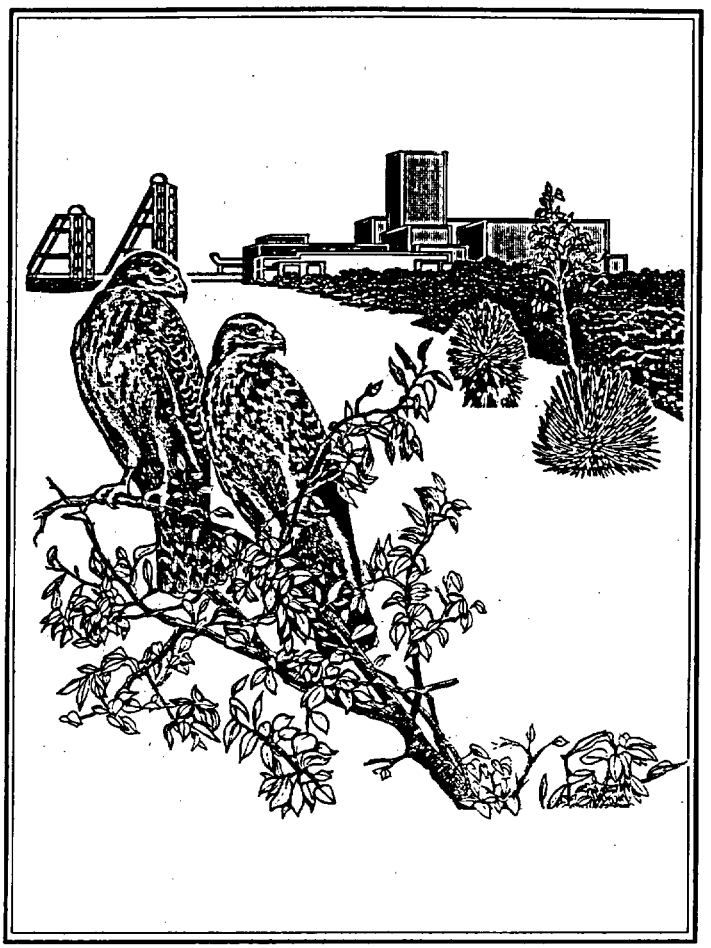
The Waste Isolation Pilot Plant

1992 Annual Report



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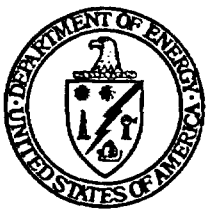
About the Cover

Protecting the environment is a primary objective at the Waste Isolation Pilot Plant. Located in southeast New Mexico, the area surrounding the WIPP is home to birds of prey such as these Harris hawks, which are protected by federal and state laws.



The Waste Isolation Pilot Plant

1992 Annual Report

Contents

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Waste Isolation Pilot Plant
Fiscal Year 1992 Highlights

October 1, 1991 - September 30, 1992

1991

October

- WIPP Project Integration Office established
- Secretary of Energy Watkins announces decision to start test phase
- Lawsuit filed by the state of New Mexico; waste shipments delayed

November

- U.S. Senate passes WIPP Land Withdrawal Bill
- U.S. District Court, District of Columbia, issues a temporary injunction prohibiting waste receipt

December

- Enhanced roof support system installed in Room 1, Panel 1

1992

January

- Annual waste reduction report issued

February

- U.S. District Court, District of Columbia, issues summary judgement prohibiting waste receipt under current administrative land withdrawal and ruled WIPP ineligible for interim status under the Resource Conservation and Recovery Act.
- Three million safe working hours achieved

- "Students Touching Technology" newsletter established
- TRUPACT-II Mobile Unit successfully demonstrated

March

- Draft Comprehensive Underground Management Plan issued
- Revision 1, Resource Conservation and Recovery Act Part B permit application submitted

April

- Retrieval demonstration successfully conducted
- First Limiting Conditions for Operations compliance run completed
- Mine rescue team wins regional competition
- TRUPACT-II used to ship transuranic waste at Idaho National Engineering Laboratory

May

- Community Day held

June

- Secretary Watkins and four governors visit WIPP
- Resource Conservation and Recovery Act permit application declared administratively complete by the New Mexico Environment Department
- Western Governors Association second-year agreement with DOE approved
- In-house Energy Management Plan issued
- Enhanced brow support system installed at E-140 drift
- National Academy of Sciences issues report on WIPP test program

July

- U.S. House of Representatives passes WIPP Land Withdrawal Bill
- Mine Safety and Health Administration (MSHA) inspection, second quarter: no citations issued, no negative observations or findings
- U.S. Court of Appeals, District of Columbia, reverses district court ruling on interim status but upholds ruling necessitating legislative land withdrawal

August

- Plutonium solubility test program awarded to Los Alamos National Laboratory
- Mine rescue team scores highest in national competition

September

- TRANSAX '92 emergency preparedness exercise conducted
- TRUPACT Assembly Facility excessed
- Waste Management and Pollution Program Prevention Awareness Plan submitted
- MSHA inspection, third quarter: no citations issued, no negative observations or findings

October

- President Bush signs the WIPP Land Withdrawal Bill into public law

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The Waste Isolation Pilot Plant

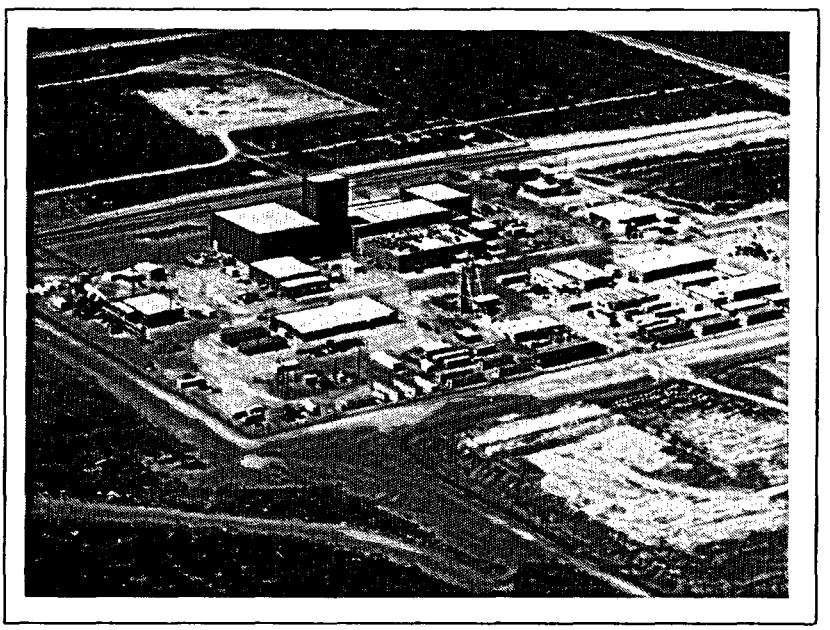
1992 Annual Report

Introduction

The Waste Isolation Pilot Plant (WIPP) is a research and development project of the U. S. Department of Energy (DOE). This first-of-a-kind project was authorized by Congress in 1979 in response to the national need for long-term, safe methods for disposing of radioactive by-products from our country's defense programs.

The WIPP's research and development mission includes the following:

- Research to study the characteristics of bedded rock salt and how it interacts with, and can safely contain, mixed transuranic wastes. Mixed transuranic, or "TRU," wastes are items contaminated with radioactive materials whose radioactivity will last many thousands of years. This waste also contains some hazardous materials, like cleaning solvents.



This aerial view shows the WIPP site, 26 miles east of Carlsbad, New Mexico.

- A test program to verify that TRU wastes can safely be disposed of in a deep, underground, bedded salt formation. WIPP nonradioactive experiments are on-going; a Test Phase with radioactive waste is scheduled to take about five years.

All equipment and procedures are designed to ensure full waste retrieval from the underground facility during the Test Phase if necessary. If the tests at WIPP prove successful and the decision

is made to permanently dispose of transuranic wastes at the WIPP, the facility will operate as a repository for approximately 20 years.

The WIPP project impacts the waste management operations of 10 DOE waste generator sites across the country. These activities as well as overall responsibilities for the WIPP project are coordinated and managed through the DOE-WIPP Project Integration Office. The DOE-WIPP Project Site Office oversees site operations. The Westinghouse Waste Isolation Division is the WIPP site management and operating contractor. Sandia National Laboratories (SNL), Albuquerque, is the WIPP scientific advisor.

WIPP TRU Waste Generator Sites

Argonne National Laboratory-East, Illinois

Hanford Reservation, Washington

Idaho National Engineering Laboratory, Idaho

Lawrence Livermore National Laboratory, California

Los Alamos National Laboratory, New Mexico

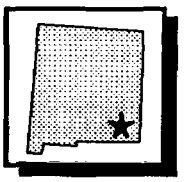
Mound Plant, Ohio

Nevada Test Site, Nevada

Oak Ridge National Laboratory, Tennessee

Rocky Flats Plant, Colorado

Savannah River Plant, South Carolina



WIPP Background

The WIPP site was chosen through a selection process that started in the 1950s. At that time, the National Academy of Sciences (NAS) conducted a nationwide search for geological formations stable enough to isolate TRU wastes from the environment for thousands of years. In 1956, after extensive study, the NAS recommended salt deposits as a promising medium for the disposal of TRU wastes. The presence of salt formations indicates historical absence of surface and groundwater. At the 2,150-foot depth of the WIPP repository, the salt will eventually entomb the buried waste as it "creeps" to close in voids over time.

In 1962, the U.S. Geological Survey (USGS) identified salt beds in the Permian Basin, a 225-million year-old formation beneath much of the southwestern United States, as a workable location for such a repository.

Based on the USGS report, the Oak Ridge National Laboratory studied various locations for potential repositories. This laboratory conducted extensive testing at sites in Kansas and New Mexico. In 1974, a portion of the Permian Basin 26 miles east of Carlsbad, New Mexico, was selected as the most promising location.

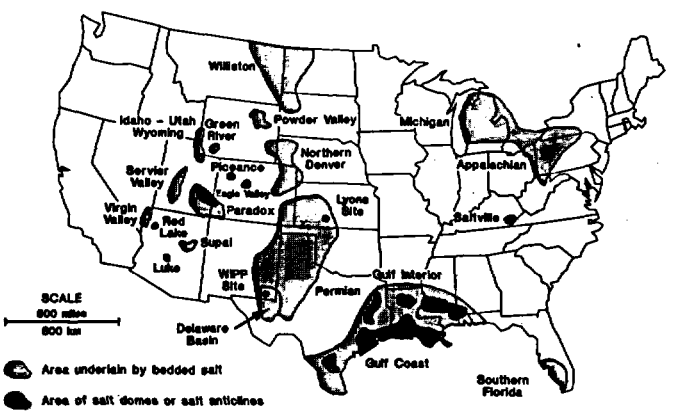
In July 1981, the DOE signed a cooperative agreement with the state of New Mexico to develop the 10,240-acre WIPP site. Full facility construction was authorized July 1, 1983.

Transuranic waste....

includes items such as gloves, clothing, glass and tools contaminated with radioactive materials whose radioactivity will last many thousands of years. These wastes are by-products of our country's defense programs.

The location of the WIPP site was determined by the geology of the area. Excavation lies in the thickest region of salt beds in the Permian Basin.

ROCK-SALT DEPOSITS in the UNITED STATES



Underground Activities

Today, the WIPP underground is ready to support Test Phase activities with TRU waste. Test Phase data will help verify that WIPP can perform as designed.

Underground areas for the disposal of waste are laid out in eight sections, or panels. Seven rooms branch off each panel. Presently, one panel is fully mined. Disposal rooms are 13 feet high, 33 feet wide, and 300 feet long. The panel of rooms is connected by a mile-long tunnel to other rooms where nonradioactive experiments are conducted. The underground areas are connected to vertical shafts for air intake and exhaust, and transport of people, salt, and waste. All of these facilities occupy less than a one-square-mile area. As of September 1992, about ten miles of rooms, hallways, and shafts have been mined in the underground.

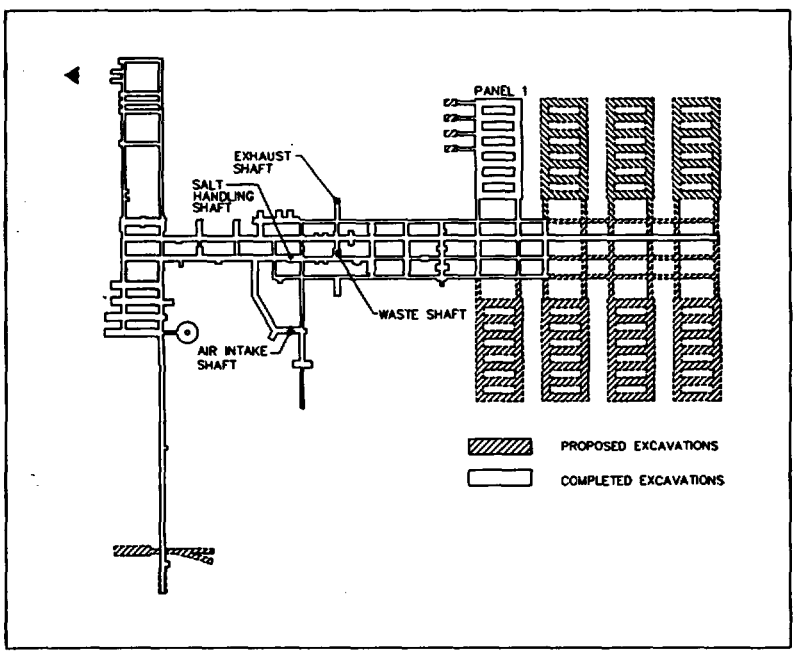
A rock bolt is...

a steel rod two feet or longer and at least 5/8 inch in diameter, which is used to support ceilings in mines. Rock bolts are designed to hold layers of rock tightly together so the layers act as one strong beam.

Between October 1991 and September 1992, WIPP underground activities included

- installing an innovative supplementary roof support system,
- developing the "Comprehensive Underground Management Plan,"
- maintaining the underground environment, and
- conducting a remote waste retrieval technology demonstration.

The WIPP underground layout comprises four vertical shafts, working drifts, the experimental area (north) and the storage and testing area (south).



Once mined, salt slowly closes open spaces. As part of on-going maintenance WIPP workers inspected and maintained the underground, installed patterned rock bolt systems, maintained air filtration and hoisting systems, and supported ongoing nonradioactive experiments.

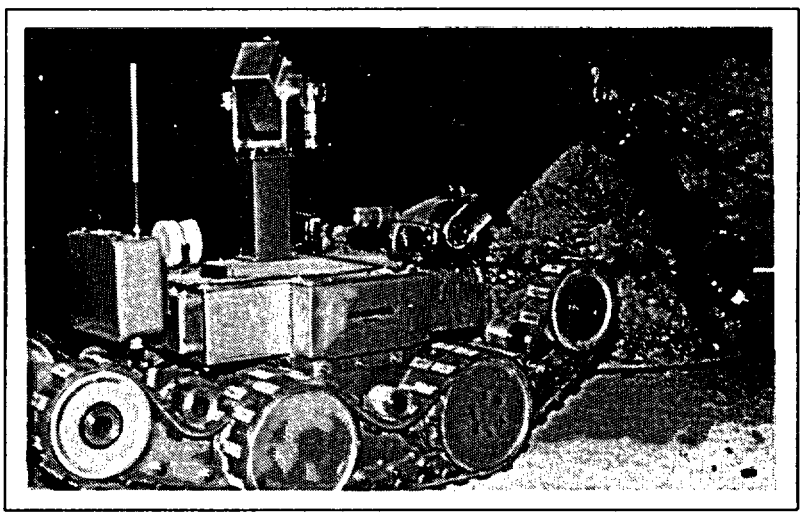
In December 1991, WIPP engineers completed enhancing the structural integrity of Room 1, Panel 1—the underground storage room where the first TRU waste experiments

will be conducted. These enhancements were based on the recommendations of an independent panel of geotechnical experts.

This system uses steel supports, 13-foot-long rock bolts, steel cables, wire mesh, and expanded metal to further assure safety in the room. The system is remotely monitored and designed to be flexible to accommodate inherent rock salt movement. The October 1991, New Mexico State Mine Inspector's report concluded, "This degree of conservatism is unheard of in the mining industry." These enhancements ensure that the Test Phase can be conducted safely and further ensure that test waste can be retrieved if necessary.

In March 1992, a comprehensive underground management plan was developed. This plan provides a technical baseline for the repository, accommodates Test Phase experiments, and describes underground safety and emergency response procedures.

Because safety is the top priority, the WIPP demonstrated, in April 1992, how commercially available robotics could perform hazardous work duties in the underground. The demonstration involved maneuvering remote control units in an underground room in which conditions simulated those after a roof fall. The demonstration documented how the remote control units can support the affected room with additional bracing, remove fallen debris, and recover damaged equipment without workers entering the room. The robotics demonstration was videotaped for reference.



Robotic equipment is capable of entering areas deemed hazardous to humans. It can perform work including waste retrieval, if necessary.

Test Phase Readiness

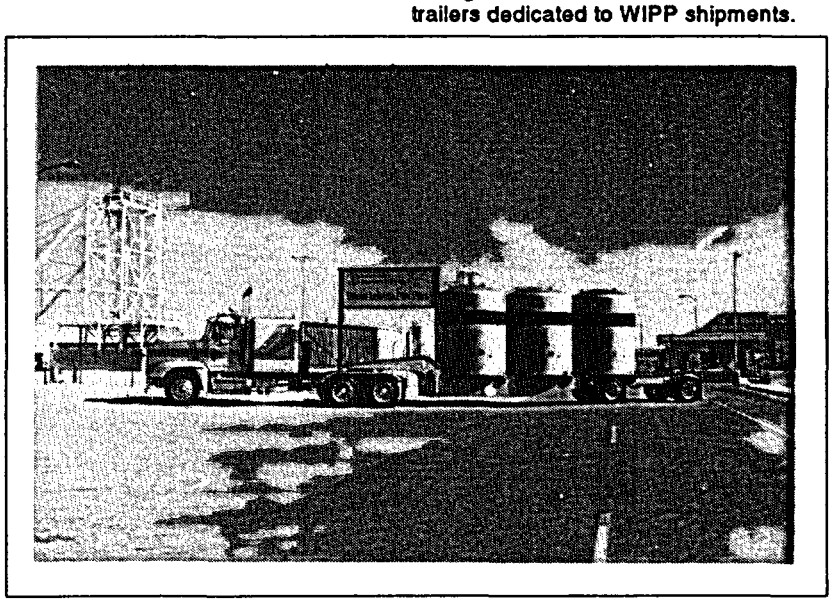
The WIPP's readiness to start Test Phase operations was marked by the completion of a series of milestones established by Secretary of Energy James D. Watkins. In October 1989, Secretary Watkins issued a plan to document that WIPP was ready to begin a Test Phase, called a Draft Decision Plan. It specified activities that needed to be completed to declare readiness. These activities focused on verifying the readiness of various project components, including the base facility, the transportation system, and the waste generator sites. External organizations that evaluated the Secretary's WIPP Decision Plan included the following:

- States of New Mexico, Colorado, Idaho, Nevada, South Carolina, Tennessee, Washington
- U.S. Environmental Protection Agency
- Departments of Defense and Interior
- Environmental Evaluation Group
- Defense Nuclear Facilities Safety Board
- Advisory Committee on Nuclear Facility Safety
- U. S. Congress

As activities were completed and new issues and requirements were identified, the Draft Decision Plan was updated and revised to reflect change. Numerous project readiness reviews verified the completion of each milestone.

The project announced base facility readiness in March 1991. The base facility includes plant systems necessary to conduct the Test Phase activities safely. The transportation system includes waste packaging, handling and shipping equipment, the trucking company, route designation, and emergency response training along that route.

All Test Phase TRU waste will be transported to WIPP in specially designed shipping containers by semi-trucks. These shipping containers, called TRUPACT-IIs, have successfully completed rigorous testing for normal and



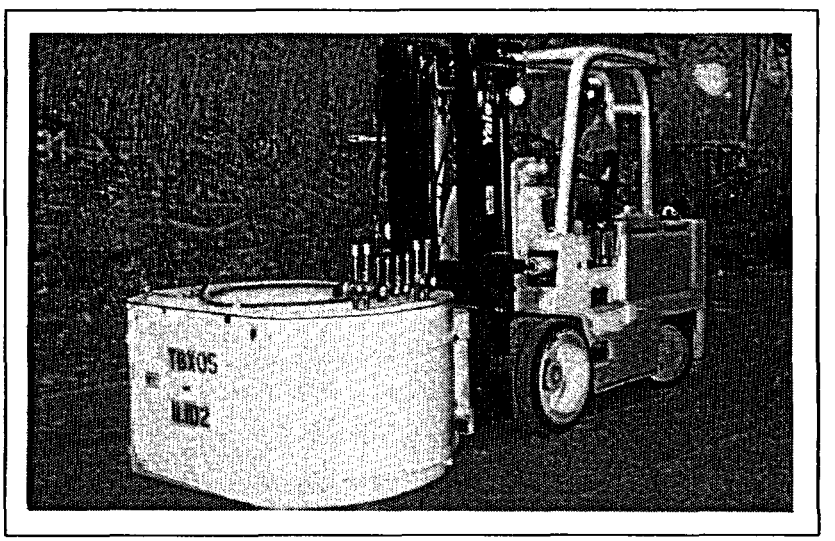
TRUPACT-II shipping containers will be transported from generating and storage sites to WIPP on tractors and trailers dedicated to WIPP shipments.

off-normal accident conditions as part of a comprehensive certification program by the Nuclear Regulatory Commission (NRC). The test series included drop tests, puncture tests, and fire tests. To be certified by the NRC, the container had to remain leak-tight. In August 1991, the project accepted 15 TRUPACT-II containers meeting NRC certification requirements for use during the Test Phase.

The Western Governors Association Technical Advisory Group for WIPP Transport issued a report to the Secretary of Energy in June 1991. The report concluded that the states along the route from the Idaho National Engineering Laboratory (INEL) to the WIPP can support Test Phase shipments of TRU waste. These states are Idaho, Utah, Wyoming, Colorado, and New Mexico. The report highlighted the working partnership between the states and the DOE in the areas of accident prevention, emergency preparedness, and communication.

The DOE Office of Environmental Restoration and Waste Management conducted an Operational Readiness Review during the period of May through August. Key DOE officials and independent experts examined WIPP management, personnel, procedures, equipment, and systems. This review verified the safe and environmentally sound operation of the WIPP project in preparation of Test Phase startup.

TRU waste used in experiments during the Test Phase will come from the INEL and the Rocky Flats Plant in Colorado. INEL will provide the first waste shipments. Therefore, readiness of the INEL to characterize, load, and ship waste for the initiation of Test Phase activities was key to the project's declaration of readiness. INEL's quality assurance programs were developed and audited by the WIPP Waste Acceptance Criteria Certification Committee. Their Environmental Chemistry Laboratory was certified through a Performance Demonstration Program. Each aspect of the INEL's activities in support of the WIPP Test Phase underwent the same scrutiny as did the WIPP site.

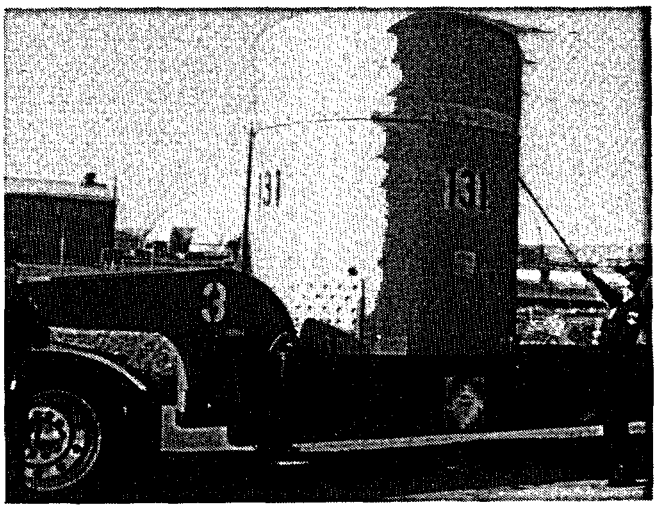


Bins are emplaced in the WIPP underground in preparation for beginning tests with radioactive transuranic waste.

The project completed an internal readiness review to receive waste in August 1991. The review included an Integrated Systems Checkout, which verified test waste handling, shipping, and

emplacement procedures. This beginning-to-end demonstration included transporting a TRUPACT-II from INEL to New Mexico, off-loading it at the WIPP site, and emplacing the contents in the underground. The internal readiness review verified how the first phase of TRU waste experiments will be safely conducted in the underground.

Secretary Watkins' Final Decision Plan, issued September 27, 1991, documented the completion of 50 readiness milestones. After issuing the final plan, the Secretary declared the facility ready to begin testing with transuranic waste.



Operators at the Idaho National Engineering Laboratory demonstrate radiation detection procedures as part of an operational readiness exercise.

Since completing all Decision Plan activities, the WIPP project has maintained a high state of readiness to receive waste. One way of achieving this has been by conducting Limiting Conditions for Operation compliance runs. These compliance runs confirm WIPP's ability to maintain facility availability while adhering to mandatory safety conditions. This is done by performing simulated waste handling activities. Since starting this program in April 1992, there have been no safety violations and facility availability has been greater than 99 percent.

Bin tests will be conducted in Room 1 of Panel 1 in the WIPP underground. Ground control in this room has been enhanced to ensure stability throughout the Test Phase.

Test Phase Programs

Radioactive waste disposal is an international concern. The WIPP project is today's recognized leader in responsible radioactive waste management. In fact, scientists from 11 foreign nations, including the United Kingdom, Australia, and Japan, will help evaluate the results of WIPP Test Phase experiments.

The WIPP Test Phase will evaluate the repository's ability to isolate TRU waste from the environment for at least 10,000 years. The Test Phase will address Environmental Protection Agency regulations for both radioactive waste and for hazardous waste. If test results verify the WIPP to be a safe, valid repository, a decision will be made to emplace TRU waste in the underground and permanently isolate it from the environment. Test Phase activities will take place at the WIPP site as well as in off-site laboratories, such as SNL and Los Alamos National Laboratory (LANL).

Performance Assessment

Performance assessment work will provide an analysis of the WIPP's disposal system performance for comparison with radioactive waste management regulations. Performance assessment, as defined by the regulations, means an analysis that identifies the processes and events that might affect the WIPP's ability to contain radioactive and hazardous waste and examines the effects of those processes and events. It includes computer modeling, laboratory experiments, and TRU waste experiments at the WIPP.

The December 1991 performance assessment studies indicate a high probability that the WIPP would perform successfully as a TRU waste repository. Human intrusion is a factor in the performance assessment, including consideration of drilling through the repository and striking pressurized brine pockets. Preliminary comparisons of these results with the EPA containment requirements indicates that WIPP's performance is well within the agency's regulatory limits. Performance assessment simulations of undisturbed repository performance indicate zero radioactive releases to the accessible environment in 10,000 years.

Test Plan

In June 1992, the National Academy of Sciences WIPP Panel issued a letter report reviewing the WIPP's experimental plan. The panel made two key recommendations - the highest priority should be given to conducting those tests that can determine the validity of the critical assumptions used in the performance

Brine is...

water saturated with salt. Brine has been trapped inside the bedded salt for millions of years. Pressure from the surrounding rock tends to squeeze limited amounts of trapped brine into excavated areas. Some tests measure the rate at which brine flows into small-scale excavations, the repository horizon, and full-size underground rooms.

assessment calculations, and the plan to conduct a large number of bin tests should be reevaluated.

The panel's concerns will be addressed in future revisions to the Test Plan, the first of which is scheduled for issuance in early 1993. It is important to note that the panel's review only addressed compliance with radioactive waste management, while the Test Phase activities must also address compliance with hazardous waste management regulations.

The administrator of the EPA will review and approve the Test Plan. This approval is a requirement of the WIPP Land Withdrawal Act and must be made according to an official rule-making process.

Nonradiological Testing

Ongoing nonradioactive tests address the stability of excavated rooms and the projected movement of the salt over thousands of years. These tests document the validity of theories developed from laboratory data in predicting the behavior of large masses of rock and validate the use of computer models to predict long-term performance of the facility.

Salt was selected as the host rock because it creeps and will seal the openings made in it. Extensive experiments at the WIPP site have allowed a high degree of confidence with results three times more accurate than similar modeling done in the laboratory. Accurate creep modeling is critical to determining how waste room seals will behave. The seals will consist of modules formed from concrete and salt. Laboratory and field studies continue to evaluate various concrete and salt/clay combinations to be considered for use as seals.

At the Idaho National Engineering Laboratory, transuranic waste is examined piece by piece before placement in a bin.

Radiological Testing

As with the nonradioactive tests, data gathered from Test Phase experiments using TRU wastes will support WIPP computer modelling and Performance Assessment studies. Test Phase experiments using TRU waste are scheduled to begin toward the end of fiscal year 1993, and include bin-scale tests designed to evaluate gasses generated by TRU wastes over the test period.

Transuranic wastes must meet specific characteristics in order to be used during the WIPP Test Phase. To fully identify wastes, the DOE revised the Waste Characterization Program Plan in fiscal year 1992. This document explains how to implement waste characterization programs at generator and storage sites. In preparation for the Test Phase, the INEL and the Rocky Flats Plant have implemented waste characterization programs. If the

wastes meet Test Phase acceptance criteria, as noted in the WIPP Waste Acceptance Criteria document, they may be transported to the WIPP and used in Test Phase experiments.

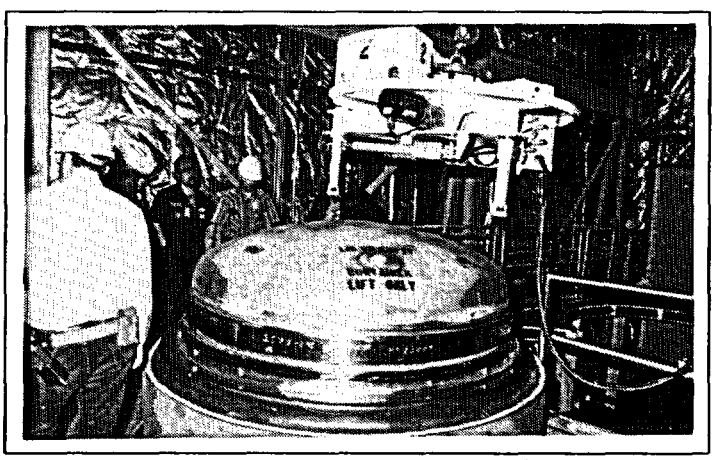
Testing involves placing different types of TRU waste inside bins. Technicians will measure the rate and nature of gas generation to compare against computer predictions. Gas generation data is important in satisfying the regulatory conditions established by the EPA. This testing will be conducted in Room 1, Panel 1, of the underground. Data will be gathered from the bins over a period of five to seven years.

Bin tests at the WIPP will be supported by smaller scale laboratory tests that will be conducted at the LANL. In August 1992, DOE contracted LANL to conduct a four-year test as part of the overall evaluation of the WIPP's ability to safely isolate radioactive wastes. The tests involve adding brine and other elements to actual TRU waste and analyzing the resulting chemical changes. Through their experimental process, scientists at LANL will produce conditions in the test containers similar to anticipated future disposal conditions at WIPP.

Waste Generator Site Activities

WIPP's Test Phase programs go beyond the gates of the site and the borders of New Mexico. The waste generator sites must also be preparing to ship waste, especially INELand the Rocky Flats Plant.

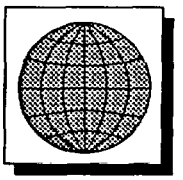
Bin loading for the first phase of the test program is ongoing at the INEL. By the end of fiscal year 1992, the INEL had five bins characterized, fully loaded and ready to ship to WIPP. Bin loading activities at the INEL were temporarily disrupted in late 1991 when it was determined that the container used to transport waste from the storage facility to the bin-loading facility was no longer adequate. A special TRUPACT-II mobile loading unit was designed by WIPP engineers and put into service at the INEL. The mobile loading unit eliminated the need to construct a TRUPACT-II loading facility at the waste storage area, saving both time and money. The first shipment using the TRUPACT-II was made in April 1992.



Operators at the Idaho National Engineering Laboratory use the TRUPACT-II mobile loading unit to demonstrate waste handling readiness.

The Rocky Flats Plant has also developed and qualified laboratories for the experimental waste characterization program under the Performance Demonstration Program. Rocky Flats TRU Waste Quality Assurance programs were demonstrated to be effective and adequately implemented by the WIPP Waste Acceptance Criteria Certification Committee (WACCC) surveillance and audits in 1991 and 1992. In August 1992 the WACCC performed a major audit of Rocky Flats certification program, the Experimental Waste Characterization Program Quality Assurance Project Plan, and the TRUPACT-II payload control program. The audit identified a number of deficiencies, all of which were expected by Rocky Flats. Rocky Flats is in the process of undertaking corrective actions in response to these findings.

The other generator sites are involved with WIPP activities through waste characterization video-conferences, TRU Systems Integration update meetings, and participation in working groups, such as the Certification Planning Interface Working Group.



Foreign Technical Exchange

Underground disposal of nuclear waste is being investigated or implemented in numerous countries in addition to the United States, including Finland, Sweden, Germany, France, the United Kingdom, Spain, Canada, Australia, Japan, Switzerland, and the Netherlands. In 1992 Finland opened an underground disposal facility for low-level nuclear waste in a granite formation.

The technical support groups at Sandia National Laboratories, Westinghouse Electric Corporation and the DOE engage in several forms of technical exchange with foreign scientists and engineers working on underground waste disposal projects. The purpose of many exchanges is to keep abreast of advances in scientific measurement or modeling techniques that are being developed in foreign countries. In addition, WIPP scientists and engineers frequently present their test or modeling results to international groups to receive comments on the approaches they have taken toward predicting the future performance of the WIPP site.

INTRAVAL

In October 1990, at Cologne, Germany, WIPP scientists submitted two test cases based on WIPP experiments to an international group that specializes in the most difficult of scientific tasks, the validation of models to predict the transport of radioactive materials though the subsurface (geosphere). The group, INTRAVAL, for International Project Study Validation of Geosphere Transport Models, is run by the Swedish Nuclear Power Inspectorate (SKI) and includes participants from France, Canada, Australia, Germany, Spain, the United Kingdom, Finland, Japan, Switzerland, the Netherlands, and the United States.

The Salt Test Case

The first test case, the Salt Test Case, is based on three experiments currently being run in the underground repository at the WIPP site. All experiments in this test case yield information about the ability of brine to flow from the underground salt deposits, in which the repository is located, into the WIPP excavations. These experiments were begun shortly after the initial excavations were made and brine was observed seeping slowly into them. A physical model, formulated by WIPP scientists to explain the brine seepage, treats rock salt as a porous medium. The purpose of the Salt Test Case is to determine the confidence of other scientists in (or to validate) the WIPP model and to examine the validity of alternative hypotheses or models.

One of the interesting alternative hypotheses being examined by the INTRAVAL is that brine present from the time the salt formation was created (200 million years ago) is released due to microfractures in the salt. These microfractures are created during and immediately after mining excavations.

The Culebra Test Case

The second test case, the Culebra Test Case, concerns the only subsurface rock unit near the proposed repository that is water saturated and in which the water flows. Near the WIPP site the water in the Culebra formation is too salty to drink. In the unlikely case, however, that radionuclides were to be released from the repository, the Culebra has been identified as the most likely pathway for radionuclides to migrate to where they might come into contact with humans. The WIPP project has been conducting hydrologic tests in the Culebra since the late 1970s and has formulated a model of how groundwater flows in the Culebra. This model will be used to predict future Culebra groundwater flow patterns and therefore how long it might take radionuclides released into the Culebra from WIPP to reach an off-site location. The test case examines how well the experiments have allowed WIPP scientists to understand the groundwater flow in the Culebra. Foreign scientific teams will evaluate the WIPP experiments and models and will address whether or not the flow of radionuclides might occur somewhere in the Culebra or other formations surrounding the underground repository.

Current Status

The test cases were accepted by the INTRAVAL group, which means that at least two international project teams have agreed to work independently to address the issues brought up by each test case. In addition, all the test cases and the resulting scientific work are commented upon and discussed by the entire INTRAVAL membership. Currently, teams from the Netherlands and France are working on the Salt Test Case. Teams from the United Kingdom, Spain, Japan, and Canada are working on the Culebra Test Case. Results of the INTRAVAL studies will be published in an open report sometime in 1995.

WIPP Site Safety

Safety and health are the top priority at the WIPP. Fulfilling this priority, Westinghouse employees set an industry safety record in February 1992 by working three million hours without a day away from work due to an occupational illness or injury.

Mine Safety

Historically, miners have known that, should disaster occur, fellow miners would make every possible rescue effort. This is the mine rescue tradition.

Today's miners have notable advantages over their predecessors. Modern earth removal, fire fighting, communications, training, and first aid equipment have greatly improved rescue capabilities.

The WIPP mine rescue teams have scored top in competitions across the nation. Competition keeps rescue skills sharp and ensures standard safety procedures throughout the mining industry.

According to safety officials and mine rescue team trainers and members, competition is the only way to keep mine rescue skills sharp and consistent nationwide. The WIPP maintains a top-notch mine rescue program that can support any other facility's rescue efforts in addition to its own safety needs.

WIPP mine rescue teams have successfully competed in national events since 1987 and have established themselves as leaders in rescue expertise. The Secretary of Energy personally congratulated WIPP mine rescue teams in 1991 for their exemplary performances both in competitions and in actual rescue support roles beyond the WIPP site.

In August 1992, the WIPP Silver Mine Rescue Team scored highest of 32 teams at the 1992 National Mine Rescue Competition in Las Vegas, Nevada. The WIPP Blue Team earned first place at the Southwestern Regional Mine Rescue Competition in April 1992 for the third year in a row. Individual team members finished first and second in benchman and first aid events. The benchman event involves maintaining self-contained breathing apparatus.

Environmental Compliance

The operating philosophy at the WIPP is "Start Clean, Stay Clean." The DOE and its contractors are committed to keeping the facility free of radioactive contamination and to responsibly manage hazardous materials.

Radiological Environmental Monitoring

All activities at the WIPP reflect sensitivity to environmental responsibility. Environmental scientists from the WIPP and the state of New Mexico sample regional surface water, groundwater, soil, and wildlife to determine and document background radiation levels. These regions include undeveloped land, nearby ranches, villages, and cities. Sandia began monitoring air quality and background radiation levels at the WIPP site in 1976. Air monitoring units at key facility locations continuously measure airborne radiation at the site. Upon receipt of radioactive waste, these units will provide warnings of potential airborne radiation releases.

Nonradiological Environmental Monitoring

Nonradiological monitoring activities at WIPP began in 1975. These activities help define WIPP's environmental status. They involve evaluating the size of the wildlife community, monitoring weather patterns, and measuring nonradiological contaminants typically found in air, water, and soil.

Monitoring the habits of wildlife, such as the kangaroo rat, has been ongoing at the WIPP site for years.

The WIPP site supports a large breeding population of Harris hawks and other birds of prey that are called raptors. The raptor population is a primary indicator of environmental health. The WIPP raptor study program documents the project's overall impact on the region's natural balance. Through extensive studies and environmental responsiveness, WIPP preserves this natural balance in the region.

In September 1992 the U.S. Bureau of Land Management signed an agreement with the DOE to expand the WIPP raptor research program. As part of this program, a southeastern New Mexico facility for the care and release of injured raptors will be established in the WIPP vicinity. Rehabilitated raptors rescued mainly in the states of New Mexico and Texas will be re-introduced from this site into their natural habitat. The DOE will work on this project with Wildlife Rescue of New Mexico, a volunteer organization.

Other animal studies involve insect-dependent birds (barn swallows), small mammals (mice and rabbits), and livestock.

WIPP wastes include radioactive constituents (such as plutonium particles) and hazardous constituents (such as residual solvents). Addressing the hazardous constituents, the EPA issued the WIPP a "Conditional No-Migration Determination" in November 1990. This determination states that hazardous wastes will not migrate from the WIPP disposal unit during the Test Phase. By granting this determination, the EPA allowed the WIPP to manage wastes needed during the Test Phase.

Conditions attached to this determination require hazardous waste characterization and air contaminant monitoring programs. In 1992, waste characterization activities included sampling the gas headspaces of the first waste containers scheduled for shipment to the WIPP. This took place at the Idaho National Engineering Laboratory.

Hazardous air contaminant monitoring hardware is located in both the WIPP underground and on the surface. In 1992, this hardware was upgraded to increase operating efficiency and baseline data were gathered to support future system readings. This hardware will be used to monitor air once wastes arrive at the site and the Test Phase begins.

Environmental Permitting

Standards established by the EPA for hazardous waste as well as radioactive waste apply to Test Phase activities. The New Mexico Environment Department has the authority to implement standards that meet or exceed the EPA standards for hazardous waste management. These EPA standards are defined by the Resource Conservation and Recovery Act (RCRA). On March 4, 1992, Revision 1 of the "WIPP RCRA Permit Application—Part B" was submitted to the New Mexico Environment Department and the EPA. This application defines facility and waste characteristics, process information, project closure plans, environmental monitoring plans, and other details of regulatory interest. As required, Part A of the application and the original Part B were submitted in January and February 1991, respectively. On June 10, 1992, the New Mexico Environment Department accepted the WIPP's RCRA Part A application as administratively complete. The Part B application was likewise accepted in August.

The New Mexico Environment Department is reviewing and commenting on the RCRA permit applications. The WIPP is scheduled to provide additional details, as they may be requested by the state in November 1992. After that, the state will hold public information meetings, followed by formal public hearings in 1993. The state is expected to make a decision on the Part B permit during fiscal year 1993.

Other primary environmental regulations which govern activities at the WIPP are the National Environmental Policy Act and the Clean Air Act. The National Environmental Policy Act requires the WIPP to issue environmental impact statements and provide supporting documents as needed. The Clean Air Act requires the WIPP to submit hazardous material and radionuclide emissions data following TRU waste receipt.

Ongoing operational permits are in place to process site sewage water, monitor wildlife, and restore areas impacted by WIPP construction and activities.

The DOE produced the annual WIPP Site Environmental Report in 1992 to document WIPP environmental monitoring activities. This report describes the environmental status and mission of the WIPP and provides supporting scientific data.

These extensive environmental monitoring activities provide the DOE with the baseline knowledge to prevent, identify early, and, if necessary, correct any adverse effects caused by project activities.

Project Management

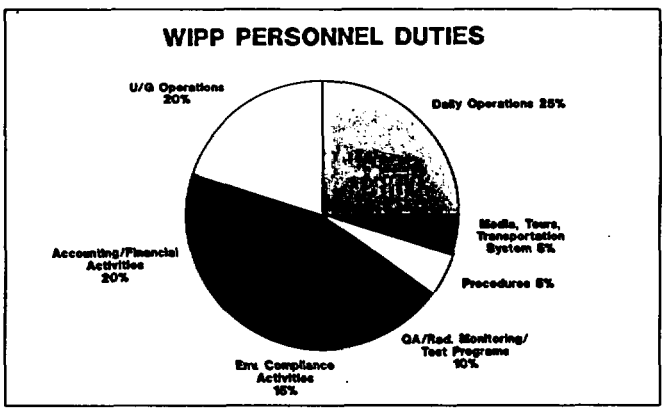
Fiscal year 1992 began with a new DOE WIPP project management structure. The change provided clearer definition of authority and responsibility with a single line of direction and reporting. This restructuring centered on establishing direct line management from DOE Headquarters to the field through the WIPP Project Integration Office (based in Albuquerque), and then to the WIPP Project Site Office (based at the WIPP site), while maintaining a management control system that will focus the WIPP workscope during the Test Phase.

Thanking Energy Secretary Watkins (right) for his continued support, Mike Daniels, a WIPP mining operations employee, presented the Secretary with a rock salt sample from the underground.

The integration office includes the Project Director who receives program and technical guidance from DOE Headquarters, Washington, D.C. The Project Director has overall responsibility for the WIPP project and for integrating appropriate TRU waste management activities with all DOE TRU waste generator sites.

The integration office also includes branches responsible for Quality Assurance and Compliance, Experimental Programs and Waste Integration, Planning and Administration, and Public Relations and Intergovernmental Affairs.

The WIPP Project Site Office is responsible for daily site operations. These functions include overseeing site operations, maintenance, safety, repository technology, project support, environmental compliance, and public affairs.



DOE, Westinghouse, and Sandia employees work at the WIPP. This chart shows percentages of the work force dedicated to given work duties.

Roles and Responsibilities

The WIPP project team includes personnel from four groups: the DOE, with offices in Carlsbad and Albuquerque, New Mexico, and in Washington, D.C.; the Westinghouse Waste Isolation Division; Sandia National Laboratories, New Mexico; Advanced Sciences Incorporated; and various other support contractors. The project is also supported by personnel at each of the TRU waste generator sites.

Westinghouse's Waste Isolation Division has been the management and operating contractor since 1985. As WIPP's primary contractor, the Westinghouse Waste Isolation Division

manages and operates the facility for the DOE. Responsibilities include technology development and engineering applications; support to scientific studies; information management; facility maintenance and operation; environment, safety and health programs development and administration; waste transportation; public affairs; and environmental compliance.

Sandia is DOE's scientific advisor for the WIPP. Sandia's role is to develop and implement a comprehensive scientific and experimental program to explore issues related to the WIPP's mission. Through laboratory tests, theoretical studies and tests in the WIPP underground, Sandia provides DOE with data, documentation, analyses and recommendations regarding WIPP's short- and long-term performance in its effort to isolate transuranic waste from the environment.

Emergency Preparedness

The DOE is committed to preventing WIPP-related accidents, but has prudently provided emergency response training and equipment to local, state, and tribal governments, as well as hospitals and their staff, along the WIPP transportation routes.

States Training

Since 1988, WIPP's States Training and Education Program has trained more than 8,600 emergency response professionals in 12 states. This annual training focuses on response to potential accidents involving WIPP waste shipments. Classes address caring for accident victims, guarding the public welfare, protecting the environment, and ensuring the safety of responders.

TRANSAX '92 documented the effectiveness of emergency response procedures and training programs that focus on incidents involving simulated WIPP shipments.

The "Report on the Emergency Response Training and Equipment Activities through Fiscal Year 1992 for the Transportation of Transuranic Waste to the Waste Isolation Pilot Plant" (DOE/WIPP 92-055) summarizes state training activities. This report was submitted to officials in state governments, Indian tribes, and the U.S. Congress.

The DOE has entered into cooperative agreements with New Mexico, the Western Governor's Association (representing 12 western states), and tribal governments to ensure appropriate emergency response capabilities. Along with providing training, these agreements provide funds for purchasing radiation detection instruments, anti-contamination clothing, respiratory protection equipment, and other training-related expenses.

Students' critiques following the WIPP emergency response classes have consistently endorsed course content and rated the training received as above average or excellent. State emergency coordinators periodically audit these classes to ensure that students receive consistent and effective training.

The Radiation Emergency Assistance Center/Training Site (REAC/TS) has provided hospital-based medical training since 1989. The Oak Ridge, Tennessee-based REAC/TS is internationally recognized for its expertise in radiation emergency assistance. It was designated by the World Health Organization as the Western Hemisphere Collaboration Center to investigate, manage, and provide assistance in response to radiation accidents. More than 800 health care providers have attended REAC/TS training. These students are based along or near the Test Phase

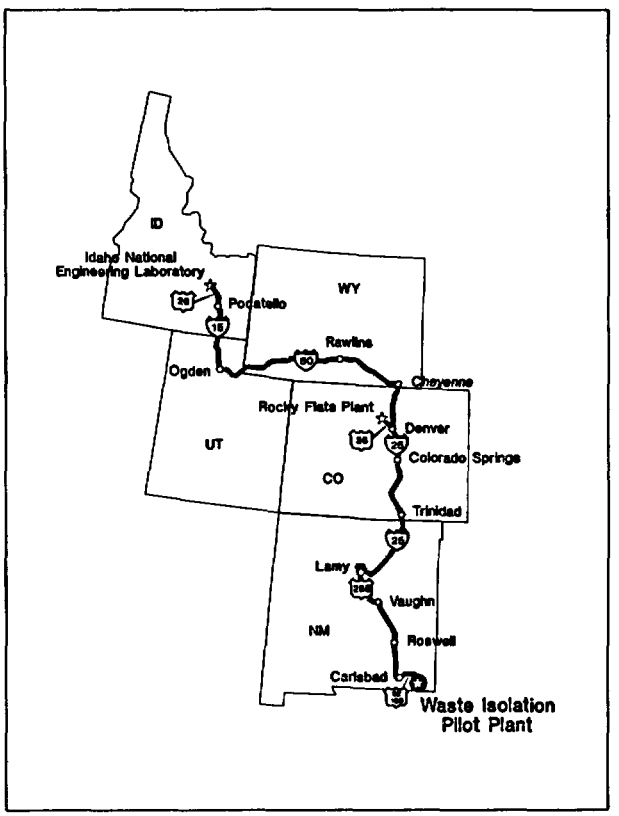
transportation route in Idaho, Utah, Wyoming, Colorado, and New Mexico. Students along an alternate route through Texas have also been trained.

Emergency Drills

To be prepared for a transportation accident involving a WIPP shipment, practice drills are conducted to confirm emergency response procedures and capabilities of WIPP staff, state and tribal governments, and emergency response professionals along WIPP transportation routes.

In September 1992, DOE participated in a full-scale transportation accident drill in cooperation with the state of Idaho and the Shoshone-Bannock Indian Tribe. This exercise took place on the Fort Hall Indian Reservation near the INEL, one of the facilities on the WIPP route.

The objective of this drill, called TRANSAX '92, was to determine if tribal, state, local, and federal emergency response teams could successfully respond to a mock accident involving a TRUPACT-II waste shipment. This was successfully completed. Personnel from the WIPP supported the DOE-Albuquerque office by evaluating the response capabilities of DOE Radiological Assistance Teams and staffed the WIPP TRUPACT-II Accident Response Team.



The WIPP transportation route travels through Idaho, Wyoming, Utah, Colorado, and New Mexico.

The drill scenario included activating the Emergency Operations and Information Centers at DOE-Headquarters, DOE-Idaho, DOE-Albuquerque, and the WIPP. These centers provided clear communication lines connecting all appropriate emergency response units.

A similar drill was held in Colorado in 1990. That drill tested the capability of response teams to deal with a TRUPACT-II container breaking away from its trailer. Although these drill conditions are unlikely to happen, the exercises ensure the highest level of emergency preparedness.

The DOE also conducts the WIPP Transportation Emergency Exercise program. These exercises coordinate local, state, and tribal accident-response parties. Unlike the full-scale program, these exercises do not involve the complete activation of all DOE authorities. The first of these exercises was conducted in Artesia, New Mexico, in September 1991. Raton, New Mexico, hosted a similar exercise in October 1992.

Oversight Organizations

A variety of external oversight groups have evaluated WIPP activities since its inception. Response to the concerns and recommendations of these organizations has further ensured and enhanced WIPP safety and operational quality and regulatory compliance. Oversight groups included the following:

- Environmental Protection Agency
- U.S. Office of the Inspector General
- U. S. General Accounting Office
- National Academy of Sciences
- U.S. Department of Transportation
- U.S. Mine Safety and Health Administration
- New Mexico Environment Department
- Environmental Evaluation Group
- U.S. Nuclear Regulatory Commission
- U.S. Department of Interior
- Western Governors Association
- Southern States Energy Board
- New Mexico Legislature
- DOE agencies
- Defense Nuclear Facilities Safety Board
- Westinghouse Electric Corporation
- State governments along the WIPP transportation routes
- U.S. Congress
- Tribal governments

The state of New Mexico established the Environmental Evaluation Group in 1978 to provide an independent technical appraisal of WIPP. Since 1989, the DOE has funded the Environmental Evaluation Group through a contract with the New Mexico Institute of Mining and Technology. Comprised of scientists, engineers, and supporting staff, this group conducts independent reviews and evaluations of the design, construction, and operations of the WIPP as they relate to the protection of the public health and safety and the environment of the state.

The Defense Nuclear Facilities Safety Board is an independent, civilian team of nuclear safety experts appointed by the President with Congressional concurrence. Created by Congress in 1988, this board provides advice and recommendations to the President and the Secretary of Energy regarding public health and safety issues at DOE nuclear defense facilities, including the WIPP.

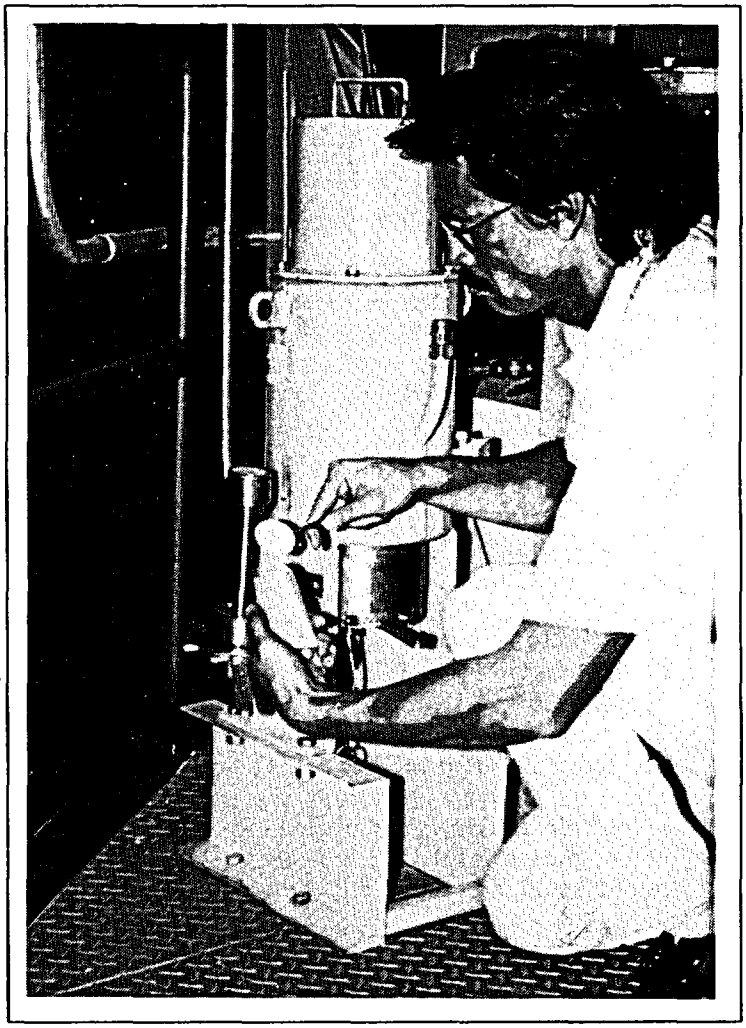
Defense Nuclear Facilities Safety Board members visited the WIPP site in February and March 1992, rating WIPP's radiation safety program as the best in the DOE nuclear facilities complex. Specifically, the board highlighted three elements within WIPP's radiation safety program:

- Continuous air monitoring system
- Health physics training
- Site contamination control and monitoring philosophy.

Since 1988, 19 WIPP Readiness Reviews have been conducted by a variety of expert oversight organizations. A total of 2,009 findings resulted from these reviews. All these findings have been resolved.

Several oversight groups inspected project activities during fiscal year 1992. These groups included the Defense Nuclear Facilities Safety Board; the DOE-HQ offices of Environment, Safety and Health, and of Nuclear Safety; the DOE-Albuquerque Office of Environment, Safety, and Health; the Westinghouse Nuclear Safety and Environmental Oversight Committee; and the DOE/Albuquerque Information Management Division. Topics covered by these groups included property management, industrial hygiene, fire safety, health physics, personnel training, records keeping, and conduct of operations.

In addition to general project audits, the U.S. Mine Safety and Health Administration (MSHA) and the New Mexico Mine Inspector Office have reviewed WIPP underground operations. Under a Memorandum of Understanding with the DOE, the MSHA periodically inspects WIPP operations. In addition, the recently enacted WIPP Land Withdrawal Act directs MSHA to inspect WIPP no less than four times each year.

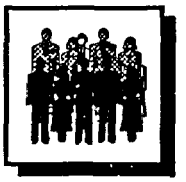


Continuous air monitors, called CAMs, measure amounts of airborne radiation at the WIPP site.

In September 1992, an MSHA federal mine inspector spent seven days at the WIPP conducting a site-wide, surface and underground, safety and health inspection. At the conclusion, the

inspector stated that he was unable to find a single violation of the MSHA regulations, and remarked that he had never seen a site that looked as good as the WIPP. This inspection reinforced a previous MSHA inspection completed in June 1992. MSHA also found no inadequacies during this inspection and issued no findings. These inspections support the fact that safety and operation excellence are WIPP priorities.

Oversight organizations are monitoring the WIPP facility and its activities and will continue to do so. It is the policy of the WIPP project management to track each group's findings and concerns resulting from these inspections and document the resolution of any findings. Each item has been and will continue to be resolved to ensure that WIPP policies and procedures are always effective and efficient, meeting or exceeding current regulations and needs.



Outreach

The WIPP project has several active programs aimed at assuring the public has access to WIPP information. These include a speakers bureau, a tour program, a touring exhibit, and educational programs. A permanent WIPP display is housed in the WIPP Office and Information Center located in downtown Carlsbad. Here, visitors can receive a guided tour and explanation of the WIPP project. A WIPP exhibit also can be viewed at the National Atomic Museum in Albuquerque, New Mexico. For visitors with more time, guided tours of the WIPP surface and underground facilities can be arranged. In fiscal year 1992, 3,706 people toured the WIPP site.

Community Day

On May 2, 1992, the WIPP held its fourth Community Day. Approximately 600 people from throughout New Mexico and west Texas toured the WIPP's surface and underground facilities. Surface events included a TRUPACT-II tractor-trailer exhibit and a tour of the Waste Handling Building. Visitors to the underground were taken into Room 1, Panel 1, where WIPP staff gave them a briefing about the room's planned use and enhanced support system.

Speakers Bureau

To inform large numbers of people about the project, employees take part in the WIPP Speakers Bureau program. Upon request, presentations are delivered to any civic, private, technical, or education group located in New Mexico or along the WIPP Test Phase shipping route. In fiscal year 1992, 275 speakers bureau presentations were given, reaching over 12,500 people.

WIPP Exhibits

The WIPP Exhibit/Public Awareness Program maintains open communications, identifies public concerns as quickly as possible, and acquaints people along transportation routes with the WIPP project. Employees staff WIPP information displays at technical conferences, county and state fairs, and other community events. In fiscal year 1992, the WIPP participated in 54 exhibits, reaching an estimated 48,000 people.

Education

WIPP-sponsored educational programs promote opportunities with New Mexico and out-of-state universities as well as statewide public school districts. The programs provide and develop waste management and environmental curricula for

higher education and educational enhancements to public school classrooms. In fiscal year 1992, more than 800 students and education professionals visited the WIPP site.

Specifically, these efforts include distributing educational materials to New Mexico schools, sponsoring the "Shadowing Program," and supporting the Waste-management Education Research Consortium.

In February 1992, the WIPP created a science bulletin entitled, "Students Touching Technology." Starting with an initial distribution to only New Mexico schools, over 20,000 copies have now been distributed to schools across the country. The bulletins, written at a grade-school level, feature hands-on activities and discuss subjects such as mine technology, environmental programs, career investigation, and information about radiation.

WIPP's education outreach programs involve teaming students with project activities. Pictured here, a student working with WIPP's Environmental Monitoring section examines a hawk native to the region.

The Shadowing Program is establishing a partnership between school districts and WIPP employees. Students select their personal career interests and are teamed with appropriate volunteer mentors from the WIPP. The Shadowing Program enjoys widespread success among students, teachers, parents, and mentors. For fiscal year 1992, WIPP hosted 35 Shadowing Program tours.

Additional schools in Carlsbad and Hobbs, New Mexico, will participate in the WIPP Shadowing Program during the 1992-93 academic year,. Also, local businesses in Carlsbad met in September 1992, to develop a community Shadowing Program.

The Waste-management Education Research Consortium (WERC), a coalition of New Mexico universities and federal laboratories, promotes the understanding of today's waste management processes.

WERC initiatives include providing pre-college educational programs to local schools, strengthening university and vocational school relations, and supporting local science programs which further the region's scientific base. Such programs include creating the Carlsbad Environmental Monitoring and Research Center. This independent oversight center was established to determine if WIPP waste management activities impact the region.

Activities of the WERC also include providing advanced education programs to WIPP employees. Satellite signals transmit interactive instructional classes to the WIPP. Employees may attend these classes and receive college credits. Given the remote location of the WIPP area, this program provides enriching educational opportunities to employees.

International

The WIPP, an international leader in nuclear waste management technology, hosts scientists and other visitors from around the world. Between October 1991 and September 1992, the WIPP hosted more than 100 visitors from 16 countries.

The WIPP was particularly pleased to host a visit by members of the European Parliaments Environment Committee in June 1992. The trip, sponsored in part by the Waste-management Education Consortium and the DOE, allowed the delegates to discuss European and American approaches to waste management.

These visits allow the DOE to share ideas about waste disposal with an international audience and to enhance the recognition of WIPP worldwide.

During the European ministers' tour of the underground in June 1992, Dr. Wendell Weart (far left) of Sandia National Laboratories explained the details of the Test Phase experiments.

Public Opinion

The WIPP project contracts with the University of New Mexico Institute for Public Policy to measure public perception of the project and to help direct the public outreach efforts. Surveys conducted in 1992 indicated a slight increase in public support of WIPP, but also showed that 27 percent of the survey respondents were strongly opposed to opening WIPP. Only 17 percent were strongly supportive of it. The survey results also clearly indicate that those who perceive themselves to be well informed about WIPP were significantly more supportive. These results help bolster the need to continue an aggressive public information program and ensure that information about the WIPP is readily available to a wide variety of publics.

Institutional Issues

Before the Test Phase may be initiated, certain institutional issues must be resolved. These issues include the following:

- Transferring responsibilities for the land surrounding the WIPP site from the Department of Interior to the DOE. This transfer is referred to as land withdrawal.

- Settling litigation involving the land withdrawal process and compliance with the federal Resource Conservation and Recovery Act (RCRA).

To build consensus and emphasize WIPP site readiness, the Secretary of Energy hosted a tour for key stakeholders. These stakeholders, the governors of states where DOE facilities are located, had an opportunity to see the WIPP project firsthand. The DOE recognizes the significance of stakeholders' participation in resolving the project's institutional issues.

Admiral Watkins spoke to the media during a visit to the WIPP site. Watkins brought with him four governors from states that host WIPP waste generating and storage sites. Seated, from the left, are Governors Romer (Colorado), King (New Mexico), Andrus (Idaho) and Miller (Nevada).

Administrative Land Withdrawal

Control of lands managed by the U.S. government may be transferred from one department to another by way of administrative (presidential) or legislative (congressional) land withdrawal. When the project was initiated, the WIPP site occupied U.S. Interior Department land. The DOE constructed the WIPP facility under a temporary, administrative land withdrawal that did not allow receipt of radioactive wastes. After the DOE declared the project ready to start tests with radioactive wastes, a modified land withdrawal measure was necessary. Although the DOE encouraged and preferred a legislative withdrawal, the Interior Department issued an administrative

modification in January 1991, when it appeared that legislative withdrawal was not forthcoming. As issued, this revised public land order allowed waste receipt at the WIPP. It was, however, later ruled illegal by a U.S. District Court.

Legislative Land Withdrawal

The U.S. Senate of the 102nd Congress unanimously passed the WIPP Land Withdrawal Bill sponsored by the senators from New Mexico on November 5, 1991.

On July 21, 1992, the U.S. House of Representatives passed a WIPP Land Withdrawal Bill. Because significant differences existed between the Senate and House bills, a congressional conference committee convened to compromise on mutually acceptable legislation. Thirty-one conferees were named to the committee: 24 House members and seven Senate members. New Mexico Senators Domenici and Bingaman, along with Representative Richardson were members of the committee.

On October 6, 1992, the committee issued a compromise WIPP bill to both the House of Representatives and the Senate. The House passed this legislation on the same day. The Senate passed this legislation on October 8, 1992. The legislation, the WIPP Land Withdrawal Act—Public Law 102-579, became law on October 30, 1992.

Litigation

On October 9, 1991, the New Mexico attorney general filed a lawsuit in U.S. District Court for the District of Columbia against the DOE and the Department of the Interior. The lawsuit challenged the legality of an administrative land withdrawal on the basis of alleged violations of the Federal Land Policy and Management Act. In November 1991, a coalition of private parties and the state of Texas joined the attorney general's lawsuit alleging noncompliance with terms of the Resource Conservation and Recovery Act.

WIPP Land Withdrawal Act: Key Points

- The U.S. Environmental Protection Agency has the responsibility for determining acceptable environmental standards for radionuclides.
- The state of New Mexico has authority over hazardous wastes.
- The EPA is required to publish final nuclear waste disposal standards within six months.
- WIPP's Test Plan and Retieval Plan, both subject to the final standards, must be approved or disapproved within 10 months.
- The maximum volume of waste that can be used for the Test Phase is 0.5 percent of WIPP's capacity, or 4,200 drums.
- New Mexico is authorized to receive $43 million immediately, then $20 million annually for 15 years, beginning with transport of waste to WIPP.

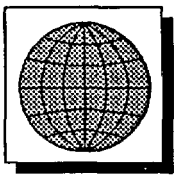
Acknowledging the attorney general's case, the Secretary of Energy voluntarily delayed TRU waste shipments to WIPP. In a subsequent decision, the Honorable John G. Penn, the presiding federal judge, issued a preliminary injunction blocking the first shipment of TRU waste to the WIPP effective on November 26, 1991.

Judge Penn issued a permanent injunction on January 30, 1992, prohibiting the WIPP from receiving waste under the administrative land withdrawal. He also ruled that the WIPP was not eligible for Resource Conservation and Recovery Act interim status. "Interim status" under RCRA would allow the handling of hazardous wastes at the WIPP until a RCRA permit is issued by the state of New Mexico.

The DOE appealed Judge Penn's ruling, and on July 10, 1992, the U.S. Court of Appeals reversed the district court's decision that WIPP was not eligible for interim status under RCRA, but rather affirmed that the court's decision that the Secretary of the Interior exceeded his authority under the Federal Land Policy and Management Act.

The Test Phase using a limited amount of transuranic waste at WIPP can only be started after the following conditions are met:

- The permanent injunction is lifted by the district court;
- The RCRA interim status issue is resolved; and
- All legislatively mandated Test Phase prerequisites are completed.



Summary

Readers who wish to become more familiar with the details of the WIPP Test Phase can obtain a copy of the WIPP Test Phase Plan, DOE/WIPP 89-011, Revision 1, at the WIPP Reading Rooms located throughout New Mexico (see listing). Readers who wish to become familiar with previous work, its status, and the context of its incorporation into analyses and assessments are referred to the Final Supplemental Environmental Impact Statement (DOE, 1990), the No-Migration Variance Petition (DOE, 1989), and the three completed preliminary performance assessments (Bertram-Howery, et al., 1990; Sandia, 1991; and Sandia, 1992).

Additional information about the WIPP facility and the surrounding area can be found in the Final Safety Analysis Report: Waste Isolation Pilot Plant (DOE, 1990).

The reader needs to keep in mind that the state of knowledge about the WIPP continues to evolve over time with addition of the results or each year's work, as research continues at the WIPP site and at laboratories across the nation.

General information about the WIPP can also be obtained by contacting the **U.S. Department of Energy, P.O. Box 3090, Carlsbad, New Mexico 88221-3090, or Westinghouse Waste Isolation Division, P.O. Box 2078, Carlsbad, New Mexico 88221-2078.** Also, facility tours and speakers are available and can be arranged by writing to the above addresses.

WIPP Reading Rooms in New Mexico

Thomas Brannigan Memorial Library
200 E. Picacho
Las Cruces, NM 88005

New Mexico State Library
325 Don Gaspar
Santa Fe, NM 87503

Pannell Library
New Mexico Junior College
5317 Lovington Highway
Hobbs, NM 88240

Carlsbad Public Library
101 S. Halagueno
Carlsbad, NM 88220

Zimmerman Library
Government Publications Dept.
University of New Mexico
Albuquerque, NM 87138

National Atomic Museum
U.S. Dept. of Energy
P.O. Box 5800
Albuquerque, NM 87115

Sandia National Laboratories
Technical Library
Organization 3144
P.O. Box 5800
Albuquerque, NM 87185

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U.S. Department of Energy
One Park Square, Suite 903
6501 Americas Parkway N.E.
Albuquerque, NM 87110

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