

WIPP Bulletin



Protecting Public Health and the Environment

Office of Radiation & Indoor Air

Winter 1998 Number 5

A Message From the Director

By Mary Kruger
Director
WIPP Center

On October 30, 1997, EPA issued a proposed rulemaking to certify that the Department of Energy's (DOE) Waste Isolation Pilot Plant (WIPP) will comply with the radioactive waste disposal regulations set forth at 40 CFR Part 191 (Environmental Standards for the Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Waste), and is therefore safe to contain the radioactive waste. If the Agency's final decision is consistent with the proposal, the WIPP could become the world's first underground disposal facility for transuranic radioactive waste.

EPA received DOE's Compliance Certification Application (CCA) in October 1996, and immediately began the rulemaking process with publication of an advance notice of proposed rulemaking. Most of 1997 was spent reviewing the CCA, meeting with the public, considering public comments, and performing independent testing of the performance assessment calculations, which are used to demonstrate that WIPP will comply with EPA's radioactive waste disposal regulations. EPA conducted an exhaustive scientific review of over 100,000 pages of documentation, held public hearings and meetings in New Mexico, and responded to nearly 1,000 public comments.

EPA is required by the WIPP Land Withdrawal Act (LWA) of 1992, as amended, to

evaluate whether the WIPP will comply with EPA's standards for the disposal of radioactive waste. If EPA issues a certification of compliance, DOE could begin placing radioactive waste in the WIPP, provided that all other applicable health and safety standards have been met. However, the proposed certification is subject to several conditions. Most notably, EPA must approve site-specific waste characterization measures and quality assurance plans before allowing waste generator sites to dispose of transuranic wastes at the WIPP.

Upon publication of the proposed rule in the Federal Register, EPA opened a 120-day public comment period. Comments on the proposal will be responded to if the Agency receives them on or before February 27, 1998. EPA will consider all comments received during the comment period in making its final decision. In an effort to obtain preliminary comments on the proposed decision, EPA held meetings in December 1997 with major stakeholders in New Mexico. In addition, EPA will hold public hearings in Carlsbad, Albuquerque, and Santa Fe January 5-9, 1998.

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If, after reviewing public comments, EPA concludes that the WIPP will comply with the radioactive waste disposal regulations, EPA will issue a final certification to the Secretary of Energy. Thirty days following publication of the certification, the Secretary of Energy would be authorized to begin emplacement of radioactive wastes in the WIPP, once all other applicable health and environmental requirements have been met.

In the Spring of 1998, EPA plans to publish a final rule in the Federal Register announcing the Administrator's decision.

The Proposed WIPP Certification Rulemaking

By Caroline Laikin

EPA's proposed certification rule, states the Agency's proposed determination that the WIPP complies with the radioactive waste disposal regulations and compliance criteria. In addition, the proposal specifies all conditions which would apply to the certification. The WIPP compliance criteria (40 CFR Part 194) set criteria to implement and interpret the generic radioactive waste disposal regulations (40 CFR Part 191). The criteria describe in detail what information DOE must submit for EPA's review, and clarify the basis on which EPA's compliance determination will be made.

The proposed rule addresses each of the technical WIPP compliance criteria in turn. The Agency describes the basis for evaluating compliance with each criterion, and discusses briefly how DOE's compliance certification application (CCA), and other relevant information, demonstrates compliance with EPA's requirements. The more detailed technical rationale for EPA's proposed decision is contained in the Compliance Application Review Documents (CARs) supporting the rule. The CARs are analogous to the "Background Information Document" usually provided for EPA rulemakings.

The CARs discuss DOE's compliance with the individual requirements of the WIPP compliance criteria. Each CARD summarizes DOE's approach to compliance and describes EPA's compliance review. CARs also list additional EPA technical support documents and any other references used by EPA in rendering a proposed decision on compliance. Finally, CARs contain EPA's response to comments received on the Agency's Advance Notice of Proposed Rulemaking (ANPR) of November 15, 1996 (61 FR 58499) and on other comments received prior to August 8, 1997.

EPA's proposed certification decision is based on the entire record available to the Agency. The record consists of the complete DOE CCA, supplementary information submitted by DOE in response to EPA requests for additional information for technical sufficiency, technical reports generated by EPA and EPA contractors, EPA audit reports, and public comments submitted on EPA's ANPR for the certification decision.

All materials which informed EPA's proposed decision have been placed in the WIPP docket or are otherwise publicly available. A full description of the supporting documentation for EPA's proposed decision and a full list of the DOE compliance documentation considered by the Agency are located at Docket A-93-02, Item III-B-1. Through these means, the Agency believes the public will have a clear indication of what materials constitute the complete CCA, and what materials constitute the basis for EPA's proposed certification decision.

EPA'S Conditions of Compliance

By Scott Monroe

EPA's proposal determination states that the certification will be subject to four conditions. These conditions are described below. The Agency will consider and respond to public comments on the proposal when issuing its

Opening of Public Comment Period

By Margaret Sheppard

The public comment period for EPA's WIPP Certification Rulemaking is your chance to share your reactions to the proposed rulemaking with EPA. This 120-day period began on Thursday, October 30, 1997, and continues through Friday, February 27, 1998. EPA will consider comments received during the public comment period before making its final decision about certification for the WIPP.

If you want to submit written comments on EPA's proposed WIPP Certification Rulemaking, send two copies to the following address:

Docket No. A-93-02, Air Docket
Room M-1500 (LE-131)
U.S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460

Because of the large number of comments the Agency is expecting and because EPA is required by regulation to make its final decision within a year of the Administrator's completeness determination, we must adhere to the **February 27, 1998 deadline for receipt of public comments.**

The most useful public comments that EPA receives are comments that clearly explain the issue and suggest specifically the course of action for resolving the issue.

We look forward to receiving your comments.



**For Further Information on
EPA's WIPP Activities**

**Please Call the WIPP
Information Line**

1-800-331-WIPP

Public Hearings to be Held in New Mexico

By Sharon White

EPA will be holding public hearings in three cities in New Mexico in January to obtain public comment on EPA's proposed decision to certify that the Waste Isolation Pilot Plant (WIPP) is in compliance with the Agency's radioactive waste disposal standards. Both written and oral comments will be given EPA's full and equal consideration. The hearings will be held according to the following schedule and locations:

Schedule and Locations

Carlsbad

Pecos River Village Conference Center
Room #3
711 Muscatel
Carlsbad, NM

Monday	January 5	6 pm to 9 pm
Tuesday	January 6	9 am to 4 pm

Albuquerque

Albuquerque Convention Center
Aztec/Galisteo Room
401 Second St., NW
Albuquerque, NM

Wednesday	January 7	12 pm to 9 pm
Thursday	January 8	9 am to 12 pm

Santa Fe

Harold Runnels Building
1190 St. Francis Dr.
Santa Fe, NM

Thursday	January 8	3 pm to 9 pm
Friday	January 9	9 am to 5 pm

final determination; see "Opening of Public Comment Period."

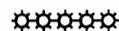
Conditions of Compliance

- The first condition requires DOE to implement the most stringent of the four options in its application for the panel closure design. Panel closure will serve to block the flow of any brine from one room (panel) in the repository to another. In the Compliance Certification Application (CCA), DOE described four panel closure options without indicating which would be employed. Of these options, Option D, or use of fresh water concrete, was the most robust. However, EPA believes it would be beneficial -- and more consistent with DOE's assumptions in the performance assessment -- to modify Option D so that Salado mass concrete (concrete mixed with Salado salt) is used instead of fresh water concrete.
- The second condition states that Los Alamos National Laboratory in New Mexico is the only waste generator site with an approved quality assurance program for waste characterization activities. No other waste generator site may send waste to the WIPP for disposal until EPA has approved its quality assurance program. EPA will evaluate such programs by means of audits and inspections.
- The third condition approves only certain legacy waste streams at Los Alamos National Laboratory for shipment to the WIPP for disposal. "Legacy" waste streams are waste forms that have been generated and are being stored at a generator site. Any other legacy waste or waste generated in the future at Los Alamos or other sites may not be shipped to the WIPP until EPA determines that DOE adequately employed process knowledge to characterize the waste and implemented a system of controls to confirm that the

waste falls within established limits. EPA will evaluate DOE's process knowledge and system of controls for waste characterization at generator sites by means of audits and inspections.

- Finally, EPA proposed to require DOE to submit additional information in support of its conceptual design for passive institutional controls (markers, records, and other means of identifying the WIPP site in the future). EPA identified this information as necessary to ensure that all passive institutional controls are in place before or as soon as possible after closure of the WIPP. DOE must demonstrate that facilities to transport and assemble certain site markers exist, and that archives and other repositories will accept WIPP information as planned. EPA also called for DOE to revise its schedule for implementing the conceptual design.

In the proposed decision, EPA also states its preliminary finding that it is not necessary for DOE to acquire two oil and gas leases. These leases are located at the southwestern part of the withdrawal area and permit drilling below 6,000 feet (the WIPP itself is 2,150 feet below the surface). The Land Withdrawal Act required EPA to determine whether DOE must acquire the leases in order to prevent drilling that could adversely affect the WIPP's compliance with EPA standards. As part of its review of DOE's performance assessment, EPA found that it was not possible for boreholes drilled from the leases to intersect the WIPP. EPA also found that current drilling practices, including fluid injection and resource recovery, would not cause the WIPP to exceed EPA standards.



Speakers representing themselves will be allocated 5 minutes, and individuals testifying as the official representative or spokesperson on behalf of groups or organizations will be allocated 10 minutes for a presentation exclusive of any time consumed by questions from the government panel and answers to these questions.

Testifiers are requested to pre-register by calling EPA's WIPP Information Line at 1-800-331-WIPP between 11:00 a.m. and 7:00 p.m. Eastern Standard Time (EST) with the following information: Name/Organizational Affiliation (if any)/address/hearing date/location, time(s) available to testify and a daytime telephone number.

New Mexico Drafts RCRA Permit for WIPP

By Nick Stone
EPA Region 6



The New Mexico Environment Department (NMED) expects to complete the draft Resource Conservation and Recovery Act (RCRA) permit for the WIPP facility this winter. The NMED determined the

RCRA application to be complete on June 27, 1996. The Department of Energy (DOE) continued to submit updated and new information related to their permit application to NMED through September 1997. The information included a revised groundwater monitoring plan, disclosure documentation required under State law, information relative to the Land Withdrawal Act exemption from land disposal prohibition, and other text changes and clarifications.

NMED is also requiring the Westinghouse Waste Isolation Division (WID) to meet the financial assurance requirements of 40 CFR 264 subpart H because WID signed the permit application as a co-operator of WIPP. These requirements ensure that the operator has the funding to complete the disposal process and the closure process. The regulation protects the public from RCRA sites becoming Superfund sites. WID is listed as the co-operator and co-permittee for the site, and NMED is requiring WID to meet the financial requirements. Due to the extent of new information and the absence of financial assurance information, NMED rescinded its original completeness determination on September 26, 1997. WID submitted preliminary financial assurance information in November 1997, but has not waived any right to challenge these requirements based on the Federal interpretation that government contractors are exempt at Federal facilities.

Once a completeness determination is restored and the draft permit is complete, the State will proceed with public notice of the draft permit and begin the public hearing process. The final permit decision may be reached by late 1998.

EPA Issues Guidance for Management of Waste at the WIPP

By Betsy Forinash

In the event that EPA issues a final certification of compliance for the WIPP and the facility begins operation, EPA must ensure that disposal operations will protect human health and the environment. To this end, EPA has issued "WIPP Subpart A Guidance" to implement standards for management of radioactive waste at the WIPP. EPA's generally applicable standards at 40 CFR Part 191, Subpart A, limit radiation doses to the public from activities associated with receiving and

placing waste at the WIPP. (Limitations on radiation doses which may occur after closure of the disposal system are separately addressed by EPA's disposal regulations—Subparts B and C of 40 CFR Part 191—and WIPP Compliance Criteria—40 CFR Part 194.)

EPA announced the availability of draft Subpart A guidance in a Federal Register notice on September 5, 1996, and invited public comment on all aspects of the draft guidance. (61 FR 46804) Revised WIPP Subpart A Guidance, incorporating changes made in light of public comments, was issued by EPA in January 1997. (See 62 FR 9188; February 28, 1997)

The WIPP Subpart A Guidance describes the application of Subpart A to activities associated with the approximately 35-year period during which packaged waste would be received at the above-ground portion of the WIPP. The guidance covers waste that would be: unloaded and prepared for emplacement in the underground repository; lowered down a mechanical hoist and emplaced in the mined-out repository; and managed during the closure and decommissioning of the facility, if the WIPP is approved for use as a disposal system. The guidance clarifies EPA's interpretation of certain definitions as applied to the WIPP, and provides Agency recommendations for methods used to demonstrate compliance with the standard. For example, the guidance identifies the compliance boundary for Subpart A as the patrolled area reserved exclusively for the use of DOE and its contractors, and recommends that air monitoring be conducted in accordance with the methods described in certain Clean Air Act regulations.

In addition, EPA expects that compliance reports for Subpart A will be submitted to the Agency every two years as required by the WIPP Land Withdrawal Act, or more often if calculations indicate that the dose limits are exceeded. The guidance does not establish binding rights or duties on EPA or on DOE (although the environmental protection standard itself is binding on DOE). The document may be

updated as needed in the future to reflect changes in policy, radiation science, operation of the WIPP, and response to concerns raised by the public.

Copies of the WIPP Subpart A Guidance can be obtained by calling the WIPP Information Line.

The Audit Schedule

By Mike Eagle

EPA's WIPP Center was busy in 1997 performing audits of the WIPP, and in 1998 the auditing will increase.

EPA regulations (40 CFR 194) require that quality assurance (QA) programs be established by DOE and its contractors for all activities important to the containment of waste in the disposal system. The regulations also require these QA programs to meet the requirements of the American Society of Mechanical Engineers (ASME) for nuclear facilities.

In 1997, EPA performed audits of certain WIPP organizations to verify that their QA programs were in compliance with the ASME requirements. DOE, Westinghouse, Sandia Labs, and the Los Alamos site were audited, and the EPA determined that their QA programs were in compliance with pertinent regulations. The Los Alamos site was the only TRU-waste generator site that was ready for an audit of its QA program. Other TRU-waste generator sites, such as the Idaho site and the Rocky Flats site, were not ready for EPA audits. In its recently proposed rule, EPA proposes to certify that the WIPP will meet the regulatory requirements conditioned on separate, subsequent approvals from EPA that each TRU-waste generator site has a QA program that complies with the ASME requirements. If after consideration of public comment on EPA's proposal, EPA certifies that the WIPP will

comply with the regulatory requirements, EPA will then be in a position to commence the approval process at the other TRU-waste generator sites.

There are ten major sites that will require subsequent approvals from EPA. These are the Nevada Test Site, Mound Plant (Ohio), West Valley site (New York), Lawrence Livermore National Laboratory (California), Argonne National Laboratory East (Illinois), Idaho National Environmental Engineering Laboratory, Rocky Flats Environmental Technology Site (Colorado), Oak Ridge National Laboratory (Tennessee), Hanford site (Washington), and the Savannah River Site (South Carolina). About five minor sites with small quantities of TRU waste will also require approvals. For several other minor sites, DOE plans to use a mobile unit to characterize the waste. Therefore, EPA will also perform audits of the mobile unit and these other minor sites.

If WIPP is certified, EPA must perform annual audits of the WIPP organizations to verify that the QA programs are being properly maintained.

***Performance Assessment:
Determining if
The WIPP is Safe***

By Margaret Sheppard

Have you ever wondered how EPA made its proposed decision as to whether the WIPP can safely contain radioactive waste for ten thousand years? The Agency carefully did a detailed examination of an analysis called a "performance assessment" or "PA," as part of its proposed decision to certify WIPP.

A Performance Assessment does three things. First, it describes the disposal system and its surroundings and anything that could affect them. Second, the PA considers what

could go wrong and predicts how that would affect the disposal system. Third, it estimates how much radioactivity could escape from the disposal system. The performance assessment uses sophisticated computer modeling to simulate millions of possibilities.

The Department of Energy (DOE) has conducted several performance assessments, the latest of which was included in its Compliance Certification Application (CCA). DOE's PA described the characteristics of the WIPP repository, its surroundings, and the waste that would be shipped to the WIPP. These characteristics include things like how easily water moves through the layers of rock above the WIPP, the particular radionuclides and their amounts, and how difficult it is to dissolve the waste in brine. Scientists found numerical values for most of these characteristics by conducting scientific experiments and studies, and by reviewing available literature.

Next, DOE looked at hundreds of natural and artificial processes that might affect the WIPP to see what can reasonably be expected to happen. Some examples of processes included in the PA are gas buildup in the waste area, fracturing in rock near the WIPP, mining for potash, and drilling for oil and gas.

The processes that were reasonably likely to occur and could have a significant impact on the WIPP were then described so that they could be included in the performance assessment. DOE also developed descriptions of the ways in which radioactivity could escape from the WIPP.

Over the course of the previous several years, the descriptions of features, events, and processes were used to develop conceptual models that were the starting point in the process of writing computer codes. An independent panel of scientists and engineers examined DOE's conceptual models and suggested where changes should be made. The final conceptual models and revised

computer programs were included in the CCA Performance Assessment.

The computer codes simulated about three million possible "futures" for the performance assessment. The codes computed how much radiation would be released in each simulated future. The computer codes presented final results as graphs. The graphs in the PA showed that the probability of radiation releases was far less than EPA's limit for containing radioactive waste.

EPA carefully reviewed the information and reasoning that DOE used to develop its computer models and codes. For example, EPA reviewed the support for each of the 1600 parameters used in the PA. This review was important to ensure that the final results of the PA were adequate for comparison to EPA's standards. The PA results indicated that the WIPP will meet EPA's radioactive waste disposal standards.

In a few cases, EPA believed that the Department needed better reasons for deciding to leave out some processes from the analysis. For example, as a result of EPA's review and public comments, EPA asked DOE for more information to explain why injection of brine should not be included in the performance assessment. The Department's additional information and EPA's own analysis showed that brine injection would have an insignificant effect on the WIPP.

In other cases, EPA believed that the numbers used to describe the WIPP and its surroundings were not appropriate or not well supported. For example, the Agency thought that the waste shear strength or the waste's resistance to being eroded if a drill penetrates the WIPP, was too high. This could mean that the performance assessment underestimated how much radioactivity would escape.

To assure that the calculated releases of radioactivity in the CCA were adequate, EPA asked DOE to repeat the analysis using certain

numbers chosen by the Agency. The results of this performance assessment "verification test" also showed that the WIPP would safely contain radioactive waste.

Based on the CCA performance assessment and additional information and analyses, EPA proposed to certify that the WIPP will be able to contain radioactive waste safely for at least ten thousand years. The next time you hear about the WIPP, you'll know the basics of how EPA decides whether the WIPP can safely contain radioactive waste.



Partnering with the National Safety Council

By Cheryl Malina

Through a cooperative agreement with EPA, the Environmental Health Center, a division of the National Safety Council (NSC), is performing activities that are designed to increase public awareness and understanding of the health risks associated with the WIPP and the various federal and state WIPP-related regulatory responsibilities. NSC is a nonprofit, non-governmental public service organization that is a recognized source of worker, public safety and environmental health information with state and community based chapters and offices throughout the country.

In September 1996, the NSC, in conjunction with the University of New Mexico's Institute for Public Policy, conducted a series of three focus groups in New Mexico and statewide public interviews. The purpose of these interviews was to determine the public's knowledge of the WIPP and the oversight and regulatory process surrounding it. In response

to the questions that were posed by New Mexicans during the focus groups and interviews, the NSC developed various public information materials to address their concerns. These materials include:

- "Frequently Asked Questions on the WIPP" - a 16-page booklet that answers the most frequently asked questions on the WIPP facility, radiation, transportation issues, and transuranic waste.
- "Public Participation Opportunities on the Road to U.S. EPA's WIPP Certification Decision" - a graphic illustration of the opportunities the public has had to comment on EPA's WIPP activities from 1992 to the present.
- "WIPP - Roles of the Federal Agencies" - a graphic illustration of the various responsibilities of the Federal Agencies, from transportation of the waste to the safety and health of the employees working at the WIPP.
- "EPA's WIPP Certification Decision" - a poster describing aspects of the WIPP program and how EPA will make a decision on the safety of the WIPP.
- "A Reporter's Guide on the Waste Isolation Pilot Plant" - a factual guide for the media on the WIPP facility, including radiation, transuranic waste, public participation opportunities, transportation of the waste, future management of the WIPP, and a listing of WIPP contacts.

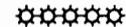
If you have any questions about the materials or would like a copy of these documents, please call Kimberly McCauley at (202) 974-2487. Or write to her at:

The National Safety Council
 1025 Connecticut Ave., NW Suite 1200
 Washington, DC 20036

Email: mccaulek@nsc.org.

Additional information is also available on NSC's web site at:

www.nsc.org/ehc/wipp.htm.



For More Information

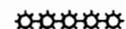
All information on EPA's decision-making processes concerning the WIPP can be obtained from any of EPA's four public docket locations (Washington DC, Albuquerque, Carlsbad, and Santa Fe, New Mexico). For the latest information on upcoming public hearings and meetings as well as the status of EPA activities regarding the WIPP, please call EPA's recorded WIPP Information Line at **1-800-331-WIPP**.

You can also read all about EPA's WIPP Program on the Internet. EPA's WIPP homepage is an excellent source for current information on EPA WIPP activities. On the homepage, you can read about EPA's role in the WIPP, the compliance criteria, the certification decision, public outreach activities and the calendar of events. From the Homepage you can also download EPA documents and docket information. EPA's WIPP Homepage address is:

www.epa.gov/radiation/wipp/

Regulatory Dockets Locations

Carlsbad Public Library 101 S. Halagueno Carlsbad, NM 88220 (505) 885-6776	Fogelson Library College of Santa Fe 1600 St. Michaels Drive (505) 473-6576
Zimmerman Library Government Publications	US EPA Air Docket Waterside Mall Room M1500
University of New Mexico Albuquerque, NM 87131 (505) 277-5441	401 M St. SW Washington, DC 20460 (202) 260-7548





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