RADIATIVE AND HAZARDOUS MATERIALS COMMITTEE

TENTATIVE AGENDA

August 29, 2000

Room 4

Pecos River Convention Center

Carlsbad, New Mexico

Tuesday August 29, 2000

9:30 a.m.

CALL TO ORDER

--Representative John Heaton, Chair

MINUTES

10:00 a.m.

WIPP STATUS REPORT

--Ines Triay, Director, Carlsbad Area Office, Department of Energy

11:00 a.m.

RADIOACTIVE WASTE CONSULTATION TASK FORCE

--Jennifer Salisbury, Secretary of Energy, Minerals and Natural Resources

12:00

LUNCH

1:30 p.m.

ENVIRONMENTAL EVALUATION GROUP

--Matt Silva, Director, EEG

2:30 p.m.

DOE/NEW MEXICO CONSULTATION AND COOPERATION AGREEMENT

--Glenn Smith, Office of the Attorney General (invited)

3:30 p.m.

RCRA PERMIT MODIFICATIONS AND WASTE
CHARACTERIZATION ISSUES

--Pete Maggiore, Secretary of Environment

4:30 p.m.  WIPP TRANSPORTATION ISSUES

Pete Rahn, Secretary of Highway and Transportation

5:30 p.m.  ADJOURN
Radioactive Waste Consultation Task Force Update

By

Jennifer A. Salisbury
Chair, Radioactive Waste Consultation Task Force
Briefing Topics:

- Task Force Budget
- Waste Characterization at the WIPP
- Movement of Waste by Rail
- DOT Ruling concerning Stopping at Rail Road Crossings
Topic 1:

Task Force Budget
FY 2001/2002

- Calendar of Events:

  - January/February 2000 - Biennial budget totaling $3,904,939 submitted to DOE/CAO
  - April 2000 - Received letter from DOE/CAO stating that our funding level would not exceed $1,043,500
  - May 2000 - Notified Dr. Triay that State could not operate on amount provided and requested
  - July 2000 - Met with DOE/CAO to negotiate budget. Agreed on $500,000 for first quarter -- received amendment for $125,000
  - July 2000 - Received second amendment for $375,000 for first quarter -- new total $500,000. Negotiating revised biennial budget totaling $3,504,722 this afternoon
Topic 2:

Waste Characterization at the WIPP
(Small Quantity Site Initiative)
Waste Characterization at WIPP

• Affects transuranic waste stored at 18 sites throughout the United States.

• NMED will make decision after public hearings and comment period which ends on September 26, 2000.

• Approval would allow DOE to perform certain characterization at the generator sites for transportation and at WIPP for final disposal.
Topic 3:

Movement of TRU Waste by Rail
The Rail Option

• Evaluation of this option is based on recommendation by National Academy of Science to use ATMX car to transport TRU Waste to WIPP.

• Implementation would require amendments to both Land Withdrawal Act and Second Modification to Consultation & Cooperation Agreement between New Mexico and DOE to withdraw requirement to use NRC approved shipping containers.

• ATMX operates under DOT approval and not NRC approval.
Topic 4:

DOT Ruling on WIPP Trucks stopping at Rail Road Crossings
Stopping at Rail Road Crossings

• DOE and State of New Mexico had different interpretations of Code of Federal Regulations when it came to WIPP trucks stopping at rail road crossings.

• NM argued that all vehicles should stop as TRUPACT-IIIs are marked with trefoil and public does not know whether they are empty or full.

• In early March 2000, both parties requested a DOT Determination and Ruling on the issue.

• In June 2000, DOT ruled that empty WIPP trucks are not required to stop at rail road crossings.
Radioactive Waste and Hazardous Materials Committee

New Mexico Legislature

WIPP UPDATE

Matthew Silva
Director

August 29, 2000
Carlsbad, NM

Providing an independent technical analysis of the Waste Isolation Pilot Plant (WIPP), a federal transuranic nuclear waste repository.
Mr. Chairman, Members of the Committee,

Thank you for the opportunity to provide an update on the activities of the Environmental Evaluation Group.

Just as activities at the WIPP facility continue to evolve, the activities of the EEG continue to evolve. Since EEG last testified before this committee, almost exactly one year ago, there have been substantial changes. Most notably, after 21 years of distinguished leadership, EEG’s first director, Bob Neill, has retired. I was appointed Director effective June 1. But rest assured that in his new capacity as Director Emeritus, Bob continues to make contributions. For example, he recently distributed a journal article he coauthored urging DOE to reconsider rail transport of transuranic waste to WIPP, using NRC certified containers.

With waste emplacement underway at WIPP, EEG continues to focus on operational safety and environmental monitoring issues for this facility which was designed to dispose of TRU waste contaminated with 13 metric tons of plutonium. We continue to enjoy a very professional relationship with the CAO and its contractors. I wish to first provide you with a summary of our activities and concerns as documented in our most recent papers and reports and then focus on the two issues for which testimony was specifically requested: 1) the suggestion to revisit the possible use of the ATMX rail car, and 2) the proposal to conduct waste characterization at the WIPP facility.

**Recertification**

Continued investigation into nuclear waste disposal over the next 35+ years will undoubtedly generate new information. To accommodate new information, the WIPP Land Withdrawal Act requires that the facility be recertified every five years. The first shipment of waste arrived at WIPP on March 26, 1999 and therefore the DOE application to the EPA for first recertification is due by March 25, 2004. Undoubtedly, the effort put into first recertification will set the precedent for all future recertifications. The EEG has identified, through two scientific papers published in 1999, the WIPP long-term performance assessment issues that may require additional experimental work and/or analyses:


Meanwhile, the DOE and EPA are in the process of determining how much effort will be needed to satisfy the recertification requirement.
Operational Issues

EEG has distributed six reports (EEG-70 through EEG-75) since certification of the facility. Each of these reports has been on operational issues and environmental surveillance for radioactivity. Three reports have been distributed since the last time EEG appeared before this committee (EEG-73 through EEG-75):


  EEG has conducted preoperational surveillance since 1985 and this will be the last preoperational report now that the facility is operational.


  The report demonstrates that the methodology developed by the same authors in EEG-65, *Probability of Failure of the Waste Hoist Brake System at the Waste Isolation Pilot Plant (WIPP)*, can be used to determine the confidence in the calculated probability of failure of other systems.


  The evaluation concluded that the pre-permit waste characterization appeared to substantially meet the technical requirements of the permit’s Waste Analysis Plan (WAP). Non-accidental carcinogenic risks from the waste emplacement were six to eight orders of magnitude less than those allowed by the permit. This risk is too low to justify any remedial or other actions involving these wastes.

EEG Reports in Press


  The report investigates the effects of site-specific meteorology on dispersing a plume of aerosolized radioactive material in the event of an accidental release during waste handling and waste emplacement operations using data collected from the meteorological towers at the WIPP site and compares the results against those calculated in the WIPP SAR and the WIPP RCRA Subpart B application. The results show only a very slight increase in the calculated concentration of
released radionuclides, but that may have been due, in part, to the selection of a more stable wind class.


  Dr. Oversby reviews development in the field of plutonium solution chemistry and makes specific recommendations for experiments to be conducted in preparation for recertification. It also serves as a reminder that the issue is the disposal of plutonium contaminated waste.


  Historically, the safety assessment at WIPP has relied on a deterministic dose assessment. This report recommends and demonstrates incorporating probabilistic information into the calculations to provide a more realistic assessment of a release as the result of an operational accident.


  This report is in final EEG review and is significant because it is our first report of surveillance monitoring of the facility now that TRU waste is in place. The analysis leads to the conclusion that there has been no measurable radiation dose to the public as a result of WIPP operations during 1999.

**The ATMX Railcar and the History of Shipping Requirements for WIPP**

The ATMX rail car is a single contained, vented package which has not been tested under the hypothetical accident conditions described in 10 CFR 71.73. In the 1980 WIPP Environmental Impact Statement DOE said that the Super Tiger package and the ATMX railcar were not going to be used for WIPP because: “the existing systems are not of the right shape and size for efficiently packing the drums and boxes that will be transported to the WIPP, and the existing systems, now 10 years old, can be improved by using recent advances in technology.”

The DOE planned to use the TRUPACT (now referred to as TRUPACT-I) to transport Contact Handled Transuranic (CH-TRU) waste to WIPP. Even though TRUPACT-I was vented and single contained, DOE believed it would be certifiable by the U.S. Nuclear Regulatory Commission (NRC). After NRC confirmed (in August 1983) that they would not accept the TRUPACT-I design the DOE pursued self certification. In May 1986, after EEG objected to the TRUPACT-I design the DOE Albuquerque Operations Office agreed to proceed with a TRUPACT-II design which would meet all NRC regulations without variance. However, DOE continued with efforts to self certify TRUPACT-I and obtain approval from the U.S. Department
of Transportation (DOT) for shipments to WIPP (the DOT cannot certify Type B packages but they can grant exemption for shipments of self-certified DOE packages). These efforts led to letters (copies attached) to DOT from the New Mexico Congressional delegation (3/16/87) and Governor Garrey Carruthers (4/20/87) objecting to the use of non-NRC certified containers for shipments to WIPP. The Congress later incorporated this requirement into the 1992 WIPP Land Withdrawal Act (102 P. L. 579).

In 1983 EEG became aware of DOE’s four-year-old concern about the possible existence of explosive concentrations of hydrogen gas in some high-curie CH-TRU drums. This problem was evaluated in EEG-24 and became one of the factors that led to the State of New Mexico’s concerns about using only NRC certified packages for shipment to WIPP.

The NRC determined (from data provided by DOE in the Safety Analysis Report for Packaging-SARP) that it was necessary to have payload requirements for the wastes shipped in TRUPACT-II in order to insure that hydrogen gas concentrations in the innermost bag in a waste drum would not exceed 5%. This requirement can be met by decay heat limits (which limits the number of curies of transuranic waste that can be shipped in each waste material type) or by testing. The decay heat limit is the preferred method of showing compliance. Decay heat limits are fairly strict; they were the reason for repackaging the 17 shipments of LANL heat source waste shipped to WIPP and will cause quite a bit of repackaging of other CH-TRU wastes. DOE has on-going research programs and interactions with NRC that are gradually justifying less stringent decay heat limits. But there will still be a fraction of the presently stored waste containers that will not be able to meet decay heat limits without repackaging.

One of the attractions of using the ATMX is that, without any NRC requirements, the shippers can ignore the hydrogen gas problem. This would make life simpler for the shipper, but it ignores the belief of NRC (and EEG) that potential hydrogen gas problems are real and need to be managed. A proposal to use the ATMX is in effect saying that the more stable waste can be shipped in TRUPACT-II (which is NRC certified, double contained, non-vented, and has been subjected to accident drop tests) while those wastes with higher radioactivity concentrations and a greater potential to generate hydrogen gas can be shipped in the ATMX (which could not be NRC certified, is single contained, vented, and has not been subjected to accident drop tests).

Shipping economies may also be cited as a reason to use the ATMX. However, one needs to be cautious about reaching simplistic conclusions about cost. For example, EEG was told by DOE in 1986 that by objecting to TRUPACT-I we would be increasing costs and highway deaths due to the additional shipments necessary in a more expensive, double contained, package which obviously would have a lower payload. They were wrong in both cases. A trailer of three TRUPACT-IIs was about 11% cheaper and carried 16% more drums than a TRUPACT-I trailer.

EEG believes the issue that led to the requirement for NRC certified packages and payload requirements to control hydrogen gas concentrations 13 years ago is still valid. We would be willing to review any recent Safety Analysis on the ATMX that addresses the hydrogen gas issue as well as a quantitative assessment of equivalence to 10 CFR 71 hypothetical accident.
conditions. In the absence of such a satisfactory assessment EEG remains opposed to the use of the ATMX or any other non-NRC certified package for shipments of waste to WIPP.

Small Quantity Site Waste Characterization Initiative

On June 16, the DOE/CAO provided EEG with a presentation of a Small Quantity Site Waste Characterization initiative. In preparation for the presentation, EEG had submitted 27 technical questions to CAO on June 9. These were discussed at the June 16 presentation and again in more detail at an August 3 meeting. As an example of the nature of the questions, some ask how the DOE is going to assure that each waste drum or box:

1) contains TRU waste (>100 nCi/g)
2) meets the limit of <200 fissile gram equivalents
3) meets the DOE waste acceptance criteria and NRC shipping requirements for liquids, pyrophorics, corrosivity, etc.
4) meets the decay heat limits
5) meets the requirements of <500 ppm flammable VOC concentrations.

On August 23, the CAO provided a written response to each question as well as providing 8 additional questions and responses which we are reviewing at this time.

Other selected questions and responses are of interest to today's discussion. For example, with respect to transportation, EEG asks "TRUPACT II shipping requirements are more prescriptive than those for some other containers. It will not be easy to characterize some containers for conformance with the TRAMPAC. Do you plan to ship to WIPP only in TRUPACT-II containers?"

DOE responds "The current program is only considering the shipment of waste in TRUPACT-II or in HalfPACTs. (The HalfPACT is a shorter version of the TRUPACT-II; waste characterization will be same for both.)"

EEG also asks "Is DOE considering using the ATMX or any other package that is not (and cannot) be certified by the NRC? This would be a violation of the Land Withdrawal Act and prior agreements with the State of New Mexico."

DOE responds "In accordance with the recent recommendation of the National Research Council, the DOE is evaluating the use of ATMX for shipments to WIPP. As indicated, both the Land Withdrawal Act and the C&C agreement prohibit WIPP shipments in non-NRC certified packages."

EEG asked what changes to the NMED Permit would be required and if these would be a Level 3 change that require a public hearing. Paraphrasing the DOE response, on July 21 DOE submitted Class 2 permit modifications to increase storage capacity, increase permitted storage areas, increase the length of time containers may be stored at the WIPP facility, and amend the current audit requirement for waste characterization at the WIPP facility. EEG is still evaluating these modifications with our comments due to NMED September 26.
EEG asked “What will be done with waste that is found to be unacceptable at WIPP? Where will it be returned to?” The DOE response identified the options which are contained in the proposed permit modification. The first step will be to remove the non-compliant item and notify the waste generator. In the event that the item cannot be sent to another treatment, storage, or disposal facility or managed at WIPP with NMED approval, it will be sent back to the generator site. CAO states that it will require each site to enter into a Memorandum of Understanding that will require the generator site to accept material that can only be returned.

EEG also asked about the need for NEPA documentation, a modification to the CH-TRU WIPP Safety Analysis Report and the Hazard Evaluation. EEG plans to provide a complete technical evaluation of the proposed facility once EEG has these documents as well as the DOE Decision of Record. Meanwhile, we are reviewing and completing our comments on the proposed modifications to the WIPP Hazardous Waste Facility Permit by September 26.

EEG Presentations (from 8/31/99-8/28/00)


Neill, R.H. 9/20/99 Presentation to Carlsbad Economic Summit, Carlsbad, NM.


Neill, R.H. 10/14-15/99 Opening comments, Joint DOE/EEG Workshop on WIPP Radiation Air Monitoring Programs, Carlsbad, NM.


Silva, M.K. 10/19/99 “Technical Issues for an Operational Nuclear Waste Repository,” Graduate Chemical Engineering Seminar, University of Kansas, Lawrence, KS.

Rucker, D. 10/22/99 “WIPP’s Radioactive Inventory (as of 10/20/99)”, 68th Quarterly Meeting, Albuquerque, NM.
Neill, R.H. 10/22/99 Update of recent EEG work, 68th Quarterly Meeting, Albuquerque, NM.


Neill, R.H. 12/14/99 "The Preferred Future and How to Achieve It", Workshop on Radiation Protection, Institute for Alternative Futures, EPA Education Center, Washington, DC.

Neill, R.H. 1/18/00 "Major Issues", 69th Quarterly Meeting, Santa Fe, NM.

Bartlett, W.T. 1/18/00 "WIPP Radiation Air Effluent Monitoring", 69th Quarterly Meeting, Santa Fe, NM.

Channell, J.K. 1/18/00 "Possible Risks from Existing Waste Emplaced in Room 7", 69th Quarterly Meeting, Santa Fe, NM.

Silva, M. 2/17/00 "Reduction or Elimination of MgO as an Engineered Barrier at WIPP", WIPP Backfill Workshop, Stevens Inn, Carlsbad, NM.

Neill, R.H. 2/29/00 "Perspectives on WIPP", Session 33 Panel Discussion, WM 2000, Tucson, AZ.


Neill, R.H. 2/29/00 "Expected Dose from CH-TRU Waste During an Accident at WIPP - A Probabilistic Approach", poster session, WM 2000, Tucson, AZ.
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<tr>
<th>Name</th>
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<tr>
<td>Neill, R.H.</td>
<td>3/22/00</td>
<td>&quot;EEG Perspectives on Headspace Gas&quot;, DOE Headspace Gas Workshop, Albuquerque, NM.</td>
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<tr>
<td>Chaturvedi, L.</td>
<td>5/4/00</td>
<td>&quot;Quarterly EEG Status/Activities&quot;, 70th Quarterly Meeting, Carlsbad, NM.</td>
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<td>Rucker, D.</td>
<td>5/4/00</td>
<td>&quot;Probabilistic Risk Assessment for WIPP Operational Procedures&quot;, 70th Quarterly Meeting, Carlsbad, NM.</td>
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<td>Silva, M.</td>
<td>7/18/00</td>
<td>EEG status report, WIPP issues, 71st Quarterly Meeting, Albuquerque, NM.</td>
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<td>Chaturvedi, L.</td>
<td>7/18/00</td>
<td>&quot;Status of Resolution of the Exhaust Shaft Water Problem&quot;, 71st Quarterly Meeting, Albuquerque, NM.</td>
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<td>Bartlett, W.T.</td>
<td>7/18/00</td>
<td>&quot;Alpha Air Monitoring in the WIPP Underground&quot;, 71st Quarterly Meeting, Albuquerque, NM.</td>
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<td>Chaturvedi, L.</td>
<td>8/14/00</td>
<td>&quot;Resolution of Geological Issues at the WIPP Site&quot;, keynote speaker, Symposia B-3, Site Selection and Management of Nuclear Power Plant Areas and Nuclear Wastes, 31st International Geological Congress, Rio de Janeiro, Brazil.</td>
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Ms. Cynthia Douglass, Administrator  
Research and Special Programs Administration  
Department of Transportation  
400 Seventh St., SW.  
Washington, DC 20590

Dear Ms. Douglass:

On January 27, 1987, Assistant Secretary of Energy S. R. Foley requested the Administrator of Research and Special Programs of your Department to initiate a rulemaking to amend the packaging requirements for the transportation of radioactive wastes to the Waste Isolation Pilot Plant (WIPP), which is located in our State.

We urge you to reject this petition of the Department of Energy.

The WIPP was authorized by Public Law 96-164. As part of the authorization of that project, the Secretary of Energy was directed to enter into an agreement with the State of New Mexico. That agreement would establish procedures by which the State could make recommendations "with regard to the public health and safety aspects" of the project. The Secretary was also directed to attempt to resolve any concerns raised by the State through these procedures.

This agreement eventually took the form of a stipulated agreement, which is under the supervision of the United States District Court. One area of concern that has been clearly and repeatedly identified by three separate Governors is the issue of packaging of the transuranic wastes to be shipped to WIPP. The position of the State has been that TRUPAC I, the container which the Department of Energy originally planned to use for WIPP, does not meet applicable Federal standards for transuranic nuclear waste transportation. In December of 1986, the Department of Energy, acting through its Albuquerque Operations Office, committed to Governor Anaya that it would resolve the State's concerns regarding the design of the container to be used in transportation. More specifically, the Department committed to use a waste container referred to as TRUPAC II.

TRUPAC II incorporates the features which we believe are necessary to meet the existing Department of Transportation and Nuclear Regulatory Commission transportation regulations. The Department of Energy committed to the people of New Mexico in the
"First Modification to the July 1, 1981, Agreement for Consultation and Cooperation on the Waste Isolation Pilot Plant by the State of New Mexico and the U.S. Department of Energy" that "DOE and WIPP will comply, at a minimum, with all applicable state, federal and local standards, regulations and laws,..."

The Department of Energy also stated in the Final Environmental Impact Statement on WIPP that "The transportation of radioactive waste to the WIPP will comply with the regulations of the U.S. Department of Transportation (DOT) and the corresponding regulations of the U.S. Nuclear Regulatory Commission (NRC)."

The Department of Energy, by seeking to amend the nuclear waste transportation regulations of your Department so that TRUPAC I could comply, is admitting that TRUPAC I, does not meet your regulations. Furthermore, they are breaking faith with their commitment to New Mexicans.

Assistant Secretary Foley's statement in his letter requesting the change that "the proposed rulemaking is in keeping with DOE commitments to provide safe and efficient transportation" is clearly not in keeping with the facts.

It is also our understanding that the Department of Transportation, under a Memorandum of Understanding with the Nuclear Regulatory Commission dated July 2, 1979, agreed to delegate its authority over Type B radioactive materials transportation to the Nuclear Regulatory Commission.

For the reason stated above, we urge you in the strongest terms to deny the petition of the Department of Energy.

Joe Skena
Bill Richardson

Pete V. Domenici
Jeff Bingaman

Cc: The Honorable Elizabeth H. Dole, Secretary of Transportation
The Honorable John S. Herrington, Secretary of Energy
The Honorable Sylvester R. Foley, Jr., Assistant Secretary of Energy, Defense Programs
April 20, 1987

Alan I. Roberts, Director
Office of Hazardous Materials Transportation
Department of Transportation
400 Seventh Street, S.W.
Washington, D.C. 20590

Dear Mr. Roberts:

The State of New Mexico urges you to reject the petition for rulemaking (Petition No. P-1008, February 27, 1987) concerning the package design for TRU waste being transported to the Waste Isolation Pilot Plant. The petition states that rulemaking is necessary to transport transuranic waste to the WIPP site. Currently, the Nuclear Regulatory Commission (NRC) and the Department of Energy (DOE) have regulatory authority to certify type B package designs.

DOE has informed the State of New Mexico of the intent to ship waste as early as October 1988. We estimate that the time frame for full Department Of Transportation (DOT) analysis, and an open discussion of all issues including public involvement will not support an October 1988 starting date. We believe that any perceived benefit of a more flexible design certified by DOT over a design which NRC might certify will be greatly reduced as the DOE TRU waste inventory is depleted.

If the certification of a vented, single containment type B package is critical to DOE operations, the DOE can grant itself an exemption from design requirements.

DOE officials have consistently assured the State of New Mexico that the package design for TRU waste which will be transported to WIPP will meet type B package design criteria as used by NRC. State emergency response planning and state concurrence with DOE operational plans has been predicated on the type B package. If DOE or DOT certifies, or anticipates certifying, an alternate package design, the State of New Mexico will be forced to reexamine basic issues and may suffer significant programmatic delays.
We do not dispute the right of any individual or agency to petition your department for rulemaking, but we do assert that this action may negate the joint planning efforts of many state and federal agencies. Under these conditions and given the short time until start-up of WIPP, we feel that your department can and should refuse the petition.

Sincerely,

[Signature]

Garrey Carruthers
Governor