



ENVIRONMENTAL EVALUATION GROUP

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April 30, 1991

Honorable John J. Rhodes III
Ranking Republican Member
Energy and the Environment Subcommittee
Committee on Interior and Insular Affairs
U.S. House of Representatives
Washington, D.C. 20515-6230

Dear Mr. Rhodes:

In accordance with your April 22, 1991 request for additional information following my appearance before the Energy and Environment Subcommittee, we are pleased to provide the following in response to your questions.

Sincerely,

Robert H. Neill
Director

RHN:pdg
Enclosure



1. Do you think DOE should begin the test phase using the Remanded 40 CFR 191B regulations? Why? Other technical groups support testing using the old standards, are they wrong?

Experiments are not required by EPA to demonstrate compliance with their standards for safe disposal of TRU or High Level Waste. While DOE wishes to conduct experiments with Contact-Handled (CH-TRU) waste at WIPP, DOE has no plans for experiments with Remote-Handled (RH-TRU) waste (which comprises 1/3 of the WIPP total radioactivity). For the high level waste repository program in Nevada, the U.S. Nuclear Regulatory Commission also does not require any experiments to demonstrate compliance with 10CFR60 (which incorporates 40CFR141) nor does DOE have any plans to conduct any such experiments. As the implementing agency for high level waste disposal using the same EPA standards, NRC requires completion of the documentation to meet the standards before granting a license to begin construction.

In 1987, New Mexico and DOE formally agreed to permit DOE to proceed with the evaluation of the safety of TRU waste disposal using the 1985 EPA Standards, despite the fact that they had been vacated earlier by the 1st Circuit Court in Boston.

EEG does not oppose testing per se, but believes that any experiments conducted should have a reasonable expectation to provide meaningful information in a timely manner to assist in determining whether the facility can be shown to meet the standards for safe disposal. DOE expects to make that determination in early 1995.

Since experiments with waste are not even mentioned in the EPA Standards, there is no direct correlation between the test phase and the Standards.

2. In your testimony you say there is "no scientific advantage to conducting experiments in the mine versus on the surface." Could you explain that statement?

The "dry bin" tests consist of emplacing radioactive CH-TRU waste in a sealed bin and measuring the amounts of different gases generated with time. The gas generation rate is independent of the physical location of the steel bin, whether it is in the mine, located on the surface at WIPP or elsewhere. Hence if one establishes a temperature in a room on the surface similar to the expected temperature of the waste during the disposal phase, the data will be identical.

Surface testing eliminates the problem associated with floor and roof stability during the tests and required retrieval of the

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waste at the completion of the experiments. Note that the dry bin tests, currently scheduled to be conducted in Room 1 of Panel 1, will involve 9 years for emplacement, experimentation, and retrieval in a 5 year old room. Without extensive maintenance, it is difficult to guarantee safety for the workers and the experiments in a room 14 years after excavation.

3. How do you interact with DOE? How frequent is your contact? Do you have staff on site? How would you characterize DOE's conduct toward you?

We interact continuously with DOE with meetings, correspondence and telephone calls. EEG has published 48 major reports to date related to health and safety and our response to question number 4 details our correspondence and interaction with DOE.

EEG has a staff of 10 in our Carlsbad office and 8 in our headquarters in Albuquerque.

While DOE has recently endeavored to be more responsive to our requests, their responsiveness is frequently quite slow and inadequate.

4. Could you list the number of procedures and documents (FSAR, waste retrieval plan, integrated system check out) that DOE is using regarding WIPP that you have reviewed?

See Attachment #1 for response to question #4.

5. What have been the extent of the comments?

See Attachment 1 for response to question #5.

6. Would you please furnish a copy of your comments regarding the FSAR addendum and other outstanding DOE WIPP related documents?

Attachment 2 contains EEG's review of selected DOE documents.

4/3/91	EEG Review of FSAR Addendum
2/5/91	EEG Review of Operational Readiness
7/89	Review of Draft WIPP SEIS, EEG-41
5/89	Review of Final WIPP SAR, EEG-40

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Of greater importance are the analyses conducted by EEG and published. The following is a list of our reports shown as Attachment 3.

7. To what extent are you involved with the expert panel that is looking at floor and roof problems?

After initially rejecting our request to attend the Expert Panel meetings, DOE invited EEG to participate as an observer with the Expert Panel looking at floor and roof problems in the WIPP mine. Dr. Lokesh Chaturvedi, Deputy Director, EEG and an engineering geologist has participated in the meetings and has concluded that the hazards associated with emplacement of waste and access to workers in rooms that were excavated 5 years ago for a period exceeding 2 or 3 years from now may be unacceptable. This is true even though the rooms have 10 ft. rock-bolts in the roof off the rooms.

8. Since Admiral Watkins became Secretary, how would you characterize your differences with DOE over WIPP issues? Major? Minor? What are those differences?

There is more official openness toward oversight groups since Admiral Watkins became Secretary.

Yet in the final analysis little has changed. We still have to constantly push (on a case by case basis) to get information in a timely manner. We have been invited recently to several expert panel meetings (usually after more than one request).

9. In testimony you say that waste modification could add 5 to 11 years to the process, please explain.

DOE has established a Task Force to evaluate the impact if it is necessary to modify the waste form in order to meet the EPA Standards for TRU waste disposal. The following table was presented by DOE at a briefing of the National Academy of Sciences WIPP Panel on March 20, 1991 and shows the potential slippage on the WIPP schedule of 5 to 11 years for different engineered alternatives and a range in cost of 130 to 1050 million dollars.

TABLE 9-1
SUMMARY OF EFFECTIVENESS AND FEASIBILITY OF ENGINEERED ALTERNATIVES

ALTERNATIVE DESCRIPTION						ALTERNATIVE EFFECTIVENESS					ALTERNATIVE FEASIBILITY			
Alt. #	Design	Solid Organic	Solid Inorganic	Residue	Waste Container	Gas Generation		Human Intrusion			Level of Development	Capital cost of Treatment (\$ M)	Implem. Schedule (Y)	Regulatory Impact
						Miscel'd & Particulate	Aerobic Conversion	E1	E2	E1E2				
1	AR	S&C	S&C	SLT	AR	PE	PE	PE	NE	E	H	185-282	5-7	•
2	CMT	S&C	S&C	SLT	AR	PE	PE	PE	NE	E	H	222-313	5-7	•
3	CMT	S&C	S&C	CGT	AR	PE	PE	PE	E	E	H	222-313	5-7	•
4	CMT	I&C	S&C	SLT	AR	E	PE	NE	NE	E	H	436-891	5-11	..
5	CMT	I&C	S&C	CGT	AR	E	PE	PE	E	E	H	436-891	5-11	..
6	VTR	I&V	MM	SLT	AR	E	PE	PE	PE	E	M	581-824	7-11	..
7	VTR	I&V	MM	CGT	AR	E	PE	E	E	E	M	581-824	7-11	..
8	VTR	I&V	MFM	SLT	NFE	E	E	E	PE	E	M	757-1856	7-11	..
9	VTR	I&V	MFM	CGT	NFE	E	E	E	PE	E	M	757-1856	7-11	..
10	AR	AR	DRM	NA	NFR	NE	E	NE	NE	E	H	343-488	5-7	•
11	AR	SPT	SPT	SLT	AR	NE	NE	NE	NE	NE	H	138-183	5-7	•
12	AR	SPT	SPT	CGT	AR	NE	NE	PE	NE	E	H	138-183	5-7	•
13	VTR	I&V	MFM	NA	NFR	E	E	E	PE	E	M	757-1856	7-11	..
14	AR	SPT	SPT	SAG	AR	NE	NE	PE	PE	E	H	138-183	5-7	•

AR - AS RECEIVED
 CMT - CEMENT
 VTR - VITRIFY
 S&C - SHRED & CEMENT
 I&C - INCINERATE & CEMENT
 I&V - INCINERATE & VITRIFY
 SPT - SUPERCOMPACT
 MM - MELT METALS
 NA - NOT APPLICABLE

MFM - MELT AND REMOVE METALS
 DRM - DECONTAMINATE AND REMOVE METALS
 SLT - SALT
 CGT - CEMENT GROUT
 SAG - SALT AGGREGATE GROUT
 NFE - NON FERROUS
 NFR - NON FERROUS, RECTANGULAR
 NE - NO EFFECT

PE - PARTIALLY EFFECTIVE
 E - EFFECTIVE
 H - HIGH
 M - MEDIUM
 .. - RCRA/NSA, DOE ORDERS, NEPA, NE SHAP
 . . - RCRA/NSA, DOE ORDERS, NEPA, NE SHAP, CAA, CWA, TSCA, PSD, MAAGS, NSPS

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The position taken by DOE is to wait until they complete the analyses for compliance with the standards in 1995 since it may not be necessary to modify the waste form thus saving time and money. Conversely, the NRC has established more stringent requirements for the disposal of certain types of low level radioactive waste forms than DOE requires of itself to do for TRU waste, which is generally considered to be comparable in overall toxicity to high level waste.